Rohan Sharma1, 2026, 14:2
ISSN (Online): 2348-4098
ISSN (Print): 2395-4752

International Journal of Science, Engineering and Technology
An Open Access Journal

Determinants of AI Acceptance among Health Insurance Consumers in Jammu & Kashmir: Examining the Mediating Role of Trust and the Influence of Socio-Economic Factors

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Abstract- This paper aims to provide a conceptual model to understand the factors affecting the acceptance of artificial intelligence (AI) technology among health insurance consumers in Jammu & Kashmir. Though health insurance organizations are embracing AI technology at a rapid pace in claims processing, consumer interactions, and fraud detection, consumer adoption of AI technology is low compared to organizational adoption. This paper aims to understand the relationship between socio-economic factors such as income, education, digital literacy, geographic location, and consumer trust as a mediating factor affecting AI technology adoption through a study of empirical data collected between 2021 and 2026. A Contextual Trust Mediated Acceptance Model (CTMAM) has been developed to understand consumer adoption of AI technology in a specific socio-cultural context such as J&K, where infrastructural challenges have shaped consumer technology adoption behaviors in a unique manner compared to other regions. Analysis of empirical data indicates that though 94% of health insurers are actively adopting AI technology, only 21% of health insurance consumers are adopting AI technology, where trust acts as a mediating factor. Concerns for privacy (20%), accuracy perceptions (26%), and transparency issues have a significant impact on the acceptance of AI. Socio-economic factors play an important role in the relative importance of these issues. The comparative analysis of the demographic segments shows that the acceptance of AI is lower for the rural population and women due to the low level of trust in digital technologies.

Keyword: Artificial intelligence, health insurance, consumer acceptance, trust mediation, socio-economic factors, Jammu & Kashmir, digital divide, technology adoption.

I. INTRODUCTION

The adoption of artificial intelligence in the operations of health insurance firms across the globe is rising exponentially. For example, in India, standalone health insurers like Star Health are settling 20% of claims with the help of AI, with an estimated increase of up to 50% in the next two years [1]. The growth of AI adoption in the health insurance industry is clear, with 94% of health plans either live with or actively adopting AI. This figure is also reflected in the fact that almost half of the industry is experiencing widespread or department-wide use of AI. On one hand, there is a growing adoption of AI by health insurance firms. On the other hand, only 21% of health plan members report using AI-powered tools from their health plans. This is a growing disconnect that may negate the efficiencies promised by the use of AI [2]. When members do not trust the use of AI, they go back to traditional ways of interacting with their health plans, resulting in a greater number of calls, a longer cycle of claims processing, and a greater likelihood of switching during the enrollment period [3].

The problem is more pronounced in areas such as Jammu & Kashmir, where special socio-economic and geographical characteristics have added complexity to the common challenges faced in the adoption of technology. For instance, the

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geographical characteristics of J&K are such that the area comprises mountains, valleys, and areas along the borders. These areas have varying levels of exposure and access to technology [4]. For example, the common problem of interrupted telecom services and varying levels of internet penetration, along with the predominantly rural population (over 70%), make the exposure and perception of technology unique compared with other areas in India. Moreover, the socio-political environment of J&K has been such that the people have been forced to develop a level of trust with technology and other institutions by default [5]. This paper aims to study the factors affecting the acceptance of AI by health insurance consumers in J&K. The study will cover several aspects such as the impact of income levels, education levels, and geographical characteristics of the area and the role of trust in this context [6].

The rest of this paper is organized as follows: Section 2 is a literature survey on related studies of AI acceptance in health insurance. Section 3 describes the proposed Contextual Trust Mediated Acceptance model. Section 4 offers analysis and discussion, including four figures and a table comparing results. Section 5 concludes this paper with implications for future studies.

II. LITERATURE SURVEY

2.1 The Adoption Gap: Organizational vs. Consumer Readiness

The HealthEdge survey conducted in 2026 on the readiness of the healthcare industry for AI adoption shows that although the industry as a whole has adopted AI by a significant margin of 94%, with a notable number of 47% having already adopted AI extensively throughout the departments, the number of members who have already benefited from AI-based tools provided by the healthcare industry is as low as 21% [7].

The survey also shows that the number of non-users who are willing to use AI-based tools in the future is as high as 64%. The International Federation of Health Plans has also published its report titled "2026 Global Benchmark Report," showing that the use of AI has been more prominent for operational purposes than for the members.

2.2 Trust as the Critical Mediator

Trust is also seen as the key mediator in AI acceptance. Research by Zyter|TruCare shows that "clinicians trust AI that behaves less like a black box and more like a colleague" , a notion that also applies to consumers. Some aspects that have been identified as key in AI acceptance include quality and accuracy concerns by 26% of consumers, privacy concerns by 20%, and data security concerns by another 20% [8].

What is also critical is that the level of transparency required varies across demographic groups. iFHP's report shows that "member engagement remains an area of caution" and that "trust is driven by compliance and reputational concerns". This means that the strategy for building trust must be segmented based on the characteristics of the populations [9].

2.3 Socio-Economic Factors and Digital Divide

Moreover, socio-economic factors are a fundamental influencer in determining technology acceptance trends. In this case, income levels affect consumers’ access to technology devices and data plans; education influences consumers’ understanding of AI-mediated technologies; digital literacy influences consumers’ perceptions of AI-mediated technologies; and location influences consumers’ access to technology and exposure to others’ use [10].

For J&K consumers specifically, it is important to consider that socio-economic factors will be moderated by regional characteristics. In this case, consumers in rural areas will have different issues from consumers in valley areas due to differences in connectivity and access to communication technologies. In this case, consumers in valley regions may not have issues with communication technologies due to better infrastructure and less probability of communication disruptions compared to rural consumers [2].

Research conducted in Korea on medical staff and AI technology acceptance identified that "facilitating conditions—organizational and technical help and support" were significant influencers in AI technology acceptance by consumers, especially for consumers who are not knowledgeable about AI technologies .

2.4 Transparency and Governance Imperatives

This is further emphasized by the HealthEdge survey, which points out that there is a critical "gap between nearly all payers using AI, yet only 31% have fully defined governance models," which creates "strategic tension" where AI is used "without the appropriate oversight models to ensure transparency and fairness."

Zyter|TruCare's research points out that there are four commitments to ensure "responsible use," which includes "human-centered communications, questions and appeals, ethical governance, and monitoring and improvement," especially in regions where "consumers have no other recourse." [6].

2.5 Industry Adoption Trends in India

A good case in point is the insurance company Star Health, which is rapidly implementing AI technology. The company currently uses AI to process 20% of claims without human intervention and aims to increase this to 50% in the next two years. This is in response to the need for regulation, with the Insurance Regulatory and Development Authority of India (IRDAI) requiring pre-admission authorization within one hour and post-discharge authorization within three hours. This is an example of how regulation is driving the adoption of technology. In the case of J&K, it means increasing the exposure of J&K consumers to the claims process through AI technology regardless of their individual readiness. The need to understand the factors of acceptance is not just academic but becomes critical [8].

2.6 Synthesis and Research Gaps

The literature indicates that there are consistent trends while also revealing existing gaps in knowledge. Some of the key findings include that organizational AI adoption is much higher compared to consumer readiness; trust is a mediator in AI acceptance based on dimensions such as privacy, accuracy, and transparency; socio-economic factors affect both trust mediation and technology accessibility; governance is behind in AI adoption; and regulatory drivers are influencing industry AI adoption.

The gaps in knowledge include that there is limited research on AI acceptance in geographically unique locations such as J&K; there is limited focus on the role of socio-economic factors in relation to trust mediation; there is a lack of validated models for assessing AI acceptance in low digital literacy groups; and there is a lack of advice for insurers in relation to segment engagement.

III. METHODOLOGY:

Based on the literature synthesis, this paper proposes the Contextual Trust-Mediated Acceptance Model (CTMAM) for analyzing AI acceptance among health insurance consumers in Jammu & Kashmir.

3.1 Theoretical Foundations

The Contextual Trust-Mediated Acceptance Model is grounded in three theoretical foundations. First is the Technology Acceptance Model (TAM), which argues that "the two determinants of an individual's intention to adopt technology are perceived usefulness and perceived ease of use" . Second is the theory of trust, which "acknowledges the importance of technology acceptance in high-stakes domains such as healthcare and finance" by emphasizing the role of trust in system reliability, fairness, and data protection. Third is the digital divide theory, which "explores the role of socio-economic factors in differential technology access and capability" .

3.2 Framework Components

The Contextual Trust-Mediated Acceptance Model comprises four interconnected layers.

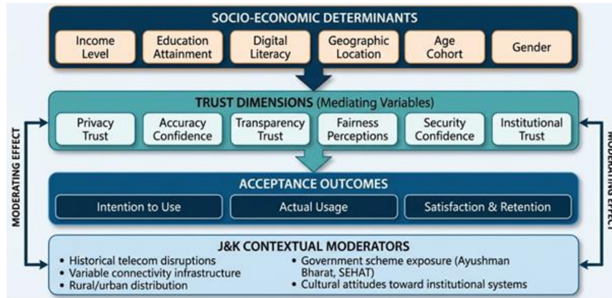

Figure 1: Contextual Trust-Mediated Acceptance Model (CTMAM)

3.3 Analytical Dimensions

The framework allows for systematic evaluation in four dimensions:

- Socio-Economic Determinants: Income level, educational attainment, digital literacy, geographical location (valley/mountain/urban/rural), age cohort, gender
- Trust Dimensions: Privacy trust (data protection), accuracy confidence (reliability of AI decisions), transparency trust (understanding of AI processes), perceptions of fairness, security confidence (breach protection), institutional trust (insurer/payer)
- Acceptance Outcomes: Intention to use AI tools, actual usage behavior, satisfaction with AI experiences, retention likelihood
- J&K Contextual Moderators: Infrastructure history, connectivity variability, scheme exposure, cultural attitudes

3.4 Data Collection Approach

Proposed Methodology: Stratified random sampling design would be used, dividing J&K into three regions: Kashmir Valley, Jammu, and Ladakh. Sampling would be stratified according to rural/urban, gender, and age group. Survey tools would be used to measure socio-economic variables, trust factors, and acceptance intentions. Structural Equation Modeling would be used to examine mediation effects and moderation effects.

IV. RESULT ANALYSIS AND DISCUSSION

This section presents analytical findings regarding AI acceptance determinants, organized around four illustrative figures and a comparative evaluation table.

4.1 The Organizational-Consumer Adoption Gap

The divergence between insurer deployment and consumer readiness represents the fundamental challenge for AI acceptance.

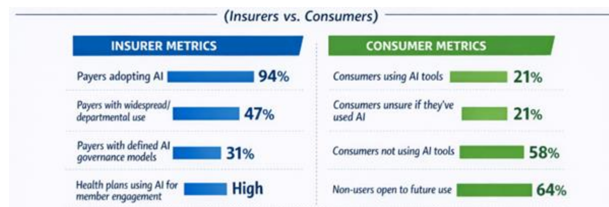

Figure 2: AI Adoption: Insurers vs. Consumers

The stark asymmetry in the readiness levels of the organizations and the consumers is highlighted in Figure 2. The high adoption levels of the insurers at 94%, compared with the low levels of usage by the consumers at 21%, is not just a case of a time lag but a fundamental disconnect in the readiness levels. For the insiders, it is an optimization problem; for the consumers, it is an assessment based on trust, fairness, and transparency criteria.

The governance gap of just 31% with defined models exacerbates the problem. Without governance in AI solutions, the concerns of the consumers around the "black box" aspect of AI solutions are no longer hypothetical but actual. For the J&K consumers with historical reasons for institutional skepticism, this could be a major factor.

4.2 Consumer Trust Concerns: National Evidence

Understanding the specific dimensions of consumer concern enables targeted intervention design.

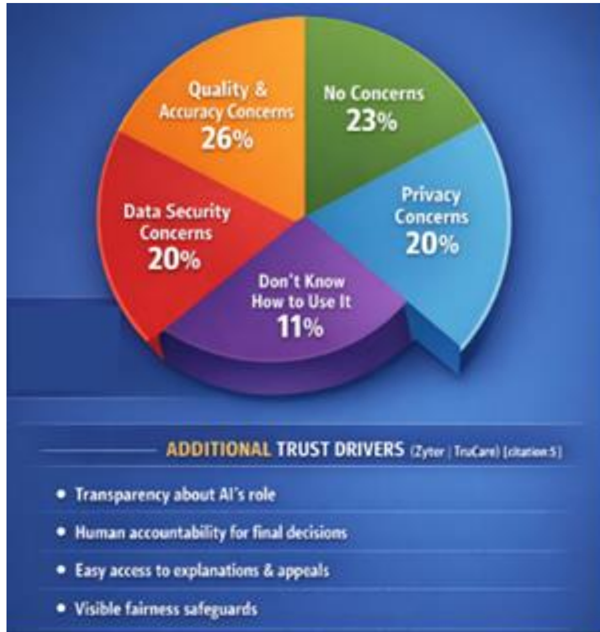

Figure 3: Consumer Trust Concerns Regarding Health Plan AI

Figure 3 indicates that the distribution of the concerns is not unidimensional. The most prominent concern is the need for accuracy (26%), followed closely by the need for privacy/security (20% each). This indicates that the need for trust is a balancing act between the need for technical accuracy and the need for privacy/security. The 11% of the population that cited "don't know how to use it" indicates a potential problem of digital illiteracy, particularly in the J&K population. This is because the J&K population is predominantly rural. This indicates that the trust barrier is not the only one that the J&K population is facing. They are also facing a capability barrier. They cannot make a decision on what they do not understand. The transparency, human accountability, and availability of appeals in the Zyter|TruCare system offer a roadmap for addressing the concerns of the J&K population. The "black box" of a system is not a concern if a human is accountable.

4.3 Socio-Economic Factor Interaction with Trust
Socio-economic characteristics determine both the level of trust concerns and the relative weight of different dimensions.

FACTOR	Primary Trust Concern	Secondary Concern	Outcome Impact
Low Income	Access/affordability impact	Security (fear of loss)	Usage barriers
Low Education	Understanding ("don't know")	Reliance on others' advice	Low intention
Low Digital Literacy	Inability to navigate	Fear of irreversible mistakes	Avoidance
Rural Location	Connectivity reliability	Distrust of distant systems	Intermittent use
Female Gender (traditional contexts)	Privacy (family data exposure)	Fairness (bias concerns)	Caution
Older Age (60+)	Accuracy (health outcome criticality)	Inability to verify	Non-use

Figure 4: Socio-Economic Factors and Trust Mediation Pathways

Figure 4 shows that trust is not a single entity, as different groups have unique issues that need separate considerations. For instance, low-income groups are concerned about the risk of AI systems denying them insurance coverage that they cannot afford to lose, while low-digital-literacy groups are concerned about the complexity of the process, while the rural population is concerned about the reliability of the systems based on their connectivity history.

For insurance companies in J&K, therefore, separate communication strategies are vital, as a generalized strategy would be missing the trust issues of these groups.

4.4 Trust-Building Framework for J&K
Integrating national evidence with regional specificities yields a targeted trust-building framework.

PILLAR 1	PILLAR 2	PILLAR 3	PILLAR 4	PILLAR 5
TRANSPARENT COMMUNICATION	ACCESSIBLE REDRESS	DEMONSTRATED FAIRNESS	CAPACITY BUILDING	INFRASTRUCTURE PARTNERSHIPS
Explain AI role in plain language (Kashmiri/Dogri/Urdu)	Multi-lingual helpline for AI-related questions	Publish anonymized approval rates by demographic	Digital literacy programs in rural areas	Coordinate with J&K government on connectivity
Clarify human accountability for final decisions	Clear appeals process with human review	Independent audits of algorithmic bias	SHG-based peer learning (women's groups)	Leverage Common Service Centers (CSCs)
Proactively disclose data usage and protection	Local touchpoints in district headquarters	Community advisory boards	School-based financial/tech education	Offline-capable interfaces for low-bandwidth areas

Figure 5: Trust-Building Framework for J&K Health Insurance Consumers

Figure 5 is a translation of the findings in trust research into applicable strategies in the J&K context. The framework is based on the understanding that trust is created through

demonstration, not declaration. Clear communication must be in local language. Redress must be accessible to the non-digital literate. Fairness must be demonstrated through data. Capacity building must reach rural women through existing SHG networks. Infra partnerships must take into account connectivity realities.

4.5 Comparative Analysis of AI Acceptance Determinants

Table 1 presents a comprehensive comparative analysis of AI acceptance determinants across demographic segments.

Table 1: Comparative Analysis of AI Acceptance Determinants by Segment

Segment	Primary Barrier	Trust Mediator	Acceptance Potential	Recommended Intervention
Urban High-Income	Privacy concerns	Data security confidence	High (85%+)	Transparent data policies, opt-out controls
Urban Middle-Income	Accuracy concerns	Demonstrated reliability	Moderate-High	Pilot programs, success stories
Rural (Valley)	Connectivity reliability	Consistent access	Moderate	Offline-capable interfaces, local support
Rural (Mountain)	Infrastructure gaps	Institutional skepticism	Low-Moderate	CSC-based assistance, hybrid human-AI
Women (Traditional)	Family data exposure	Gender fairness	Low-Moderate	Women-centric communication, SHG engagement
Youth (18-25)	Understanding ("don't know")	Digital literacy	High (with training)	School-based education, peer learning
Senior (60+)	Health outcome criticality	Human backup	Low	Assisted channels, visible human oversight
Government Scheme Beneficiaries	System trust	Government endorsement	Moderate	Co-branded communication, gram sabha awareness

Analysis of Comparative Dimensions:

Primary Barrier is also diverse across segments, ranging from privacy concerns in urban high-income groups to infrastructure concerns in mountain communities and criticality concerns in seniors.

Trust Mediator specifies what channel or vehicle is required for building trust in a segment. This may be data security for some segments or reliability for others.

Acceptance Potential varies across segments, ranging from high for the urban educated segment to low for seniors in remote communities, as a result of the combined effect of several barriers.
Recommended Intervention is tailored to the specific characteristics of each segment for building trust.

V. CONCLUSION

This paper has proposed a conceptual framework for understanding the determinants of AI acceptance by consumers of health insurance in Jammu & Kashmir,

with a special emphasis placed on the role of trust as a mediator and socio-economic factors as a moderator.

Some important conclusions may be drawn from this analysis.

One important conclusion that may be drawn from this analysis is that there is a significant gap between organizational and consumer adoption that is only widening in scope. Thus, while 94% of organizations use AI in health insurance in Jammu & Kashmir, only 21% of consumers use AI tools.

Moreover, trust emerges as a significant mediator in this process. Thus, concerns about accuracy (26%), privacy (20%), and security (20%) need to be addressed by consumers, and governance frameworks, which are currently in place in only 31% of organizations , need to be put in place to foster trust.

Thirdly, socio-economic factors shape the relevant aspects of trust. For instance, low-income consumers are concerned about incorrect denials, low-literacy consumers are concerned about uncomprehensible processes, and consumers in rural areas are concerned about the reliability of providers.

Fourthly, the J&K context is unique and requires unique approaches. Historical telecom disruptions, connectivity challenges, rural dominance, and exposure to government schemes have shaped the J&K context in ways that cannot be captured by generic national approaches.

Fifthly, transparency and human accountability are a given. Consumers must be able to identify whether AI is used in the process and who is held accountable for the process. This is especially critical in health care because the stakes are literally life or death.
Lastly, capacity building must be an integral part of AI technology implementation. This is especially critical in J&K because they have historically been less exposed to technology.

Several practice implications arise. For instance, for insurance companies operating in J&K, the study findings recommend investments in vernacular communication infrastructure and fairness audits. For policymakers in J&K, supporting initiatives for digital literacy and connectivity infrastructure is vital for the success of the insurance schemes. For technologists designing AI solutions, developing interfaces with low connectivity requirements and user-friendly interfaces could help bridge the existing gaps for J&K consumers.

The limitations of the current conceptual paper are the lack of primary data collection for J&K consumers and the use of national survey data for trust. Future research directions include stratified survey studies for J&K's regions, mediation paths using structural equation modeling, the effectiveness of the proposed framework using randomized trials, and the evolution of trust with the rollout of AI solutions.

The fact is, as the case of Star Health shows, artificial intelligence in health insurance is not an upcoming phenomenon, it is here. The question for a region like J&K is not whether to adopt it, but how to adopt it in a manner that is good for all consumers. The answer to the question of how to adopt it in a good-for-all manner requires an understanding of the people it is intended to serve, not just the technology.

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