

**INSURTECH ADOPTION IN INDIA: UNDERSTANDING
CUSTOMER ACCEPTANCE OF ONLINE HEALTH
INSURANCE SERVICES.**

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Abstract

The insurance sector in India is shifting rapidly, hence it is crucial to know the evolving expectations and behaviors of consumers. The study identifies the factors that influence the Indian health insurance customers to utilise online health insurance portals. The study is exploratory research in nature and based on Unified Theory of Acceptance and Use of technology (UTAUT). The data was gathered by choosing simple random sampling, and the views of 300 users of online health insurance in India were analysed. A standardized questionnaire was used to gather the data. The data was analysed using Cronbach's Alpha, KMO Bartlett's Test, and Principal Component. The study revealed seven components including, performance expectancy, effort expectancy, facilitating conditions, social influence, trust in Insurtech and behavioral intention significantly impact customer adoption behavior. Further studies can explain how Insurtech is used by different segments of the Indian population in the long run.

Keywords: Behavioral Intention, Insurtech, Online Insurance, Technology Adoption, UTAUT.

1. Introduction

Technological advancements are changing the way organisations and customers interact with the global insurance industry (Malika Shuxratovna & Nuriddin Rustam Ugli, 2021). The number of Indians adopting digital health insurance has increased in these days due to the convergence of new technology, favourable government laws and the adverse consequences of pandemic (Kumar, 2017). Customers are increasingly likely to choose online insurance solutions due to their ease and convenience (Harris & Goode, 2010). Recent studies indicate that consumer willingness to adopt Insurtech platforms depends on both technological preparedness and trust (Liu et al., 2023). Insurance coverage is low in developing nations

because of poor insurance literacy, lack of trust, and high transaction cost. Digital literacy is a key factor in the adoption of Insurtech and the general inclusion of insurance (Kiwauka & Sibindi, 2024). Those with greater ability to use mobile and online services were much more likely to take up insurance and Insurtech adoption itself mediated the effect of literacy on inclusion (Saeed & Arshed, 2024). These findings show that without fundamental digital abilities, people stay separated from insurance solutions even when technology exit. Similarly behavioral elements including perceived value, trust and awareness have been repeatedly identified as significant predictors of digital insurance adoption (Gebert-Persson et al., 2019). In established economies, younger cohorts (Millennials/ Gen Z) increasingly expect smooth online service and customised policies, whereas older customers may remain hesitant or prefer human advisory channels (Dharmesti et al., 2019).

Using UTAUT, researchers generally consider Performance and Effort Expectancy, Facilitating Conditions and Social Influence as major variables of technology use (Oshlyansky et al., 2007). The Literature makes it clearer that trust in Insurtech suppliers influence the decision of online health insurance client (L. Lin & Chen, 2020). Even with the assistance of technology and laws, it is insufficient to address the primary issues of low digital literacy, security concerns and privacy difficulties that hinder individuals from adopting technology (Zarei et al., 2019). UTAUT variables of trust have not yet been covered in studies on user behaviour in health insurance and trust in insurtech. Therefore, this study is significant as it examines how UTAUT factors and trust in Insurtech affect the expectations and usage of online health insurance in India. The findings are expected to assist insurance companies and technology developers boost their customers' confidence and engage in digital insurance services.

2. Literature Review

• The transformational Role of Insurtech in Modern Insurance Operations.

Insurtech is a term that carries digital technology into insurance industry, making the insurance business more efficient, reformed and render better service to clients (Yaneva, n.d.). The adoption of Insurtech technology and system has placed the insurance industry on the verge of an era of revolution (Braun & Schreiber, n.d.). Insurance is not an exception to the current financial trend towards technology (Hassan et al., 2023). The insurance industry's explosive growth has given rise to new products and services, applications, and business strategies (Niraula & Kautish, 2019). Technological upheavals and highly competitive market conditions are restructuring the limits of financial services (Yan et al., 2018). Large data sets can help insurers target services more effectively, manage more efficiently, and make decisions based on information that may result in innovative and strategic growth (Stanly, 2024; Usendiah et al., 2022). These days, insurance industry is being revolutionised by various technologies including cloud computing, wearables, block chain, chatbots, artificial intelligence and big data (Ostrowska, 2021). This will help companies to maintain their competitiveness in the market while also helping them in improving operational efficiency and their client value proposition through the usage of new technology (Aduloju et al., 2014). Using technologies based on big

data, AI, IoT and block chain reducing insurance costs, including underwriting costs (Akter et al., 2022). By tackling actual insurance issues like moral hazard and adverse selection insurance companies can utilize predictive analytics and the data driven risk profiles to estimate the overall risk profiles (Malika Shuxratovna & Nuriddin Rustam Ugli, 2021). However, the industry has encountered difficulties like cyber security threats, data privacy and corruption and regulatory compliance (Wang, 2021). Insurtech must be technologically competent on the one hand, and customer and organisational readiness with execution capabilities on the other hand (Prakhar Harit, 2021). The empirical evidence suggests that digital insurance is preferred for operational advantage and cost efficiency, but it carries certain privacy risks as well as certain areas of weaknesses (Yu & Chen, 2018).

According to J. S. C. Lin and Hsieh (2012), incumbents will have to collaborate with insurtech and digital platforms to fulfil the potential of profiling opportunities focused on effective claim management, customised services, and behavior-led predictive underwriting. Interest in Insurtech has elevated in India because of the India Insurtech Association's collective efforts to establish the nation as a global centre for Insurtech by uniting a thriving insurance technology and collaborative ecosystem (Alpesh Shah et al., 2021). Among other technological

advancements, big data analytics and IoT provide substantial support for innovation in the conventional insurance value chain (Mohamed et al., 2018). According to Halima and Yassine, (2022), insurtech have grown quickly by developing new value-added services, extending the limits of product innovation, and generating significant network implications. The risk-pooling mechanism of generic insurance is driven by risk-based assessment of Insurtech premiums is far more widespread, and has started to be used more widely as an outcome of advancements in accessibility to data and modelling ability (Holliday, 2019). The Insurtech's transition from pure insurance to more general applications entail the financial appraisal of physical data and add-on services that provide solution for all customer related issues (Kalyani & Pathak, 2020). Analytics are helping insurers to gain insights in crucial areas including the identification of fraud and its prevention, service to clients, customisation of products and services, and claim settlement (Eling & Lehmann, 2018). It is essential to embrace sophisticated automation and explore what cannot be automated, particularly regard to AI and its robust computing and storage capabilities (Rawat et al., 2021).

- **Unified Theory of Acceptance and Use of Technology (UTAUT)**

An extensive theoretical framework for understanding patterns of technology adoption is established by Venkatesh et al., (2003) through UTAUT. It merges accepted models to define variables for technology adoption which contain performance expectancy characteristics together with social influence measures, scales to measure effort expectancy and facilitating or enabling conditions. Users primarily employ performance expectancy effects to forecast their intents when using technology, but as they gain more experience, the effort expectancy elements become less significant (Chao, 2019). The adoption of technology gets substantially

influenced by social behaviors within mandate usage spaces as well as when targeting female or elderly groups(Oshlyansky et al., n.d.) .

Users perceive technology utilization to bring performance advantages along with useful benefits which together form performance expectancy(Dwivedi et al., 2019). According to the research conducted by Salloum et al. (2019), customers rely their adoption decisions for online insurance services on perceived utility, which goes beyond established trust measures. These findings were supported by Ku and Lee, (2023) when they demonstrate performance expectancy stands as a main element influencing customer decision to utilize digital insurance platforms. People tend to choose technology implementations which provide distinct benefits and improve the performance of their tasks(Cimperman et al., 2013).

Using technology brings ease to everyday practice under the term effort expectancy(Hoque & Sorwar, 2017). User adoption behavior in digital platforms especially Insurtech strongly depends on system usability (Schmidt, 2018). According to (Zarifis & Cheng, 2022), while adopting fintech services in the insurance industry, customers prioritize system usability. Several research studies demonstrate that effort expectancy directly influences adoption intentions, as individuals are willing to accept digital insurance when devices and platforms have simple user interfaces (Amnas et al., 2025; Lanfranchi & Grassi, 2022).

Social influence is the result of individuals' expectations regarding the appropriate use of technology, which is shaped by influential people in their lives(Sleiman et al., 2021). Research undertaken by Ricky and Sfenrianto (2024), proves users' social requirements function as main determining elements for adopting Insurtech solutions. The study by Susanto and Aljoza (2015) also highlighting the trust and social influence outweigh perceived usefulness and ease of use in driving e-government adoption, especially in contexts where institutional credibility is a concern. Peer influence and significant personal choices are valued in traditional cultural contexts across communities (de Andrés-Sánchez & Gené-Albesa, 2023). On the other hand, the study by Palacios-Marqués et.al. (2022) revealed that user behavior was shaped more by frequent use, trust, and individual inventiveness and social influence had no discernible impact on the decisions taken for technology adoption.

The use of technology requires services and resources which are labelled as facilitating conditions (Saini & Khasa, n.d.). Emphasising the need of institutional support and resource availability in higher education environments, the study by Gunasinghe et al. (2020) shown that facilitating conditions greatly affect academicians' behavioral intention to embrace e-learning. The findings of Lee et al., (2023) shows that technological infrastructure and similar conditions function as essential elements that foster actual technological adoption. Ricky and Sfenrianto (2024) demonstrated that facilitating conditions display limited importance within their research due to differences in technology infrastructures across regions. Strong facilitating conditions play a pivotal role in digital adoption because these structures create essential functionality particularly when technology resources are fundamentals (Rudhumbu, 2022) .

The adoption rate of digital technology by users in insurance-related financial services strongly depends on trust levels (Mcknight et al., 2011; Uma Maheswari, 2018). Trust functions as the primary element that determines insurance customers' adoption of digital chatbots exceeding their assessments of usefulness and ease of use (de Andrés-Sánchez & Gené-Albesa, 2024). The assessment of Insurtech service reliability, privacy, and data security challenges lead to customer hesitancy in adopting Insurtech solutions (Amnas et al., 2025; Saeed & Arshed, 2024). Adequate trust-building systems which focus on transparent data practices and security protocols create strong conditions for Insurtech adoption by customers (Kiwanuka & Sibindi, 2025).

The initial desire of a person to engage in a specific behaviour, which in turn leads to actual technology use, is measured by behavioral intention variable (Mourya et al., 2023). It stands as the most substantial predictor of the way individuals would adopt advanced technology (Wu & Lim, 2024). Research conducted by Yoga Anunggita and Suryadi (2024) and (Hassan et al., 2023) showed that behavioral intention acts as the intermediary force which links technology acceptance factors to actual use of Insurtech services. The study by Ku and Lee (2023) explains behavioral intention as a vital middle factor which performance expectancy and facilitating conditions fundamentally determine.

The direct utilization of technology mainly depends on behavioral intentions as well as facilitating conditions (Alalwan et al., 2017). Usage behavior relates directly to behavioral intention and external facilitating conditions which include technical support and infrastructure (Chao, 2019; Venkatesh et al., n.d.). According to Pahuja and Chitkara (2016), actual fintech service use occurs directly through structural modelling from users' behavioral intentions. The measurement of actual usage activity constitutes an essential practice outcome which demonstrates successful Insurtech adoption implementation (Gupta, 2023).

3. Research Objectives

- To study how the trust in insurtech, performance expectancy, facilitating conditions, effort expectancy and social influence affect the consumers' behavioral intentions and usage behavior with regard to online health insurance services in India.

4. Methodological Framework of Research

Exploratory research design is used in this study which aims at exploring the factors that contribute to the Indian health insurance consumers' acceptance of online insurance platforms which are at the core of the increasingly booming Insurtech ecosystem. The research discovers and analyses the factors which influencing the users' acceptance and adoption of the technology through an extended version of the UTAUT, including traditional technology adoption variables and the extended variable- trust in Insurtech.

• Measurement Scale

The main theoretical framework through which multi-item constructs were developed in the current work was the UTAUT model by Venkatesh, Morris, Davis, and Davis (2003). They

were extended with domain-specific constructs to online health insurance and Insurtech (Chao, 2019; de Andrés-Sánchez & Gené-Albesa, 2023; Guo et al., n.d.-; Palacios-Marqués et al., n.d.; Rudhumbu, 2022). Each item was rated using 5-point Likert scale, where 1 represented strongly disagree and 5 represented strongly agree. The item mean scores vary between 3.32 to 3.53 indicating that majority of the respondents hold a moderate to positive opinion. Standard deviations ranged between 1.124 to 1.256 indicating that answers were distributed normally and further statistical analysis can be carried out using the information obtained.

PE (Performance Expectancy), which measures the perceived benefits and usefulness was measured by using four statements including “Online health insurance helps me to accomplish tasks more quickly.” These items were taken from previous studies conducted by Chao (2019); Rudhumbu (2022). Statements like “Learning to use online health insurance services is easy for me” were included in Effort Expectancy (EE), which focused on the platform’s usability and learnability. According to de Andrés-Sánchez & Gené-Albesa (2024); Guo et al., n.d.-; Rudhumbu (2022), this dimension is essential to understand how perceived simplicity influences user intention. Social Influence (SI) assessed the extent to which a person’s decision to use online insurance services is influenced by the views of their family and friends. Based on the theoretical foundations of UTAUT, items such as “People who influence my behaviour think that I should use online health insurance services” were verified in multiple research studies (Palacios-Marqués et al., n.d.-; Venkatesh et al., 2012).

Four parameters measuring the availability of technology resources, expertise and support were used to evaluating the Facilitating Conditions (FC). As a representation of infrastructure and environmental preparedness, the statement “I have the resources necessary to use online health insurance services” is significant. These observations align with the previous research on technology adoption (Alalwan et al., 2017; Venkatesh et al., 2003). A crucial concept in the light of digital environment, Trust in Insurtech (TI) was assessed by using four statements, including “I trust Insurtech providers protect my personal and financial information.” Using frameworks developed by Amnas et al. (2025); Chao (2019); Palacios-Marqués et al., n.d., this construct reflects consumers’ trust in the security, integrity and reliability of digital health insurance platforms.

“I intend to use online health insurance in the future” is one of the three statements used to measure Behavioral Intention (BI), which measures users’ commitment to future adoption and the dependent variable Usage Behaviour (UB) was analysed using four statements such as “I frequently use online health insurance services” to capture users’ real engagement and behavioural patterns. Studies by Guo et al., n.d.-; Rudhumbu (2022); Venkatesh et al. (2012) have shown that these elements aid in bridging the gap between intention and action.

5. Findings of the study

Preliminary statistical analysis was carried out to ensure the internal consistency and reliability of measurement instruments. To verify the dataset’s accuracy and usability, these include

reliability testing with Cronbach's Alpha and descriptive scale statistics. The measurement scale's internal consistency and reliability was assessed using Cronbach's Alpha, which is a widely recognized reliability coefficient for evaluating the degree to which items in constructs are interrelated (Taber, 2018). In this study, Cronbach's Alpha for the entire 26 scale-item was found to be 0.883, which exceeds the commonly accepted threshold of 0.70 (Nunnally & Bernstein, 1995). A significant measure of the internal consistency, which shows that the instrument's items assess the intended latent components.

Scale statistics, which compile the overall mean, variance, and standard deviation of 26-item instrument, brought more insight into the scale. With a variance of 246.833 and a standard deviation of 15.711, the scale's overall mean was 88.66. the scale items generated a sufficiently variable data distribution appropriate for advanced statistical modelling, as seen by these numbers, which show a sufficient dispersion of responses.

KMO measure and Bartlett's Test of Sphericity is used to assess the adequacy of data and structure detection prior to performing factor analysis. This study has KMO value which is above the acceptable threshold of 0.60, since it was well above that, it meant that sampling was more than good enough for exploratory factor analysis. Barlett's test of sphericity yielded highly significant result ($\chi^2 = 2195.276$, $df = 325$, $p < 0.001$), indicating that the variables were correlated enough to do the factor extractions.

The data were subjected to PCA with Varimax rotation to extract the underlying structure. The eigenvalues greater than 1 resulted in seven of the component solution that accounted for about 53.95% of biplot cumulative (total) variance. A reasonably good one to explain the factor structure which is appropriate to describe the main dimensions of the constructs under observation. Regarding UTAUT and its extensions, all extracted components are very close to the conceptual framework.

Table 5.1 Explaining Breakdown of Factor Contributions to Overall Variance

Initial (Preliminary) Eigenvalues			Post Extraction Value			Adjusted Rotation Value		
Total	Variance (%)	Cumulative (%)	Total	Variance (%)	Cumulative (%)	Total	Variance (%)	Cumulative (%)
6.625	25.479	25.479	6.625	25.479	25.479	2.163	8.320	8.320
1.422	5.470	30.950	1.422	5.470	30.950	2.156	8.292	16.611
1.342	5.163	36.113	1.342	5.163	36.113	2.149	8.265	24.877
1.248	4.801	40.913	1.248	4.801	40.913	2.094	8.055	32.932
1.198	4.608	45.521	1.198	4.608	45.521	2.028	7.799	40.731
1.135	4.365	49.886	1.135	4.365	49.886	1.720	6.616	47.347
1.056	4.063	53.950	1.056	4.063	53.950	1.717	6.603	53.950
.989	3.805	57.754						

.936	3.599	61.354					
.828	3.184	64.537					
.818	3.145	67.683					
.770	2.960	70.643					
.751	2.887	73.530					
.708	2.722	76.252					
.667	2.564	78.816					
.632	2.430	81.246					
.616	2.370	83.615					
.605	2.328	85.943					
.565	2.172	88.114					
.537	2.065	90.179					
.500	1.925	92.104					
.473	1.817	93.921					
.448	1.723	95.645					
.423	1.626	97.270					
.373	1.436	98.707					
.336	1.293	100.000					

(Source: Statistical results derived from Researcher's data processing)

Table 5.2 Rotated Component Matrix^a

	Component						
	1	2	3	4	5	6	7
PE1					.735		
PE2					.678		
PE3					.542		
PE4					.628		
EE1	.636						
EE2	.621						
EE3	.560						
EE4	.668						
SI1							.659
SI2							.439
SI3							.588
FC1				.678			
FC2				.480			
FC3				.714			
FC4				.681			
TI1			.543				

TI2			.588				
TI3			.731				
TI4			.513				
BI1						.591	
BI2						.603	
BI3						.763	
UB1		.735					
UB2		.665					
UB3		.538					
UB4		.524					

(Source: Statistical results derived from Researcher's data processing)

Principal Component Analysis was used to reduce the data set's dimensions by identifying key components that explain the most variance. Varimax Rotation with Kaiser Normalisation was applied to make the factor structure more transparent and easier to interpret by maximising the variance of factor loadings. The rotation converged in 8 iterations, indicating a stable and reliable factor solution was achieved.

The seven-factor matrix of variable responses presented strong distinct loadings after rotation. The analysis showed that the first component exclusively measured items from the Effort Expectancy (EE) section demonstrating that users valued user-friendly technology during the adoption process. A balance of items assessing Usage Behaviour (UB) comprised the second aspect of this study and pertained to practical online insurance service use among users. TI Items strongly dominate the third component in the analysis which demonstrates its essential role in digital insurance security given that user needs trust as their primary criterion. The fourth aspect of Facilitating Conditions (FC) established that digital adoption required both infrastructure support and digital resources alongside quality customer services. The assessment of Performance Expectancy (PE) indicated users would powerfully analyse and take notice of the benefits available through online insurance services. The Behavioral Intention (BI) items in the sixth component revealed high significance of digital adoption as predicted through user attitudes and intentions. The seventh element contained items that showcased Societal Influence (SI) effects on consumer conduct through societal guidelines and peer family-endorsed methods. Empirical evidence from factor analysis validates that theoretical components exist with empirical power as they are common elements in India's adoption of Insurtech. This investigation demonstrates that customer acceptance behaviour contains multiple establishment points. The decision-making process of customers focuses first on digital trust along with usability and perceived performance gains. Social circles together with customer assistance availability and technology accessibility as well as behavioural intentions and actual usage require constant examination as facilitative conditions.

6. Suggestions and Conclusion

Reliability in Insurtech together with Performance Expectancy and Effort Expectancy serve as fundamental factors which promote online insurance adoption in India. To build user trust insurers need to develop digital platforms that maintain safety and security of user data. Insurtech user interfaces must become simplified and customer journeys need streamlining to enhance user experience which generates stronger Effort Expectancy. To encourage Social Influence, digital insurance providers need to plan marketing initiatives at community and social levels through testimonials from customers or peer user involvement. The IRDAI alongside relevant policymakers must continue promoting digital innovation by developing programs to educate customers and creating transparent digital methods for rural and semi-urban regions which still have low digital literacy. The findings presented in the study deliver meaningful implications that affect major stakeholders operating in insurance and technological domains. Insurance providers along with Insurtech companies need to prioritize enhancing Effort Expectation and fostering trust due to their product solutions focused on easy usage and precision. The second priority involves creating transparent communication methods and protecting data alongside efficient support systems that optimize conditions. The government and regulatory agencies should introduce programs that boost digital education and financial literacy because this combination of initiatives would encourage more population segments to utilize digital practices.

7. Scope of Further Research

This research provides a means for further investigations in several areas. The future studies could integrate the moderating effect of demographic variables like educational level, digital literacy, or regional disparity could help to refine understanding of adoption behaviour. Second, a second set of comparisons could be made between various digital providers, namely private vs public insurance providers. Beyond that, a longitudinal study could help identify behavioral trends that are emerging post pandemic, and, because of which, Insurtech platforms can learn how consumers remain engaged with the services after this catastrophe. Finally, the sample base could be expanded to include rural populations and qualitative interviews could help contribute richer, grounded more interpretations of user behaviour.

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