

# A STUDY ON CONSUMER PERCEPTION TOWARDS AI CHATBOTS WITH SPECIAL REFERENCE TO TIRUPPUR CITY

VINESHVARI P, SURIYA R  
STUDENT

KATHIR COLLEGE OF ARTS AND SCIENCE

## CHAPTER- 1

### 1.1 INTRODUCTION

Artificial Intelligence (AI) has become one of the most influential technologies in recent years and is transforming the way businesses interact with their customers. Among the many applications of AI, chatbots have gained significant importance in customer service, marketing, information delivery, and support services. AI chatbots are computer programs designed to simulate human conversation and provide instant responses to customer queries. They are widely used by banks, e-commerce companies, telecom industries, hospitals, educational institutions, and many other service sectors.

In the present digital era, customers expect quick, accurate, and convenient service at all times. Traditional customer support systems, which depend mainly on human employees, are often limited by working hours, workload pressure, and response delays. AI chatbots help to overcome these barriers by providing 24/7 automated assistance. Customers can interact with chatbots through websites, mobile apps, and social media platforms to get information, register complaints, track orders, make enquiries, or receive recommendations.

Customer perception plays a very important role in determining the success of AI chatbot adoption. Even though AI chatbots are becoming popular, customers may have different experiences, opinions, levels of trust, and satisfaction when interacting with them. Some customers may find chatbots helpful, fast, and user-friendly, while others may feel frustrated due to irrelevant replies, misunderstanding of queries, lack of human emotions, or security concerns. Therefore, understanding customer perception is essential for improving chatbot design and performance.

### HISTORY OF AI CHATBOTS

The development of AI chatbots can be traced back to the early stages of computer science and artificial intelligence. The idea of machines communicating with humans in natural language started as a theoretical concept. In 1950, Alan Turing introduced the famous Turing Test, which proposed that a machine could be considered intelligent if its responses were indistinguishable from those of a human. This concept laid the foundation for the future development of conversational systems like chatbots.

The first true chatbot was ELIZA, developed in 1966 by Joseph Weizenbaum at the Massachusetts Institute of Technology (MIT). ELIZA simulated a psychotherapist by replying to user statements using pattern-matching techniques. Although it was very simple, many users felt as though ELIZA “understood” them. This experiment proved that computers could engage in meaningful text-based interactions, sparking worldwide interest in conversational artificial intelligence.

In the 1970s, another important chatbot named PARRY was created by psychiatrist Kenneth Colby. Unlike ELIZA, PARRY attempted to simulate the behavior of a person with paranoid schizophrenia. It introduced more complex conversational rules and emotional reactions, making it more advanced for its time. These early systems were not intelligent in the modern sense, but they marked key milestones in chatbot evolution.

During the 1980s and 1990s, chatbots continued to develop slowly. They were mainly rule-based, meaning responses were generated using fixed scripts. Around this time, chatbots started being used in entertainment and academic research. The rise of the internet in the 1990s expanded the scope of chatbots, especially for online communication. One famous example is ALICE (Artificial Linguistic Internet Computer Entity), created in 1995. ALICE used pattern matching and a structured database of responses, winning several AI awards.

The 2000s marked a period of growth in commercial and web-based chatbots. Companies began experimenting with chatbots for customer service, technical support, and information delivery. Early website chatbots were still basic, but they helped businesses reduce workload and respond to customer queries instantly. Meanwhile, advancements in machine learning and natural language processing (NLP) created opportunities for more intelligent chatbot systems.

A major transformation occurred after 2010, when smartphones, social media, and messaging platforms became widespread. Companies like Apple, Google, Microsoft, and Amazon introduced virtual assistants such as Siri, Google Assistant, Cortana, and Alexa. These systems combined AI, speech recognition, and NLP, enabling more natural and interactive communication. Chatbots also began to be integrated into platforms like Facebook Messenger, WhatsApp, and business websites.

With the growth of e-commerce, digital banking, online services, and automation, AI chatbots became powerful tools for customer engagement. They started handling tasks such as order enquiries, complaints, appointment booking, banking transactions, and technical troubleshooting. Unlike earlier rule-based bots, modern AI chatbots use machine learning, deep learning, and NLP to learn from interactions and improve over time.

In India, the use of AI chatbots grew rapidly after the expansion of digital services, online shopping, and UPI-based banking systems. Banks, telecom companies, online shopping platforms, airlines, hospitals, and government portals began adopting chatbots to handle millions of customer queries efficiently. Chatbots such as HDFC Bank's EVA, IRCTC chatbots, Swiggy and Zomato chat assistants, and telecom support bots have become familiar to Indian consumers.

Tirupur, being a major industrial and commercial hub, has also witnessed this digital transformation. Textile industries, banks, logistics companies, e-commerce platforms, and service providers in Tirupur increasingly rely on AI chatbots for customer communication. As more businesses adopt chatbot technology, understanding the historical evolution and customer perception of these systems becomes essential.

Today, AI chatbots continue to evolve with the integration of advanced AI models, predictive analytics, emotional intelligence, and personalization features. They are no longer limited to answering simple questions but are now capable of learning user preferences, analyzing data, and offering smart recommendations. The journey from ELIZA to modern AI chatbots highlights the continuous innovation in human-machine communication.

Thus, the history of AI chatbots reflects the broader progress in artificial intelligence and digital technology. From experimental systems in research labs to essential tools in global business operations, chatbots have become an integral part of modern customer service. This historical background provides strong justification for studying how customers perceive AI chatbots, particularly in growing cities like Tirupur where digital adoption is increasing rapidly.

Trust and security concerns remain key issues in AI-based communication. Many customers may hesitate to share personal or financial information with chatbots. This study examines whether customers feel safe while interacting with AI chatbots and whether they trust the technology to handle their data responsibly. The findings will help organizations to design better privacy and security measures.

## 1.2 NEED AND SCOPE OF THE STUDY

This study is needed to clearly understand how consumers perceive and experience AI chatbots, as many organizations today use chatbots for enquiry handling, complaint registration, information support, and service assistance. Consumers may differ in their levels of satisfaction, trust, security concerns, ease of use, and comfort while interacting with AI chatbots, and these differences directly influence their acceptance of the technology. Therefore, this study focuses on evaluating consumer satisfaction with chatbot interactions, understanding their opinions, analyzing the factors influencing perception such as usefulness, speed, friendliness, clarity, and system design, and examining whether chatbots really help in improving customer engagement. The scope of the study also includes identifying common complaints and problems faced by users, studying the level of security and trust customers feel while sharing information, and comparing perceptions across different industries such as banking, e-commerce, telecom, education, and healthcare. By analyzing these aspects, the study aims to provide valuable insights that will help businesses improve chatbot design, reduce service issues, enhance customer convenience, and use AI chatbots more effectively for better customer experience and business growth.

## 1.3 STATEMENT OF THE PROBLEM

AI chatbots are increasingly being adopted by banks, e-commerce platforms, telecom services, healthcare providers, and other businesses, there is still uncertainty about how consumers actually perceive and experience these chatbot interactions. Some consumers may find AI chatbots useful, quick, and convenient, while others may feel dissatisfied due to issues such as irrelevant responses, lack of human touch, technical problems, misunderstandings, and concerns about privacy and data security. Since consumer perception, satisfaction, trust, ease of use, and engagement play a major role in determining the success of AI chatbot services, it becomes necessary to study whether consumers truly accept and prefer AI chatbots compared to traditional human support. Therefore, the problem of this study is to examine the level of customer satisfaction, trust, security concerns, opinions, and common issues faced while interacting with AI chatbots, and to identify the key factors that influence their overall perception towards chatbot-based services.

## 1.4 OBJECTIVES OF THE STUDY

- To Evaluate Consumer Satisfaction with AI Chatbots.
- To Know the Consumer Opinion about AI Chatbots
- To Evaluate the Security & Trust concerns that consumers have when interacting with AI Chatbots.
- To Identify the most common issues or complaints faced by the consumers when interacting with AI Chatbots.
- To Identify opportunities for AI Chatbots to enhance consumer experience & business growth.

## 1.5 RESEARCH METHODOLOGY

Research is a scientific method of finding answers to issues. It is essentially an investigation, a recording and an evaluation of proof for the reason of gaining know-how. Primary data has been collected for the purpose of the study through questionnaire. Secondary data inclusive of quantitative and qualitative data well collected from various sources including books, research papers, magazines and websites is used for the study. The various aspects of methodology adopted in the present study discussed below.

### 1.5.1 RESEARCH DESIGN

The Study adopts descriptive research design, as it focuses on describing and analyzing the existing perception and behavioral responses of consumers towards AI Chatbots without altering any variables.

### **1.5.2 AREA OF THE STUDY**

The Study is confined to Tiruppur City.

### **1.5.3 SAMPLE SIZE**

The Study covered a sample size of 100 respondents belonging to Tiruppur City.

### **1.5.4 SOURCES OF DATA**

Both Primary and Secondary data is used in the current study.

**PRIMARY DATA** – collected through structured questionnaire administrated to 100 respondents.

**SECONDARY DATA**- collected from different Journals, Books, Websites, Company Portals, Research Articles, Reports, Online Publications and Magazines.

### **1.5.5 SAMPLING TOOLS**

The purpose of data analysis and interpretation chapter is to transform the data collection in to dependable suggestion about the development of the interface and its performance using by the data preparation to organizing, describing and interpret the data for analysis.

- Simple Percentage Analysis
- Chi-square Analysis

## **1.6 LIMITATIONS OF THE STUDY**

- The Study is limited to Tiruppur City only, so the findings may not fully represent the perception of consumers in other cities and regions.
- Scope of the Study is wider, but sample size is limited to 100 members only.
- Technology and AI Chatbot features keep changing rapidly, so the findings of this study may become outdated over time as new developments and improvements takes place.

## **1.7 CHAPTER SCHEME**

CHAPTER 1: Introduction and Design of the Study.

CHAPTER 2: Review of Literature.

CHAPTER 3: Theoretical Framework & Overview of the Study.

CHAPTER 4: Data Analysis and Interpretation.

CHAPTER 5: Findings, Suggestions and Conclusion of the Study.

## CHAPTER- 2

### REVIEW OF LITERATURE

**Ramesh and Deepa (2022)** Investigated tech-savvy youth in Tamil Nadu and found that acceptance of AI chatbots is highest among college students who use them primarily for order tracking and instant query resolution in e-commerce apps.

**Kumar and Sharma (2024)** studied digital consumer behavior specifically in Tiruppur District. They identified that "trouble-free" interaction and perceived ease of use are the primary drivers for local consumers when using AI-driven retail applications.

**Gracia A. (2024)** explored chatbot adoption in Nagercoil, Tamil Nadu, highlighting that while the primary use is complaint resolution, older users in the region remain skeptical due to security concerns and perceived lack of accuracy.

**S. Deepa (2025)** conducted a study in Chennai City which revealed that middle-aged users are becoming active e-commerce chatbot users, valuing the "helpfulness" of the bot even when response speed is moderate.

**Pillai & Sivathanu (2020)** examined the retail sector in Tamil Nadu and concluded that AI-driven loyalty programs and chatbot reminders significantly boost customer retention among grocery shoppers.

**Sivakumar et al. (2023)** analyzed supermarket customers in the Coimbatore/ Tiruppur belt, finding that 24/7 availability is the highest-rated feature, though personalization remains a weak point for regional AI implementations.

**Vijay Kumar (2025)** investigated whether Indian businesses are sacrificing quality for efficiency. The study found that while chatbots reduce costs, Indian consumers often feel a "loss of empathy" during stressful service interactions.

**Kaakandikar et al. (2025)** researched AI chatbots in the Indian banking sector, noting that 47.5% of users are satisfied with response times, but trust remains a barrier for high-value financial transactions.

**Denaputri and Usman (2023)** focused on the Indian retail sector using the TAM model, proving that "Perceived Usefulness" (PU) has the strongest positive influence on an Indian consumer's attitude toward AI.

**Nagy and Hajdu (2021)** found that for the Indian online shopping experience, "Perceived Ease of Use" is the gateway to adoption, especially for first-time users of AI-based interfaces.

**Shalini Dubey (2024)** noted that in the Indian market, speed of response is often prioritized over the "human-likeness" of the bot, especially in fast-paced urban environments.

**Moriuchi (2019)** argued that for Indian consumers, the convenience of avoiding long wait times on phone calls is the main reason they choose to interact with a chatbot.

**Graham et al. (2025)** highlighted that global consumer expectations are shifting; users now anticipate "human-like" support from AI, and failure to provide it leads to brand switching.

**Acquire BPO (2024)** reported that 70% of global consumers would switch brands after just one frustrating experience with an AI-supported service, emphasizing the high stakes of chatbot quality.

**Hassan Alboqami (2023)** introduced the role of "Anthropomorphism," suggesting that giving chatbots human names and personalities significantly increases consumer trust and intention to use.

**McKinsey & Co. (2023)** found that while 72% of users are satisfied with AI speed, 58% still demand a "human-escalation" option for complex problems.

**Gnewuch et al. (2021)** emphasized that "Empathy" in conversational agents is the next frontier, as consumers begin to demand more than just transactional data from their AI interactions.

**Davenport et al. (2020)** posited that AI will change the future of marketing by moving from "mass communication" to "individualized conversation" through persistent chatbot interfaces.

**Tran et al. (2021)** argued that "Customer Expectation" is the single most important variable; if the bot's capabilities are oversold, satisfaction scores plummet regardless of actual performance.

**Mostafa & Kasamani (2022)** concluded that "Perceived Risk" regarding data privacy is the only factor that consistently shows a negative correlation with the intention to use AI chatbots globally.

## REFERENCES

- Ramesh, S. & Deepa, R. (2022). Consumer Attitude towards AI-Driven Chatbots in Online Shopping Platforms: A Study in Coimbatore. *International Journal of Creative Research Thoughts (IJCRT)*, 10(4), 563-570.
- Kumar, S. & Sharma, R. (2024). A Study on Consumer Perception Towards Online Food Delivery Apps with Special Reference to Tiruppur District. *International Journal of Scientific Research in Engineering and Management (IJSREM)*, 9(03), 1-9.
- Gracia, A. (2024). The User's Adoption towards Chatbot Technology: An Exploration in Nagercoil City. *i-manager's Journal on Management*, 11(2).
- Deepa, S. (2025). The Impact of AI-Powered Chatbots on Customer Satisfaction in E-Commerce: A Study with Special Reference to Chennai City. ResearchGate Publication, October 2025.
- Pillai, R. & Sivathanu, B. (2020). Adoption of AI Chatbots in Supermarkets: Analyzing Customer Satisfaction in Coimbatore District. *International Journal of Environmental Sciences*, 7(1).
- Sivakumar, P. et al. (2023). Digital Consumerism in Western Tamil Nadu: Analyzing the Transition from Human Support to AI Assistants. *Journal of Management Research & Analysis*, 10(2).
- Vijay Kumar, P. (2025). Customer Perception of AI Chatbots in Service Delivery: Are Businesses Sacrificing Quality for Efficiency? *International Education and Research Journal (IERJ)*, 11(09).
- Kaakandikar, R. et al. (2025). Study of Customer Perception of AI-Driven Chatbots in Banking Services. *Advances in Consumer Research*, 2(2), 693-703.
- Denaputri, A. & Usman, O. (2023). Impact of AI on Consumers' Purchase Intention Towards Online Grocery Shopping in India. *Journal of Reliability and Statistical Studies*, River Publishers.
- Nagy, S. & Hajdu, N. (2021). Consumer Acceptance of the Use of Artificial Intelligence in Online Shopping: Evidence from the Indian Retail Market Context. *Amfiteatru Economic*, 23(56), 155-173.
- Shalini Dubey (2024). The Impact of AI-Powered Chatbots on Customer Satisfaction in E-commerce Marketing (TAM Approach). *MCU Journal of Research*, 8(2), 45-52.
- Moriuchi, E. (2019). Using Chatbots in E-retailing: How to Mitigate Perceived Risk and Enhance the Flow Experience. *Journal of Retailing and Consumer Services*.
- Graham, T. et al. (2025). 2025 Consumer Expectations Report: AI, Omnichannel, and the New Landscape of Service. Balto AI Research Division.
- Acquire BPO (2024). AI in Customer Service Survey: The Cost of Negative AI Encounters. Industry Report, September 2024.
- Hassan Alboqami (2023). Factors Affecting Consumers Adoption of AI-Based Chatbots: The Role of Anthropomorphism. *American Journal of Industrial and Business Management*, 13(4), 16.
- McKinsey & Company (2023). The State of AI in 2023: Generative AI's Breakout Year. McKinsey Global Institute Survey.
- Gnewuch, U., Morana, S., & Maedche, A. (2021). Empathy in Conversational Agents: The Impact on User Experience and Trust. *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*.
- Davenport, T. H. et al. (2020). How Artificial Intelligence will Change the Future of Marketing. *Journal of the Academy of Marketing Science*, 48(1), 24-42.
- Tran, A. D. et al. (2021). The Impact of AI Chatbots on Customer Satisfaction with Special Reference to Fintech Companies. *JYX Digital Archive*, University of Jyväskylä.
- Mostafa, R. & Kasamani, T. (2022). Meta-analytic insights into AI chatbots adoption in the service industry: Uncovering dynamics and contextual insights. *Marketing Intelligence & Planning*.

## CHAPTER- 3

### OVERVIEW OF THE STUDY

#### INTRODUCTION TO AI CHATBOTS

AI Chatbots are software applications designed to simulate human conversation through text or voice commands. In the context of consumer perception, they represent the frontline of digital customer service. Unlike traditional interfaces, chatbots allow consumers to interact with businesses using "Natural Language," making technology feel more personal and accessible.

#### EVALUATION OF AI CHATBOTS

**The Birth (1960s) ELIZA (1966):** The first chatbot, created at MIT, simulated a psychotherapist using simple pattern matching. Rule-Based: Followed a strict "if-then" logic.

**The Growth (1990s - 2000s) A.L.I.C.E (1995) and Smarter Child (2001):** Integrated into early messenger apps like MSN and AIM. Heuristic: Used keywords to trigger pre-written responses.

**The Smart Era (2010s) Siri (2010), Alexa (2014):** Voice-activated assistants became household names. Early NLP: Used Machine Learning to recognize intent.

**The Generative Era (2022-2025) ChatGPT, Gemini, Claude:** Shifted from "predicting the next word" to reasoning and creating content. LLMs: Large Language Models with deep context.

**The Agentic Era (2026) Autonomous AI Agents:** Bots that can execute tasks (booking, buying, filing) autonomously.

#### HISTORY OF AI CHATBOTS

The development of AI chatbots can be traced back to the early stages of computer science and artificial intelligence. The idea of machines communicating with humans in natural language started as a theoretical concept. In 1950, Alan Turing introduced the famous Turing Test, which proposed that a machine could be considered intelligent if its responses were indistinguishable from those of a human. This concept laid the foundation for the future development of conversational systems like chatbots.

The first true chatbot was ELIZA, developed in 1966 by Joseph Weizenbaum at the Massachusetts Institute of Technology (MIT). ELIZA simulated a psychotherapist by replying to user statements using pattern-matching techniques. Although it was very simple, many users felt as though ELIZA "understood" them. This experiment proved that computers could engage in meaningful text-based interactions, sparking worldwide interest in conversational artificial intelligence.

In the 1970s, another important chatbot named PARRY was created by psychiatrist Kenneth Colby. Unlike ELIZA, PARRY attempted to simulate the behavior of a person with paranoid schizophrenia. It introduced more complex conversational rules and emotional reactions, making it more advanced for its time. These early systems were not intelligent in the modern sense, but they marked key milestones in chatbot evolution.

During the 1980s and 1990s, chatbots continued to develop slowly. They were mainly rule-based, meaning responses were generated using fixed scripts. Around this time, chatbots started being used in entertainment and academic research. The rise of the internet in the 1990s expanded the scope of chatbots, especially for online communication. One famous example is ALICE (Artificial Linguistic Internet Computer Entity), created in 1995. ALICE used pattern matching and a structured database of responses, winning several AI awards.

The 2000s marked a period of growth in commercial and web-based chatbots. Companies began experimenting with chatbots for customer service, technical support, and information delivery. Early website chatbots were still basic, but they helped businesses reduce workload and respond to customer queries instantly. Meanwhile, advancements in machine learning and natural language processing (NLP) created opportunities for more intelligent chatbot systems.

A major transformation occurred after 2010, when smartphones, social media, and messaging platforms became widespread. Companies like Apple, Google, Microsoft, and Amazon introduced virtual assistants such as Siri, Google Assistant, Cortana, and Alexa. These systems combined AI, speech recognition, and NLP, enabling more natural and interactive communication. Chatbots also began to be integrated into platforms like Facebook Messenger, WhatsApp, and business websites.

With the growth of e-commerce, digital banking, online services, and automation, AI chatbots became powerful tools for customer engagement. They started handling tasks such as order enquiries, complaints, appointment booking, banking transactions, and technical troubleshooting. Unlike earlier rule-based bots, modern AI chatbots use machine learning, deep learning, and NLP to learn from interactions and improve over time.

In India, the use of AI chatbots grew rapidly after the expansion of digital services, online shopping, and UPI-based banking systems. Banks, telecom companies, online shopping platforms, airlines, hospitals, and government portals began adopting chatbots to handle millions of customer queries efficiently. Chatbots such as HDFC Bank's EVA, IRCTC chatbots, Swiggy and Zomato chat assistants, and telecom support bots have become familiar to Indian consumers.

Tirupur, being a major industrial and commercial hub, has also witnessed this digital transformation. Textile industries, banks, logistics companies, e-commerce platforms, and service providers in Tirupur increasingly rely on AI chatbots for customer communication. As more businesses adopt chatbot technology, understanding the historical evolution and customer perception of these systems becomes essential.

Today, AI chatbots continue to evolve with the integration of advanced AI models, predictive analytics, emotional intelligence, and personalization features. They are no longer limited to answering simple questions but are now capable of learning user preferences, analyzing data, and offering smart recommendations. The journey from ELIZA to modern AI chatbots highlights the continuous innovation in human-machine communication.

Thus, the history of AI chatbots reflects the broader progress in artificial intelligence and digital technology. From experimental systems in research labs to essential tools in global business operations, chatbots have become an integral part of modern customer service. This historical background provides strong justification for studying how customers perceive AI chatbots, particularly in growing cities like Tirupur where digital adoption is increasing rapidly.

Trust and security concerns remain key issues in AI-based communication. Many customers may hesitate to share personal or financial information with chatbots. This study examines whether customers feel safe while interacting with AI chatbots and whether they trust the technology to handle their data responsibly. The findings will help organizations to design better privacy and security measures.

This phenomenon highlighted an important aspect of consumer perception, where users tend to anthropomorphize machines. The success of ELIZA demonstrated that humans were willing to interact with machines conversationally, even when the intelligence was limited. This early interaction shaped initial consumer attitudes toward conversational systems and raised ethical and psychological questions regarding human-machine relationships.

Following ELIZA, several rule-based chatbots were developed during the 1970s and 1980s, including PARRY, which simulated paranoid behavior. These chatbots relied heavily on predefined scripts and lacked adaptability. While technologically constrained, they played a crucial role in testing how users responded to automated conversations. During this era, consumer interaction with chatbots was largely experimental and limited to academic and research environments. The lack of real-world applications restricted widespread consumer exposure. Consequently, public perception of chatbots remained neutral or skeptical, as these systems could not handle complex or dynamic conversations. Nonetheless, these early systems contributed significantly to understanding conversational flow and user engagement.

The 1990s marked a transition phase with the rise of the internet and personal computing, which expanded opportunities for human-computer interaction. Chatbots began appearing on websites as simple customer support tools designed to answer frequently asked questions. These bots were still rule-based but served practical purposes such as guiding users through websites and providing basic information. Consumer perception during this period was mixed, as chatbots were often perceived as helpful for simple tasks but frustrating for complex queries. Limited language understanding and rigid responses led to dissatisfaction among users. However, this period marked the beginning of chatbots entering commercial environments rather than remaining confined to research laboratories. The early 2000s witnessed significant technological improvements with the introduction of machine learning techniques and increased computational power. Chatbots slowly evolved from static rule-based systems to adaptive models capable of learning from user interactions. Businesses began integrating chatbots into customer service operations to reduce call center workload and operational costs. Consumer perception began shifting as chatbots demonstrated improved accuracy and responsiveness. However, trust issues remained, particularly regarding reliability and data handling. Despite these concerns, consumers gradually accepted chatbots as supplementary tools rather than replacements for human interaction. This era laid the foundation for consumer-centric chatbot development.

A major breakthrough occurred in the 2010s with advancements in Natural Language Processing (NLP) and Artificial Intelligence. Chatbots became capable of understanding natural language, context, and intent, significantly improving conversational quality. The launch of virtual assistants such as Siri, Google Assistant, and Alexa familiarized consumers with AI-driven conversational systems. These innovations transformed consumer expectations, as users began to demand faster, smarter, and more personalized interactions. The historical shift from command-based interaction to conversational engagement marked a turning point in consumer perception. Chatbots were no longer seen merely as automated tools but as intelligent assistants integrated into daily life. The expansion of smartphones and social media platforms further accelerated chatbot adoption. Messaging applications such as Facebook Messenger and WhatsApp enabled businesses to deploy chatbots in environments already familiar to consumers. This accessibility increased consumer exposure and normalized chatbot interaction. Historically, this period is significant because it democratized chatbot usage beyond technologically advanced users. Consumers across different age groups and regions began interacting with chatbots for shopping, banking, travel, and customer support. As a result, perception became more experience-driven, shaped by ease of use, convenience, and responsiveness rather than novelty.

In the Indian context, chatbot history is closely linked with the country's digital transformation initiatives. Programs such as Digital India encouraged online service delivery, prompting businesses and government agencies to adopt chatbot solutions. Initially, Indian consumers were hesitant due to language barriers, limited digital literacy, and trust concerns. Over time, the introduction of multilingual chatbots improved accessibility and acceptance. Historically, this period reflects a gradual shift in consumer perception from resistance to cautious acceptance. Chatbots began playing a supportive role in banking, e-commerce, and public service delivery across urban and semi-urban regions.

In Tamil Nadu, the historical adoption of chatbot technology aligns with the state's strong emphasis on education, industrial growth, and digital governance. Consumers in the state were exposed to chatbots through e-governance portals, utility services, and private sector platforms. The introduction of Tamil-language interfaces significantly influenced perception by reducing communication barriers. Historically, consumers began associating chatbots with convenience and time efficiency. However, traditional expectations for personalized service continued to shape attitudes, especially in semi-urban areas. This balance between technology and human interaction characterizes the historical evolution of chatbot perception in the state.

From a regional perspective, Tirupur City's historical interaction with chatbot technology reflects its commercial orientation and export-driven economy. Businesses initially adopted digital tools for operational efficiency, with

chatbots gradually introduced for customer communication and inquiry handling. Consumers in Tiruppur were historically exposed to chatbots through e-commerce platforms, banking services, and textile business websites. While early perception was cautious, repeated exposure improved familiarity and acceptance. Historically, Tiruppur consumers viewed chatbots as functional tools rather than emotional communicators. This historical evolution sets the stage for the present study, emphasizing how past experiences shape current consumer perception towards AI chatbots.

## TECHNOLOGICAL ADVANCEMENT

**Multimodal Capabilities:** Modern chatbots are no longer text-only. In 2026, a consumer in Tiruppur can show a chatbot a photo of a fabric defect via WhatsApp, and the AI can analyze the image and process a return automatically.

**Natural Language Processing (NLP) & Localization:** Advancements in NLP have made AI fluent in regional dialects. For your study, this means chatbots can now handle "Tanglish" or pure Tamil with high accuracy, significantly improving Perceived Ease of Use.

**Emotional Intelligence (Sentiment Analysis):** Chatbots today use real-time sentiment analysis. If a user's tone becomes frustrated, the AI detects the "negative polarity" and either adjusts its tone to be more empathetic or instantly escalates the chat to a human supervisor.

**Agentic Intelligence:** This is the most significant jump. Previous bots could only talk about a problem; 2026 bots can solve it by interacting with other software (e.g., updating a shipping database or processing a bank refund) without human intervention.

The rapid advancement of Artificial Intelligence (AI) has significantly transformed the way businesses interact with consumers. Among various AI applications, chatbots have emerged as one of the most influential tools in digital communication, enabling automated, real-time interaction between organizations and users. AI chatbots simulate human conversation using technologies such as Natural Language Processing (NLP), machine learning, and data analytics, thereby enhancing customer engagement and service efficiency.

In today's digital economy, consumers increasingly expect instant responses, personalized communication, and uninterrupted service availability. AI chatbots fulfill these expectations by offering 24×7 support, quick query resolution, and consistent service quality across multiple digital platforms. As a result, organizations across sectors such as retail, banking, healthcare, education, and e-commerce have widely adopted chatbot technology.

Consumer perception plays a vital role in determining the success of AI chatbot implementation. Perception refers to the way consumers interpret, evaluate, and respond to chatbot interactions based on their experiences, beliefs, and expectations. Positive perception leads to higher acceptance, satisfaction, and continued usage, while negative perception can result in resistance, dissatisfaction, and rejection of the technology.

In developing countries like India, digital transformation has accelerated due to increased internet penetration, smartphone usage, and government initiatives such as Digital India. These developments have created an environment where AI-driven technologies are becoming part of everyday consumer life. However, consumer attitudes towards AI chatbots vary depending on factors such as awareness, digital literacy, trust, privacy concerns, and cultural preferences.

AI chatbots in India are increasingly being used not only by large corporations but also by small and medium enterprises (SMEs) to enhance customer interaction at a lower operational cost. Messaging platforms such as WhatsApp, Facebook Messenger, and website chat interfaces have become popular channels for chatbot-based communication.

Despite their growing usage, consumers still exhibit mixed perceptions regarding chatbot effectiveness, accuracy, emotional understanding, and reliability. While some consumers appreciate the speed and convenience offered by

chatbots, others prefer human interaction, especially for complex or sensitive issues. This divergence in perception makes it essential to study consumer attitudes in specific geographical contexts.

Tirupur City, located in Tamil Nadu, is a prominent industrial and commercial hub, particularly known for its textile and garment manufacturing activities. The city has witnessed rapid digital adoption among businesses and consumers, driven by export-oriented industries, e-commerce growth, and increased use of digital communication tools.

Consumers in Tirupur interact with AI chatbots through online shopping platforms, banking applications, utility service portals, and business websites. However, their perception towards chatbot services is influenced by regional factors such as language preference, trust in technology, service expectations, and familiarity with digital platforms. Understanding consumer perception towards AI chatbots in Tirupur City is crucial for businesses aiming to improve customer satisfaction and service efficiency. It also helps policymakers and technology developers design inclusive, user-friendly, and culturally appropriate AI solutions.

Therefore, this study aims to analyze consumer perception towards AI chatbots with special reference to Tirupur City, focusing on awareness, usage patterns, satisfaction levels, perceived benefits, challenges, and overall acceptance of chatbot technology.

The profile of the study provides a comprehensive background on the evolution, adoption, and impact of AI chatbots in the context of consumer interaction. It highlights the technological, economic, and social dimensions that influence consumer perception towards automated conversational systems.

AI chatbots are designed to act as virtual assistants capable of understanding user queries and providing appropriate responses without human intervention. Their deployment has grown rapidly due to advancements in artificial intelligence, availability of big data, and improvements in computational power.

From a consumer perspective, chatbots are evaluated based on factors such as ease of use, response accuracy, speed, personalization, trustworthiness, and language compatibility. These factors shape consumer attitudes and determine their willingness to engage with chatbot-driven services.

The profile also examines the historical development of chatbot technology, tracing its journey from rule-based systems to intelligent, learning-driven conversational agents. This evolution has significantly improved chatbot performance and user experience.

At the global and national levels, AI chatbots have become integral to digital customer service strategies. In India, the adoption of chatbots has been influenced by rising digital literacy, mobile-first consumer behavior, and the demand for cost-effective service solutions.

At the state and regional levels, particularly in Tamil Nadu and Tirupur City, chatbot usage reflects both modern digital trends and traditional consumer preferences. Businesses often adopt chatbots to handle routine queries while maintaining human interaction for complex issues.

Tirupur's commercial ecosystem, dominated by textile industries and small-scale enterprises, presents a unique environment to study consumer perception. The integration of chatbots in local business operations highlights the balance between technological efficiency and personalized service expectations.

The profile further considers challenges such as data privacy concerns, lack of emotional intelligence, language limitations, and technological barriers that may affect consumer trust and satisfaction.

Simultaneously, the study identifies opportunities arising from chatbot adoption, including improved customer engagement, reduced operational costs, enhanced service accessibility, and data-driven decision-making for businesses.

Overall, this profile sets the foundation for the research by outlining the contextual, technological, and consumer-related factors influencing AI chatbot adoption, thereby justifying the need for an in-depth study on consumer perception in Tirupur City.

## CHAPTER- 4

### DATA ANALYSIS AND INTERPRETATION

The Purpose of data analysis and interpretation is to transform collection of data with the help of relevant tools and techniques. The next foremost step is to analyze and interpret data with a view to arriving at empirical solution to the problem.

**The Tools used for Analysis are;**

4.1 Simple Percentage Analysis

4.2 Chi Square Analysis

#### 4.1 SIMPLE PERCENTAGE ANALYSIS

Percentage Analysis is one of the basic statistical tools which is widely used in analysis and interpretation of Primary Data. It deals with the number of respondent’s response to a particular question is percentage arrived from the total populations selected for the study. It is one of the simple forms of analysis which is very easy for anyone to understand the outcome of the research. It is normally used by commercial research organization and pictorially presented with different diagrams.

#### FORMULA:

$$\text{PERCENTAGE ANALYSIS} = \frac{\text{No. of Respondents}}{\text{Total No. of Respondents}} * 100$$

**TABLE NO: 4.1.1**

**TABLE SHOWING THE AGE CATEGORY OF THE RESPONDENTS**

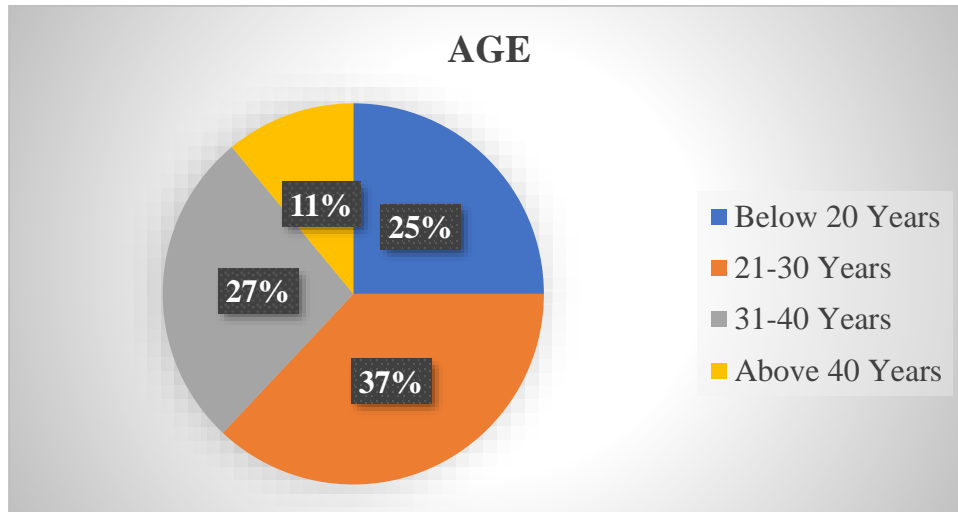
S.NO	AGE	FREQUENCY	PERCENTAGE
1	Below 20 Years	25	25%
2	21-30 Years	37	37%
3	31-40 Years	27	27%
4	Above 40 Years	11	11%
	<b>TOTAL</b>	<b>100</b>	<b>100</b>

SOURCE: PRIMARY DATA

#### INTERPRETATION:

The above table shows that 25% of respondents are ‘below 20 Years’, 37% of respondents are between ‘21-30 Years’, 27% of respondents are between ‘31-40 Years’, 11% of respondents are ‘Above 40 Years’.

**CHART NO: 4.1.1**



**TABLE NO: 4.1.2**  
**TABLE SHOWING GENDER OF THE RESPONDENTS**

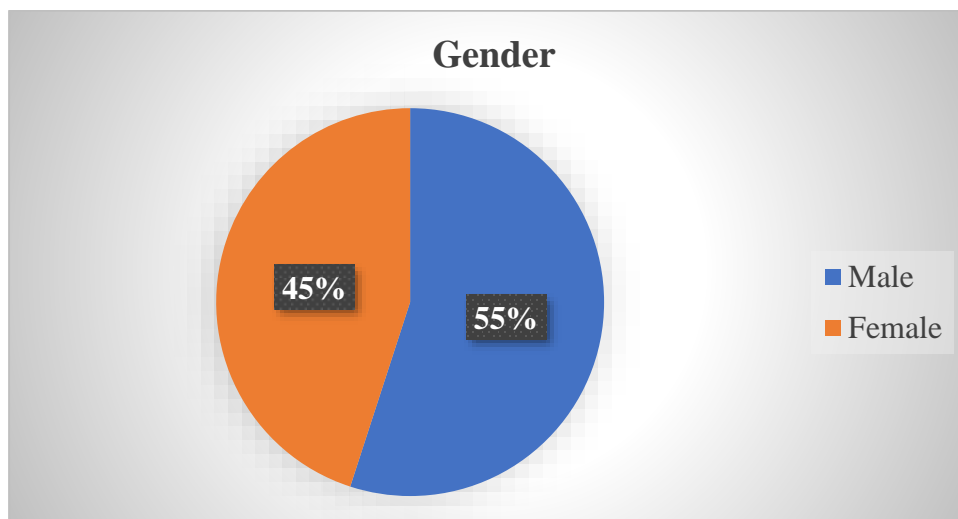
S.NO	GENDER	FREQUENCY	PERCENTAGE
1	Male	55	55%
2	Female	45	45%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION:**

The above table shows that 55% of respondents are ‘Male’ and 45% of respondents are ‘Female’.

**CHART NO: 4.1.2**



**TABLE NO: 4.1.3**

**TABLE SHOWING EDUCATIONAL QUALIFICATION OF THE RESPONDENTS**

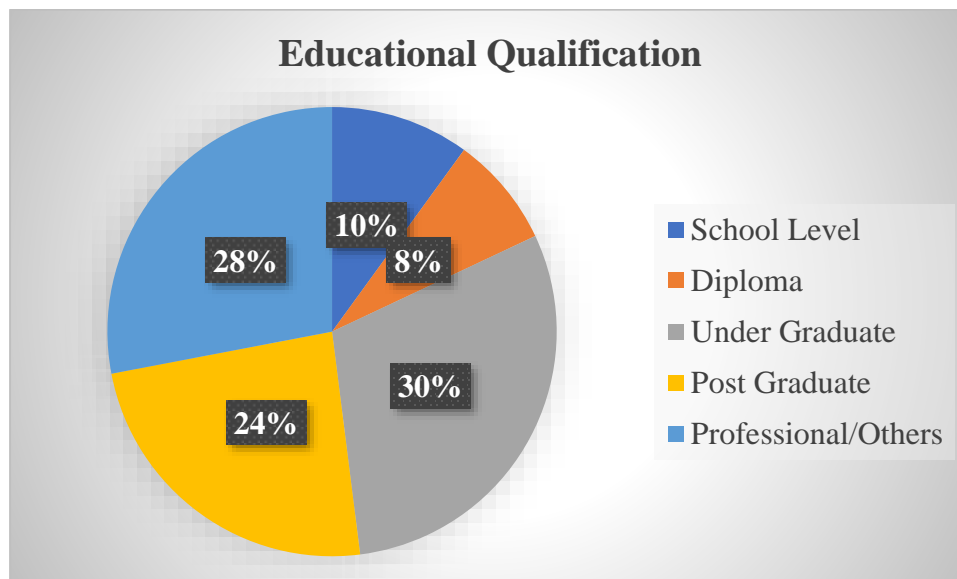
S.NO	EDUCATIONAL QUALIFICATION	FREQUENCY	PERCENTAGE
1	School Level	10	10%
2	Diploma	8	8%
3	Under Graduate	30	30%
4	Post Graduate	24	24%
5	Professional/Others	28	28%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION:**

The above table shows that 10% of respondents are ‘School Level’, 8% of respondents are ‘Diploma Students’, 30% of respondents are ‘Under Graduate’, 24% of respondents are Post Graduate and 28% of respondents are ‘Professional/Others’.

**CHART NO: 4.1.3**



**TABLE NO: 4.1.4**  
**TABLE SHOWING OCCUPATION OF THE RESPONDENTS**

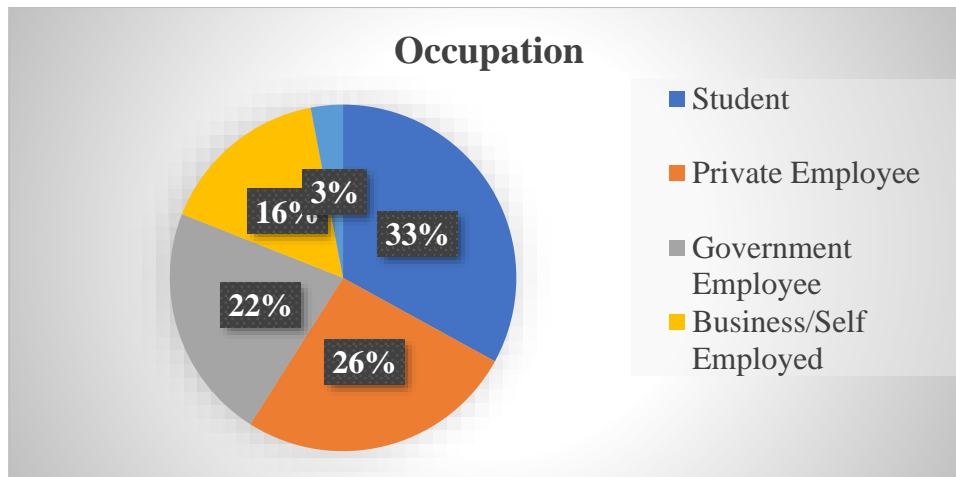
S.NO	OCCUPATION	FREQUENCY	PERCENTAGE
1	Student	33	33%
2	Private Employee	26	26%
3	Government Employee	22	22%
4	Business/Self Employed	16	16%
5	Others	3	3%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 33% of respondents are ‘Student’, 26% of respondents are ‘Private Employee’, 22% of respondents are ‘Government Employee’, 16% of respondents are doing ‘Business/Self Employed’ and 3% of respondents comes under ‘Others’ category.

**CHART NO: 4.1.4**



**TABLE NO: 4.1.5**  
**TABLE SHOWING MONTHLY INCOME OF THE RESPONDENTS**

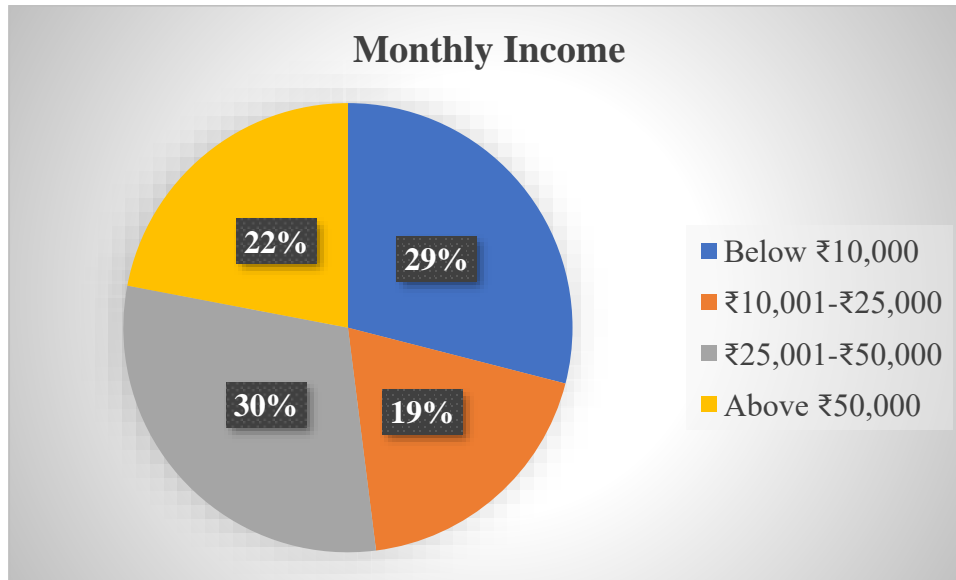
S.NO	MONTHLY INCOME	FREQUENCY	PERCENTAGE
1	Below ₹10,000	29	29%
2	₹10,001-₹25,000	19	19%
3	₹25,001-₹50,000	30	30%
4	Above ₹50,000	22	22%
	TOTAL	100	100

SOURCE: PRIMARY DATA

### INTERPRETATION

The above table shows 29% of respondents earning ‘Below ₹10,000’, 19% of respondents earning between ‘₹10,001-₹25,000’, 30% of respondents earning between ‘₹25,001-₹50,000’, and 22% of respondents earning ‘Above ₹50,000’.

**CHART NO: 4.1.5**



**TABLE NO: 4.1.6**

**TABLE SHOWING INTERACTIONS OF RESPONDENTS WITH AI CHATBOTS**

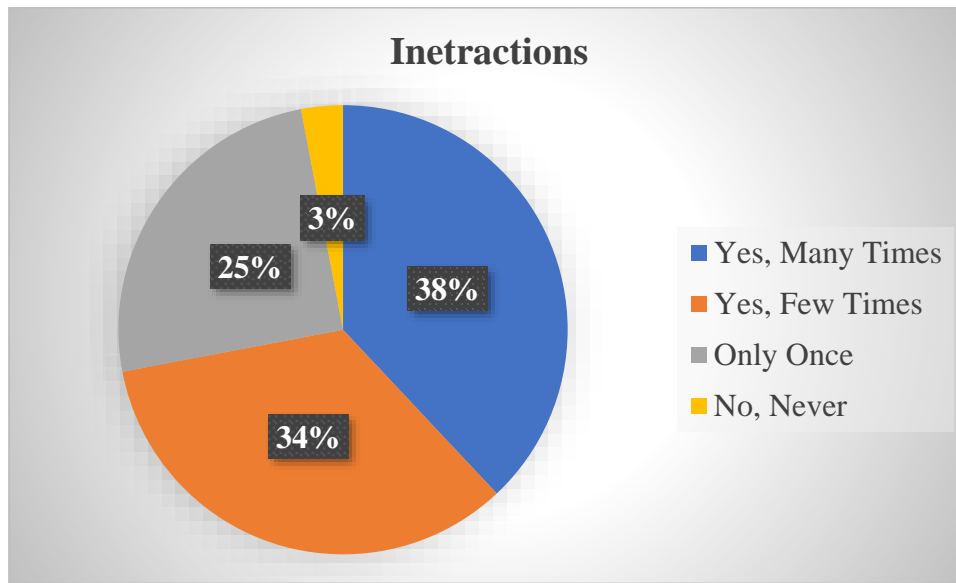
S.NO	INTERACTIONS	FREQUENCY	PERCENTAGE
1	Yes, Many Times	38	38%
2	Yes, Few Times	34	34%
3	Only Once	25	25%
4	No, Never	3	3%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above tables shows that 38% of respondents interacted ‘Many Times’, 34% of respondents interacted ‘Few Times’, 25% of respondents interacted ‘Only Once’ and 3% of respondents ‘Not Interacted’ with AI Chatbots.

**CHART NO: 4.1.6**



**TABLE NO: 4.1.7**

**TABLE SHOWING HOW EASY TO USE AI CHATBOTS AMONG RESPONDENTS**

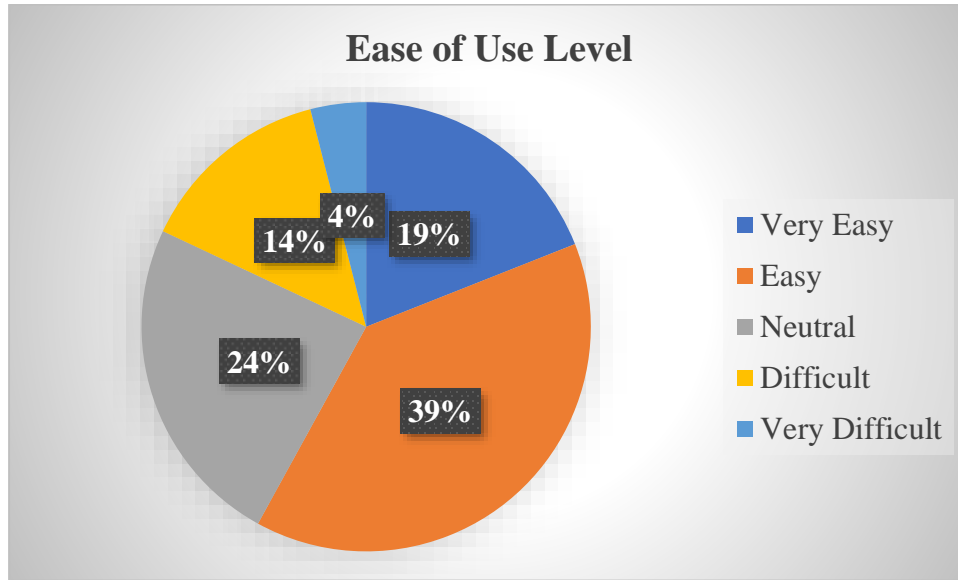
S.NO	EASE OF USE LEVEL	FREQUENCY	PERCENTAGE
1	Very Easy	19	19%
2	Easy	39	39%
3	Neutral	24	24%
4	Difficult	14	14%
5	Very Difficult	4	4%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 19% of respondents feels ‘Very Easy’ to use, 39% of respondents feels ‘Easy’ to use, 24% of respondents feels ‘Neutral’ level, 14% of respondents feels ‘Difficult’ to use and 4% of respondents feels ‘Very Difficult’ to use AI Chatbots.

**CHART NO: 4.1.7**



**TABLE NO: 4.1.8**

**TABLE SHOWING THE ACCURACY OF AI CHATBOTS AMONG RESPONDENTS**

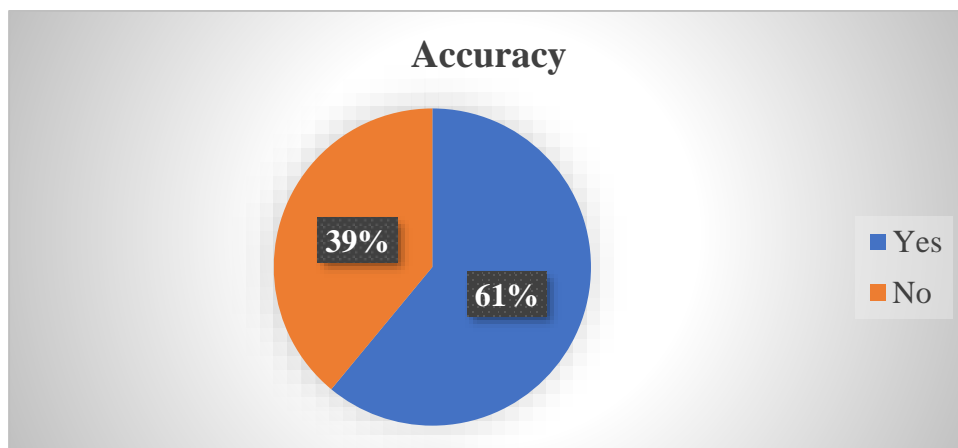
S.NO	ACCURACY	FREQUENCY	PERCENTAGE
1	Yes	61	61%
2	No	39	39%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 61% of respondents feels AI Chatbots understands the queries correctly and 39% of respondents feels AI Chatbots does not understand the queries correctly.

**CHART NO: 4.1.8**



**TABLE NO: 4.1.9**

**TABLE SHOWING HELPFULNESS OF AI CHATBOTS AMONG RESPONDENTS**

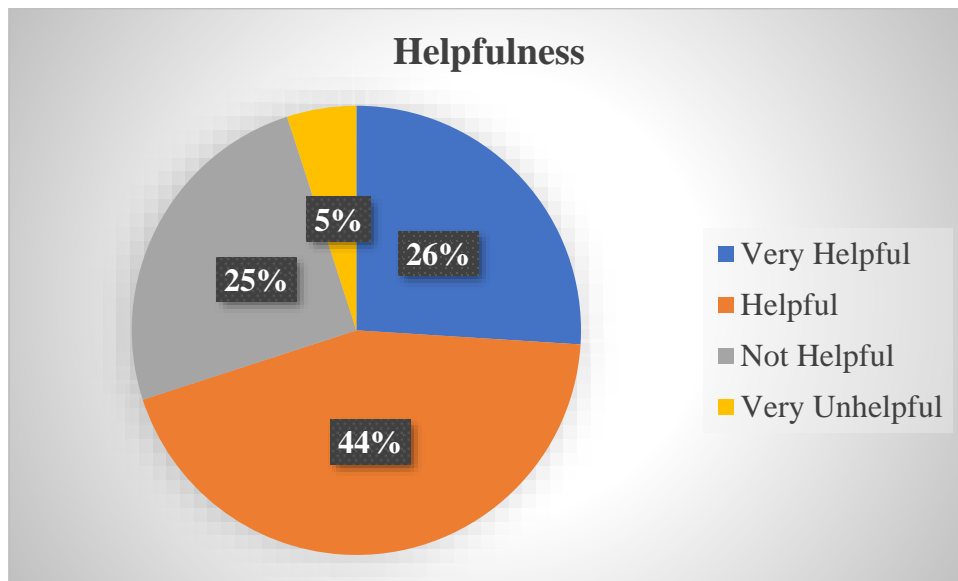
S.NO	HELPFULNESS	FREQUENCY	PERCENTAGE
1	Very Helpful	26	26%
2	Helpful	44	44%
3	Not Helpful	25	25%
4	Very Unhelpful	5	5%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that AI Chatbots is ‘Very Helpful’ to 26% of respondents, ‘Helpful’ to 44% of respondents, ‘Not Helpful’ to 25% of respondents and ‘Very Unhelpful’ to 5% of respondents.

**CHART NO: 4.1.9**



**TABLE NO: 4.1.10**

**TABLE SHOWING THE USAGE PREVALENCE OF AI CHATBOTS AMONG RESPONDENTS**

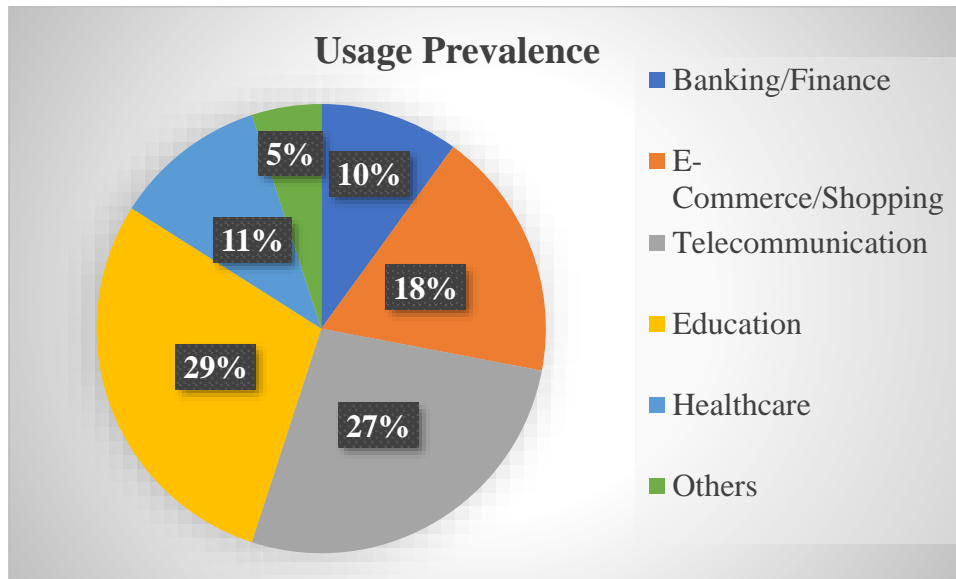
S.NO	USAGE PREVALENCE	FREQUENCY	PERCENTAGE
1	Banking/Finance	10	10%
2	E-Commerce/Shopping	18	18%
3	Telecommunication	27	27%
4	Education	29	29%
5	Healthcare	11	11%
6	Others	5	5%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 10% of respondents use AI chatbots for ‘Banking/Finance’ purpose, 18% of respondents uses for ‘E-Commerce/Shopping’ purpose, 27% for ‘Telecommunication’, 29% of respondents uses for ‘Education’, 11% of respondents uses for ‘Healthcare’, and 5% of respondents uses for ‘Others’.

**CHART NO: 4.1.10**



**TABLE NO: 4.1.11**

**TABLE SHOWING TRUST LEVEL OF SHARING PERSONAL INFORMATION WITH AI CHATBOTS AMONG RESPONDENTS**

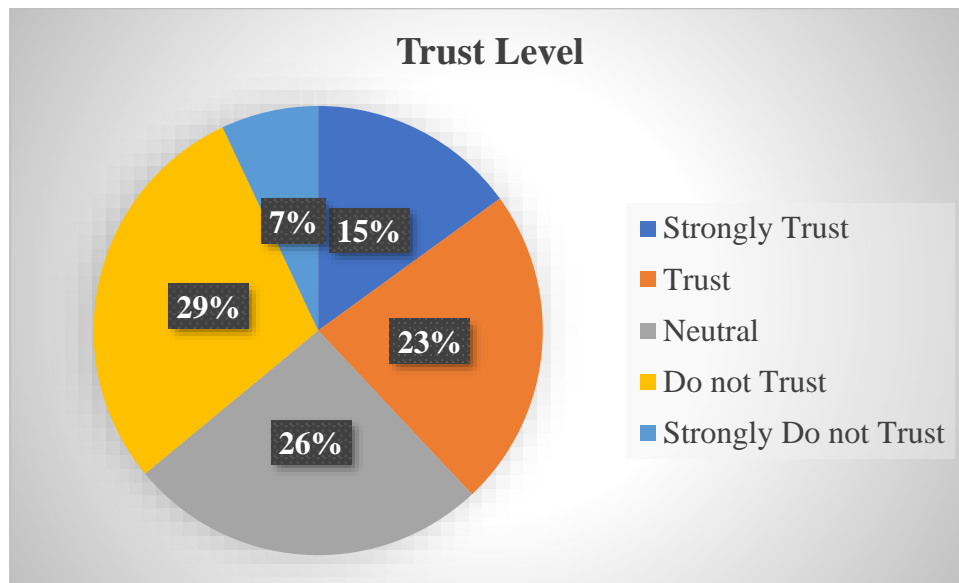
S.NO	TRUST LEVEL	FREQUENCY	PERCENTAGE
1	Strongly Trust	15	15%
2	Trust	23	23%
3	Neutral	26	26%
4	Do not Trust	29	29%
5	Strongly Do not Trust	7	7%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 15% of respondents ‘Strongly Trust’, 23% of respondents ‘Trust’, 26% of respondents feels ‘Neutral’, 29% of respondents ‘Do not Trust’ and 7% of respondents ‘Strongly Do not Trust’ the AI chatbots for sharing personal information.

**CHART NO: 4.1.11**



**TABLE NO: 4.1.12**

**TABLE SHOWING SECURITY LEVEL SHARING INFORMATION WITH AI CHATBOTS AMONG RESPONDENTS**

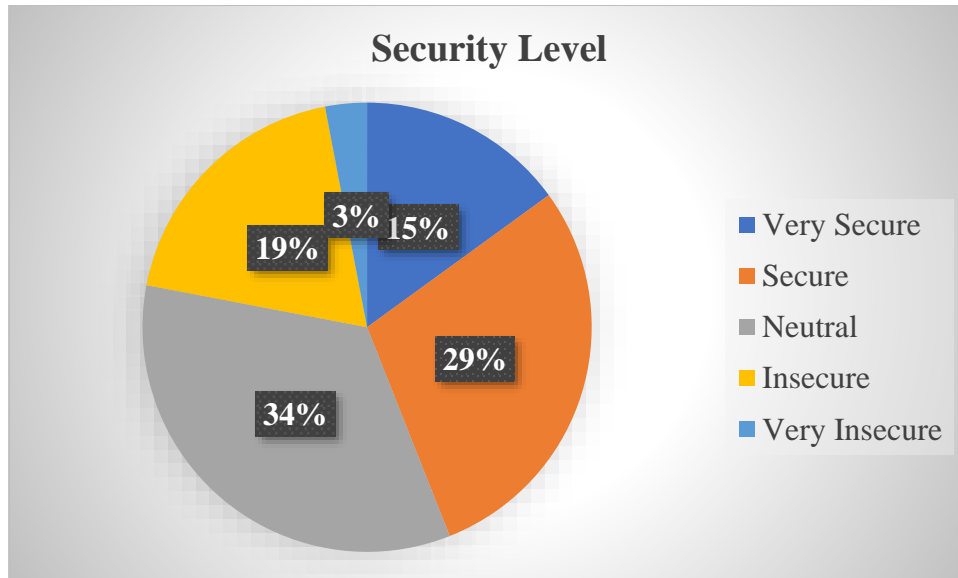
S.NO	SECURITY LEVEL	FREQUENCY	PERCENTAGE
1	Very Secure	15	15%
2	Secure	29	29%
3	Neutral	34	34%
4	Insecure	19	19%
5	Very Insecure	3	3%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 15% of respondents feels ‘Very Secure’, 29% of respondents feels ‘Secure’, 34% of respondents feels ‘Neutral’, 19% of respondents feels ‘Insecure’ and 3% of respondents feels ‘Very Insecure’ to share information with AI Chatbots.

**CHART NO: 4.1.12**



**TABLE NO: 4.1.13**

**TABLE SHOWING THE IMPROVEMENT OF CUSTOMER ENGAGEMENT WITH THE HELP OF AI CHATBOTS AMONG RESPONDENTS**

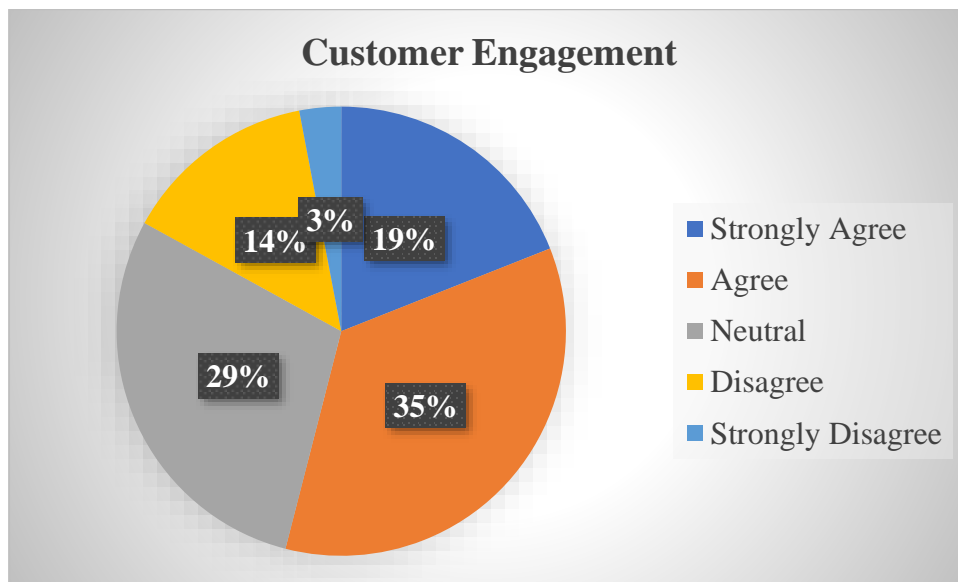
S.NO	LEVEL OF CUSTOMER ENGAGEMENT	FREQUENCY	PERCENTAGE
1	Strongly Agree	19	19%
2	Agree	35	35%
3	Neutral	29	29%
4	Disagree	14	14%
5	Strongly Disagree	3	3%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 19% of respondents ‘Strongly Agree’, 35% of respondents ‘Agree’, 29% of respondents ‘Neutral’, 14% of respondents ‘Disagree’ and 3% of respondents ‘Strongly Disagree’ for improvement of customer engagement by AI Chatbots.

**CHART NO: 4.1.13**



**TABLE NO: 4.1.14**

**TABLE SHOWING FREQUENCY OF ISSUES FACED BY RESPONDENTS WHILE USING AI CHATBOTS**

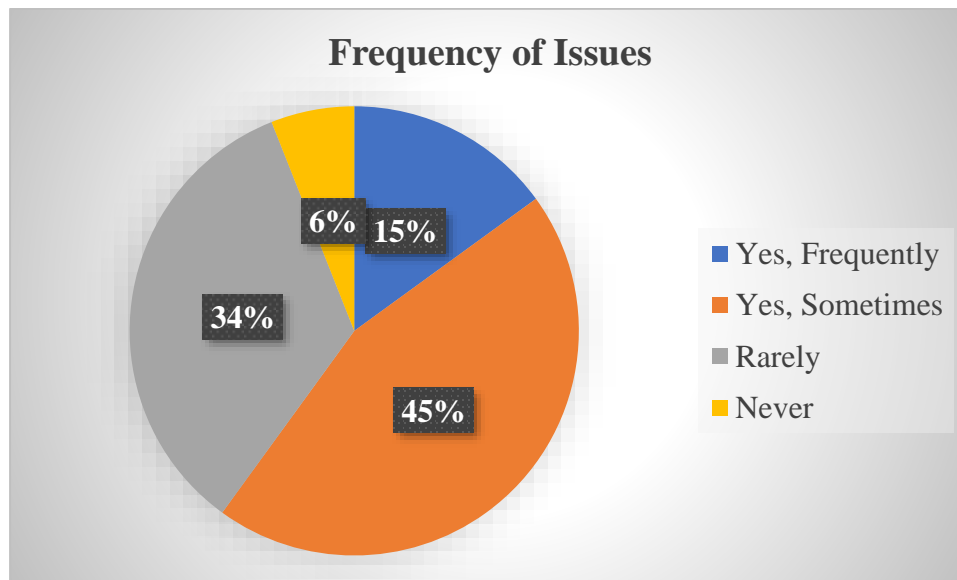
S.NO	FREQUENCY OF ISSUES	FREQUENCY	PERCENTAGE
1	Yes, Frequently	15	15%
2	Yes, Sometimes	45	45%
3	Rarely	34	34%
4	Never	6	6%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 15% of respondents facing issues ‘Frequently’, 45% of respondents facing issues ‘Sometimes’, 34% of respondents facing issues ‘Rarely’ and 6% of respondents ‘Never’ facing issues while using AI Chatbots.

**CHART NO: 4.1.14**



**TABLE NO: 4.1.15**

**TABLE SHOWING MOST COMMON PROBLEM FACED BY THE RESPONDENTS**

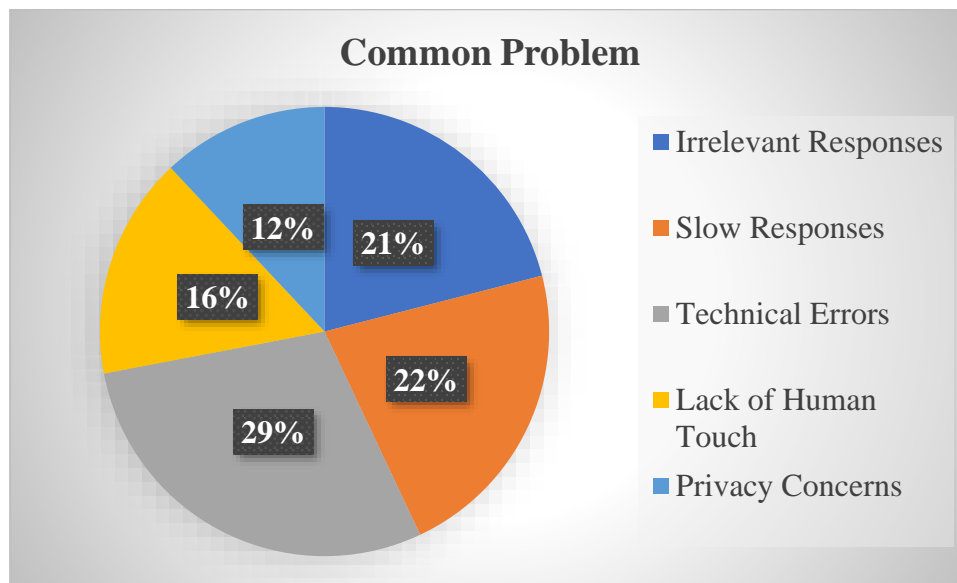
S.NO	COMMON PROBLEM	FREQUENCY	PERCENTAGE
1	Irrelevant Responses	21	21%
2	Slow Responses	22	22%
3	Technical Errors	29	29%
4	Lack of Human Touch	16	16%
5	Privacy Concerns	12	12%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 21% of respondents facing issue of ‘Irrelevant Responses’, 22% of respondents facing issue of ‘Slow Responses’, 29% of respondents facing issue of ‘Technical Errors’, 16% of respondents feels ‘Lack of Human Touch’ and 12% of respondents facing issues on ‘Privacy Concerns’ of AI Chatbots.

**CHART NO: 4.1.15**



**TABLE NO: 4.1.16**  
**TABLE SHOWING THE LEVEL OF IMPORTANCE OF AI CHATBOT’S DESIGN AMONG RESPONDENTS**

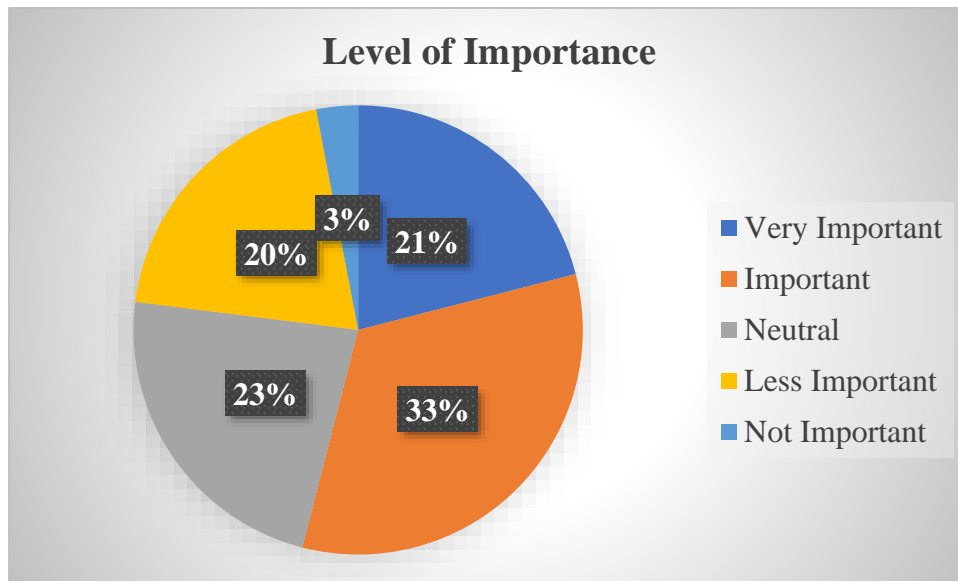
S.NO	LEVEL OF IMPORTANCE	FREQUENCY	PERCENTAGE
1	Very Important	21	21%
2	Important	33	33%
3	Neutral	23	23%
4	Less Important	20	20%
5	Not Important	3	3%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 21% of respondents give ‘More Importance’ to design, 33% of respondents give ‘Importance’ to design, 23% feels ‘Neutral’ regarding design, 20% of respondents give ‘Less Importance’ and 3% of respondents feels ‘Not Importance’ about designs of AI Chatbots.

**CHART NO: 4.1.16**



**TABLE NO: 4.1.17**

**TABLE SHOWING AI CHATBOT’S CUSTOMER SERVICES, COMPARED TO HUMANS AMONG RESPONDENTS**

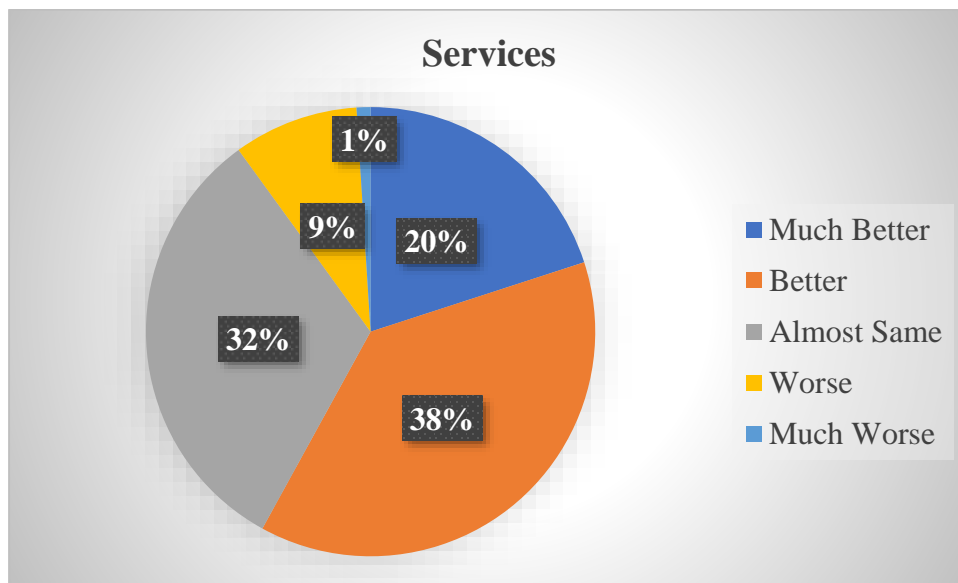
S.NO	SERVICES	FREQUENCY	PERCENTAGE
1	Much Better	20	20%
2	Better	38	38%
3	Almost Same	32	32%
4	Worse	9	9%
5	Much Worse	1	1%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 20% of respondents feels ‘Much Better’, 38% of respondents feels ‘Better’, 32% of respondents feels ‘Almost Same’, 9% of respondents feels ‘Worse’ and 1% of respondents feels ‘Much Worse’ comparing to the customer services by Humans.

**CHART NO: 4.1.17**



**TABLE NO: 4.1.18**

**TABLE SHOWING LEVEL OF ACCURACY AND RELEVANT INFORMATION GIVEN BY AI CHATBOTS AMONG RESPONDENTS**

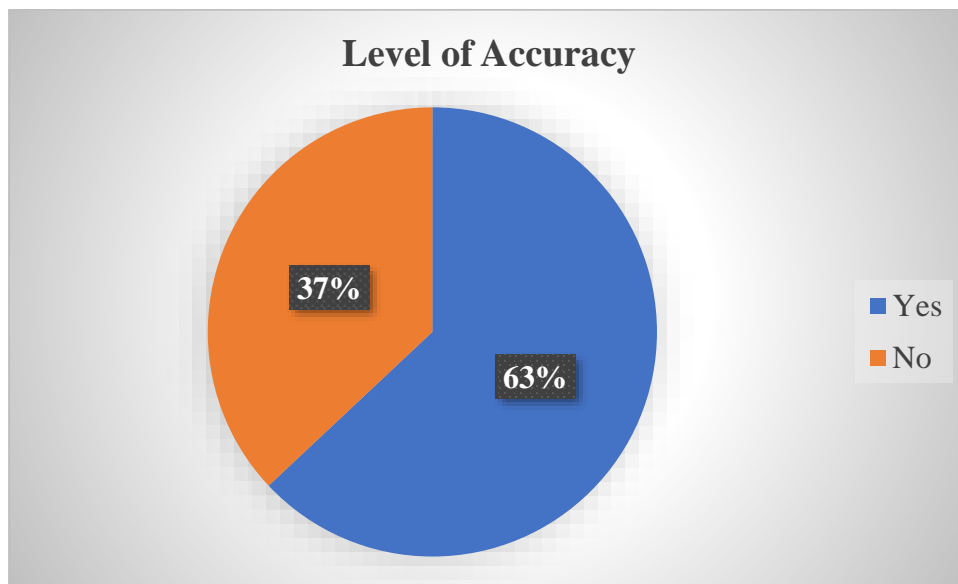
S.NO	LEVEL OF ACCURACY	FREQUENCY	PERCENTAGE
1	Yes	63	63%
2	No	37	37%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 63% of respondents said AI Chatbots giving Accurate and relevant information and 37% of respondents does not accept the accuracy of AI Chatbots.

**CHART NO: 4.1.18**



**TABLE NO: 4.1.19**

**TABLE SHOWING LEVEL OF USAGE OF AI CHATBOTS IN FUTURE AMONG RESPONDENTS**

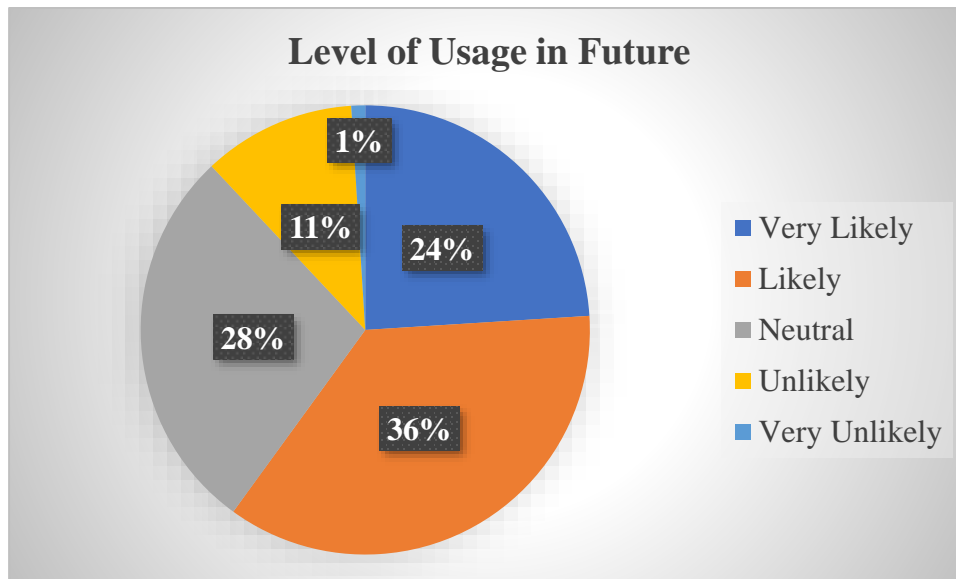
S.NO	LEVEL OF USAGE IN FUTURE	FREQUENCY	PERCENTAGE
1	Very Likely	24	24%
2	Likely	36	36%
3	Neutral	28	28%
4	Unlikely	11	11%
5	Very Unlikely	1	1%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 24% of respondents ‘Very Likely’ to use AI Chatbots in future, 36% of respondents ‘Likely’ to use, 28% of respondents are ‘Neutral’ to use, 11% of respondents ‘Unlikely’ to use, 1% of respondents ‘Very Unlikely’ to use AI Chatbots in future.

**CHART NO: 4.1.19**



**TABLE NO: 4.1.20**

**TABLE SHOWING GENERAL OPINION ABOUT AI CHATBOTS AMONG RESPONDENTS**

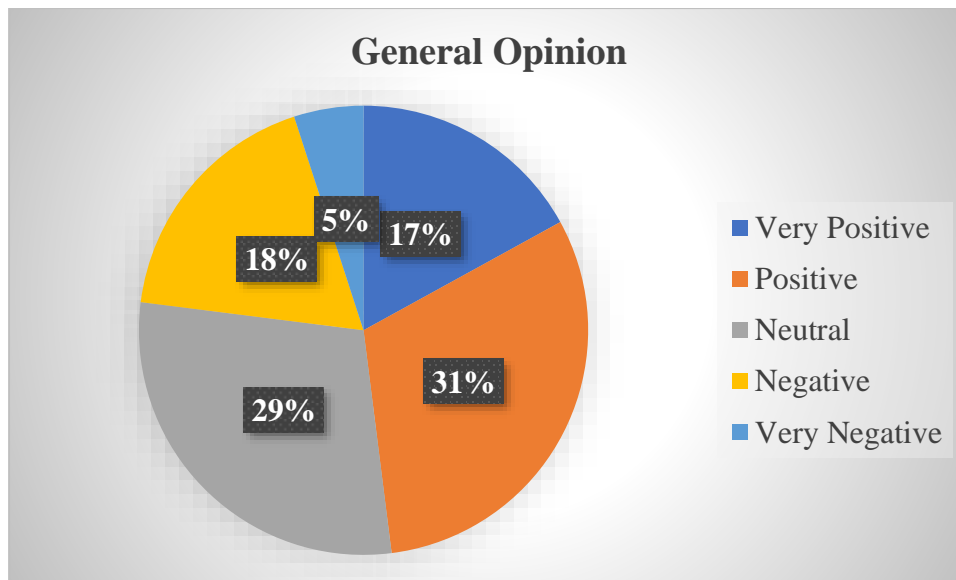
S.NO	GENERAL OPINION	FREQUENCY	PERCENTAGE
1	Very Positive	17	17%
2	Positive	31	31%
3	Neutral	29	29%
4	Negative	18	18%
5	Very Negative	5	5%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 17% of respondents having ‘Very Positive’ opinion, 31% of respondents having ‘Positive’ opinion, 29% of respondents having ‘Neutral’ opinion, 18% of respondents having ‘Negative’ opinion and 5% of respondents having ‘Very Negative’ opinion about AI Chatbots.

**CHART NO: 4.1.20**



**TABLE NO: 4.1.21**

**TABLE SHOWING LEVEL OF AVAILABILITY OF AI CHATBOTS TO USE AMONG RESPONDENTS**

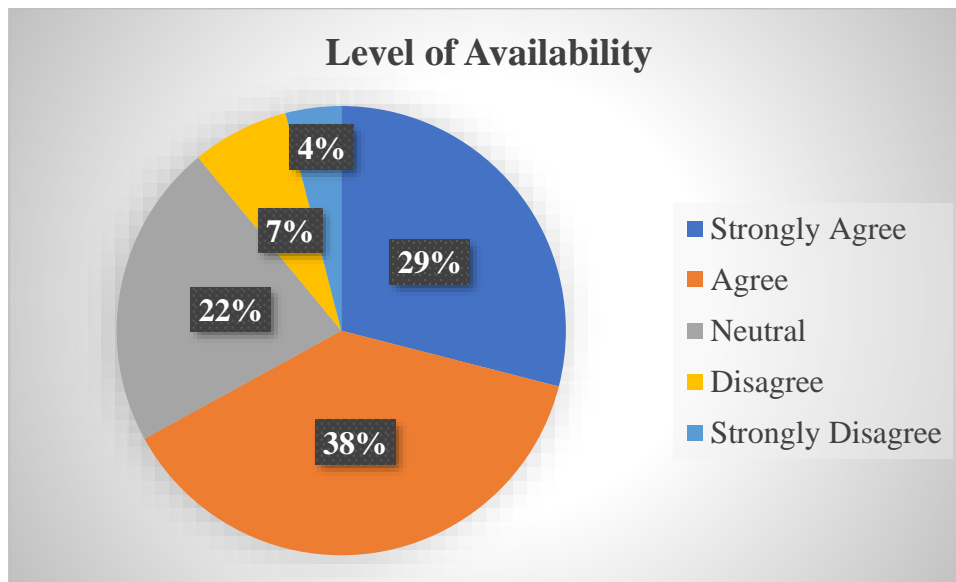
S.NO	LEVEL OF AVAILABILITY	FREQUENCY	PERCENTAGE
1	Strongly Agree	29	29%
2	Agree	38	38%
3	Neutral	22	22%
4	Disagree	7	7%
5	Strongly Disagree	4	4%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 29% of respondents ‘Strongly Agree’, 38% of respondents ‘Agree’, 22% of respondents feels ‘Neutral’, 7% of respondents ‘Disagree’ and 4% of respondents ‘Strongly Disagree’ about the Availability (24/7) of AI chatbots among users.

**CHART NO: 4.1.21**



**TABLE NO: 4.1.22**

**TABLE SHOWING LEVEL OF USEFULNESS OF AI CHATBOTS IMPROVE BUSINESS GROWTH AND CUSTOMER EXPERIENCE AMONG RESPONDENTS**

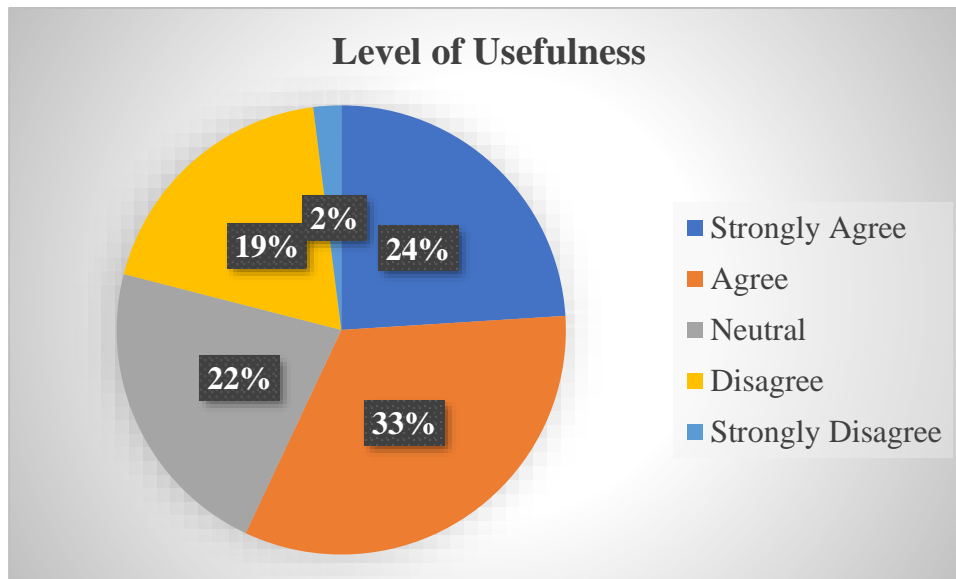
S.NO	LEVEL OF USEFULNESS	FREQUENCY	PERCENTAGE
1	Strongly Agree	24	24%
2	Agree	33	33%
3	Neutral	22	22%
4	Disagree	19	19%
5	Strongly Disagree	2	2%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 24% of respondents ‘Strongly Agree’, 33% of respondents ‘Agree’, 22% of respondents feels ‘Neutral’, 19% of respondents ‘Disagree’ and 2% of respondents ‘Strongly Disagree’ about the usefulness of AI Chatbots to improve business growth and customer experience.

**CHART NO: 4.1.22**



**TABLE NO: 4.1.23**

**TABLE SHOWING THE LEVEL OF TIME SAVING WHILE USING AI CHATBOTS COMPARING TO HUMAN SUPPORT STAFF AMONG RESPONDENTS**

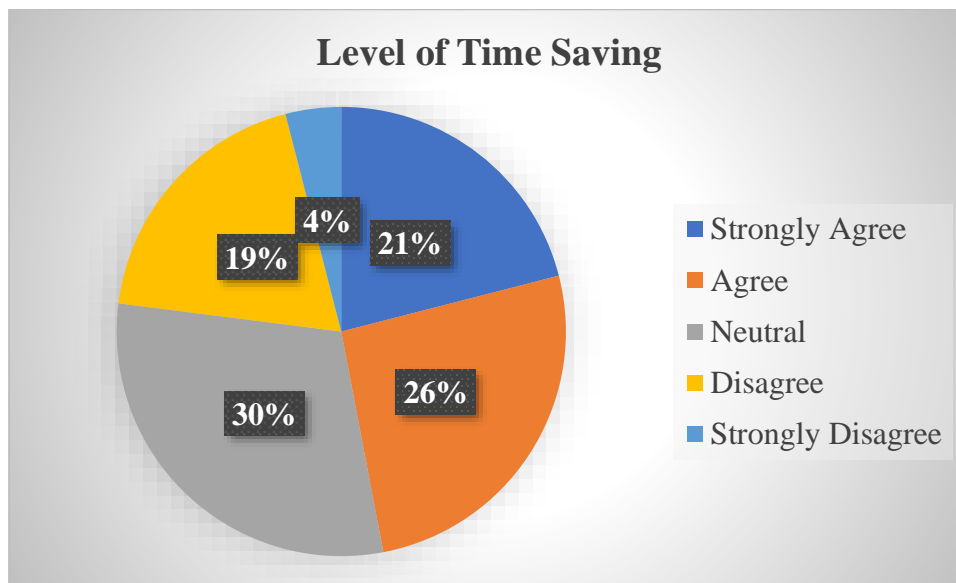
S.NO	LEVEL OF TIME SAVING	FREQUENCY	PERCENTAGE
1	Strongly Agree	21	21%
2	Agree	26	26%
3	Neutral	30	30%
4	Disagree	19	19%
5	Strongly Disagree	4	4%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 21% of respondents ‘Strongly Agree’, 26% of respondents ‘Agree’, 30% of respondents feels ‘Neutral’, 19% of respondents ‘Disagree’ and 4% of ‘Strongly Disagree’ about the time saving while using AI Chatbots comparing to human staff support.

**CHART NO: 4.1.23**



**TABLE NO: 4.1.24**

**TABLE SHOWING LEVEL OF OVERALL SATISFACTION WITH AI CHATBOTS INTERACTIONS AMONG RESPONDENTS**

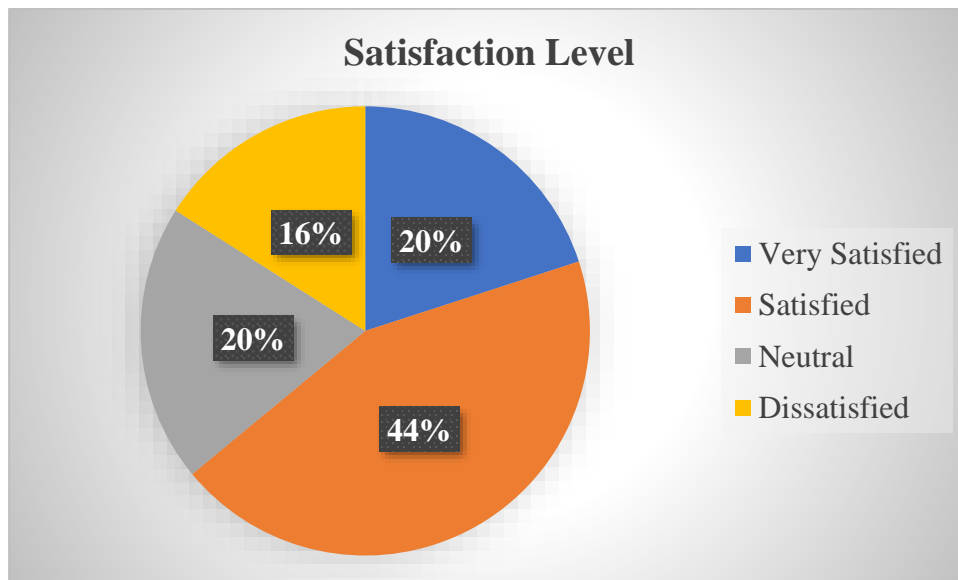
S.NO	SATISFACTION LEVEL	FREQUENCY	PERCENTAGE
1	Very Satisfied	20	20%
2	Satisfied	44	44%
3	Neutral	20	20%
4	Dissatisfied	16	16%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 20% of respondents ‘Very Satisfied’, 44% of respondents ‘Satisfied’, 20% of respondents feels ‘Neutral’ and 16% of respondents ‘Dissatisfied’ with overall satisfaction with AI Chatbots interactions.

**CHART NO: 4.1.24**



**TABLE NO: 4.1.25**

**TABLE SHOWING THE RECOMMENDATIONS OF RESPONDENTS TO USE AI CHATBOTS TO OTHERS**

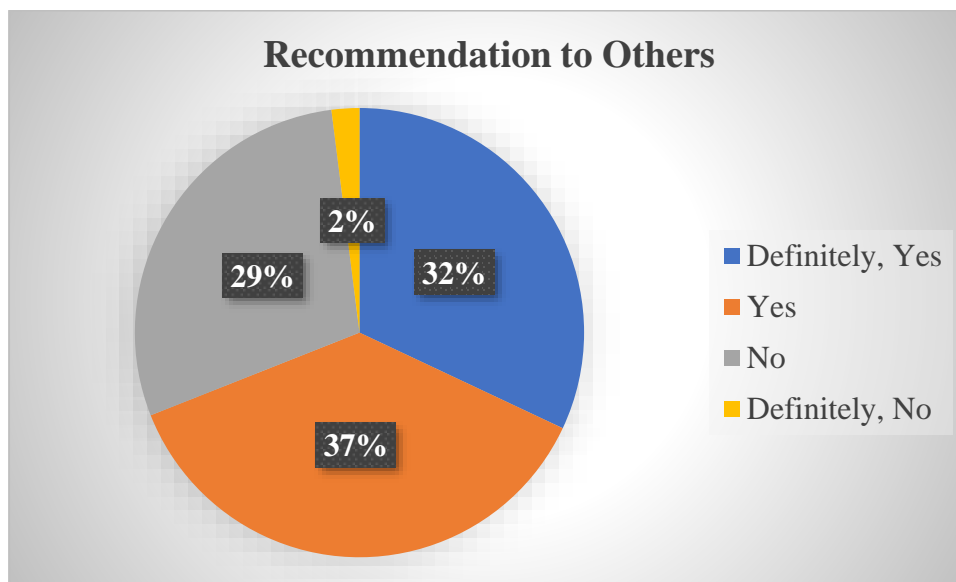
S.NO	RECOMMENDATION	FREQUENCY	PERCENTAGE
1	Definitely, Yes	32	32%
2	Yes	37	37%
3	No	29	29%
4	Definitely, No	2	2%
	TOTAL	100	100

SOURCE: PRIMARY DATA

**INTERPRETATION**

The above table shows that 32% of respondents will ‘Definitely’ recommend, 37% of respondents ‘Recommend’, 29% of respondents ‘Not recommend’ and 2% of respondents ‘Definitely Not Recommend’ to others to use AI Chatbots.

**CHART NO: 4.1.25**



## 4.2 CHI SQUARE ANALYSIS

Chi Square is a statistical technique used to test significance in the analysis of No. of Respondents distribution. It is also used to determine whether there is significant association between two populations. The calculated Chi Square value is compared with the theoretical value which is based upon required level of certainty (possibly need to be at least 95% certain of the outcome) and the degrees of freedom present in the test. If the Chi Square value less than the theoretical value, state there is no significant association between two population mean.

Chi Square test, symbolically written as  $\chi^2$ , is a statistical measure used in the contest of sampling analysis for comparing a variance to a theoretical variance. As a parametric test, it can be used to determine if categorical data shows dependency or the two classifications are independents. It can also used to make comparisons between theoretical populations and actual data when categories are used; Thus, the Chi Square test is applicable in large number of problems. The test is, in fact, a technique through the use of which it is possible for all researchers to (i) test the goodness of fit; (ii) test the significance of association between two attributes and (iii) test the homogeneity or significance of population variance.

### FORMULA

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

**O = OBSERVED VALUE**

**E = EXPECTED VALUE**

Degree of Freedom refers to the maximum number of logically independent values, which are values that have the freedom to vary, in the data sample. The degrees of freedom for the Chi Square are calculated using the following formula:

$$\text{Degree of Freedom} = (r-1) (c-1)$$

**r = number of rows**

**c = number of columns**

**TABLE NO: 4.2.1**

**TABLE SHOWING CHI SQUARE ANALYSIS  
 RELATIONSHIP BETWEEN GENDER & OVERALL SATISFACTION OF AI CHATBOTS AMONG  
 RESPONDENTS**

### Cross-tabulation: Gender × Satisfaction Level

Gender	Very Satisfied	Satisfied	Neutral	Dissatisfied	Total
Male	11	24	11	9	55
Female	9	20	9	7	45
<b>Total</b>	<b>20</b>	<b>44</b>	<b>20</b>	<b>16</b>	<b>100</b>

### Chi-Square Tests

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0.014	3	0.999
Likelihood Ratio	0.014	3	0.999
No. of Valid Cases	100	—	—

### Note:

All expected cell frequencies are greater than 5.

Minimum expected count = **7.20**

## INTERPRETATION

The above table shows that the observed significance value ( $p = 0.999$ ) is greater than the standard value of 0.05 at the 5% level of significance with the given degree of freedom. Therefore, the null hypothesis is accepted. Hence, it is found that **there is no significant relationship between gender and satisfaction level.**

## CHAPTER- 5

### FINDINGS, SUGGESTIONS AND CONCLUSIONS

#### 5.1 FINDINGS

##### 5.1.1 SIMPLE PERCENTAGE ANALYSIS

- Majority 37% of the Respondents are between 21-30 years of Age Group.
- Majority 55% of the Respondents are Male.
- Majority 30% of the Respondents are Under Graduate.
- Majority 33% of the Respondents are Students.
- Majority 30% of the Respondents are Earning Monthly Income between ₹25,001-₹50,000.
- Majority 38% of the Respondents are Interacted Many Times with AI Chatbots.
- Majority 39% of the Respondents feels Easy to Use AI Chatbots.
- Majority 61% of the Respondents feels AI Chatbots Understands queries correctly.
- Majority 44% of the Respondents feels AI Chatbots are Helpful in solving problems.
- Majority 29% of the Respondents uses AI Chatbots for Education Purpose.
- Majority 29% of the Respondents Do Not Trust to share Personal Information with AI Chatbots.
- Majority 34% of the Respondents feels Neutral for the Security Level of AI Chatbots.
- Majority 35% of the Respondents Agree with the improvement of customer engagement with the help of AI Chatbots.
- Majority 45% of the Respondents facing issues Sometimes while using AI Chatbots.
- Majority 29% of the Respondents facing Technical Errors are the common problem while using AI Chatbots.
- Majority 33% of the Respondents gives importance to AI Chatbot's design.
- Majority 38% of the Respondents rates Better to the services provided by AI Chatbots comparing to Humans.
- Majority 63% of the Respondents says AI Chatbots provides accurate and relevant information.
- Majority 36% of the Respondents Likely to use AI Chatbots again in the future.
- Majority 31% of the Respondents gives Positive opinion about AI Chatbots.
- Majority 38% of the Respondents Agree with the availability of AI Chatbots.

- Majority 33% of the Respondents Agree with AI Chatbots for the improvement of Business Growth & Customer Experience.
- Majority 30% of the Respondents feels neutral about the time saving benefit compared to human support staff.
- Majority 44% of the Respondents Satisfied with overall interactions of AI Chatbots.
- Majority 37% of the Respondents Recommend to use AI Chatbots to others.

### 5.1.2 CHI SQUARE ANALYSIS

There is no significant relationship between gender and satisfaction level.

### 5.2 SUGGESTIONS

- Improves Technical Performance by reduces technical errors and system issues regularly updating and maintaining chatbot systems.
- Enhancing Data Security by strengthen privacy policies and security measures to build user trust in sharing personal information.
- Collecting user feedbacks frequently to identify problems and improves Chatbots performance.
- Reduce dependency on scripts by making chatbots more conversational and less robotic.
- Increases Accuracy & Personalization by training AI systems continuously for better understanding the user queries and provide more personalized responses.

### 5.3 CONCLUSION

The study shows that AI chatbots are widely accepted, especially among young adults and students. Most respondents find chatbots easy to use, accurate, and helpful in solving problems. Many users are satisfied with their overall experience and believe that chatbots improve customer engagement and business growth. However, some users face technical issues and have concerns about data privacy and security. Overall, AI chatbots have strong potential for future growth, but improvements in reliability, security, and user trust are necessary to increase their effectiveness and adoption.

### BIBLIOGRAHY

- Paulmurugan, S., & Nagashree, M. (2024). *Customer Perception Towards AI Chatbots Acceptance in Bangalore: An Empirical Investigation Among Banks*. Migration Letters, 21(S5), 198–204.
- Gope, P., Gupta, A., & Tripathi, A. (2025). *Understanding Consumer Behavior towards Chatbots: An Empirical Study of Indian E-Commerce Users*. Journal of Informatics Education and Research, 5(2).
- Leelavathy, V., & Bhargavi, B. (2024). *A Study on Consumer Perception and Satisfaction Towards Chatbots at Chennai City*. International Journal of Research and Analysis in Commerce and Management, 3(3).
- Zakri, M., Nurhayati, N., Aspiranti, T., Amaliah, I., & Wijoyo, A. (2026). *A Systematic Literature Review of Chatbots and Anthropomorphism in Digital Marketing: Consumer Attribution, Trust, and Loyalty Outcomes*. International Journal of Science and Environment, 6(1), 173–178.

Kumar, V. (2025). *Customer Perception of AI Chatbots in Service Delivery: Are Businesses Sacrificing Quality for Efficiency?* International Education and Research Journal, 11(09).

## WEBSITES

<https://www.google.com>

<https://www.nammaarasu.tn.gov.in>

<https://www.meta.com/india/>

<https://whatsapp.com>

[www.wikipedia.com](http://www.wikipedia.com)

[www.researchgate.net](http://www.researchgate.net)

## A STUDY ON CONSUMER PERCEPTION TOWARDS AI CHATBOTS WITH SPECIAL REFERENCE TO TIRUPPUR CITY

### QUESTIONNAIRES

1. Age of the Respondent

a) Below 20 years

b) 21–30 years

c) 31–40 years

d) Above 40 years

2. Gender

a) Male

b) Female

3. Educational Qualification

a) School Level

b) Diploma

c) Under Graduate

d) Post Graduate

e) Professional / Others

4. Occupation

a) Student

b) Private Employee

c) Government Employee

d) Business / Self-employed

e) Others

5. Monthly Income

a) Below ₹10,000

b) ₹10,001–₹25,000

c) ₹25,001–₹50,000

d) Above ₹50,000

6. Have you ever interacted with an AI chatbot?

a) Yes, Many Times

b) Yes, Few Times

c) Only Once

d) No, Never

7. How easy is to use AI chatbots?

a) Very Easy

b) Easy

c) Neutral

d) Difficult

e) Very Difficult

8. Do you feel AI chatbots understand your queries correctly?

a) Yes

b) No

9. How helpful are AI chatbots in solving your problems?

a) Very Helpful

b) Helpful

c) Not Helpful

e) Very Unhelpful

10. Which industry's AI chatbot have you used most frequently?

a) Banking & Finance

b) E-commerce / Shopping

c) Telecommunications

d) Education

e) Healthcare

f) Others

11. Do you trust AI chatbots with your personal information?

a) Strongly Trust

b) Trust

c) Neutral

d) Do not Trust

e) Strongly Do Not Trust

12. How secure do you feel when sharing information with AI chatbots?

a) Very Secure

b) Secure

c) Neutral

d) Insecure

e) Very Insecure

13. Do you think AI chatbots improve customer engagement?

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

14. Have you faced any issues while using AI chatbots?

a) Yes, Frequently

b) Yes, Sometimes

c) Rarely

d) Never

15. What is the most common problem you faced with AI chatbots?

a) Irrelevant Responses

b) Slow Response

c) Technical Errors

d) Lack of Human Touch

e) Privacy Concerns

16. How important is chatbot design (layout, language, friendliness) in your experience?

- a) Very Important
- b) Important
- c) Neutral
- d) Less Important
- e) Not Important

17. Compared to human customer service, how do you rate AI chatbots?

- a) Much Better
- b) Better
- c) Almost Same
- d) Worse
- e) Much Worse

18. Do AI chatbots provide accurate and relevant information?

- a) Yes
- b) No

19. How likely to use AI Chatbots again in the Future?

- a) Very Likely
- b) Likely
- c) Neutral
- d) Unlikely
- e) Very Unlikely

20. What is your general opinion about AI Chatbots?

a) Very Positive

b) Positive

c) Neutral

d) Negative

e) Very Negative

21. Do you feel AI chatbots are available when needed (24/7 support)?

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

22. Do you think AI chatbots can improve business growth and customer experience?

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

23. Do AI Chatbots save our time compared to human support staff?

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

24. How would rate your overall satisfaction with AI Chatbots interaction?

- a) Very Satisfied
- b) Satisfied
- c) Neutral
- d) Dissatisfied
- e) Very Dissatisfied

25. Would you recommend the use of AI chatbots to others?

- a) Definitely Yes
- b) Yes
- c) No
- d) Definitely No



**Copyright & License:**

© Authors retain the copyright of this article. This work is published under the Creative Commons Attribution 4.0 International License (CC BY 4.0), permitting unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.