Consumers Preference towards Artificial Intelligence in Insurance- A Study on Chatbot

D. Poongothai

Abstract

Technology is changing the world and is influencing the way we live, work and play. AI is expected to fundamentally transform today's marketplace, for businesses and consumers alike. The insurance industry in India has undergone a profound transformation with the advent of Artificial Intelligence (AI) and machine learning (ML). An insurance chatbot is an AI-powered virtual assistant that can be programmed to help ease the journey of insurance customers by catering to their requirements and improving communication between the insurance company and its consumer. With so much taking place in the globe with technology the current study is been carried out with an aim to understand consumers preference towards using chatbots in insurance company where 340 respondents were selected for the study through purposive sampling method in the district of Coimbatore. The study found that there is strong association between education and usage of Chatbot among the respondents. There was high significance among the consumers related to the anxiety, safety and need of human interaction in solving the issues was identified. The study concluded that though artificial intelligence is important for the insurance market there is need of more safety to be provided to bridge the gap of safety among the consumers.

Keywords: Artificial intelligence, Chatbot, Consumers preference, Insurance, Machine learning.

Introduction

The increasing prevalence of internet usage and technological advancements has significantly shaped both lifestyles and the business landscape [Kwangsawad et.al, 2022]. This transformation has led to a dynamic shift in consumer behavior, prompting companies to employ diverse digital marketing strategies to meet evolving customer expectations in the digital realm [Araújo et.al, 2020]. Embracing information and communication technologies (ICTs), organizations have enhanced their relationship channels, ensuring constant availability to assist customers [Calvaresi et.al, 2021]. These technologies not only reduce the time consumers spend on requested services but also optimize resource management within organizations, enabling employees to focus on other activities [Pillai et.al, 2020].

In the past decade, the emergence of artificial intelligence (AI) has become a focal point in marketing and business [Ceccarini et.al, 2019 and Huang et.al, 2021], driven by affordable yet powerful computing and big data capabilities. The evolution of AI has empowered companies to leverage chat services for customer support, gaining popularity among managers seeking to automate customer relationship processes [Sheehan et.al, 2020 and Sands et.al, 2021]. Evidently, various industries, including e-commerce, hospitality, fashion, health services, and banking, are incorporating chatbots into their operations [Seo,

ISBN: 978-93-83302-64-2

2021]. Offering a continuous touchpoint with 24/7 availability and the capacity to handle large volumes of inquiries, chatbots efficiently assist customers, fostering positive experiences [Nuruzzaman et.al, 2020]. The convenience and quick access to information provided by chatbots enhance customer satisfaction and build loyalty. Presently, more than 50 percent of firms are adopting or planning to adopt chatbot technology [Rodríguez et.al, 2021], with a projected estimation that around 95 percent of online service interactions will involve AI chatbots or live chat by 2025 [Oza et.al, 2020]. The growing popularity of chatbots is anticipated to generate $112 billion in retail sales by 2023.

Despite the increasing adoption of chatbots, challenges have emerged, leading to negative and frustrating customer experiences. Reports suggest that customers are losing trust in chatbots, with 42 percent avoiding them for complex inquiries and 15 percent lacking confidence in using chatbots for communication with companies. This has sparked scholarly attention on the application of AI, including chatbots. However, research on chatbot acceptance remains limited, and few studies have delved into users' behavior concerning chatbots. Having this as background the current study was administrated.

Objectives of the study

The study is been carried out with the objectives to,

Assessing Consumer Preferences towards using chatbots for insurance

Impact of Education on Chatbot Usage

Consumer Perceptions of AI in Insurance

Methodology of the study

The study adopts a descriptive research design to delve into the preferences and perceptions of consumers in the district of Coimbatore regarding the utilization of chatbots in the insurance industry. Through purposive sampling, 340 respondents are selected, ensuring their relevance to the study's objectives, including their interaction with insurance services and willingness to engage with chatbots. Data is collected using a structured questionnaire comprising closed-ended and Likert-scale questions, supplemented by interviews to capture both quantitative and qualitative insights. The variables measured include education level, frequency of insurance interactions, perceptions of AI, safety concerns, and preferences for human interaction. Statistical tools such as SPSS are employed for quantitative data analysis, encompassing frequency distribution, correlation analysis, and chi-square tests to explore relationships between variables, particularly the association between education and chatbot usage. Qualitative data from interviews undergo thematic analysis to identify recurring themes related to consumer concerns, expectations, and experiences with insurance chatbots. Ethical considerations are paramount, with informed consent obtained from participants to ensure confidentiality and anonymity. The validation process involves triangulation, comparing findings from surveys and interviews to enhance the study's credibility. Limitations, such as the study's geographical scope is being confined to Coimbatore, are acknowledged, recognizing potential impacts on the generalizability of the findings.

Findings of the study

The findings made in the current study is been elaborately discussed in this section.

ISBN: 978-93-83302-64-2

Table-1

Socio economics profile of the insurance consumers

S.No	Particulars		Frequency	Percentage
1	Age	18 to 25	80	25.00
		26 to 35	72	21.18
		36 to 45	103	30.29
		45 above	80	23.52
		Total	340	100
2	Gender	Male	182	53.53
		Female	160	47.06
		Total	340	100
3	Income	40,000to60,000	142	41.76
		61,000 to 80,000	79	23.24
		80,000 to 1,00,000	64	18.82
		1,00,000 to above	55	16.18
		Total	340	100
4	Occupation	Self Employed	96	28.24
		Private sector	105	30.88
		Public sector	139	40.88
		Total	340	100
5	Education	Primary	25	7.35
		Secondary	95	27.94
		Higher secondary/ Diploma	148	43.53
		Collage	72	21.18
		Total	340	100

Source: Field survey

The presented table encapsulated a cross-sectional analysis of demographic characteristics derived from a conducted survey. Notably, a concentration was observed within the 36 to 45 age cohort, constituting 30.29 percent of the sample, with a notable representation in the 18 to 25 age stratum at 25.00 percent. Gender distribution manifested relative equilibrium, with 53.53 percent identified as male and 47.06 percent as female respondents. Income distribution revealed a predominant presence within the 40,000 to 60,000 income bracket, comprising 41.76 percent of the respondents, while 16.18 percent reported an income exceeding 1,00,000. Occupation diversity was discernible, with 40.88 percent engaged in the public sector, 30.88 percent in the private sector, and 28.24 percent being self-employed. Educationally, a substantial 43.53 percent possessed a minimum of higher secondary/diploma qualifications. The findings collectively underscored a diverse demographic composition across age, gender, income, occupation, and education, providing a nuanced perspective on the surveyed population. These insights

ISBN: 978-93-83302-64-2

hold potential implications for tailored policy formulation, targeted business strategies, and avenues for further academic exploration. However, it is imperative to acknowledge limitations inherent in the absence of specific sample size information and the nuanced regional or cultural context that may impact the generalizability of the findings.

The table (2) brings out the chatbot usages of consumers in insurance.

Table-2

Chatbot usages of consumers in Insurance

S.No	Particulars		Frequency	Percentage
1	Frequently	Daily	65	19.12
		Weekly	105	30.59
		Only when needed	171	50.29
		Total	340	100
2	Purpose	Information Retrained	86	25.29
		Policy inquiries	129	37.95
		Claim Processing	125	36.76
		Total	340	100

Source: Field survey

The table provided insights into the historical patterns of engagement frequency and purpose among surveyed individuals. A notable 19.12 per cent of respondents reported utilizing the service on a daily basis, while 30.59 per cent engaged with it on a weekly basis. The majority, comprising 50.29 per cent, indicated using the service only when needed. Regarding the purpose of engagement, 25.29 per cent of respondents historically utilized the service for information retrieval. Policy inquiries emerged as a significant motivation, with 37.95 per cent of participants historically indicating engagement for this purpose. Claim processing constituted another substantial aspect, with 36.76 per cent of respondents historically utilizing the service for this specific function.

The satisfaction level of consumers in Chatbot usage was studied and given in table 3.

Table-3

Satisfaction Level of consumers in Chatbot

S.No	Particulars	Strongly Agree	Agree	Neutral	Strongly Disagree	Disagree
1	Response Time	145	84	85	14	12
2	Effectiveness	105	95	75	45	20
3	User Experience	162	115	18	32	13
4	Trust	98	81	92	51	18
5	Perceived Value	68	101	86	61	24
6	Knowledge	87	71	161	16	5
7	Privacy Concern	96	103	120	15	6

Source: Field survey

ISBN: 978-93-83302-64-2

The assessment of consumer satisfaction with the chatbot reveals a nuanced landscape across various parameters. Notably, response time garnered high satisfaction, with 145 respondents strongly agreeing and 84 agreeing. In terms of effectiveness, while 105 respondents strongly agreed, and 95 agreed, a notable 45 strongly disagreed and 20 disagreed, indicating a more diverse sentiment. User experience received positive feedback from 162 respondents strongly agreeing and 115 agreeing, but with 32 expressing neutrality and 13 disagreement. Trust in the chatbot was affirmed by 98 respondents strongly agreeing and 81 agreeing; however, 51 strongly disagreed, and 18 disagreed, suggesting opportunities for improvement. Perceived value demonstrated a divided perception, with 68 respondents strongly agreeing, 101 agreeing, and 61 strongly disagreeing, and 24 disagreeing. The chatbot's knowledge was generally well-received, with 87 strongly agreeing and 71 agreeing, but 16 strongly disagreed and 5 disagreed. Privacy concerns were evident, with 96 strongly agreeing and 103 agreeing, while 15 strongly disagreed, and 6 disagreed. Overall, these findings underscore areas of strength, such as response time and knowledge, alongside potential areas for improvement, particularly in building trust and enhancing perceived value.

Table-4

Problems Faced with Chatbot in Insurance

S.No	Particulars	Frequency
1	Anxiety	125
2	Safety	96
3	Need of Human Interaction	52
4	Limited Understanding	48
5	Emotional Interaction	19
	Total	340

Source: Field survey

Table-4, sourced from a field survey, delineated the challenges encountered with a chatbot in the insurance domain. Anxiety emerged as a predominant issue, with 125 instances recorded, indicating a substantial concern about the emotional impact or reliability of the chatbot. Safety concerns were expressed by 96 respondents, reflecting apprehensions about the security and dependability of the chatbot in handling sensitive information or providing accurate guidance. A notable 52 respondents highlighted the need for human interaction, suggesting a preference for a more personalized and human-centric approach in addressing insurance-related queries. Limited understanding emerged as a challenge for 48 respondents, implying issues related to the chatbot's comprehension of user queries or the complexity of insurance-related inquiries. A relatively lower frequency of 19 instances pertained to the desire for emotional interaction, indicating a preference for a more empathetic and emotionally responsive chatbot. In total, the field survey encapsulated 340 instances of challenges faced with the chatbot in the insurance sector, shedding light on specific areas of concern that may warrant attention and improvements to enhance the overall user experience.

ISBN: 978-93-83302-64-2

Table-5

Association with Education and Purpose of Chatbot in Insurance

	Variables	F	Sig.
Frequently	Daily	158.730	0.000***
	Weekly	23.857	0.000***
	Only when needed	8.157	0.000***
Purpose	Information Retrained	1.422	0.236*
	Policy inquiries	30.872	0.000***
	Claim Processing	25.453	0.000***

Source: Estimated Note : *** Significant at 1percent level,* Significant at 10 percent level.

Table-5 presents a comprehensive analysis of the historical association between education levels and the purpose of engaging with a chatbot in the insurance sector. The frequency of chatbot utilization, categorized into daily, weekly, and only when needed, demonstrated statistically significant associations with education levels. Notably, daily users exhibited a substantial F-value of 158.730 (p = 0.000), emphasizing a robust relationship. Similarly, weekly users (F = 23.857, p = 0.000) and users engaging only when needed (F = 8.157, p = 0.000) indicated statistically significant associations with educational backgrounds. In terms of the purpose of engagement, policy inquiries and claim processing manifested noteworthy associations with education levels, as reflected by F-values of 30.872 (p = 0.000) and 25.453 (p = 0.000), respectively. The reported findings, sourced from estimations, are denoted by asterisks, with '**' signifying significance at the 1 percent level and '' indicating significance at the 10 percent level. These results contribute to a nuanced understanding of the historical dynamics between education and the utilization patterns of chatbots in the insurance domain, offering valuable insights for tailored strategies and user-centric enhancements.

Table -6

Problem faced by the Chat bot usages of Consumer in Insurance

Model	**R**	**R Square**	**Durbin-Watson**
1	0.942	0.888	1.085

Source: Estimated

Table 7

Co-efficient

S.No	Variables	B	t	Sig.
	Constant	0.458	4.769	0.000***
1	Anxiety	0.298	6.107	0.000***
2	Safety	0.779	30.534	0.000***
3	Need of Human Interaction	0.034	1.667	0.096**
4	Limited Understanding	0.386	7.980	0.000***
5	Emotional Interaction	0.148	6.047	0.000***

Source: Estimated Note : *** Significant at 1percent level,** Significant at 5 percent level.

ISBN: 978-93-83302-64-2

Table-6 provides an in-depth analysis of the issues encountered by consumers in the insurance domain when utilizing a chatbot, incorporating both regression model statistics and individual variable coefficients. The regression model exhibits a strong relationship, as evidenced by a high R-value of 0.942, indicating that approximately 88.8% of the variability in the problems faced by consumers can be explained by the model. The R Square value further supports this, standing at 0.888. The Durbin-Watson statistic of 1.085 suggests a minimal presence of autocorrelation in the model, indicating a satisfactory fit. The individual variable coefficients shed light on the significance of each problem variable. The constant term has a coefficient of 0.458, with a t-value of 4.769 and a p-value of 0.000, denoted by '', signifying statistical significance at the 1 percent level. Each specific problem variable also demonstrates statistically significant coefficients: Anxiety (B = 0.298, t = 6.107, Sig. = 0.000), Safety (B = 0.779, t = 30.534, Sig. = 0.000***), Limited Understanding (B = 0.386, t = 7.980, Sig. = 0.000***), and Emotional Interaction (B = 0.148, t = 6.047, Sig. = 0.000***). Notably, the Need for Human Interaction variable has a p-value of 0.096, denoted by '**', suggesting significance at the 5 percent level. The findings, sourced from estimations, illuminate the robustness of the regression model in explaining the variability in consumer-reported issues with insurance chatbots. These results offer valuable insights for insurers seeking to address and mitigate specific concerns in the implementation and enhancement of chatbot functionalities.

Conclusion

The study on consumers' preferences toward Artificial Intelligence (AI) in the insurance sector, focusing on chatbots, reveals a diverse demographic composition and highlights a strong association between education levels and chatbot usage. The findings identify significant consumer concerns related to anxiety, safety, and the desire for human interaction when engaging with insurance chatbots. The analysis of consumer satisfaction underscores the need for improvements in effectiveness, trust, and perceived value. The regression model further emphasizes the importance of addressing these challenges, providing insights into specific issues faced by consumers. In navigating the evolving landscape of AI-driven services in insurance, it is crucial for companies to prioritize safety and trust-building measures to enhance overall consumer satisfaction and foster greater acceptance of AI technologies.

References

Araújo, T.; Casais, B. Customer Acceptance of Shopping-Assistant Chatbots. In Marketing and Smart Technologies; Rocha, Á., Reis, J.L., Peter, M.K., Bogdanović, Z., Eds.; Springer: Singapore, 2020; Volume 167, pp. 278–287. [Google Scholar] [CrossRef]

Calvaresi, D.; Ibrahim, A.; Calbimonte, J.-P.; Fragniere, E.; Schegg, R.; Schumacher, M.I. Leveraging inter-tourists interactions via chatbots to bridge academia, tourism industries and future societies. J. Tour. Futur. 2021, 1–27.

Ceccarini, C.; Prandi, C. Tourism for all: A mobile application to assist visually impaired users in enjoying tourist services. In Proceedings of the 16th IEEE Annual Consumer Communications & Networking Conference (CCNC), Las Vegas, NV, USA, 11–14 January 2019; pp. 1–6. [Google Scholar] [CrossRef]

Huang, D.-H.; Chueh, H.-E. Chatbot usage intention analysis: Veterinary consultation. J. Innov. Knowl. 2021, 6, 135–144. [Google Scholar] [CrossRef]

ISBN: 978-93-83302-64-2

Kwangsawad, A.; Jattamart, A. Overcoming customer innovation resistance to the sustainable adoption of chatbot services: A community-enterprise perspective in Thailand. J. Innov. Knowl. 2022, 7, 100211. [Google Scholar] [CrossRef]

Nuruzzaman, M., & Hussain, O. K. (2020). IntelliBot: A Dialogue-based chatbot for the insurance industry. Knowledge-Based Systems, 196, 105810.

Oza, D., Padhiyar, D., Doshi, V., & Patil, S. (2020, April). Insurance claim processing using RPA along with chatbot. In Proceedings of the 3rd International Conference on Advances in Science & Technology (ICAST).

Pillai, R.; Sivathanu, B. Adoption of AI-based chatbots for hospitality and tourism. Int. J. Contemp. Hosp. Manag. 2020, 32, 3199–3226

Rodríguez Cardona, D., Janssen, A., Guhr, N., Breitner, M. H., & Milde, J. (2021). A matter of trust? Examination of chatbot usage in insurance business.

Sands, S.; Ferraro, C.; Campbell, C.; Tsao, H.-Y. Managing the human–chatbot divide: How service scripts influence service experience. J. Serv. Manag. 2021, 32, 246–264. [Google Scholar] [CrossRef]

Seo, K.; Lee, J. The Emergence of Service Robots at Restaurants: Integrating Trust, Perceived Risk, and Satisfaction. Sustainability 2021, 13, 4431. [Google Scholar] [CrossRef]

Sheehan, B.; Jin, H.S.; Gottlieb, U. Customer service chatbots: Anthropomorphism and adoption. J. Bus. Res. 2020, 115, 14–24. [Google Scholar] [CrossRef]

ISBN: 978-93-83302-64-2