“Digital insurance acceptance among older adults in the context of AI”

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DIGITAL INSURANCE ACCEPTANCE AMONG OLDER ADULTS IN THE CONTEXT OF AI

Abstract

AI technology integration into the Indian insurance industry promises many benefits, but its acceptance among older adults remains a challenge. Previous studies have paid insufficient attention to older adults' unique needs and concerns in the context of AI-driven insurance service acceptance in India. The purpose of the study is to evaluate the acceptance of AI-powered digital insurance services among older adults in Kerala, India, from the perspective of customer satisfaction. This exploratory study employed the insights of the Technology Acceptance Model (TAM), the Information System Continuance Model (ISCM), and the Customer Satisfaction (C-SAT) method. Data were collected by conducting interviews in September 2024 with 20 older adults using AI-powered insurance services. Findings indicate a positive trend in adopting digital insurance services among older adults. However, the mean C-SAT scores for Perceived Usefulness and Perceived Ease of Use were 58% and 56%, respectively. Customer satisfaction scores for chatbot services and automated claims processing stood at 55% and 50%, respectively. These calculated scores are below the American Customer Satisfaction Index (ACSI) benchmark of 77.9% for Q2 2024. The participants of the study also expressed concerns regarding the use of AI-powered digital insurance services, citing inadequate user training facilities, fears of financial loss, privacy issues, and security and safety concerns. These results suggest the need for enhancements in AI interface design, user training, and customer support to better meet the unique needs and concerns of older adults and improve overall satisfaction.

Keywords digital insurance services, artificial intelligence, older adults, customer satisfaction

JEL Classification G22, O33, J14, M31

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INTRODUCTION

Artificial intelligence (AI) is significantly transforming the Indian insurance industry by automating core functions such as underwriting, claims processing, risk management, fraud detection, and customer service. AI has its own peculiar and unique characteristics or abilities, like AI can understand, analyze, and be able to generate human language, stimulate human decision-making, interact with humans in natural language, handle repetitive tasks, gather and analyze data, and so on. The integration of AI into insurance services has introduced numerous opportunities, including enhanced operational efficiency and improved customer service.

AI technology integration into the Indian insurance industry promises a lot of benefits, but its acceptance among older adults remains a challenge. The older adults or 'Senior Citizens' in India are considered 60 years of age or older (IIPS & UNPF, 2023). The older adults represent a significant portion of the insurance market in India, particularly the life and health insurance segments. The demographic projections indicate a substantial increase in India's older adult population, from 100 million in 2011 to an estimated 230 million by 2036 (Technical Group on Population Projections, 2019). Furthermore, by

2050, the share of older adults will increase to 347 million in India (IIPS & UNPF, 2023). In the context of AI technology transformation of the insurance industry in India and the older adult population growth projection, understanding the acceptance of AI-powered insurance services among older adults is crucial. Previous studies have primarily focused on general consumer adoption of digital financial services, with insufficient attention to the unique needs and concerns of older adults in the context of AI-driven insurance solutions. Therefore, this study aims to explore the acceptance of AI-powered digital insurance services among older adults in Kerala, India, from a customer satisfaction perspective. The findings are intended to inform policymakers and industry stakeholders in developing strategies that promote digital financial inclusion for the older adult segment of the population.

1. LITERATURE REVIEW

The concept of artificial intelligence (AI) refers to the development of intelligent machines capable of mimicking human behavior. These technologies can understand, organize, and interpret information to make informed predictions. Today, AI plays a critical role in the growth and transformation of the financial services industry (Deloitte, 2024). AI-powered digital transformation also catalyzes economic, political, and social change (Kshetri, 2021). The foundational structure of AI systems is based on machine learning (Finlay, 2017), which enables rapid analysis of customer data and transaction histories of customers (Fokina, 2022). Applications such as chatbot services, digital claims processing, fraud detection, and risk assessment systems operate using AI algorithms and machine learning techniques (Mhlanga, 2020). AI offers numerous advantages to service providers, including customer segmentation through pattern recognition and the delivery of automated updates based on user behavior (Eckert & Osterrieder, 2020). Additionally, AI plays a vital role in integrating social media with financial services (Toucinho, 2020). By leveraging these technologies, traditional insurance services have evolved into personalized solutions that cater to the distinct needs of users (Lee et al., 2023). AI continues to have a significant impact on the development of customized insurance services.

AI-powered services gain users' trust by effectively communicating with humans and establishing emotional connections (Lee et al., 2023). Users perceive that AI can understand their needs and preferences, solve problems, communicate effectively, and build respectful and friendly relationships. (Lee et al., 2023). These distinctive features of AI are rooted in anthropomorphism, which refers to the tendency to attribute human traits to non-human entities, such as AI systems. For instance, AI technology-driven chatbots have become popular in delivering customer service (Crolic et al., 2022). To enhance customer engagement, many companies humanize their chatbot interfaces by assigning them names and avatars, thereby leveraging the psychological effects of anthropomorphism on user behavior (Crolic et al., 2022). The literature widely discusses the anthropomorphic perceptions of the general public and the ethical implications of human interaction with AI (Salles et al., 2020). Moreover, AI-driven financial technologies can enhance customer interaction with financial services (Kshetri, 2021). AI algorithms and cognitive technologies offer customers personalized services by analyzing data such as online purchase histories and digital interactions, thereby recommending suitable products and services to customers (Mhlanga, 2020).

AI-powered digital technologies provide a lot of benefits to people. AI has transformed financial services more affordable and accessible to all (Mhlanga, 2020). The augmented reality (AR) is promising to enhance digital learning among older adults by making learning more engaging and accessible (Jin, 2024). AI-enabled technologies can support healthcare delivery to older adults through remote monitoring, virtual consultations, and AI-powered surveillance systems (Bear et al., 2025). AI can improve health monitoring and access to care for older adults, but concerns include data privacy, lack of trust in AI decisions, and limited digital literacy (Wong et al., 2025). AI-powered assistants support customized interactions, improve users' digital skills, and encourage self-directed learning among older adults (Jin, 2024). Shandilya and Fan (2022) conducted a study to explore older adults' experiences with AI-enabled everyday

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technologies. Their research revealed that while many older adults are eager to learn and use such technologies, they often face challenges due to limited learning resources. Additionally, some participants expressed concerns when AI systems behaved unpredictably, raised privacy issues, or seemed to influence their decision-making abilities. These experiences led to mixed feelings about AI, with some viewing it as beneficial and others perceiving it as intrusive. Therefore, designing AI technologies that are inclusive, secure, and empower older adults to maintain control over their interactions (Shandilya & Fan, 2022).

Artificial intelligence (AI) is increasingly integral to the insurance industry, enhancing various operations and strategies. In life insurance, AI facilitates personalised and proactive health initiatives, improving policyholder outcomes and supporting insurers' long-term profitability (Bhat, Das, & Quazi, 2025). AI also streamlines claims processing, minimises errors, and enhances fraud detection, thereby improving operational efficiency and risk management (Thakur & Kansra, 2024). Additionally, AI-driven chatbots revolutionise customer service by providing responsive and personalised interactions (Thakur & Kansra, 2024). Furthermore, AI technologies enable insurers to refine pricing models and expedite claims processing, ensuring timely financial assistance during climate-related disasters (Kiwanuka & Sibindi, 2025). AI also supports efficient data analysis in the insurance industry, aiding in anomaly detection and decision-making processes (Reis et al., 2023). In recruitment, AI automates tasks such as resume screening and initial assessments, improving efficiency and reducing biases in candidate selection, while emphasising the importance of responsible implementation of AI to maintain ethical standards (Roumbanis, 2025).

AI-driven technologies have significantly impacted the Indian insurance industry and are becoming instrumental in promoting digital financial inclusion, which is a key policy imperative for fostering economic development and social well-being (Rao, 2022). The insurance business in India is working under the aegis of supervision and control of the Insurance Regulatory Development Authority of India (IRDAI) (IRDAI, 2024). Government of India initiatives like the 'Digital India' mission have further promoted the use of advanced technologies to foster innovation and strengthen the digital economy through increased opportunities and inclusive growth (MeitY, 2024). The demonetization initiative, the COVID-19 pandemic, and the rapid growth of smartphone users and innovative technologies like AI have played an instrumental role in accelerating digital financial services in India (Anirvinna et al., 2025).While AI offers various advantages, including cost savings and enhanced operational efficiency (Eckert & Osterrieder, 2020), it also raises several ethical and security concerns. For example, issues related to security, financial stability, information integrity, and privacy can influence customers' purchasing intentions (Alrawad et al., 2023). This transformation also enhances competition in the financial services industry. The rise of technology-driven fintech has started the delivery of smart insurance services (Mhlanga, 2020). These innovative financial technologies have intensified competition (Lu et al., 2022), but it provides broader advantages like easier access to financial services for all (Hou et al., 2021).

Technology acceptance refers to an individual's willingness and ability to adopt and use technological innovations. Several theories and models have been developed to explain the factors influencing technology acceptance among users. One foundational study by Davis (1989), titled *Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology*, introduced two key constructs – *perceived usefulness* and *perceived ease of use* – as core determinants of user acceptance. These constructs were supported by empirical evidence and demonstrated strong psychometric properties in predicting usage behavior (Davis, 1989). Over time, various theoretical frameworks have been proposed to explore user acceptance of technology, including the Technology Acceptance Model 2 (TAM2), Unified Theory of Acceptance and Use of Technology (UTAUT), Diffusion of Innovation (DOI), Technology Readiness Index (TRI), Innovation Resistance Theory, Technology-Organization-Environment (TOE) framework, New Product Diffusion Model, Theory of Planned Behavior (TPB), Reasoned Action Theory (TRA), Christensen's Market Creation Theory, and the New Market Development Model (Sahi et al.,

2021). Collectively, these models provide valuable insights into understanding how and why users adopt or resist new technologies.

Anol Bhattacharjee's (2001) research paper titled *Understanding information systems continuance: An expectation-confirmation model* examines the factors influencing users' intention to continue using information systems. The study found that the continuance intention is fundamentally determined by satisfaction and perceived usefulness. Koul et al. (2021) found that *perceived ease of use*, *perceived risk,* and *social influence* are major factors influencing users' acceptance of digital wallets. Similarly, Venkatesh et al. (2003) identified *performance expectancy, effort expectancy, social influence, and facilitating conditions* as significant determinants of customer acceptance of technology. Tang et al. (2021) highlighted that consumers' adoption and usage of digital financial systems are influenced by *perceived ease of use*, *perceived risk*, *perceived security*, *service quality*, *social influence*, and *compatibility*. Based on these studies, it is evident that while multiple factors influence technology acceptance, the most prominent and commonly recurring ones are *perceived usefulness* and *perceived ease of use*, as originally proposed in the Technology Acceptance Model (TAM).

Satisfaction is a subjective concept that varies from customer to customer. According to Parker and Mathews (2001), "satisfaction is a feeling that results from a process of evaluating what was received against that expected, the purchase decision itself and/or the fulfilment of needs/wants". In the context of AI technologies, understanding customer satisfaction among digital insurance users is very relevant. According to Kaur and Singh (2025), the integration of InsurTech significantly enhances customer satisfaction in the life insurance services. Key factors contributing to customer satisfaction include efficient customer service and effective policy management (Kaur & Singh, 2025). Aulia et al. (2021) examined how specific features of chatbot services influence customer satisfaction in the digital era. The study highlights that the usability of chatbots – how easy and intuitive they are to use – and their responsiveness – how quickly they reply to user inquiries – play significant roles in enhancing customer satisfaction (Aulia et al., 2021). The study by Jingzu et al. (2024) investigates factors influencing customer satisfaction and the intention to reuse online food delivery applications in China. Their research identifies information quality dimensions, perceived usefulness, and perceived ease of use are key elements that positively impact user satisfaction. To enhance continuous usage, the study suggests that application developers must focus on providing accurate, up-to-date information and improving the overall user experience (Jingzu et al., 2024). A study by Lau et al. (2013) found that five dimensions – tangibility, responsiveness, reliability, assurance, and empathy – have a significant relationship with building customer satisfaction. Perceived service quality and corporate social responsibility also influence the emotional disposition of customers and satisfaction (Tirado et al., 2024).

The anthropomorphic, functional, and system features of chatbots influence customer satisfaction and continuance usage (Nicolescu & Tudorache, 2022). Ou et al. (2024) investigated the factors influencing customer satisfaction among mobile network service providers in Cambodia and found that perceived quality, generic requirements, flexibility, corporate image, and price influence customer satisfaction. Customer satisfaction, fostering innovation, and ensuring high product quality are crucial for improving the performance of any industry (Restrepo-Morales et al., 2024). AI's broader economic impact may be linked to improvements in various sectors, potentially including enhancements in service quality and customer satisfaction (Gonzales, 2023).

The above literature review provides comprehensive insights into artificial intelligence (AI), technology acceptance, and customer satisfaction across various sectors and contexts. However, a notable research gap exists concerning the specific exploration of AI-powered insurance services' acceptance among older adults in Kerala, India, from a customer satisfaction perspective. Previous studies have primarily focused on general consumer adoption of digital financial services, with insufficient attention to acceptance of AI-powered insurance services from the customer satisfaction perspective. The study intends to fill this research gap by investigating the acceptance of AI-powered digital insurance services among older adults in Kerala, focusing on customer satisfaction metrics.

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By understanding the unique needs and concerns of older adults, the research seeks to inform strategies that enhance the usability and acceptance of AI-powered insurance services.

2. METHODS

In the era of Industry 5.0, the integration of AI into the insurance sector is reshaping service delivery, emphasizing personalization and automation. While AI technologies offer numerous benefits, understanding their acceptance among older adults remains a critical area of study. To assess customer acceptance and satisfaction, the study integrated the Technology Acceptance Model (TAM) and the Information System Continuance Model (ISCM). According to TAM, 'Perceived Usefulness' and 'Perceived Ease of Use' are critical determinants of technology acceptance (Davis, 1989). Furthermore, ISCM posits that user satisfaction significantly influences the intention to continue using a technology (Bhattacherjee, 2001). The CSAT method was employed to quantify customer satisfaction levels. The three unique constructs, *Perceived Usefulness, Perceived Ease of Use,* and *Satisfaction,* were incorporated into the present study. The measurement of customer satisfaction is a better way to understand user acceptance of technology. The research problem of the study deals with understanding AI-powered digital insurance acceptance among older adults from a customer satisfaction perspective in Kerala state in India. The objectives of the study are: 1. To evaluate customer satisfaction among older adults concerning the perceived usefulness and perceived ease of use of AI-powered digital insurance services. 2. To analyze customer satisfaction among older adults regarding specific AI-powered services, namely chatbot interactions and automated claim processing.

AI technologies are revolutionizing the insurance industry with customer-centric products and services (Eckert & Osterrieder, 2020). In the present context of the AI revolution in the insurance service industry, digital financial inclusion, and the growth of the older adults' segment of the population in India, there is vital scope and significance to this study. The study was conducted in September 2024 among older adult users of AI-powered digital insurance services in Kerala state in India, located in the south-west of the Indian subcontinent is characterized by a high literacy rate and high population density, a significantly higher female population compared to males, and a relatively low population growth rate compared to the national average. Due to a better health care system and lower birth rate, the population of Kerala has a larger proportion of elderly people compared to the national average of India. The small sample-based exploratory study was conducted among 20 older adult users of AI-powered insurance services residing in the urban area of Kerala with diverse educational qualifications, professions, and gender, residing in Kerala state in India.

This study adopts an exploratory research design. Exploratory research is particularly suitable when investigating areas where limited prior information exists, aiming to gain insights and formulate hypotheses rather than test them (Kothari, 2004). Given the study's objective to examine the acceptance and satisfaction levels of older adults regarding AI-powered digital insurance services, an exploratory approach allows for a comprehensive understanding of the underlying factors influencing user perceptions and behaviors.

In this study, data were collected using interviews that incorporated both structured and semi-structured elements, aligning with a mixed-methods research design. Structured interviews involve administering a standardized set of questions in a predetermined order to ensure consistency across participants (Kothari, 2004). Semi-structured interview, on the other hand, is a qualitative method that combines a predetermined set of open-ended questions with the flexibility to explore emerging topics during the conversation (DiCicco-Bloom & Crabtree, 2006). The mixed method design facilitates the collection of both quantitative data (through standardized questions and scales) and qualitative insights (through open-ended responses), providing a comprehensive understanding of older adults' experiences with AI-powered digital insurance services. Mixed methods research combines both quantitative and qualitative approaches to provide a more comprehensive understanding of research problems (Muskat et al., 2012). Mixed methods research is increasingly recognized as a third major research paradigm, complementing the traditional qualitative and quantitative approaches (Johnson et al., 2007).

The researchers collected primary data from users of AI-powered digital insurance services among older adults through interviews conducted in September 2024. A total of 20 older adults participated in the study. The 45-60-minute interview was conducted for each participant. This timeframe allows for a comprehensive exploration of participants' experiences with AI-powered digital insurance services while accommodating their comfort and attention spans. Before participation in the study, informed consent was obtained from all individuals, and confidentiality was maintained by anonymizing participant data, adhering to ethical standards for qualitative research (UK Statistics Authority, 2022). The interview questions were adapted from the previous research by Davis (1989) and Bhattacherjee (2001). The snowball sampling method was employed, where existing participants referred new participants from their networks (Goodman, 1961).

For data analysis, the simple percentage method and Customer Satisfaction (C-SAT) method were applied. C-SAT analysis is a scientific method for analyzing the voice of customers (Godbole & Roy, 2008). The simple percentage was calculated by using the standard formula as:

$$Simple\ Percentage = \frac{Value}{Total\ value} \cdot 100. \quad (1)$$

To assess customer satisfaction, the study employed the Customer Satisfaction (CSAT) metric, a widely recognized tool for quantifying user satisfaction levels. This method utilizes responses collected through Likert-scale surveys to gauge customer perceptions and experiences. The CSAT score representing customer satisfaction was calculated as:

$$CSAT(\%) = \frac{Total\ number\ of\ satisfied\ customers}{Total\ number\ of\ responses} \cdot 100. \quad (2)$$

The resulting C-SAT scores were then compared with the American Customer Satisfaction Index (ACSI) benchmark for interpretation (Godbole & Roy, 2008).

The American Customer Satisfaction Index (ACSI) was introduced in the year 1994 considered an evolution of the standard customer satisfaction measurement system (Fornell et

Table 1. Demographic profile of participants

Source: Interview data (September 2024).

No. of Participants	Age	Gender	Educational Qualification	Occupation	Experience With AI-powered Digital Insurance Services (Years)
1	68	Male	Post Graduate	Retired Teacher	3
2	70	Male	Diploma	Technician	5
3	67	Male	Post Graduate	Retired Officer	1
4	66	Female	High School	Homemaker	1
5	66	Female	Graduate	Nurse	4
6	70	Male	Diploma	Ex-servicemen	1
7	69	Male	Diploma	Electrician	2
8	72	Male	Matriculation	Farmer	2
9	68	Male	Matriculation	Salesman	1
10	66	Female	Post Graduate	Retired Teacher	3
11	66	Female	Matriculation	Saleswomen	2
12	67	Female	Matriculation	Home nurse	2
13	66	Male	Diploma	Plumber	4
14	67	Female	High school	Sales women	3
15	66	Male	Matriculation	Retired Clerk	1
16	67	Male	Graduate	Doctor	5
17	69	Male	Diploma	Mechanic	1
18	66	Female	Graduate	Retired officer	2
19	72	Male	Matriculation	Ex-service man	1
20	70	Female	Graduate	Homemaker	3

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al., 1996). It gives independent and scientific means of assessing customer satisfaction towards goods and services (Fornell et al., 1996). Customer satisfaction index in Q2 of 2024, the ACSI score is 77.9% (American Customer Satisfaction Index, 2024). The ACSI score is considered the benchmark of standard customer satisfaction measurement. This score is taken for the comparative analysis of customer satisfaction in this study.

Table 1 presents the demographic profile of the study's participants – older adults utilizing AI-powered digital insurance services. The sample comprised 20 individuals aged over 65, encompassing diverse educational and professional backgrounds and genders. Specifically, 60% were male, and 40% were female. Educational qualifications among participants included High School (10%), Matriculation (30%), Diploma (25%), Graduates (20%), and Postgraduates (15%). Occupations included both retired professionals and active workers. All participants had experience using AI-powered digital insurance services, ranging from 1 to 5 years. All participants were literate, actively engaged with AI-driven digital insurance platforms, and provided comprehensive responses during the interviews.

3. RESULTS

In the context of integrating artificial intelligence (AI) technologies into India's insurance sector, analyzing quantitative and qualitative data from older adult users is essential to comprehend their acceptance and satisfaction levels. The following analysis and findings are based on data from interviews conducted in September 2024 with 20 older adults in Kerala, India. The results of the study indicate customer perceptions and experiences with AI-powered digital insurance services, focusing on customer satisfaction. The following tables exhibit the study results regarding the experience of older adult users of AI-powered digital insurance services in years, customer satisfaction with perceived usefulness of AI-powered digital insurance services, customer satisfaction with perceived ease of use of AI-powered digital insurance services, customer satisfaction with chatbot services, and automated claim processing services.

Table 2. Experience of older adults using AI-powered digital insurance services

Source: Interview data (September 2024).

Years of Experience	Frequency	Percentage (%)
2023–2024	7	35%
2022–2024	5	25%
2021–2024	4	20%
2020–2024	2	10%
2019–2024	2	10%
Total	20	100%

Table 2 illustrates the duration of experience among older adults using AI-powered digital insurance services. A simple percentage method was employed to analyze and interpret the data. The findings indicate that 35% of participants began using these services between 2023 and 2024, suggesting a recent uptick in adoption. Additionally, 25% have been users since 2022, and 20% since 2021. The remaining participants have been engaged with AI-powered digital insurance services for four to five years. This distribution reflects a growing acceptance and adoption of digital insurance solutions among the older adult population in recent years.

Table 3 presents the findings from interviews conducted with 20 older adults in Kerala, India, assessing the 'Perceived Usefulness' of AI-powered digital insurance services. The interview questions were adapted from the Technology Acceptance Model (TAM) developed by Davis (1989), which identifies 'Perceived Usefulness' and 'Perceived Ease of Use' as fundamental determinants of technology acceptance. Participants responded to five questions using a five-point Likert scale, ranging from 'Strongly Disagree' (1) to 'Strongly Agree' (5). The Customer Satisfaction Score (CSAT) was calculated for each question using the formula:

$$CSAT(\%) = \frac{Number\ of\ Satisfied\ Customers}{Total\ Responses} \cdot 100. \quad (3)$$

The results indicate that the CSAT scores for the five questions ranged between 55% and 60%, with an overall mean CSAT score of 58%. These scores are below the American Customer Satisfaction Index (ACSI) national average of 77.9% reported

Table 3. Assessment of 'Perceived Usefulness' and customer satisfaction in AI-powered digital insurance services

Source: Interview data (September 2024). Interview questions (Davis, 1989).

	Perceived Usefulness							C-SAT	
No.	Interview Questions	Strongly Disagree (5)	Disagree (4)	Neutral (3)	Agree (2)	Strongly Agree (1)	Satisfied Customers	C-SAT	Overall C-SAT (Mean)
1.	Does using AI-powered digital insurance services help you to accomplish tasks more quickly?	1	2	5	8	4	12	60%	58%
2.	Does using AI-powered digital insurance services increase benefits?	1	2	5	9	3	12	60%	
3.	Does using AI-powered insurance services enhance effectiveness?	1	3	5	8	3	11	55%	
4.	Would using AI-powered insurance services make it easier?	1	2	6	8	3	11	55%	
5.	Is using AI-powered digital insurance services useful?	1	2	5	8	4	12	60%	

in the second quarter of 2024 (American Customer Satisfaction Index, 2024). The findings suggest that while older adults recognize some benefits of AI-powered digital insurance services, there is a need for improvement in enhancing their perceived usefulness. To increase customer satisfaction among older adult users, service providers should consider upgrading AI features, simplifying user interfaces, and offering targeted training programs to address older adults' specific needs and concerns.

Table 4 presents the findings from interviews conducted with 20 older adults in Kerala, India, assessing the 'Perceived Ease of Use' of AI-powered digital insurance services. The above interview questions were adapted from the Technology Acceptance Model (TAM) developed by Davis (1989), which identifies 'Perceived Usefulness' and 'Perceived Ease of Use' as fundamental determinants of technology acceptance. Participants responded to five questions using a five-point Likert scale, ranging from 'Strongly Disagree' (1) to 'Strongly Agree' (5). The Customer Satisfaction Score (CSAT) was calculated for each question using the equation 3.

The results indicate that the CSAT scores for the five questions ranged between 55% and 60%, with an overall mean CSAT score of 56%. These scores are below the American Customer Satisfaction Index (ACSI) national average of 77.9% reported in the second quarter of 2024 (American Customer Satisfaction Index, 2024). The findings suggest that while older adults find AI-powered digital insurance services relatively easy to use, there is a need for improvement. To enhance user satisfaction, service providers should consider simplifying user interfaces, offering targeted training programs, and addressing specific concerns of older adults to make

Table 4. Assessment of 'Perceived Ease of Use' and customer satisfaction in AI-powered digital insurance services

Source: Interview data (September 2024). Interview questions (Davis, 1989).

	Perceived Ease of Use							C-SAT	
No.	Interview Questions	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)	Satisfied Customers	C-SAT	Overall C-SAT (Mean)
1.	Is it easy to learn to use AI-powered digital insurance services?	1	2	5	8	4	12	60%	56%
2.	Is it easy to do AI-powered digital insurance services?	1	2	6	8	3	11	55%	
3.	Is your interaction with AI-powered digital insurance services is clear and understandable?	2	3	4	9	2	11	55%	
4.	Is it flexible to interact with AI-powered digital insurance services?	2	2	5	8	3	11	55%	
5.	Is it easy to get skilful in using AI-powered digital insurance services?	1	2	6	8	3	11	55%	

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the technology more accessible and user-friendly.

Table 5. Customer satisfaction regarding chatbots in insurance services

Source: Interview data (September 2024). Interview question (Bhattacherjee, 2001).

Response Category	Frequency	Satisfied customers	C-SAT Score
Very Satisfied	5		
Satisfied	6		
Neutral	6	11	55%
Dissatisfied	2		
Very Dissatisfied	1		

Table 5 exhibits the customer satisfaction levels among older adults concerning chatbot services in the insurance sector. During the interview, the participants were asked: How do you feel about the overall experience of chatbots in providing insurance services? (Bhattacherjee, 2001). This interview question was adapted from Bhattacherjee (2001) to assess user satisfaction. The Customer Satisfaction Score (CSAT) stands at 55%, indicating that a majority of users are satisfied with the chatbot services provided. However, this satisfaction level falls below the national average of 77.9% reported by the American Customer Satisfaction Index (ACSI) in the second quarter of 2024 (American Customer Satisfaction Index, 2024). This disparity suggests that while chatbot services are generally well-received, there is room for improvement to meet or exceed national satisfaction benchmarks. Enhancements in chatbot functionality, user interface, and responsiveness could contribute to higher satisfaction levels among older adult users.

Table 6. Customer satisfaction with automated claims processing services

Source: Interview data (September 2024). Bhattacherjee (2001).

Response Category	Frequency	Satisfied customers	C-SAT Score
Very Satisfied	4		
Satisfied	6		
Neutral	5	10	50%
Dissatisfied	3		
Very Dissatisfied	2		

Table 6 presents the customer satisfaction levels among older adults concerning automated claims processing services in the insurance sector. During interview, the participants were asked; How do you feel about the overall experience of automated claim processing services? (Bhattacherjee, 2001). This interview question was adapted from Bhattacherjee (2001) to assess user satisfaction. The Customer Satisfaction Score (CSAT) stands at 50%, indicating that half of the users are satisfied with the automated claims processing services provided. However, this satisfaction level falls below the national average of 77.9% reported by the American Customer Satisfaction Index (ACSI) in the second quarter of 2024 (American Customer Satisfaction Index, 2024). The disparity suggests that while automated claims processing services are beneficial, there is a significant need for improvement to meet or exceed national satisfaction benchmarks. Enhancements in system efficiency, user-friendliness, and transparency could contribute to higher satisfaction levels among older adult users.

During the conclusion of the interviews, participants were asked: "Can you describe any concerns or challenges you have experienced while using AI-powered digital insurance services, such as chatbots or automated claim processing?" In response, participants expressed several concerns regarding the use of AI-powered digital insurance services. These included apprehensions about potential financial losses, inadequate user training resources, and issues related to the security and privacy of AI-driven platforms.

From the above analysis, the following main conclusions of the study can be drawn:

1) The study comprised 20 literate older adults, with 60% identifying as male and 40% as female. All participants are current users of AI-powered digital insurance services.

2) There has been a noticeable increase in the adoption of AI-powered digital insurance services among older adults in recent years, indicating a positive trend in technology acceptance.

3) The mean Customer Satisfaction (C-SAT) score for 'Perceived Usefulness' was 58%, which is below the national average of 77.9% reported by the American Customer Satisfaction Index (ACSI) in the second quar-

ter of 2024 (American Customer Satisfaction Index, 2024). This suggests a need to enhance the utility of AI-powered digital insurance services to better meet the needs of older adults.

4) The mean C-SAT score for 'Perceived Ease of Use' stood at 56%, also falling short of the ACSI benchmark of 77.9%. This highlights the necessity for service providers to improve the user-friendliness of their platforms and offer training programs to assist older adults in navigating these services effectively.

5) Customer satisfaction with chatbot services in digital insurance was recorded at 55%, which is below the ACSI standard. This indicates that enhancements in chatbot functionality and responsiveness are required to elevate user satisfaction levels.

6) The satisfaction score for automated claims processing services was 50%, significantly lower than the ACSI average. This underscores the importance of improving the quality and reliability of AI-driven claims processing to better serve the older adult population.

7) The participants of the study also expressed concerns regarding the use of AI-powered digital insurance services, citing fears of financial loss, privacy issues, and security and safety concerns

4. DISCUSSION

The acceptance of AI-powered digital insurance services among older adults in India represents a pertinent area of contemporary research. This study employed an exploratory approach to understand acceptance of AI-powered digital insurance from the customer satisfaction perspective, utilizing insights from the literature review and results of interviews conducted in September 2024. Findings indicate a positive trend in the adoption of AI-powered digital insurance services among older adults in recent years. Analysis revealed that the mean CSAT scores for 'Perceived Usefulness' and 'Perceived Ease of Use' were 58% and 56%, respectively. These scores fall below the American Customer Satisfaction Index (ACSI) benchmark of 77.9% reported in the second quarter of 2024 (American Customer Satisfaction Index, 2024). This discrepancy underscores the need to enhance AI-powered digital insurance services to better cater to the usability and utility requirements of older adults. The findings of this study corroborated with existing literature, emphasizing the significance of perceived usefulness, perceived ease of use as pivotal factors influencing user satisfaction with AI-powered digital insurance services. These dimensions are integral to the Technology Acceptance Model (TAM), which posits that perceived usefulness and perceived ease of use directly impact technology acceptance among users (Davis, 1989), and user satisfaction significantly influences the intention to continue using a technology (Bhattacherjee, 2001). The perceived usefulness, perceived ease of use dimensions are key elements that impact user satisfaction (Jingzu et al., 2024).

Chatbots, which provide innovative interactive assistance for various insurance-related inquiries, yielded a CSAT score of 55% among older adult users. This figure also lags behind the ACSI benchmark, suggesting that chatbot functionalities require improvements to meet the specific needs of older adults. Similarly, AI-driven automated claims processing services received a CSAT score of 50%, indicating that only half of the users are satisfied with these services. This further emphasizes the necessity for quality enhancements in AI-powered claims processing to optimize satisfaction among older adults. These findings are corroborated by other studies. Nicolescu and Tudorache (2022) highlight that system quality, service quality, and information quality are critical dimensions that a chatbot must meet to provide a satisfactory customer experience. Similarly, Aulia et al. (2021) found that chatbot services' features positively affect customer satisfaction.

During interviews, participants expressed concerns about using AI-powered digital insurance services, including fears of financial loss, privacy issues, inadequate training resources, and security vulnerabilities. These aspects are supported by a study by Shandilya and Fan (2022), which examined older adults' experiences with AI-enabled technologies and found that while many older adults are eager to learn and use such technologies,

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they have concerns about AI systems' unpredictability and privacy issues. AI can improve access to care for older adults, but concerns include data privacy, lack of trust in AI decisions, and limited digital literacy (Wong et al., 2025). Therefore, designing AI technologies and services must be inclusive, secure, and empower older adults.

This study offers valuable insights for the insurance industry and policymakers; however, it is subject to certain limitations. The study was conducted with a relatively small sample size of 20 respondents, all from the state of Kerala, India. Consequently, the findings may not be generalizable to other regions within the country. Additionally, the study focused exclusively on older adults, thereby excluding perspectives from other demographic groups using AI-powered digital insurance services. This narrow focus may limit the applicability of the results to the broader population. Furthermore, the study did not focus on any specific insurance company but rather examined the industry as a whole within the Indian context. Future studies could benefit from analyzing individual companies to identify specific areas for improvement and by including a more diverse participant pool to enhance the generalizability of the findings. The results underscore the necessity of upgrading AI-powered digital insurance services and developing user-friendly AI interfaces tailored for older adults. Moreover, implementing comprehensive user education and training programs can significantly enhance digital financial inclusion. Despite these challenges, integrating AI technologies has initiated a significant transformation in customer perceptions and service delivery within India's insurance sector.

CONCLUSION

The integration of artificial intelligence (AI) is reshaping India's insurance sector by introducing automated claims processing and chatbot services aimed at enhancing customer experiences. Despite these advancements, adopting AI-powered digital insurance services among older adults presents challenges, particularly concerning usability and satisfaction. This exploratory study employed the Technology Acceptance Model (TAM), the Information System Continuance Model (ISCM), and the Customer Satisfaction (C-SAT) method to understand the acceptance of AI-powered digital insurance among older adults from a customer satisfaction perspective in Kerala, India. The findings revealed significant growth in the use of AI-powered digital insurance services among older adults in recent years. However, satisfaction levels related to 'Perceived Ease of Use' and 'Perceived Usefulness' were lower compared to the standard customer satisfaction scores reported by the American Customer Satisfaction Index (ACSI). Similarly, satisfaction scores for chatbot services and automated claim processing among older adults were also below the ACSI benchmark. The participants of the study also expressed concerns regarding the use of AI-powered digital insurance services, citing fears of financial loss, privacy issues, and security and safety concerns. These findings underscore the need to enhance the quality of AI-powered insurance services, introduce simplified AI interfaces tailored for older adults, and provide training assistance to help them navigate and understand these technologies effectively. In conclusion, while the digital transformation of the insurance industry in India, addressing the specific needs and concerns of older adults is crucial to ensure their acceptance and satisfaction with AI-powered digital insurance services.

AUTHOR CONTRIBUTIONS

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APPENDIX A

INTERVIEW QUESTIONS

Section A: Demographic Profile

1. What is your name?
2. What is your age?
3. What is your gender?
4. What is your highest level of education?
5. What is your current occupation or employment status?

Section B: Experience of using AI-powered digital Insurance Services

1. Do you have any prior experience using AI-powered digital insurance services? If yes, how many years?

Section C: Perceived Usefulness (Davis, 1989)
Scale: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

1. Does using AI-powered digital insurance services help you accomplish tasks more quickly?
2. Does using AI-powered digital insurance services increase benefits?
3. Does using AI-powered insurance services enhance effectiveness?
4. Would using AI-powered insurance services make it easier?
5. Is using AI-powered digital insurance services useful?

Section D: Perceived Ease of Use (Davis, 1989)
Scale: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

1. Is it easy to learn to use AI-powered digital insurance services?
2. Is it easy to do AI-powered digital insurance services?
3. Is your interaction with AI-powered digital insurance services is clear and understandable?
4. Is it flexible to interact with AI-powered digital insurance services?
5. Is it easy to get skilled in using AI-powered digital insurance services?

Section E: Customer Satisfaction with Chatbot Services (Bhattacherjee, 2001).
(Scale: Very Satisfied, Satisfied, Neutral, Dissatisfied, Very Dissatisfied)

1. How do you feel about the overall experience of chatbots in providing insurance services?

Section F: Customer Satisfaction with Automated Claim Processing (Bhattacherjee, 2001).
(Scale: Very Satisfied, Satisfied, Neutral, Dissatisfied, Very Dissatisfied)

1. How do you feel about the overall experience of automated claim processing services?

Section G: Customer Suggestions

1. Can you describe any concerns or challenges you have experienced while using AI-powered digital insurance services, such as chatbots or automated claim processing?