Evaluating the Effectiveness of AI Chatbots on Website Performance

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The main purpose of the study remains to provide an overview of the benefits of AI chatbots-based websites on traditional websites using a comparative way. The study used a mixed method to conduct the data analysis. A set of 200 respondents has been considered as the sample for the survey questionnaire conducted with the target of conducting Primary Quantitative Data Analysis. The close-ended questions were generated touching all the aspects related to the process of generating a Chatbot. Both the users of chatbot-enabled websites and the companies that use chatbots as customer service representatives were taken into consideration as samples. The results of the study show that the users have a higher response in support of Chatbot-based website usage and they do agree that chatbots have been working as a feasible way of exploring the processes regarding solving the issues related to the company tasks. On the other hand, the chatbot users have agreed that sometimes the chatbots are slow and their repetitive questions consume more time, and in cases where time is less for generating proper solutions, a higher chance of direct conversation with an agent from the company is required more. The study could conduct an interview-based solution generation method that would involve a primary qualitative data analysis to understand the company leaders' views regarding the use of AI chatbots.

1. Introduction

Within this fast-paced world even with Artificial Intelligence, chatbots are a significant part of enhancing the performance of websites. Evaluation of the AI chatbot in developing website performance by analyzing various metrics of the involvement of consumers, time usage and the satisfaction rate of customers. Chatbots influence the experience level of customers by providing instant assistance on websites and diminishing the rate of bouncing. These chatbots help to streamline the working process by handling frequently asked queries and allow human assistants to focus on severe critical issues. Monitoring the reviews of customers and providing them with effective assurance as per their requirements, AI chatbots improve the functions of websites and instigate the loyalty of customers.

The world becomes digital and the processes are transformed drastically with the processing of time. With this rapid growth of online customers and business processes, the marketplace is pushing the overall system toward e-retailing services and thus the AI chatbots are important to develop the Performance level of different websites.

These types of chatbots are becoming popular with customers as they can provide instant results as per the requirements of consumers. Studies show that the leading companies within the startup business of AI chatbots are investing as ASAPP used 380 M USD and Moveworks with 305M USD as per the information of the 2023 survey worldwide (Thormundsson, 2024). The “Personalized interactions” and the availability of those for all time are the two important aspects of accessing the AI chatbots on websites. Zoho Sales, the most prominent software company has initiated their “Zoho SalesIQ’s Codeless bot” to use the effective AI-powered chatbot within their website without the knowledge of “extensive coding” (Zoho, 2024). Providing their customers with the experience of an “omnichannel experience”, this organization has developed their services with the inclusion of an AI chatbot within the website. Providing comprehensive results to the issues of chatbots, this organization has evolved their significance within the market.

Various issues are there with using traditional websites without AI chatbots including the ***poor quality of the experience level of consumers***. The “robotic Chatbots” are made with scripts and this is the reason behind their inability to engage the users within the conversation of a “dynamic dialogue.” Studies show that within the recent few years, the size of the market is increasing and the proposed rate for 2030, will be 206.95 U.S. Dollars (Statista, 2024). The ***inability to solve personalized issues*** is the most important issue with traditional websites. Those websites could not recognize the exact issues and requirements of customers and provide customized responses to the users. ***Limited adaptability***, embedded within the traditional websites struggle to understand the inputs rather than those scripted within them as the “programming scenario” (Panda and Kaur, 2023). They fail to handle the “complex dialogues” of users and the maintenance of the hose is hectic as they do not have the learning capability.

Aim and Objective

The study aims to understand and evaluate the effects of AI-based chatbots on enhancing the performance of websites for delivering satisfaction to customers.

Objectives

- To understand the influence of chatbots based on AI upon the navigation of engagement metrics of users including the website session duration, page views and rate of interactions
- To evaluate the impact of Artificial Intelligence chatbots on delivering customer satisfaction compared to the interference of human customer care representatives
- To discuss the role of AI-enabled chatbots in manipulating website performance including factors like load times, bounce rates and conversion rates.
- To analyze the benefits of using AI chatbots powered by AI developed by bot-building software like Zoho sales IQ that provide chances for codeless bot-building.

Question

1. How does the AI chatbot influence the navigation processes of user engagement metrics including different features?
2. How does an AI chatbot play a more beneficial role than the customer service executives?
3. What role does the AI chatbot play in manipulating the website performance?
4. What are the benefits of using AI chatbots based on platforms like Amazon Lex and Zoho SalesIQ?

Hypothesis

H_1: AI Chatbots have been able to provide a better customer satisfaction level regarding the development of the experience of users in a website and enhance the overall website performance quality.
H_0: AI chatbots are not able to enhance customer satisfaction level regarding enhancement in the user experience in a website and are also not able to develop overall website performance.
H_2: Zoho SalesIQ's AI-driven operational techniques enhances consumer engagement compared to traditional ways of sales.
H_0: Zoho SalesIQ's AI-driven solutions are not efficient as traditional ways of sales.

2. Review of Literature

Role of AI chatbots in navigating consumer satisfaction and user engagement

The adoption of AI-based chatbots in businesses critically impacts breaking down the barriers of communication between business officials and consumers to enhance their connectivity. The most important benefit of the AI-based chatbots in customer satisfaction generation includes the identification of gaps in the conversation between consumers and business officials, and sometimes that leads to missing out on the resolution of crucial and significant queries (Al-Shafei, 2024). AI Chatbots become helpful for consumers searching for a particular product by navigating them directly to the product checkout page rather than tiring the searching process from the large scale of inventory (Ekechi *et al*. 2024). Furthermore, AI chatbots are available round the clock for companies that have limited working hours for their human employees to give properly organized and significant assistance to the consumers.

Challenges in Implementing AI Chatbots

Chatbot development is gradually becoming essential for most companies regarding maintenance of their website but a significant set of challenges are present that create problems for the companies in implementing the chatbots to deliver better user experience for the consumers. The most significant challenge is that the conversational flow of the chatbot-based conversation creates an experience before the consumers that the chats are scripted and mostly robotic, and there remains a significant lack of personalization (Aleedy *et al*. 2022). These automated sequence maintenance systems enabled within the chatbots create a significant problem for the consumers by repetitive redirection to the same loop of commands (Denecke *et al*. 2021). Moreover, in this era with decreasing time spent against one issue in the hands of the users, the continual questions after questions with the interference of the distributed tree database system that acts as the main backbone of the AI chatbots lead users in a sheer amount of dissatisfaction through thrive within them.

Comparison between the AI Chatbots Enabled Website along with the Traditional Websites without Chatbots

There remains a significant set of benefits that are found in the usage of AI chatbots over the traditional websites that do not endure chatbots for the usage of the consumers. The two most used platforms that allow companies to easily enable chatbots based on the usage of AI are Amazon Lex and Zoho SalesIQ. Amazon Lex is mostly beneficial among all the chatbot-enabling platforms that allow the bot administrators to user-friendly interface development (Vishwakarma, A. and Pandey, 2021). On the other hand, the process has a straightforward deployment style that helps the teams in building, verifying and distributing the chatbots across different platforms using easy commands (Adamopoulou and Moussiades, 2020). Similarly, the Zoho SalesIQ is mostly known for its easy, user-friendly and diverse range of options that open up the chances for organizations to create chatbots using the software. Navigation and announcements for creating promotional strategies for the chatbots have given the company the most beneficial task.

3. Methodology

Conducting research has been demonstrated by several authors to be followed by a set of methodological principles in which philosophical perspectives of the research have been recognised as the initial and most crucial aspect. According to Al-Ababneh

(2020), the advancement of scientific practice based on people's worldviews and presumptions about the nature of knowledge is referred to as a paradigm. This is indicating the effectiveness of following a specific philosophy regarding selection of a particular approach in a research. Among four major philosophies including, "pragmatism", "realism", "positivism" and "interpretivism", this study has been constructed by following "positivism research philosophy". As mentioned by Park *et al.* (2020), in order to validate a priori assumptions, which are frequently expressed numerically, positivism uses the hypothetico-deductive technique, which allows for the derivation of functional correlations between explanatory and causative elements and outcomes. This makes philosophy one of the most suitable ones for study.

Concerning the philosophical stance, a mixed-method approach has been undertaken in this study in terms of gathering and analysing data. "Primary quantitative data" has been gathered utilising a "Google Form" survey and using a variable-based questionnaire. Mixed type of survey questions including open-ended and close-ended question has been used with a multiple likert scale for screening the collected data into quantitative one. However, while quantitative data analysis, open-ended questions are eliminated and outcome from those section has been analysed using qualitative analysis process. On the other hand, in terms of collecting "secondary quantitative data" readily available resources such as company databases, and relevant online portals have been used as sources. Following the purpose of this study, secondary data has been interpreted using the comparative analysis technique whereas, statistical analysis has been carried out to interpret the gathered "primary quantitative information". In the statistical analysis, descriptive statistics, correlation analysis, regression analysis and reliability statistics have been conducted by which the consumer preferences regarding post and pre-AI chatbot enhancement process have been analysed.

In the survey process, 200 participants were selected by using the "purposive sampling technique". As mentioned by Campbell *et al.* (2020), this sampling process helps researchers in selecting samples that directly match the context of the study. In this regard, users of the Zoho SalesIQ's website users have been selected as samples for collecting primary quantitative data.

4. Results

Primary Quantitative Data Analysis

Reliability Statistics

Table 1 *Reliability Statistics*

Reliability Statistics	
Cronbach's Alpha	N of Items
0.856	24

The primary purpose of Cronbach's alpha in this study is to determine the internal validity of the conclusions drawn from the survey data. Izah et al. (2023) state that a Cronbach's alpha value of 0.8 or above may be regarded as a standard value that denotes excellent validity of study findings. The Cronbach's alpha value for this study was found to be 0.856, which may be regarded as proof of the validity and efficacy of the obtained results.

Descriptive Statistics

Table 2 *Descriptive Statistics*

Variables	Demographic (Gender)	Experience with Zoho SalesIQ	Influence on Engagement Metrics	Customer Satisfaction	Website Performance	Benefits of Bot-Building Software
			Statistics			
Mean	0.86	1.61	2.77	2.94	2.82	2.91
Median	1.00	2.00	3.00	3.00	3.00	3.00
Mode	0	2	4	4	4	4
Standard Deviation	0.868	0.981	1.348	1.284	1.328	1.373

Several researchers have shown that descriptive statistics are among the most important analytical tools in statistical analysis, mostly used to summarise the whole amount of data gathered and analysed. In this sense, Cooksey and Cooksey (2020) said that the analysis helps the researcher visualise the whole amount of data that was gathered. The most promising indicators of the distribution of the survey-collected data are the mean and standard deviation values. The SD value has been determined to be 0.868, but the mean value in this study, particularly in the demographic portion, is 0.86. These specific results show that the responses to "Male" and "Female" are grouped. Taking this into account, the mean and SD values may be used to anticipate the majority of replies in each area.

Correlation Analysis

The foundation of correlation analysis is mainly based on identifying interrelation between the variables of the research. As mentioned by Baak *et al.* (2020), although it is only effective for interval variables by design, Pearson's correlation coefficient is a de facto standard in the majority of areas. Considering this aspect, Pearson correlation analysis has been conducted in terms of identifying the correlation between the section variables identified in this study in which Demographic Information (Section

1), Experience with Zoho SalesIQ (Section 2), Influence on Engagement Metrics (Section 3), Customer Satisfaction (Section 4), Website Performance (Section 5), Benefits of Bot-Building Software (Section 6), Open-Ended Feedback (Section 7) are the variables used in terms of evaluating the effectiveness of AI chatbots on website performance using Zoho SalesIQ.

Table 3 *Correlation Analysis*

Correlation					
Variables	**Experience with Zoho SalesIQ**	**Influence on Engagement Metrics**	**Customer Satisfaction**	**Website Performance**	**Benefits of Bot-Building Software**
Experience with Zoho SalesIQ	1	0.190	-0.027	0.153	0.013
Influence on Engagement Metrics	0.244	1	0.489	0.467	0.330
Customer Satisfaction	0.373	0.546	1	0.578	0.527
Website Performance	0.335	0.454	0.355	1	0.704
Benefits of Bot-Building Software	0.288	0.566	0.583	0.493	1

In this study, correlation between Section 2 and Section 3 has been reported as 0.683 which is indicating a high and positive correlation between these variables. On the other hand, the correlation value between section 4 and section 5 has been recorded as 0.704. Considering this value, it can be considered there is a significant correlation between website performance and benefits of bot-building software. Overall findings of the correlation are also critically reflecting significant correlation between the sectional variables reported in the study. Hence, it can be considered that Zoho SalesIQ's AI-driven chatbot plays a vital role in the development of website performance of its clients in a positive course of action.

Regression Analysis

Table 4 *Model Summary*

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.470[a]	.221	.129	1.951

A linear connection between the variables identified and included in the questionnaire is shown by the R-value of 0.470, which may be regarded as a strong value in this study. The dependent variables' variations are represented by the R square value, and in this analysis, the estimated value is 0.221, which is likewise regarded as a high value and denotes a highly variant dependent variable that is strongly present in the data analysis. The number that indicates an abstraction of the findings is called adjusted R square, and it was 0.129, which is nearly comparable to the R-value of 0.470. An ordered link between the variables is indicated by the accounted adjusted R square value.

Table 5 *ANOVA*

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	**Regression**	192.436	21	9.164	2.407	.001[b]
	Residual	677.644	178	3.807		
	Total	870.080	199			

The fundamental idea behind regression analysis is the interpretation of a linear connection between variables, which is mostly applied when creating a linear relationship between variables in a certain distribution type. One can clearly understand the table of analyses used in the primary data analysis portion with this kind of statistical analysis. The primary purpose of the ANOVA model is to analyse the variations in the mean values of the variables included in this investigation. An effective difference between the variables used in this interpretation process is shown by the F value of 2.407 found in this specific study. A useful feature that shows the importance of the variables in gaining a comprehensive understanding of the study issue is the variation in the mean values of the variables. The sig value found in this study is 0.001, which is also a useful tool for determining how well the variables used in this specific study worked.

The results of a paired sample test, in which the mean of two distinct variables is examined primarily to ascertain the position of the hypotheses formulated in this investigation, are depicted in the above figure. Both the rejection of the null hypothesis and the acceptance of the alternative hypothesis are indicated by differences in the mean value. There has been a documented substantial difference in the mean value in both situations. However, the t value for hypothesis 1 has been reported to be 3.446, whereas the t value for hypothesis 2 has been recorded as 20.002. In this study, the alternative hypotheses are accepted whereas the null hypotheses are rejected, as shown by the positive values.

Paired Sample Test

Table 6 *Paired Sample Test*

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Hypothesis 1	What features of Zoho SalesIQ do you use most frequently? - How satisfied are you with the AI chatbot's ability to handle complex queries?	.570	2.339	.165	.244	.896	3.446	199	.001
Hypothesis 2	How has the AI chatbot impacted your website's conversion rates? - Did you face any challenges while integrating the AI chatbot with your existing systems?	2.120	1.499	.106	1.911	2.329	20.002	199	.000

Qualitative Analysis of Open-Ended Responses

Features Required to Add

In this particular section multiple viewpoints have been reported among which agent's performance metrics and user interface have been recorded as mostly mentioned aspect which is indicating a lack of proper features associated with this aspect. Considering this addition on the AI-driven chatbot system providing by the company will enhance the performance of this service. On the other multiple respondents has been demonstrated that the system is already in satisfactory situation by which it can be stated that the system is already matching with multiple business needs. Overall, it can state that addition of agent's performance metrics as well as enhancing user interface in the designing will enhance the performance of the system.

Zoho SalesIQ's AI-Chatbot's Role in Business of its Clients

The instances provided by the respondents mostly indicating the growth of consumer satisfaction by which it has been reported that the chatbot's are effectively enhancing consumer engagement in the organisations' website. On the other hand, several respondents provided responses regarding development of business performance through encouraging data collection and analysis about the consumers. On the other hand, this it has been demonstrated as helping system for the support team as well as the employees of the organisations. Considering the instances provided by the respondents' it can be stated that the AI-chatbot utilised sales perspectives allowing multiple users in terms of enhancing business performance in an effective course of action.

Additional feedbacks of the Respondents

Most of the feedbacks identified in this section indicating positive aspects of the AI-chatbot by which organisations are getting positive impacts on the business performance in the competitive business scenario. However, a lack of personalisation in communication has been recognised as a crucial issue facing by the client organisations. Automatic interaction with visitors however identified as an effective aspect enhancing consumer engagement in the company which is enhancing company performance more effectively. Streamlining customer interactions and providing instant responses to common queries has also been mentioned by several respondents as a valuable asset for the client companies by which the companies are generating performance more effectively.

Secondary Quantitative Data Analysis

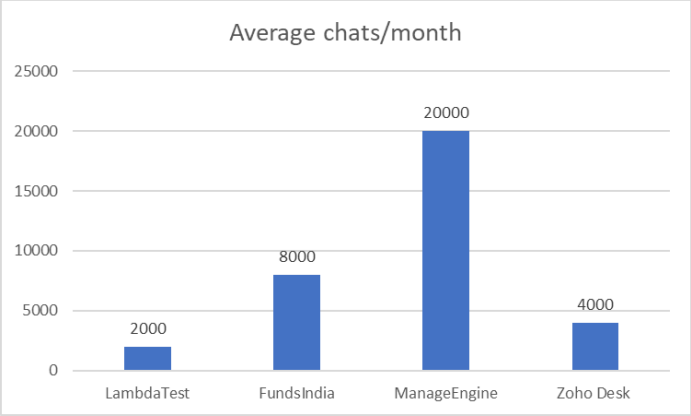

Figure 1 *Average Chats/Month in Different Companies*
(**Source:** *Developed Based on Zoho, 2024, Zoho, 2024, and Zoho, 2024*)

In the above graphic presentation, it was observed that the average chats per month rate for Zoho SalesIQ was different for various companies that have taken up the AI chatbot solution. Lambda Test had noted around 2000 average chats per month. While Zoho Desk reportedly would handle over 4000 of the same. Around 8000 chats per month was the average score for Funds India. In the case of ManageEngine, more than 20000 chats per month where being handled by the support system of the company.

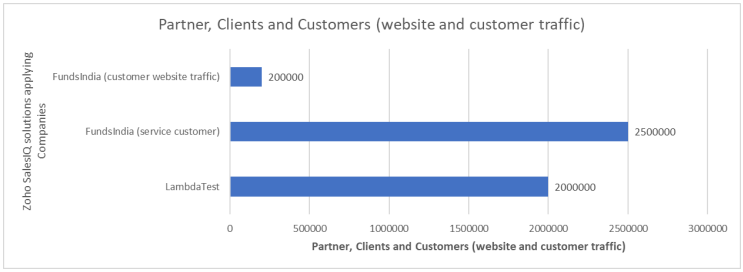

Figure 2 *Chat Per Month and Customer Traffic in Zoho SalesIQ Service Availing Companies*
(**Source:** *Developed Based on Zoho, 2024, and Zoho, 2024*)

In the case of this above graphical representation, it is observed that partners, clients and customers alongside website and customer traffic are some of the most density contributors that the client companies have been availing with the application of Zoho SalesIQ services. In the case of Funds India, the company observed potential increase in website traffic of customers and had noted an organic traffic flow involving around 200000 customers. In the case of service customers, the same company had seen a really good operation metric of 2.5 million customers availing the services of the company and being handled through the AI chat bot solution. In the case of Lambda Test, the company had been able to cater to around 2 million customers simultaneously by applying the services.

5. Discussion

As per the above finding it can be observed that Zoho SalesIQ as an AI chatbot solution is capable of contributing towards the development of website performances and operation metric of the client businesses that applied them. Zoho SalesIQ has more than 465,000 business and companies using its AI chatbots (Zoho, 2024). Better consumer engagement is capable of ensuring improvement in the website traffic. The above findings have in a sense aligned with supporting the current research hypothesis that claims that AI chat bots are capable of providing better customer satisfaction levels based on the development of the experience of users in the website along with enhancing the overall website performance quality. This indicates in support of the research finding gathered in the above results section that it is indeed effective and valid hypothesis.

Limitations and Future Research

The study faced the potential limitation of being unable to incorporate any qualitative information into the study. Additionally, it could be assessed that this study is potentially capable of contributing to the vast literature of AI technology having an impact on the relationship between overall website performance and consumer engagement through its operation enhancement features and customisation characteristics.

6. Conclusion

In conclusion it can be noted that AI chatbot technology has an important role in the enhancement of overall website performance and operation metrics of a company that implements them. There is a potential of growth and development for companies to expand their capacity for managing conversations and chats with a large scale of customer population. This is because of the customisation and personalised features that AI is capable of delivering as a customer service instrument as opposed to its traditional customer service counterpart. The development of the above study observed that efficient customer engagement has a way of improving the overall operations of the organisation and hence boost the possibility for the company in terms of having better website performance.

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