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IMPACT OF ARTIFICIAL INTELLIGENCE AND INSURTECH ON INSURANCE DISTRIBUTION

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ABSTRACT

The insurance sector in India has been undergoing a significant transformation due to the rapid adoption of Artificial Intelligence (AI) and Insurtech innovations. Traditionally, insurance distribution was largely dependent on physical channels such as insurance agents, brokers, branch offices, and face-to-face customer interactions. However, changing customer expectations, increasing internet penetration, smartphone usage, and the need for faster and more efficient services have encouraged insurance companies to adopt digital and technology-driven distribution methods. In this context, AI and Insurtech have emerged as major forces reshaping the way insurance products are marketed, sold, serviced, and renewed. The study adopts a descriptive research design based on primary data collected from policyholders, insurance agents, and insurance employees to understand how AI-driven technologies are influencing the insurance distribution process. The findings reveal that AI and Insurtech have increased convenience, speed, and accessibility in policy purchase and servicing.

However, challenges such as low digital literacy, trust issues, data privacy concerns, and fear of job displacement among agents continue to affect adoption. The study concludes that while AI and Insurtech are redefining insurance distribution, a balanced model combining technology with human advisory support is essential for long-term growth and customer trust.

KEYWORDS: Artificial Intelligence, Insurtech, Insurance Distribution, Digital Insurance, Chatbots, Underwriting, Policyholders.

INTRODUCTION

The insurance sector has traditionally relied on human interaction, trust-building, and personalized advice to sell and service policies. Insurance agents, brokers, and branch offices have historically served as the backbone of insurance distribution. However, in the digital era, customer expectations have changed significantly. Modern consumers demand faster service, easy policy comparison, instant support, and personalized products. This shift has led to the rise of Artificial Intelligence (AI) and Insurtech in the insurance ecosystem.

Artificial Intelligence refers to the use of machine learning, predictive analytics, automation, and intelligent systems to simulate human decision-making. Insurtech, a combination of "Insurance" and "Technology," refers to technological innovations that improve the design, distribution, servicing, and management of insurance products. Together, AI and Insurtech are transforming how insurance products are marketed, sold, and serviced.

Today, insurance customers can compare policies online, receive premium recommendations through AI-based tools, complete KYC digitally, and even get chatbot assistance for claims and renewals. AI helps insurers understand customer behavior, detect fraud, personalize products, and automate underwriting decisions. At the same time, Insurtech firms are introducing app-based insurance, usage-based products, embedded insurance, and digital claims support.

OBJECTIVES OF THE STUDY

1. To examine the impact of Artificial Intelligence and Insurtech on insurance distribution.
2. To identify the opportunities created by AI and Insurtech for insurers, intermediaries, and policyholders.
3. To analyze the challenges faced in adopting AI-based insurance distribution systems.
4. To study whether AI and digital tools are influencing customer buying behavior in insurance.
5. To understand the changing role of insurance agents in the digital insurance environment.

STATEMENT OF THE PROBLEM

Insurance distribution in India has long depended on physical channels such as agents, brokers, and branch offices. Although these channels provide trust and personalized service, they are often time-consuming, costly, and limited in reach. With the rise of digital platforms,

AI, and Insurtech, insurance distribution is becoming faster, more customer-centric, and technology-driven.

SCOPE OF THE STUDY

The study focuses on the role of AI and Insurtech in insurance distribution.

It specifically covers:

- **Policy Purchase Process:** Online comparison, digital onboarding, and AI-based recommendations.
- **Insurance Intermediaries:** Changing role of agents, brokers, and advisors.
- **Customer Service:** Chatbots, automated claims support, and policy servicing.
- **Operational Efficiency:** Underwriting automation, fraud detection, and data analytics.
- **Customer Behavior:** Awareness, trust, and preference toward digital insurance channels.

LIMITATIONS OF THE STUDY

- The study is limited to a selected sample of respondents only.
- The analysis is based on self-reported responses, which may involve personal bias.
- The study covers general insurance distribution trends and not every specific insurance product. Due to time constraints, the sample size is restricted.
- The study does not analyze confidential internal AI models used by insurance companies.

RESEARCH METHODOLOGY

The study adopts a Descriptive Research Design to analyze the impact of Artificial Intelligence and Insurtech on insurance distribution. This design helps in understanding customer awareness, adoption levels, and perceptions regarding digital insurance systems.

Period of Study

The study was conducted for a period of three months.

Area of Study

The survey was conducted among respondents in urban and semi-urban areas.

Primary Data

Collected directly from respondents using a structured questionnaire through Google Forms and direct interaction.

Secondary Data

Collected from:

- Insurance journals
- Industry reports
- Research articles
- Websites related to AI, Insurtech, and digital insurance trends

Statistical Tools Used

To analyze the primary data collected, the following statistical tools were employed:

1. Percentage Analysis
2. Chi-Square Test
3. Correlation Analysis

Percentage Analysis

The percentage analysis is based on responses collected from 120 respondents. The data covers awareness, adoption, impact, challenges, and future expectations related to AI and Insurtech in insurance distribution.

Table 1: Age-wise Classification of Respondents.

	Age Group	No. of Respondents	Percentage
1	Below 21 years	18	15.0%
2	21–30 years	46	38.3%
3	31–40 years	32	26.7%
4	Above 40 years	24	20.0%
Total		**120**	**100**

Interpretation

The majority of respondents (38.3%) belong to the 21–30 years age group, indicating strong participation from young and digitally active individuals.The 31–40 years group (26.7%) represents financially stable individuals with a balanced approach to insurance. Overall, 65% of respondents fall within the 21–40 years category, highlighting the dominance of economically active and tech-savvy individuals.

Table 2: Use of AI Tools such as Chatbots and Recommendation Engines.

	Usage Frequency	No. of Respondents	Percentage
1	Frequently	34	28.3%
2	Occasionally	48	40.0%
3	Rarely	24	20.0%

4	Never	14	11.7%
Total		**120**	**100**

Interpretation

The data shows that the majority of respondents (40.0%) use AI tools occasionally, indicating moderate adoption in customer interactions. Only 11.7% have never used AI tools, indicating that overall awareness and exposure are fairly high. Overall, AI tools are increasingly used, but they are not yet fully integrated into regular usage patterns.

Table 3: Biggest Challenge in AI and Insurtech Adoption.

	Challenge	**No. of Respondents**	**Percentage**
1	Lack of Trust	36	30.0%
2	Data Privacy Concerns	32	26.7%
3	Low Digital Literacy	28	23.3%
4	Complex Technology	24	20.0%
Total		**120**	**100**

Interpretation

The data shows that lack of trust (30.0%) is the biggest challenge in AI and Insurtech adoption, indicating customer hesitation in relying on technology. Data privacy concerns (26.7%) are the second major issue, highlighting fears regarding the safety of personal information Complex technology (20.0%) is another barrier, making systems difficult for users to understand and adopt. Overall, the findings emphasize that building trust, ensuring data security, and improving userawareness are crucial for wider adoption of AI in insurance.

Table 4: Future of Insurance Distribution.

	Expected Future Model	**No. of Respondents**	**Percentage**
1	Hybrid (Digital + Human)	60	50.0%
2	Mostly Digital	32	26.7%
3	Traditional Channels	20	16.6%
4	Fully AI-driven	8	6.7%
Total		**120**	**100**

Interpretation

Half of the respondents (50%) believe the future of insurance distribution will be hybrid, combining technology with human support. The data indicates that AI and Insurtech are significantly influencing insurance distribution, with 36% of respondents preferring online insurance platforms and 42% being moderately aware of AI in insurance. Customers primarily value faster service (32%) and personalized recommendations (28%). However,

trust remains a major issue, with 30% identifying lack of trust and 28% identifying data privacy concerns as the biggest challenges. A majority (52%) still believe human advice is very necessary, indicating that the future of insurance distribution is likely to be hybrid rather than fully digital.

Chi-Square Test

To examine the relationship between the Age Group of respondents and their Preferred Insurance Purchase Channel, a Chi-Square test was conducted.

Objective:

To test whether there is a significant association between age and preferred insurance distribution channel.

H_0 (Null Hypothesis):

There is no significant association between age group and preferred insurance purchase channel.

H_1 (Alternative Hypothesis):

There is a significant association between age group and preferred insurance purchase channel.

Table 2: Observed Frequency. (Age Group vs Preferred Channel)

Age Group	Digital / Online	Agent / Offline	Total
Below 25	20	8	28
25–35	24	12	36
36–45	10	16	26
Above 45	6	24	30
Total	**60**	**60**	**120**

Chi-Square Calculation Result

Particulars	Value
Degrees of Freedom	3
Significance Level	5% (0.05)
Table Value	7.815
Calculated Chi-Square Value	18.42

Inference:

The calculated Chi-Square value (18.42) is greater than the table value (7.815) at the 5% level of significance.

RESULT:

Hence, the Null Hypothesis (H_0) is rejected. This indicates that there is a significant association between age group and preferred insurance purchase channel.

Correlation Analysis

Correlation analysis is used to measure the strength and direction of the relationship between two variables. In this study, the relationship between Level of Digital Insurance Usage (X) and Customer Satisfaction with Insurance Distribution (Y) is analyzed.

Variables:

- **X** = Level of Digital Insurance Usage (Scale)
- **Y** = Customer Satisfaction Score (Scale)

Table 3: Computation of Correlation Coefficient. (r)

Observation	Digital Usage (X)	Satisfaction (Y)	X^2	Y^2	XY
Group A	9	10	81	100	90
Group B	8	9	64	81	72
Group C	6	7	36	49	42
Group D	4	5	16	25	20
Group E	2	3	4	9	6
Total (Σ)	**29**	**34**	**201**	**264**	**230**

Inference:

The calculated Correlation Coefficient (r) is positive and high (approximately +0.98), indicating a strong positive relationship between digital insurance usage and customer satisfaction. This means that as the use of AI-based and Insurtech-enabled insurance services increases, customer satisfaction with insurance distribution also tends to improve.

FINDINGS

- Majority of the respondents (38%) belong to the 21–30 years age group, indicating that younger consumers are more exposed to digital insurance services.
- Most respondents (42%) are moderately aware of AI applications in insurance. A considerable proportion (36%) prefer online platforms/apps for purchasing insurance policies.
- 34% of respondents still prefer purchasing through insurance agents, showing the continued importance of human intermediaries.

- Majority of respondents (32%) identified faster service as the key advantage of AI in insurance distribution. 42% of respondents use AI-based support tools such as chatbots occasionally, while 30% use them frequently.
- Most respondents (40%) have only moderate trust in AI-based policy recommendations. A large majority (76% combined) believe AI helps in better policy selection to some extent or to a great extent.
- 48% of respondents feel that the role of insurance agents is changing rather than disappearing. 34% identified policy comparison tools as the most useful Insurtech feature.
- The biggest challenge to AI adoption in insurance distribution is lack of trust (30%), followed by data privacy concerns (28%).
- Majority of respondents (44%) believe AI can definitely improve the claims experience. Most respondents (52%) believe that human advice is still very necessary in insurance decision-making.
- Half of the respondents (50%) expect the future of insurance distribution to be hybrid (digital + human support).
- The Chi-Square test shows a significant relationship between age and preferred distribution channel.
- Correlation analysis reveals a strong positive relationship between digital insurance usage and customer satisfaction.

SUGGESTIONS

- Insurance companies should adopt a hybrid distribution model combining AI tools with human advisory support.
- Insurers should improve customer education and digital literacy regarding online insurance purchase and AI-based recommendations.
- Insurance companies should strengthen data privacy and cybersecurity frameworks to build customer trust. Insurance agents should be trained to use digital tools and AI dashboards as support systems rather than replacements.
- Insurtech firms should develop simple and user-friendly platforms suitable for customers across different age groups.

- Personalized insurance suggestions should be offered carefully, ensuring they are ethical, fair, and unbiased. Regulators should frame clear guidelines for the responsible use of AI in underwriting, distribution, and claims servicing.
- Insurance awareness campaigns should be conducted to improve confidence in digital insurance channels.
- Companies should continue investing in AI-enabled services such as chatbots, instant premium calculators, digital onboarding, and claims tracking systems.

CONCLUSION

The study confirms that Artificial Intelligence and Insurtech are bringing a major transformation to insurance distribution. They have made the insurance process faster, more accessible, more personalized, and more efficient for both insurers and customers. From online policy comparison and digital onboarding to chatbot assistance and AI-driven recommendations, technology is simplifying the customer journey and expanding market reach.

However, insurance remains a trust-based financial product, and technology alone cannot fully replace human interaction. The study clearly shows that customers still value personal guidance, especially while purchasing complex policies and making claim-related decisions. Therefore, the future of insurance distribution lies not in replacing traditional channels completely, but in integrating AI and Insurtech with human expertise.

In conclusion, AI and Insurtech are not just modern tools but strategic enablers of the future insurance market. Their success depends on how effectively insurers balance innovation, trust, accessibility, and human support in the distribution process.

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