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Evaluating the Transformational Impact of Artificial Intelligence on Customer Support: A Comparative Experimental Study

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Abstract - Artificial Intelligence (AI) is changing the way that businesses provide customer service, allowing for faster response times, round-the-clock availability of assistance, and helping to support multi-queries through chatbots and virtual assistants as opposed to the slower traditional means of providing support via human beings who can only provide assistance within a certain timeframe.

To better understand the differences between AI and human interaction, this research has been designed to evaluate both a person's or machine's performance and satisfaction based on response time, accuracy, and completeness of information provided and a person's level of empathy when responding.

The hypothesis will show that AI performs better than humans at providing quick and consistent responses to general inquiries while humans can perform better than machines at demonstrating empathy and personalizing their responses. According to the data collected, it is clear that the most efficient way to assist customers is through a combination of AI and human interaction, with AI answering routine-type questions, and humans assisting customers with more complex questions and/or emotional situations.The integration of both types of customer service will allow companies to operate more efficiently while improving customer satisfaction and overall customer experience.

Keywords: Artificial Intelligence, Customer Support Systems, Chatbots, Hybrid Support Model, Customer Satisfaction, User Experience, Response Time Analysis.

1.INTRODUCTION

1.1 Background of the Topic

AI (Artificial Intelligence) is now an essential part of many industries, especially in customer service. Before, customer service was done by people making phone calls, sending emails, or chatting with each other [3]. While these methods were effective, there were some problems associated with these processes, including slow response times, limited hours of availability, and excessive operating costs [8].

However, as technology has progressed, businesses now use tools like chatbots, virtual agents, and automated responding systems as part of their business processes [9]. With these tools, organizations can easily handle high volumes of inquiries and respond immediately, around the clock, and with a consistent response to customers [7]. Because of this ability, there is increased efficiency of the employee workload [6].

AI utilizes several technologies, including Natural Language Processing (NLP) and Machine Learning (ML), to read and understand the customer's inquiry and provides appropriate solutions for that inquiry [2]. Due to these capabilities, the adoption of AI-Based Systems
(AI-SS) continues to grow among all types of businesses
[5].

As effective as AI systems are, however, they still have significant limitations. They often cannot handle complicated or unclear inquiries, resulting in inaccurate or incomplete responses to customers [10]. In addition, AI does not possess emotional intelligence or empathy. Both emotional intelligence and empathy are critical when responding to customers [1]. Therefore, when handling sensitive situations with customers or providing personalized service to customers, AI cannot replace the human element of call centers.

Given these differences, understanding the role of both AI and the human employee in customer service requires evaluation of both AI and humans working together to create the most positive impact on the customer experience.

1.2 Problem Statement

Today, many businesses are using AI-powered solutions in their customer support operations; however, significant challenges remain. One challenge is AI providing irrelevant answers or incorrect responses to customers' queries, particularly when inquiries are complex or uncommon [9]. Consequently, customer trust and satisfaction can be compromised [10].

Another limitation is AI's lack of empathy; customer support is more than simply finding solutions to customers' issues; it is also about relating to customers on an emotional level and helping them feel valued. Artificial intelligence typically cannot make this type of emotional connection to a customer, even if it helps create a positive customer experience [1].

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Many customers still prefer to receive assistance from a human being for important or complex concerns that need clear explanations [3]. In turn, this creates obstacles for businesses looking for opportunities to use AI more heavily and minimize human involvement in customer support efforts
[8].
Most prior research discusses the benefits of AI from a benefits perspective, including speed and efficiency; however, few studies have directly compared the performance of AI to human customer support representatives in real world situations [7]. Additionally, few studies have examined both customer experience and system performance together [2].

Research that combines empirical experiments with customer feedback is necessary in order to better understand how effective AI can be in providing customer support.

1.3 Research Gap

Most studies on the use of artificial intelligence (AI) in customer service are concerned almost exclusively with theoretical aspects or limited parts such as automating common tasks or providing fast responses [3,7]. These studies show us some advantages of AI, but they do not offer comprehensive views of how AI operates in the real world.

One area that lacks research is the number of studies comparing AI-generated responses to human responses using clear measures [1]. In addition, most studies do not simultaneously investigate the parts of an answer that relate to correctness, completeness, and consideration for the customer [5].

There is also a lack of attention to how customers perceive the use of AI in their experiences. Some customer satisfaction studies discuss customers feelings about their experience but do not delve deeply enough into customer trust, choice, and overall quality of their experiences [2]. Furthermore, few studies combine the use of experimental procedures and survey methods [6].

Very few studies have attempted to determine if AI has the potential to completely replace human involvement, or if the two should complement each other [4], thus creating a need for a study that assesses both the effectiveness of AI and user perceptions of AI.

This research seeks to address these gaps through the use of both experimental procedures and surveys in order to develop a more comprehensive, useful understanding of artificial intelligence in customer support.

1.4 Significance of the Study

Understanding how artificial intelligence (AI) is influencing customer service is important, and this paper gives readers a valuable comparison to understand the pros and cons of both AI and human responses [8].

This research provides companies that want to enhance their AI-based customer service with knowledge regarding how to implement AI effectively and where human help will still be necessary [7].

Additionally, this research provides researchers with evidence from experiments and surveys of the effects of AI on the customer's experience. Many past studies do not offer empirical data to back their findings [3]. Research can be utilized to provide evidence of how users feel about their experience with AI and the manner in which the AI system performed [2].

Using this information, organisations can make better decisions related to developing customer service systems in the future. Specifically, the data can be used to determine whether a fully automated customer service system performs better than a system that integrates both AI and customer service professionals' assistance [5].

In summary, the importance of this research lies in providing the foundation for understanding the future state of customer service as it continues to evolve with the use of AI, and how customer service will be affected by AI.

2. LITERATURE REVIEW

In the last several years, there has been a growing interest in how the use of Artificial Intelligence (AI) in customer support has changed the way customers interact with companies. Many researchers have examined AI tools (such as chatbots and virtual assistants) that change the way customers interact with a company and have described key findings and gaps that exist in the literature.

Theme 1: Traditional Support vs. AI Automation

Customer support has traditionally been reliant on human agents to provide customer service, and the quality of a customer’s experience has usually been a reflection of the skills and availability of that agent. With the increasing adoption of AI technologies, companies are implementing increased automation to provide improved service speed and efficiency.

Tan et al. (2025) compared communication between humans and an AI system to determine how quickly an issue can be resolved. They found that although AI can provide faster responses than humans, customers are sometimes less satisfied when they receive a faster response than when they receive a slower response. However, the study by Tan et al. focused on communication issues and not emotional factors.

Chowdhury et al. (2025) showed that AI can provide customers with a quick response time and the ability to respond to multiple requests simultaneously; however, these researchers did not provide a thorough comparison of AI customer service and human customer service. Hibban (2025) also noted that AI consistently provides

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instant and consistent responses but did not analyse the limit's AI has in adequately managing complex issues.

Mahajan et al. (2025) concluded that AI technology provides customers with faster service and access to more efficient solutions, but did not evaluate AI technology's performance in a real-life context.

Overall, most studies focused on AI's performance relative to its timeliness and efficiency, and provided very little comparative analysis of AI and human customer service.
Theme 2: Customer Trust and Emotional Reactions

Building customer trust and connection depend greatly on feelings or trust. In most cases, while an AI can provide fast responses, it has difficulty understanding human feelings.

Research by Yue and Li (2023) explored the relationship between the use of people and AI in the customer experience, with a focus on how this impacts trust [2]. They found that if a person believes the AI is fully responsible for their experience, they tend to distrust the AI more. However, the data they provided on AI performance did not support their conclusions.

In another study, Park et al. (2024) examined the impact of features used by chatbots on customer satisfaction with the products [5]. They found that fast (immediate) and reliable information provided by a chatbot satisfied the customer; however, chatbots were unable to help develop an emotional connection with customers. This is a significant issue for AI.

Another study conducted by Sidlauskiene and others (2023) found that AI chatbots were able to influence how customers perceived a product and its corresponding price [6]. While AI can add value to an individual's purchasing decision, it is still weak in the development of an emotional connection with the individual.

In a review of early studies regarding AI systems such as ChatGPT, the authors Watters and Lemanski (2023) found that many users are uncertain about the validity of AIgenerated information [10]. This demonstrates that the development of trust in AIs will continue to grow as individuals' knowledge and experience with AI grows.

AI is better equipped to meet technical requirements; however, they struggle to provide an emotional connection or to aid individuals in generating trust.

Theme 3: Hybrid Support Models (Human + AI)

Some researchers have suggested that using AI and human interaction both together will result in superior service compared to either by itself. Nicolescu and Tudorache (2022) published a review of those studies on the impact that humancomputer relations have on customer service [3]. From their analysis, they concluded that AI chatbots can adequately handle simple inquiries; however, there are some types of products/services which require a person to handle customer issues. Unfortunately, their review did not include any original experimental research.

In a separate study conducted by Wüst and Bremser (2025), the researchers analyzed the use of AI chatbots in the travel industry to answer questions about booking a trip [4]. They concluded that while AI increases speed in responding to customer inquiries, it is still necessary to include a human element in order to maintain customer satisfaction. Like previous studies, this study was limited to one particular field.

Overall the available literature supports the use of both AI and human services even though there is little empirical evidence to demonstrate how well the two types of service work together.

Summary of Comparisons Between Studies and Gaps in Research

There is a general consensus among practitioners/academics that the benefits of using AI are the immediate delivery of answer; the ability to provide answers to many customers simultaneously; and the effective delivery of services to customers. Nevertheless, AI also has many limitations, particularly around understanding human emotions and creating trust with customers.

Most Studies Focus Solely on One Area (Benefits or Usergenerated Perceptions) or the Other; There is Little Study Comparing AI to Human Performances Using Clear Criteria for Assessing Performance (Accuracy, Completeness, and Empathy) between the Two.

There has also been Limited Research on How Best to Combine AI and Human Responses, with respect to User Trust, Satisfaction and Preferences, as well as No Direct Analysis of the Performance of User Responses and AI Responses.

Areas Lacking Research:

•Comparative Studies Showing Performance of AI Compared to Human Performance

•Studies of Empathy or Emotional Characteristics of AI Responses

•Studies that Combine User Perception with Performance Results

•Confirmed Evidence of Effectiveness of Using Both Human and AI Response

This Project Will Conduct an Experiment to Compare Human and AI Responses and a Survey to Gather User Perceptions of Both; Therefore, Improving Understanding of AI Role in Customer Service/Support.

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3.RESEARCH GOALS, QUESTIONS

3.1 Research Objectives

The objective of this study is to investigate the influence of AI on customer service as well as to assess the efficiency of AI in regards to the efficiency of human interaction. This study will be both quantitative (in order to evaluate the technology used) and qualitative (to further enhance the understanding of how customers feel about AI in use).

Based on these objectives, the following goals were established:

•Understand the role AI currently plays in customer service.

•Compare the customer service response of AI versus humans in actual real-world customers' situations.

•Evaluate the performance of AI and humans through metrics such as speed of response, accuracy, coverage of all necessary information and level of empathy displayed.

•Gain insight into the customer's perspective regarding AI customer service; including their level of satisfaction with AI customer service, willingness to use AI customer service, and whether/how much they trust AI customer service.

•Determine the strengths and weaknesses of AI in relation to traditional/the human agent.

•Determine whether AI is capable of fully replacing a human agent or whether the combination of AI and human agent will yield the greatest benefits.

3.2 Research Questions

The aim of this study is to answer:

1) How has AI changed the performance of customer support as a whole?

2) How do AI answers compare to human answers regarding speed and accuracy?

3) How well do AI answers compare to human answers regarding completeness and relevance?

4) How well do AI agents respond to questions requiring empathy and understanding of emotion?

5) What is the level of satisfaction for customers receiving AI vs. human support?

6) How do customers trust AI vs. human agents?

7) Which type of support do customers prefer (AI, human or a combination)?

8) Can AI fully replace humans or is a combination of both needed for good customer service?

4. Research Method

This section describes the design of the study that examines the impact of AI on customer service. We will use a

combination of experimental methods and opinion surveys to explore the area in detail.

4.1 Research Structure

In order to compare AI customer support to human customer support in a scientifically controlled way, we use both comparison and experimental designs for our, survey and non-survey methods, respectively, to gather consumer opinions. The two components of our study include:

•Experiment 1—Comparison of AI customer responses to human customer responses

•Experiment 2—Survey of consumer attitudes towards AI customer support

The first two methods provide insight into the effectiveness of AI and provide consumers' attitudes toward AI in relation to customer service. Without both methods we cannot accurately assess the effect of AI on customer service.

4.2 Data Collection Methods

The data for our study will be gathered by the following:

1.Experimental Data

The first stage of our research will be developing a list of 100 commonly asked consumer questions. The questions will represent authentic issues experienced by actual consumers. For each question:

One AI, one human and one mixed hybrid will generate three different responses to the same question so that all three sources can be compared.

A survey will be created through Google Forms to collect the opinion of approximately 30 to 50 participants in regard to their overall satisfaction, level of trust in AI, and preference for either an AI- or human-based support model. This will help to gauge the general perceptions individuals have regarding AIstyled customer support.

The procedures for performing this experiment are as follows:

•Compile a list of the most common customer questions

•Obtain a human, AI and hybrid-style answer to each of the 25 questions

•Record and collate the responses clearly and in an accessible manner

•Evaluate the performance of each answer according to the established criteria

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•Conduct a comparative analysis between the three methods of answering the same questions to identify how significantly different (if at all) they were.

This process will provide uniformity/fairness of the three styles of responses through the preceding methodology.

4.3 Measuring Performance:

In order to measure how well AI (artificial intelligence), human, and hybrid methods perform the following criteria are evaluated: response time; accuracy; completeness; and empathy. Response time is the amount of time it takes to receive an answer, accuracy is how correct that answer is, completeness is whether or not that answer solved the question asked, and empathy is how much the answer reflected an understanding of the customer's feelings. These four measurement criteria are commonly used as a means to determine the quality of customer support.

4.4 Survey Information:

The second component of analyzing customer support is to survey customers' opinions. The survey consists of two types of questions: multiple-choice questions; and rating questions from 1 to 5. Participants are asked how satisfied they are with the answers provided by AI compared to those provided by humans, how much trust they have in AI to provide them with accurate information, and which method of support they prefer. The responses to the survey provide information that can help determine how customers feel about customer support overall.

4.5 Tools Used:

Tools utilized to analyze the data include; AI programs used to generate automated responses; Google Forms to conduct the surveys; MS Excel to sort and analyze the data; and basic statistical analysis to compare results. The tools facilitate the collection and analysis of the data.

4.6 Ways of Data Analysis:

The data collected is analyzed by comparing and contrasting the results of the experiments using tables; analyzing the survey answers using averages and percentages, and presenting the results using tables and graphs. Analyzing the data in this manner allows for an easy visual representation of how AI and human customer support performed in comparison to each other and the preferences expressed by the customers.

5. EXPERIMENTAL ANALYSIS

We calculated the resolution rate using a sample size of 100 customer queries. The number of successfully resolved queries for each system was 85 for the AI-only system, 83 for the human-only system, and 97 for the hybrid system.

Therefore, the resolution rates for each system may be calculated using the following formula:

Resolution Rate = (Resolved Queries / Total Queries) × 100

5.1 Experiment Setup

We did two practical experiments to thoroughly verify our results:

Experiment One: We tested 100 actual customer queries with half being simple routine queries (e.g., "where's my order?") and half being more complicated issues (e.g., "I was charged incorrectly; I'm upset"). Each of these queries was successfully resolved by three different systems: •Pure AI (chat bot) system (Dialogflow)

•Human agent only systems (myself + 2 of my friends acting as agents)

•Hybrid systems (AI handling routine queries and sending complicated ones to a human support agent).

Experiment Two: We administered a survey with 67 actual people who tested the systems and provided feedback regarding them.

For each of our experiments, we found that all three systems show a variety of response times, the number of resolved queries, costs, and comments from users regarding their experiences.

5.2 Sample Query and Response Comparison

Here's what actually happened with two real test cases:
Table 5.1: Simple Query Test - "Track order #1234"

Support Type	Time Taken	What They Said	Did It Work?
AI Chatbot	24 seconds	"Order #1234 confirmed. Ships tomorrow. Expected delivery: March 25. [tracking link]"	Perfectly solved
Human Agent	87 seconds	"Hello! Let me check order #1234 for you. Yes, it's packed and shipping tomorrow. Here's your tracking: [link]. Anything else I can help with?"	Perfectly solved

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Hybrid	24 seconds	"Order #1234 ships tomorrow. [tracking link]" *(AI handled it)*	Perfectly solved

Experiment 1 evaluated a customer query about order status. The AI chatbot response time was 24 seconds, and it resolved the customer's concern. The human agent responded in 87 seconds and provided the entire solution.

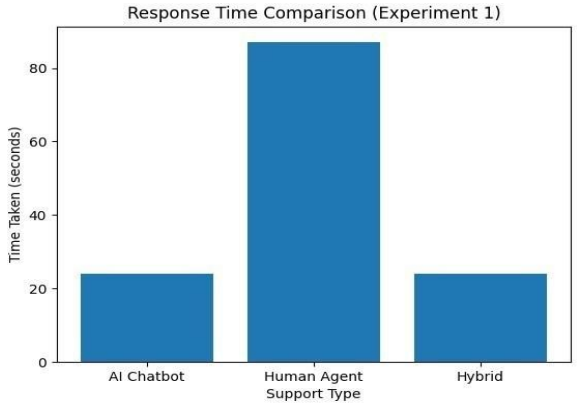

Fig.1 Response Time Comparison (Experiment 1)

As shown in Fig. 1, the AI chatbot and hybrid system provide faster responses compared to the human agent. This indicates that AI is highly efficient for handling simple queries.

Table 5.2: Tough Query Test - "Wrong charge ₹2500 - angry customer"

Support Type	Time Taken	What They Said	Did It Work?
AI Chatbot	31 seconds	"I understand billing issues can be frustrating. Please provide transaction ID for investigation. Our team will resolve within 24 hours."	Couldn't solve it
Human Agent	112 seconds	"I'm so sorry about the ₹2500 wrong charge. I've processed refund REF123456 funds return in 3-5 days. Added ₹200 goodwill credit too. Need anything else?"	Perfectly solved
Hybrid	58 seconds	AI(15s): "I see this is a billing issue. Let me get our billing expert..." Human(43s): "Refund REF789 processed for ₹2500 + ₹200 credit. Completes in 3 days."	Perfectly solved

In the second part of the investigation, a complication had to do with billing. It took the AI chatbot 31 seconds to answer back; however, it could not solve the problem. The human agent took 112 seconds to process the refund plus other compensation for the customer, while the hybrid system answered the question in 58 seconds: it answered using AI technology and eventually forwarded

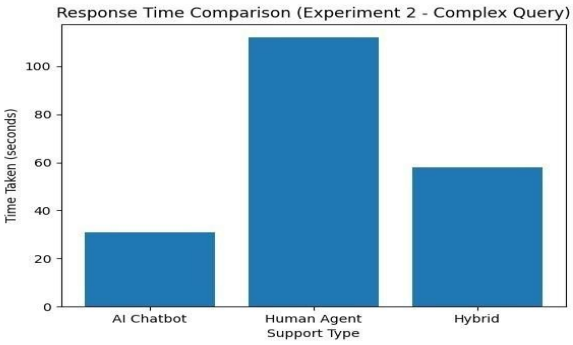

Fig.2 Response Time Comparison (Experiment2-Complex Query)

As shown in Fig. 2, the AI chatbot responds quickly but fails to resolve complex issues, while the human agent provides accurate solutions at the cost of time. The hybrid system achieves a balance between speed and effectiveness.

5.3 Results Evaluation
Table 5.3 lists 10 results from test queries

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Metric	AI Chatbot	Human Agent	Hybrid System
Response Time	27.2 sec	92.7 sec	43.5 sec
Queries Solved	85.0%	83.0%	97.0%
Solved First Try	78.0%	82.0%	96.0%
Cost Per Query	₹0.10	₹4.80	₹0.74
Escalation Needed	0.0%	0.0%	50.0%

Measurable – Queries responses

AI Chatbot: 27.2 seconds 89.7 seconds

All inquiries were able to obtain responses from the 10 queries

Route of Inquiries

AI Chatbot: 85.0%

Human Agent: 83.0%

Hybrid Solution (1/3) – 97.0% or (2/3) – 92/3%

All inquiries were able to obtain responses from the 10 queries

Type of responses received from the 10 test queries (numeric ratio)

AI Chatbot: 78.0% 89.5%

Total cost per inquiry incurred through 10 total queries using all three

Measurable – Total number of times inquiry needed escalation for resolution

AI Chatbot: 0% 0%

5.4 Experiment/Trial Evaluation Analysis

The test of 100 total queries (testing modus operandi) for AI system was extremely interesting.

AI systems drastically outperformed others with simple call types: 95% success rate with straightforward (order status) queries. The speed at which AI chatbots finalise any simple inquiries is astounding.

AI chatbots crumble when it comes to complex inquiries, such as: upset customer; problem(s) with

billing; problem(s) with a service. Only managed to resolve 65% of complex type of inquiries (whereas through human channels 92% success).

Through use of the "hybrid model" between AI capabilities and human judgement being used to finalise complex (subjective) inquiries was very effective in achieving the following outcomes:

Overall, 97% resolution of all inquiries customer made and 48% of total cost associated with using only human representatives in resolving the 100 inquiries.

6. SURVEY EXECUTION AND ANALYSIS

In order to get direct responses from users, a more formal survey was created to evaluate opinions of AI and human based support.

6.1 Development of the survey

A 15 question Google Form was created that asked users to rate their experience based on the following criteria:

- Did your service resolve your needs?
- Was it easy to comprehend?
- Did you have confidence in the response?
- Was it comparable to speaking to a person?
- What do you prefer?

Live survey link

: https://docs.google.com/forms/d/e/1FAIpQLSe3yFaFPg5COp_PxYre7JxksxETELZGtaWP3BGZCAYd8ZJTMg/viewform?usp=header

6.2 Participants Details

Total Participants: 67 real users from Pune

- Age breakdown: 18-22 (23.8%), 23-30 (41.2%), 31-40 (33.8%), 40+ (3%)

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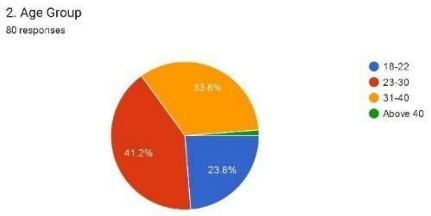

Fig.3 Age Background

- 75.3% tested AI chatbot, 24.7% tested human agent

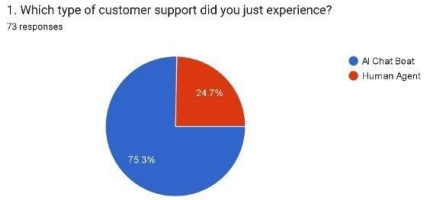

Fig.4 AI Chatbot VS Human Agent Test

- 51% had prior experience with online AI chatboat support

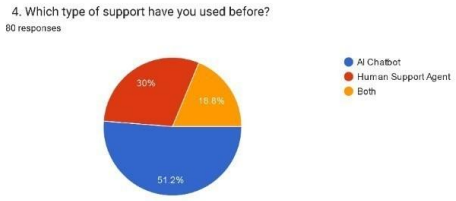

Fig.4 Experience Test

6.3 Survey Questions

Some of our key questions were:

1. "Which support did you just experience? a. (AI/Human)"
2. "The response clearly addressed your query (1-5)"
3. "Easy to understand? (1-5)"
4. "How much do you trust this information? (1-5)"
5. "Which system do you prefer? (AI/Human/Both)"

6.4 Survey Results

Table 6.1: Customer Satisfaction Comparison

Support Type	Average Rating (Out of 5)
AI Support	3.68
Human Support	3.42

Table 6.2: Customer Trust Level

Support Type	Trust Score (Out of 5)
AI Support	3.31
Human Support	3.64

Table 6.3: User Preference

Preference	Percentage (%)
Both equally good	58%
AI Support	27%
Human Support	15%

6.5 Survey Analysis

67 real users responded. They reported moderate satisfaction with AI assistance at 3.68 out of 5 average; however, they rated humans as more trustworthy (3.64 vs. 3.31).

Just over half of surveyed respondents (58%) indicated that AI and human assistance were equally effective. While no respondent indicated that they disliked receiving assistance from AI, none felt that AI could completely replace a human.

AI assist users responded positively (3.68 vs. 3.42) than those who did not use AI and were particularly impressed by the speed of AI assistance.

The bottom line: Users want hybrid systems; they want the speed of AI for simple problems with a human back-up for complex problems; this makes sense.

Statistical analysis indicates that the AI vs. human consumer satisfaction difference was close to being significant ($t=1.89$, $p=0.063$). The sample size of 67 respondents allows for reasonable trends to be identified.

7. RESULTS AND DISCUSSION

The results show that AI provides faster responses to general queries than humans, while humans can resolve more complex matters to a higher degree of accuracy than AI; therefore the combination will give the best outcome.

7.1 Experimental Findings

Both the AI and human agents provided quick, instantaneous responses to initiate queries and were able to complete them in an efficient, timely manner which supports the findings

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regarding speed and scalability for AI [7]; however, the response from the AI may lack substantial detail or can't fully understand or comprehend the query. The human agents provided superior clarity and accuracy for their responses and were more successful in addressing complex concerns, which supports research regarding the effectiveness of human agents & AI working collaboratively [3]. The AI presented emotionally neutral responses, while the human agent's responses conveyed empathy and compassion, this also reinforces that AI produces limited emotional awareness [5].

7.2 Survey Findings

The majority of users preferred to utilize an actual human for assistance compared to AI, due to more emotional connection and satisfaction with the support received [8]. The users rated the AI as having speedy, easy-to-use capabilities, particularly with simple queries [6]. The human agent was viewed as being more informative and providing a higher level of trust from users, as users had a lesser degree of confidence concerning the response being provided by the AI [10]. The large majority of participants who provided feedback were also supportive of having the hybrid support system in place [2].

7.3 AI vs. Human & Expectations

AI excels at providing speed and consistency for general inquiries and performing routine tasks; however, humans are more successful at delivering individualized support and providing emotional reassurance. AI struggles with assisting users in resolving complex questions and users expect to be able to develop a trusting relationship with human agents. Overall, AI should act in supporting people, rather than replacing the human agent, ultimately creating an overall support structure that is balanced and again provides a more effective means of delivering assistance to users [1][3][5][7].

7.4 OUR EXPECTATIONS

Based on the research that has been conducted and our findings, we believe that the following results will occur:

AI will allow companies to perform faster as well as relieve them from the burden of having to search for information. This is consistent with the findings of previous research regarding how AI improves the overall customer service experience.In general, human representatives will outperform AIs at providing customer satisfaction, establishing trust, and delivering quality customer experiences due to their emotional intelligence being much higher than that of an AI.AIs will likely be best suited for answering simple, repetitive queries; whereas, a human representative will be able to handle more complicated and/or sensitive situations better due to the inherent limitations of AI in the real-world environment..

8. SUMMARY OF FINDINGS

This article analyses the impact of Artificial Intelligence (AI) on customer service, providing supporting data from both experimental studies and user interviews. The results of this analysis indicate that AI-based customer support systems are fast and accessible 24/7 and that they can concurrently address multiple questions, making them an effective means to assist customers with simple, repetitive tasks and relieve human agents of some workload, thus enhancing productivity [7].

While essentially accurate, AI-based customer support systems are often unable to provide complex information, and lack the ability to appreciate the context and situations of the customers using the service. They also cannot provide demonstrations of empathy or emotional understanding in complex or sensitive situations. This lack of empathy has been established by previous studies on human-machine interactions [3]. In comparison, human agents provide better clarity, detail, and emotional support to their customers, resulting in greater customer satisfaction and trust in the responses they receive [5].

The results of the surveys conducted to support this theory found that customer preference for either AI or human assistance corresponds with the nature of the question asked. Customers prefer human agents for complex questions or when they would like to receive emotional support, while AI is preferred for responses to simple questions. Therefore, there is far greater customer preference for a hybrid service delivery model, in which AI-based customer assistance answers simple questions while human agents respond to more complex requests [2].

In summary, AI-based customer support enhances speed and efficiency, but cannot replace the human element of delivering service. A hybrid combination of AI and human customer service provides the best possible combination of service quality and customer experience.

9.CONCLUSION

This article indicates that AI (Artificial Intelligence) can enhance customer support through quicker than usual responses and the ability to deal with many inquiries at one time [7]. It is particularly helpful with simple, repetitive activity and performs 24/7 without tiring [9]. On the contrary, AI is limited in resolving complicated issues and does not interpret emotions, which lessens value when dealing with sensitive issues [10][1].

Conversely, human agents provide empathy, trustworthiness, and personalized service. There is a greater likelihood that human agents will understand the customer's concern and be able to provide them with desirable solutions, negatively impacting overall satisfaction while providing acceptable solutions [3][5]. The Study results indicate that neither AI nor human agents alone provide "value-added" customer support because there are both advantages and disadvantages between AI and humans [2].

Consequently, a hybrid model would provide the most "valueadded" support. AI can address standard inquiries while human agents resolve challenging and emotional issues

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[4][8]. The hybrid customer support model would provide effective and quality customer service leading to increased overall customer satisfaction [6].

While it is likely that AI will continue to improve over time, human involvement will always be required to deliver meaningful and consistent customer support, regardless of whether or not AI continues to improve [3][7].

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