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Digital Public Infrastructure and Agentic AI: Shaping the Future of Insurance in India

by

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Abstract

The Indian insurance sector is in the process of structural transformation of traditional agent-based distribution to technology-based ecosystem (Atlantic Council, 2025; Deloitte, 2025; EY, 2025; KPMG, 2025; Sharma et al., 2024). This conceptual paper focuses on the key contribution to this change represented by Agentic Artificial Intelligence (Agentic AI) systems in which decisions are made autonomously, adapt continuously, and are goal-oriented (He and Zhu, 2025; Hosseini et al., 2025; Sapkota et al., 2025). Rather than presenting empirical findings, the paper synthesizes secondary sources such as peer-reviewed literature, regulatory reports, and industry reports to develop a conceptual analysis of the transformation of four fundamental insurance value chain functions by Agentic AI: sales, underwriting, claims management, and policy servicing The analysis is designed by using Sense-Insight-Dynamics (SID) framework, a new framework that builds on the classical scheme of Perception-Cognition-Action agent framework (Wooldridge and Jennings, 1995; Russell and Norvig, 2016) by integrating in domain-specific insurance contexts. The paper explores how India Digital Public Infrastructure (DPI) has a fundamental role in facilitating scalability of these smart systems (Atlantic Council, 2025; Harvard Kennedy School, 2025; ORF America, 2025). There is also a critical evaluation of implementation issues such as algorithmic bias in the socio-culturally stratified society of India, integration with the old system, the overstaffed local population, lack of digital literacy in rural regions, and consent fatigue in DPI frameworks. The results are added to the increasing literature on AI-based financial inclusion in developing markets.

Keywords: Agentic AI, Insurtech, India, Digital Public Infrastructure, Insurance Value Chain, Financial Inclusion, SID Framework.

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Introduction

Historically, the Indian insurance industry was marked by paperwork, use of large chain of human agents, and monopoly controlled by the state, which dominated the distribution of products over several decades (Gap Gyan, 2024). Although these conventional models have proved to be effective in establishing interpersonal trust between activities happening in face-to-face, they had limitations in terms of high operational costs, scope, and serving a geographically distributed population of India (ICICI Lombard, 2023; PwC India, 2023). A structural shift is now occurring in the sector to a technology-driven, hyper-personalized ecosystem, which began with the convergence of inexpensive smartphones, low-cost internet access, and the Digital India initiative of the government around 2015 (Revrag, 2025).

Problem Statement

With the changing nature of the sector in technological aspects, there is still a thematic difference between both growth path and penetration rates. Indian insurance market has developed by 17% CAGR in the last 20 years, which is expected to further increase to 222 billion by 2026 (IBEF, 2025; Livemint, 2025), but the rate of penetration is still at around 4.2 percent of GDP, which is still significantly low compared to the global level of 7.4 percent (Revrag, 2025). This gap highlights a general problem: a big and underserved group of people that current models could not successfully address (Atlantic Council, 2025; Ranjan, 2020; Xi and Wang, 2023). Initial AI systems, namely rule-based and reactive first-generation systems, were not sufficient to handle the demands of scalability and real-time responsiveness of the Indian market (Azalen, 2025; Datacamp, 2025; Sarker et al., 2024). This paper believes that the next step in terms of filling in these gaps is Agentic AI, a new paradigm that is defined by independent agency, detection of the environment, and constant adaptation(He and Zhu, 2025; Hosseini et al., 2025). The following argument is rooted in the present trend of the technological and policy development; the future results of the given process are still to be empirically confirmed.

Scope and Assumptions

This study works under a number of assumptions that are explicit. To begin with, it presupposes that the existing course of the DPI growth, along with the favorable regulation, will remain in the medium-term. Second, a directed quantitative measure is used on reported quantitative results in industry sources that may be subject to selection bias. Third, the research addresses Agentic AI as a separate paradigm to traditional rule-based AI, and it adheres to He and Zhu (2025) and Hosseini et al. (2025). In the Limitations section, these assumptions are reconsidered.

Literature Review

This section reviews existing academic literature across four interrelated domains that form the conceptual foundations of this study: the theory of technology adoption, the digitalization of the insurance sector, artificial intelligence and intelligent agent theory, and Digital Public Infrastructure. Together, these domains establish the theoretical basis upon which the SID framework and the subsequent conceptual analysis are built.

Technology Adoption in Insurance

Technology adoption in organizations has gained a lot of research ground that has been broadly enforced using a number of theoretical perspectives. The Technology Acceptance Model (TAM) by Davis (1989) established perceptions helpfulness and ease of use as the main factors influencing adoption of technologies. Venkatesh et al. (2003) built upon this by the Unified Theory of Acceptance and Use of Technology (UTAUT) that included social influence, but added social facilitating conditions. The diffusion of innovations theory developed by Rogers (2003) further elaborated on the spread of new technologies within a population, where relative advantage, compatibility and complexity were the main factors of adoption. The unequal rate of technology adoption among the different market segments in India can be explained with the help of these frameworks in the context of the insurance industry. In the systematic review of 84 articles about digitalization in insurance, Eling and Lehmann (2018) singled out four overarching tasks in the industry, which are improving customer experience, augmenting business processes, providing new products, and preparing against cross-industry competition. The way they used the value chain as developed by Porter to the digitalization of insurance offers them a basis of referencing how this current conceptual and literature review paper will examine the presence of Agentic AI throughout the various insurance value chain.

InsurTech and Digital Transformation

The rise of InsurTech as a field has led to the increasing scholarly interest. Based on 208 innovations, Stoeckli et al. (2018) created a grounded-theory model of InsurTech innovation comprising 52 characteristics and 14 transformational capabilities. Their work showed that disruptive potential arises when transformational capabilities are aligned in three mutually-dependent activities which include infrastructure management, products innovation, and customer relationship. The above finding relates to the argument of the current conceptual paper that agency AI attains its transformative effect at this very form of cross-functional integration. Brynjolfsson and McAfee (2014) developed a powerful model to comprehend the come-of-age digital technologies in changing industries by automating and augmenting industries. Their discussion of the "second machine age" in which machines start to take on cognitive work that is until now done by human actors directly informs the current research on how the concept of Agentic AI is augmenting (not replacing) the position of human actors in the Indian insurance industry.

Intelligent Agent Theory and Agentic AI

Computer science has strong theoretical foundations of autonomous intelligent agents. In their magnum opus, Wooldridge and Jennings (1995) delineated intelligent agents as systems that show autonomy, social capability, reactivity, and pro-activeness. Their description of the Perception-Cognition-Action cycle according to which agents sense their surroundings, process information, and take action as a result gives the theoretical ancestry to the SID framework suggested by this study. Russell and Norvig (2016) put further formalizations on agent architectures, characterizing simple reflex, model based, goal based, and utility based agents, and learning agents being the most advanced form. He and Zhu (2025) and Sapkota et al. (2025) suggested conceptual taxonomies more recently as distinguishing between an agentic AI (autonomous goal-pursuit, environmental interaction, and continuous adaptation) and He and Zhu (2025) as AI agents (task-specific tools) conceptual taxonomies. A systematic review by Hosseini et al. (2025) created a role of Agentic AI in a variety of industries. All these latest additions outline the conceptual field in which the present study functions.

AI Ethics, Bias, and Explainability

The moral aspect of AI implementation has produced a lot of academic discussion. In their thorough survey, Mehrabi et al. (2019) listed the various forms and sources of discrimination in the machine learning systems. Floridi et al. (2018) developed the AI4People framework and found five principles of AI governance: beneficence, non-maleficence, autonomy, justice and explicability. A study of 84 AI ethics guidelines in the world by Jobin et al. (2019) revealed that transparency, justice, and non-maleficence are converged with significant variation between the interpretation and enforcement of these principles in different cultural and regulatory locations. It is especially important to the Indian context, where caste, gender, and regional inequalities are more likely to form bias vectors that can be insufficiently considered by Western-constructed AI fairness systems (Nishant et al., 2023; Pareek, 2022). Doshi-Velez and Kim (2017) have provided the rationale of strict interpretability in machine learning, which informs the rising allegation of Explainable AI (XAI) systems in highly regulated financial sectors including insurance.

Digital Public Infrastructure

Digital Public Infrastructure as a means towards inclusive digital economies has become a growing concept. The implementation of how DPI can facilitate a financial measurement system was put down by the Atlantic Council (2025) in the form of shared data exchange layers, digital identity, and payments. The Harvard Kennedy School (2025) has evaluated the institutional and political realities that the successful implementation of DPI needs to be carried out in emerging economies. The Digital Cooperation Organization (2025) gave an extensive principle guideline on how to design DPI as well as its governance. In India, IMF (2021) reported that India stack (Aadhaar, UPI, and similar platforms) has established a digital financial service layer. Detailed analysis of the challenges and opportunities presented in the insurance sector of India was given by ICRIER (2024), as well as the constraints of DPI implementation in practice.

Although each of these bodies of literature is well developed, a void between them exists: there is a dearth of scholarly literature that quantitatively examines how the unique features of Agentic AI and their interplay with DPI affect the insurance value chain across the particular country. This research paper fills that gap.

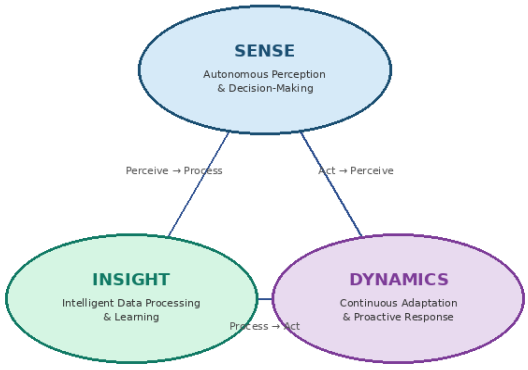
Theoretical Foundation: The Sense-Insight-Dynamics (SID) Framework

In order to develop a systematic analytical framework, this paper will offer the Sense-Insight-Dynamics (SID) model of analyzing the capabilities of Agentic AI in insurance-related scenarios.

Positioning Against Existing Agent Frameworks

The SID model is based on and expands the classical Perception-Cognition-Action (PCA) loop introduced in the intelligent agent theory (Wooldridge and Jennings, 1995; Russell and Norvig, 2016). Although the PCA cycle is a general-purpose agent behavior model, the SID framework generalizes it to suit the particular analytical needs of analyzing the insurance sector Agentic AI in three respects. First, "Sense" expands the PCA notion of the "Perception" concept to include active involvement in both intake of data as well as autonomous awareness of the surroundings and self-directed decision-making- which is characteristic of contemporary Agentic AI systems of the contemporary multimodal nature (Floridi et al., 2018; Hosseini et al., 2025). Second, "Insight" builds on top of Cognition, and focuses on continuous learning with reinforcement feedback loops instead of processes tied to fixed rules, which is especially important in insurance contexts wherein risk models need to become adaptive to changing trends (Baltrusaitis et al., 2019; Dey, 2001). Third, "Dynamics" builds upon Action with active anticipatory behavior and ongoing adjustment-functionalities, which are not only offered by Agentic AI but also unconditionally by traditional AI systems, which respond to stimuli (Russell and Norvig, 2016). These capabilities are then explicitly mapped to DPI-enabled data flows by the SID framework which the general PCA cycle does not cover otherwise.

Figure 1. The Sense-Insight-Dynamics (SID) Framework



Adapted from agent architecture literature (Wooldridge & Jennings, 1995; Russell & Norvig, 2016)

The Sense-Insight-Dynamics (SID) Framework is adapted from the Perception-Cognition-Action cycle (Wooldridge & Jennings, 1995; Russell & Norvig, 2016)

Framework Principles

Sense is the ability of the system against constant human control and autonomous perception of the environment and independent decision-making (Floridi et al., 2018; Hosseini et al., 2025). In insurance, it includes multimodal data input, voice, text, unstructured documents, and medical records as well as telematic data, which allows proactive automated workflows (Amplework, 2025; Baltrusaitis et al., 2019; General Insurance Council of India, 2025).

Insight is a cognitive skill that is able to process complex information, learn on reinforced feedback loop, and produce contextually informative responses (Baltrusaitis et al., 2019; Dey, 2001; IBM, 2025). As a case in point, Agents of AI will have the capacity to learn new approaches to identifying fraud, it can constantly update detection models based on the nature of emerging fraud schemes (Kellton, 2025).

Dynamics is the ability to constantly adapt and make adjustments in the real time (Russell and Norvig, 2016). In insurance, systems are able to optimally refine the customers risk profile at any time based on real-time behavioral analytics and take proactive steps like renewal nudges (Azalen, 2025; Hyland, 2025).

One must keep in mind that the SID framework is a hypothetical instrument that is yet to be tested empirically. It is valuable in its systematic way of analysis; the next research needs to work out whether it can be applied by using primary methods.

Methodology

As a conceptual paper, this study does not test hypotheses or collect primary data. Instead, it employs a qualitative and secondary research design which implements the SID framework as a conceptual lens for organizing, categorizing, and interpreting the analysis. The goal is to synthesize existing knowledge from diverse sources into a structured argument about how Agentic AI, enabled by India's DPI, is reshaping the insurance value chain and to identify the conditions under which this transformation may succeed or fail.

Data Collection and Source Selection

The search took place with specific search tools in academic databases (Google Scholar, IEEE Xplore, SSRN, Scopus), regulatory sites (IRDAI, RBI) and industry repositories. The search terms were combinations of "Agentic AI," insurance, India, Digital Public Infrastructure, and Insurtech. The paper has made it a point to use peer-reviewed academic literature as the main foundation of analysis, accompanied by industry reports as a source of current implementation data. Preliminary scholarly sources were covered irrespective of year of publication; literature in the industry was confined to the 2020-2025 time frame.

Analytical Approach

The deductive categories of coding were the three SID principles. Reported outcomes and use cases were classified as Sense, Insight or Dynamics according to the

most important capability demonstrated. This methodology has facilitated the systematic mapping of theoretical constructs on practical applications in value chain.

Methodological Limitations and Mitigations

There are a number of limitations to be mentioned. To begin with, the use of secondary data does not allow making any causal assertions; the results reported are self-reported industry data and must be understood as suggestive and not final. Second, industry reporting might present some pro-technology bias; to overcome this the study cross-tabulates some sources, and devotes heavy research efforts to critical counterargue. Third is the fact that initial brainstorming stages were performed using generative AI tools; all the ultimate analysis will be the independent scholarly work of the author. The secondary data dependency also allows seeing the multi-faceted perspective that would have been hard to access via primary research alone (ATLAS.ti, 2025).

The Evolution of the Indian Insurance Ecosystem

Phase 1: The Pre-Insurtech Era (Pre-2015)

Before around 2015, the Indian insurance market was characterized by legacy systems that highly depended on human agents (Gap Gyan, 2024). Although face-to-face interaction helped in building trust in urban locations, it was very limited between rural populations (Ranjan, 2020; Xi and Wang, 2023). Paper-based procedures did not have flexibility and prevented innovation (European Journal of Computer Science, 2025; ICICI Lombard, 2023).

Phase 2: The Digital Awakening (2015–2020)

Inexpensive smartphones, competitive internet prices, and government incentives orchestrated the shift to digital (Revrag, 2025). Insurtechs such as Acko and GoDigit seized the opportunity of changing consumer demands shifting the competition to the next level and preparing the way to more advanced change.

Phase 3: The DPI-Enabled Era (2020–Present)

The latter stage is marked by the development of Agentic AI that India has made possible through its DPI (Digital Cooperation Organization, 2025; Harvard Kennedy School, 2025; ORF America, 2025). The India Stack forms a lower platform upon which the service delivery can be cashless, paperless and presence-less. Nonetheless, there are still practical difficulties, such as interoperability between units of DPI and the existing system, consent fatigue in users, and disproportionate levels of digital literacy among the rural population (ICRIER, 2024). Relational AI DPI- Agentic is thus not deterministic, but complementary. DPI components are mapped to SID framework in table 1.

Table 1.

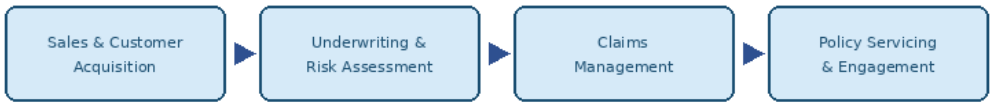
Mapping India's DPI to the SID Framework. Note: Several platforms exhibit capabilities across multiple principles.

DPI Platform	SID Mapping	Insurance Relevance	Key References
Aadhaar / e-KYC	Sense	Digital identity verification for onboarding and fraud prevention	Atlantic Council, 2025; ORF America, 2025; IMF, 2021
DigiLocker	Sense	Secure digital document storage for policy and medical verification	SBI Life, 2020; SignDesk, 2025
Vaahan / FASTag	Sense	Vehicle registry and movement data for motor and usage-based insurance	ICICI Lombard, 2022
AgriStack	Sense	Agriculture and land data for rural and parametric insurance	Digital Cooperation Organization, 2025
ABDM	Sense	Health IDs and electronic records for health insurance onboarding	Hosseini et al., 2025; ICRIER, 2024
Account Aggregator	Insight	Consent-based financial data sharing for risk profiling	IMF, 2021; Sahamati, 2025
NHCX	Insight	Standardized digital health claims exchange	Eling & Lehmann, 2018; ICRIER, 2024
OGD Platform	Insight	Government datasets for actuarial analysis	Digital Cooperation Organization, 2025
UPI	Dynamics	Real-time payments, claims settlements, premium collections	IMF, 2021; Atlantic Council, 2025
Bima Sugam	Dynamics	National insurance marketplace for dynamic transactions	GICouncil, 2024; Legal500, 2025
ONDC	Dynamics	Open network for embedded insurance distribution	PwC India, 2023
Bima Vahak / CSC	Dynamics	Last-mile digital insurance in rural areas	ICRIER, 2024; Harvard Kennedy School, 2025
JAM Trinity	Sense	Foundational access for micro-insurance via KYC and account linkage	IMF, 2021; Xi & Wang, 2023

Agentic AI's Impact Across the Insurance Value Chain

In this section SID framework is applied to four fundamental functions of insurance. As opposed to re-defining the framework in every sub section, the analysis shows how individual abilities are carried to the actual results of operations made possible by DPI.

Figure 2. Four Stages of the Insurance Value Chain



Source: Author's representation based on Eling & Lehmann (2018)

Sales and Customer Acquisition

The agentic AI builds on the classical agent-based model and allows the proactive and data-driven marketing (Applied Systems, 2025; Azilen, 2025; Everest Group, 2024). Aadhaar e-KYC allows verifying identities without papers (Atlantic Council, 2025; ORF America, 2025), whereas the Account Aggregator system offers consented money data to recommend products accurately (Sahamati, 2025). The use of the term AI twins to describe the artificial creation of consumer cohorts by HDFC Ergo (Consumr.ai, 2025) exemplifies how Insight capabilities of the system optimize the comprehension of the audience based on the continuous learning principle, which provides hyper-personalized recommendations to a large audience.

Underwriting and Risk Assessment

It is mentioned that agentic AI will turn the generally static underwriting into a continuous real-time risk evaluation (Azilen, 2025; Amplework, 2025). These systems can create more detailed risk profiles by combining data on telematics (Cognizant, 2025) with approved, approved financial data (IMF, 2021; Sahamati, 2025) provided by the Account Aggregator system. Such models have been implemented by ICICI Lombard and Onsury to use as usage-based premiums (ICICI Lombard, 2022; Onsurity, 2024). This is a qualitative change of underwriting as a single event to the continuous process (Eling and Lehmann, 2018; Russell and Norvig, 2016).

Claims Management

These systems have been said to automate claims lifecycle including First Notification of Loss (FNOL) to payout including fraud detection (Amplework, 2025; Hyland, 2025; IBM, 2025). DigiLocker will be used to verify documents immediately (SBI Life, 2020; SignDesk, 2025); UPI will be used to receive an instant payment. These systems are allegedly capable of identifying new patterns of fraud through lifelong learning (Amplework, 2025; Mehrabi et al., 2019) and their detection is relevant to the estimated losses of [?]45,000 crore of fraud reported in the sector annually (General Insurance Council of India, 2025). It

is an industry report estimate, and to what degree these losses have been decreased by Agentic AI is yet to be independently confirmed.

Policy Servicing and Engagement.

AI Agentic allows the round-the-clock support of the DPI-enabled channels (MoEngage, 2025; Tata AIG, 2024). These systems combine information sources to respond based on context and also be proactive in anticipating customer needs (Max Financial Services, 2024). Tata AIG has accounted a 90-percentage decline in manual works and 93-percentage time decreased on the campaign go-live time (MoEngage, 2025). These are directionally consistent numbers based on a vendor case study, and are meant to be interpreted as indicative.

Table 2.

Reported Impact of Agentic AI Across the Indian Insurance Value Chain

Function	Application	Insurer(s)	Reported Metric (Source Type)	Supporting Literature
Claims	Automated FNOL, Image Recognition	Digit, ICICI Lombard, Bajaj Allianz	Processing reduced from days to minutes (vendor report); 80% faster processing (vendor report, Kellton, 2025)	Eling & Lehmann, 2018; Hosseini et al., 2025; Stoeckli et al., 2018
Servicing	AI Chatbots, Renewal Nudges	Tata AIG, Max Life	90% decrease in manual efforts; 93% drop in go-live time (vendor case study, MoEngage, 2025)	Davis, 1989; Venkatesh et al., 2003; Brynjolfsson & McAfee, 2014
Underwriting	Dynamic Risk Profiling	ICICI Lombard, Onsurity, HDFC ERGO	Up to 50% lower costs (industry estimate, Kellton, 2025); improved loss ratios (vendor report, Azilen, 2025)	Baltrusaitis et al., 2019; Eling & Lehmann, 2018; Russell & Norvig, 2016
Sales	Hyper-Personalization	HDFC ERGO, Acko	Improved conversion rates (vendor case study, WebEngage, 2024)	Rogers, 2003; Stoeckli et al., 2018; Floridi et al., 2018
Fraud Detection	Pattern Analysis	Bajaj Allianz (general)	Industry-estimated losses of ₹45,000 crore (GI Council, 2025). Direct AI impact not independently quantified.	Mehrabi et al., 2019; Nishant et al., 2023; Pareek, 2022

Note. Reported metrics are drawn from industry and vendor sources; sample sizes and replicability conditions are generally not disclosed and figures should be interpreted as indicative. The Supporting Literature column identifies peer-reviewed academic works that provide the theoretical and empirical foundation for each application area.

A Global Perspective

In Western insurance, business competition is the main reason that influences the adoption of AI (BCG, 2025; McKinsey and Company, 2025). Aviva (UK) has reported in Europe that it has cut the liability assessment time down by 23 days and reduced customer complaints by 65 percent (McKinsey & Company, 2025). The national, interoperable platform which provides India with an advantage is DPI. While Western insurers must grapple with the task of aligning heterogeneous data sources by their own means (Cognizant, 2025; Thomson Reuters, 2025), the DPI offered by India already offers a pre-existing framework upon which the Agentic AI can be scaled at a faster pace (Digital Cooperation Organization, 2025; Harvard Kennedy School, 2025). Innovation further is encouraged by the government Insurance by Parts vision by 2047 and Bima Sugam (Atlantic Council, 2025; GICouncil, 2024).

Nonetheless, Western markets enjoy more developed data governance, greater underlying digital literacy, and privacy conventions. The DPI edge of India needs to be offset by digital inequity and the intricacies or difficulties of a compelling linguistic and socio-economic market. Controlled empirical studies that are yet to be done would be necessary to make a direct comparison.

Implementation Challenges and Strategic Imperatives

This part critically examines the obstacles to the implementation of Agentic AI beyond the promise of the technology, and evaluates the conditions in which it will not work or have counterproductive effects.

Algorithmic Bias and India-Specific Socio-Cultural Risks

The danger of algorithmic bias is well-reported (Mehrabi et al., 2019; Nishant et al., 2023). This acquires specific meaning in India, where there is strong socio-cultural stratification. Artificial intelligence models that are trained using historical data can reproduce caste, gender, religion, and regional-economic variation biases. Underwriting models that have been trained based on city data have a systemic bias against rural applicants (CFA Institute, 2025; Pareek, 2022). Another risk dimension is that gender differences at the level of disparities lead to the possibility of biased evaluation in AI systems, provided that it is demonstrated that lower utilization levels are inherent to women in the historical health claims statistics (prompted by socio-cultural barriers and not a lower need). In a study by Jobin et al. (2019), it was revealed that although AI ethics guidelines tend to meet with the principles of transparency and justice internationally, there is still a high

level of variation in the interpretation of these principles in different cultural circumstances-indicating that the Western-based fairness systems might not work well in addressing the vectors of bias that are specific to India. To solve these risks, culturally sensitive bias auditing frameworks (Doshi-Velez and Kim, 2017), Explainable AI (XAI) systems (Doshi-Velez and Kim, 2017), and methods of evaluating fairness to machine learning (Pareek, 2022) are required. The DPDP Act of 2023 in India offers a legal premise (Legal500, 2025; PwC India, 2025), and the enforcement processes are still in their infancy.

DPI Implementation Challenges

Although DPI offers structural benefits, there exist practical issues. First, the challenge of consent fatigue is becoming an increasing issue: Account Aggregator architecture is based on consent architecture, but persistent consent requests can easily result in unwarranted consent or blanket denial (ICRIER, 2024). Second, interoperability between DPI modules and legacy insurer systems creates patchwork integrations of latency and data inconsistency (FinTechStrategy, 2025; Thomson Reuters, 2025). Third, the threat of data misuse through misaggregation of DPI and systemic cybersecurity vulnerability should be taken seriously.

Rural Digital Literacy and the Last-Mile Challenge

The digital divide is a major obstacle to India. Although rural populations have access to DPI platforms like Bima Vahak and Common Service Centres, their success relies on the poor digital literacy that is not broadly balanced (ICRIER, 2024). The diversity of India makes this even harder: AI interactions usually use either English or Hindi, which may lock out the populations of the southern and northeastern states. Although vernacular AI systems are developing (Gnani AI, 2025), creating an Agentic AI in the 22 official languages of India is a significant challenge. In the absence of this gap, Agentic AI will increase rather than eliminate existing inequities.

Most internal applications feed a diverse array of data using internal systems that might be fragmented or lacking interoperability

Legacy Systems and Data Fragmentation

The compatibility of modern AI systems and the pre-existing IT infrastructure is also a technical bottleneck (Brynjolfsson and McAfee, 2014, European Journal of Computer Science, 2025). The majority of Indian insurers store information in several isolated systems, which complicates the process of building a single dataset (ICRIER, 2024; McKinsey and Company, 2024). Although DPI does solve some of the problems in the integration of external data, internal fragmentation, such as the unstructured data in the form of handwritten claims and voice recordings, have yet to be addressed (FinTechStrategy, 2025; Thomson Reuters, 2025).

The Human Factor: Workforce Transformation

The fear of job displacement is an important obstacle that shapes to be tackled with the help of strategic change management (Applied Systems, 2025; World Economic Forum, 2024). The desired model presupposes the human agents transforming into the strategic managers of the teams with the AI-driven technology (Insurance Journal, 2025; McKinsey & Company, 2024). This will demand long-term investment in reskilling initiatives of AI literacy, data analytics, and complex problem solving (Brynjolfsson & McAfee, 2014; Complete AI Training, 2025; World Economic Forum, 2025).

Regulatory Governance Gaps

Regulatory frameworks also need to change as the Agency AI becomes a part of the operations. Regulatory bodies will be at risk of relying too much on industry self-reporting. The sandbox programs of IRDAI are a good move, yet the AI systems should have independent audit mechanisms like financial auditing standards, yet they are not in place yet (Legal500, 2025).

The Road Ahead

This trend is aimed at the growing involvement of autonomous intelligence in the core operations (Amplework, 2025; Everest Group, 2024; IBM, 2025). To make insurance more transparent and to allow AI-based comparisons between insurers, convergence to this insurance type is possible (PwC India, 2023). The advanced data and transactional capability with each new DPI platform. Such optimistic projection, however, is conditional on resolving the problems in Section 8. An Agentic AI-based financial inclusivity will not be evenly delivered without conscious effort to regulate algorithmic bias, digital literacy, meaningful consent, and independence of regulators.

Limitations and Future Research

This research encounter has a few limitations. To begin with, relying only on secondary data would make it impossible to determine causation, quantitative indicators happen to be self-reports and are to be considered as indicative (Scribbr, 2025). Second, skewed importance of industry reports raises the chances of pro-technology bias. Third, the SID model is a new theoretical instrument that has not been empirically tested yet. Fourth, the results might not be applicable to other countries (Harvard Kennedy School, 2025).

Future Research

There are a number of avenues to explore: (a) comparative empirical research involving DPI-enabled Agentic AI adoption in India, the U.S., and Europe; (b) empirical research (e.g. survey and controlled case study) to substantiate quantitative assertions; (c) creation of organizationally sensitive AI fairness initiatives relating to India-specific biases (caste, gender, regional); (d) research on DPI-legacy system interoperability limitations; (e)

research on IoT data influence on risk prediction accuracy and the ethical considerations of constant behavior (Gnani AI, 2025).

Conclusion

This conceptual and literature review paper discusses the contribution of a transformative force in the Indian insurance sector with the help of the novel Sense-Insight-Dynamics (SID) framework, Agentic AI. It was based on a framework, which is a variation of the classical Perception-Cognition-Action agent architecture (Wooldridge and Jennings, 1995), and offered a systematic perspective in examining the way in which the capabilities of Agentic AI to sense the environment, process information intelligently, and adapt dynamically, manifest throughout the insurance value chain. Analysis shows that reported improvement in sales, underwriting, claims management, and policy servicing are being created as a result of Agentic AI being enabled by DPI in India. The DPI of India gives structural benefits that would make its path unique compared to Western markets.

The same conceptual and literature review paper has however also critically analyzed significant barrier such as algorithmic discrimination with the socio-culturally stratified setting in India, implementation of DPI, the digital-digital divide, system integration, workforce restructuring, and regulatory failures in governance. The article concludes that although India has the structural elements that can drive it into the model of AI-based insurance transformation, this success is not a guarantee. It needs to be addressed in a multi-faceted manner that values ethical governance, investing in digital literacy, obtaining meaningful consumer consent, and having a regulatory body independent of the particular organization. Through these socio-technical issues, the Indian insurance sector can move towards an inclusive, smart and ethically balanced future serving its diverse population of over 1.4 billion human beings.

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