INSURANCE INSTITUTE OF INDIA, MUMBAI

SPONSORED

ONE DAY NATIONAL SEMINAR

on

ROLE OF INSURANCE IN A

SUSTAINABLE SOCIETAL

FRAMEWORK

26th September – 2025

Organized by:

Department of Commerce – Business Process Services

Sri Ramakrishna College of Arts & Science (Autonomous)

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Disclaimer

Message from
Principal

I am honored to extend my wishes for the Insurance Institute of India-sponsored National Seminar organized by the Department of Commerce - Business Process Services on **"Role of Insurance in a Sustainable Societal Framework",** In today's dynamic world, where societies face increasing risks from climate change, economic uncertainty, health crises, and social disparities, the importance of resilience and sustainability has never been more critical. Insurance, often perceived merely as a financial safety net, plays a far more impactful role—it is a pillar that supports economic stability, risk mitigation, and long-term development.

This seminar will help the participants to gain knowledge and explore how insurance can evolve beyond traditional models to address the needs of a sustainable society. From promoting responsible business practices and enabling recovery after disasters, to supporting innovation in green technologies and inclusive coverage, insurance is a key driver in shaping resilient communities.

I am sure that the seminar will achieve its goal of offering a platform for learning and experiencing the most recent advancements in the field of insurance.

I appreciate the organizers for arranging this National Seminar, as well as the attendees and paper contributors from various institutions.

I extend my wishes for the National Seminar Proceeding publication.

Best Wishes.
Dr.B.L.Shivakumar
Principal &Secretary
Sri Ramakrishna College of Arts & Science
(Autonomous)

167 | IMPACT OF RECENT DEVELOPMENTS IN REGULATION AND CONSUMER PROTECTION IN THE INSURANCE SECTOR

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ABSTRACT

The insurance industry is undergoing rapid transformation through the adoption of technology-driven models, commonly known as InsurTech, which leverage innovations such as artificial intelligence, machine learning, blockchain, and digital platforms to enhance service delivery, personalization, and operational efficiency. While these advancements offer significant benefits, they also introduce challenges related to consumer protection, data privacy, algorithmic fairness, and regulatory compliance. This study aims to evaluate consumer protection measures in technology-driven insurance models and identify key regulatory challenges faced by InsurTech firms. Primary data were collected from 150 respondents in Coimbatore district using a structured questionnaire, and analyzed using descriptive statistics for consumer protection determinants and multiple dichotomy analysis for regulatory challenges. Findings indicate that grievance redressal, data privacy protection, and consumer awareness are the most critical factors influencing consumer trust and satisfaction, while InsurTech firms face major challenges in algorithm and AI governance, data privacy compliance, and cybersecurity. The study underscores the need for robust regulatory frameworks that balance innovation with consumer protection and provides policy recommendations to enhance transparency, fairness, and security in technology-driven insurance services. These insights are valuable for regulators, policymakers, and industry stakeholders seeking to foster a sustainable and innovation-friendly InsurTech ecosystem.

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1.1 INTRODUCTION

The insurance industry is undergoing a significant transformation driven by the rise of InsurTech—the application of financial technology to enhance and automate insurance products and services. Through innovations such as artificial intelligence (AI), machine learning, blockchain, telematics, and digital platforms, InsurTech has disrupted traditional insurance models, enabling greater personalization, faster claim settlements, lower costs, and improved customer experience. These technological advancements have the potential to increase insurance penetration, especially in emerging markets, by making insurance more accessible and affordable. However, this rapid innovation also brings new challenges. The increasing use of customer data, automated decision-making, and algorithm-based pricing raises concerns about data privacy, fairness, transparency, and cybersecurity risks. Consumers may face issues such as mis-selling of policies on digital platforms, bias in underwriting algorithms, or difficulty in accessing grievance redressal mechanisms. These risks highlight the need for robust consumer protection frameworks that safeguard policyholders' rights while maintaining their trust in technology-driven insurance solutions.

From the industry perspective, InsurTech firms must navigate a complex web of regulatory requirements including compliance with data protection laws, licensing norms, solvency regulations, and cybersecurity guidelines. While these regulations are necessary to maintain market stability and protect consumers, excessive or outdated regulatory burdens can slow down innovation, increase compliance costs, and deter new entrants from introducing disruptive solutions. Therefore, the key challenge lies in striking a balance—creating a regulatory environment that encourages innovation and healthy competition, while simultaneously ensuring consumer protection, financial stability, and ethical use of technology. Exploring this balance is critical for regulators, policymakers, and industry stakeholders to foster a sustainable, inclusive, and innovation-friendly insurance ecosystem.

1.2 REVIEW OF LITERATURE

Chen, Liang, and Liao (2022) investigated the effect of online customer engagement on purchase decisions in food delivery services, focusing on the mediating role of trust. Using structural equation modeling, the study found that user-generated reviews and ratings significantly influence consumers' trust in the platform, which in turn affects their purchase intentions. The authors also highlighted that negative reviews have a stronger impact on consumer decision-making than positive reviews, emphasizing the importance of managing

online feedback carefully. Their research suggests that fostering active customer engagement and building trust are crucial for enhancing purchase behavior in digital food delivery services. The study provides insights for platform managers to prioritize engagement strategies, transparent communication, and feedback management to strengthen customer loyalty and drive sales. Overall, it underscores the central role of trust as a mediator between online engagement and consumer behavior in the context of technology-driven service platforms.

Kapoor and Vij (2021) examined service quality and customer loyalty in online food delivery platforms using the SERVQUAL model. They found that responsiveness and reliability are the most significant factors influencing repeat purchases and customer retention. Tangibles, such as app interface design, and assurance also affected loyalty, but to a lesser extent. The study emphasized that accurate deliveries and real-time order tracking are crucial for maintaining customer satisfaction. Chen, Liang, and Liao (2022) explored the role of online customer engagement on purchase decisions and highlighted that trust mediates the relationship between user-generated reviews and purchase intention. Their findings also showed that negative reviews have a stronger impact on consumer decisions than positive ones. Both studies underscore the importance of service quality, responsiveness, and trust in shaping consumer behavior. They suggest that effective management of customer feedback and engagement is essential for platform growth. Integrating technological tools with reliable service can enhance customer loyalty. Overall, these studies provide insights into improving performance and consumer satisfaction in digital food delivery services.

Shaeeali, Mohamed, and Mutalib (2020) reviewed techniques for analyzing customer reviews in food delivery services, focusing on sentiment analysis, machine learning, and NLP approaches. They noted that social media data is rich but noisy, containing slang and sarcasm, which complicates analysis. The study concluded that sentiment analysis can effectively predict consumer preferences and suggested integrating it with business decision-making to improve service quality. Kapoor and Vij (2021) examined service quality using the SERVQUAL model and found responsiveness and reliability most strongly influence customer loyalty. They emphasized that real-time tracking and accurate deliveries are crucial, while tangibles and assurance play a moderate role. Chen, Liang, and Liao (2022) explored customer engagement on social media and found that trust mediates the impact of reviews on purchase intentions. Negative reviews were shown to affect consumer behavior more than positive ones. Together, these studies highlight the importance of analytics, service quality, and trust in shaping customer decisions. They suggest that platforms should combine technology,

reliability, and effective feedback management. Overall, integrating these factors can enhance service quality and foster customer loyalty in food delivery services.

1.3 STATEMENT OF THE PROBLEM

The rapid growth of technology-driven insurance models (InsurTech) is reshaping the insurance industry by offering innovative products, personalized pricing, and faster service delivery. However, this transformation has raised critical concerns related to consumer protection and regulatory adequacy. On one hand, consumers face challenges such as lack of transparency in digital policy terms, risks of algorithmic bias in underwriting and pricing, potential mis-selling through digital platforms, and concerns over data privacy and grievance redressal effectiveness. These issues may affect consumer trust, adoption, and satisfaction with InsurTech solutions.

On the other hand, InsurTech firms encounter significant regulatory hurdles including compliance with evolving data protection laws, cybersecurity requirements, solvency and capital adequacy norms, and complex licensing procedures. Ambiguities in regulatory guidelines for emerging technologies such as artificial intelligence, blockchain, and IoT further add to operational uncertainty and may hinder innovation. The challenge, therefore, lies in achieving a balanced approach—ensuring strong consumer protection while fostering an enabling regulatory environment that promotes innovation and competitiveness. This study seeks to evaluate existing consumer protection measures and to identify key regulatory challenges faced by InsurTech firms, providing insights that can guide policymakers, regulators, and industry stakeholders in building a robust, inclusive, and innovation-friendly insurance ecosystem.

1.4 RESEARCH QUESTIONS
  ➢ To what extent do digital insurance providers ensure the privacy and security of consumer data?
  ➢ Do the Insur tech firms face regulatory challenges?

1.5 OBJECTIVES OF THE STUDY
  ➢ To evaluate consumer protection measures in the context of technology-driven insurance models.
  ➢ To identify key regulatory challenges faced by InsurTech firms.

1.6 LIMITATIONS OF THE STUDY

The study was limited to 150 respondents from Coimbatore district, which may not fully represent the diverse population of the area, limiting the generalizability of the findings. Being restricted to a single district, the results may not apply to other regions with different demographic or socio-economic characteristics. Data was collected through self-reported questionnaires, which may be subject to response bias or social desirability bias. Time constraints also limited the study, potentially overlooking seasonal or temporal variations in consumer behavior. Additionally, respondents' familiarity with digital platforms varied, which could influence their answers. External factors such as promotions, discounts, or pandemic-related changes were not controlled, and the relatively small sample size restricted the depth of statistical analysis and segmentation. Overall, these limitations suggest caution when generalizing the results beyond the study context.

1.7 RESEARCH METHODOLOGY

The study adopted a descriptive research design to examine consumer protection measures in technology-driven insurance models and identify key regulatory challenges faced by InsurTech firms. The population comprised consumers of digital insurance services and representatives of InsurTech firms in Coimbatore district, with 150 respondents selected using convenience sampling based on accessibility and willingness to participate. Primary data were collected through a structured questionnaire divided into sections on demographics, consumer protection measures, and regulatory challenges. Consumer protection measures were measured using a 5-point Likert scale, while regulatory challenges were captured through multiple-response questions, analyzed using multiple dichotomy analysis. Descriptive statistics such as mean, standard deviation, and percentage distribution were applied to summarize consumer perceptions and evaluate the importance of various protective measures. Multiple dichotomy analysis was used to identify the most significant regulatory challenges, including algorithm governance, data privacy, and cybersecurity. Ethical considerations were maintained by ensuring confidentiality, voluntary participation, and informed consent throughout the data collection process.

1.8 ANALYSIS AND INTERPRETATION
DESCRIPTIVE STATISTICS

Descriptive statistics provide a powerful tool to summarize and interpret consumer perceptions, helping researchers understand trends, patterns, and the distribution of opinions regarding the effectiveness of these protective measures. This technique involves using

measures such as mean, standard deviation, and percentage distribution to describe and interpret how customers collectively rate different aspects of online reviews and ratings. In this study, By analyzing responses from insured individuals, descriptive statistics can reveal the level of awareness, satisfaction, and trust in technology-driven insurance services, providing insights that can guide regulators, insurers, and policymakers in strengthening consumer protection frameworks. The mean scores indicate the overall importance of each factor in shaping consumer decision-making, while the standard deviation shows how consistent or varied consumers' opinions are. This analysis provides an initial understanding of the most influential elements affecting food delivery choices and highlights areas that may require attention or improvement. It serves as a foundation for further statistical tests such as ANOVA and regression analysis, offering valuable insights for food delivery platforms and restaurants to enhance customer satisfaction and engagement.

Determinants of consumer protection measures in the context of technology-driven insurance models.

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Table -1.1

Determinants of consumer protection measures in the context of technology-driven insurance models.

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Descriptive Statistics					
Particulars	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Transparency	150	3	5	4.04	.747
Fair Pricing	150	3	5	4.00	.553
Grievance Redressal	150	4	5	4.71	.454
Data Privacy Protection	150	3	5	4.26	.681
Consumer Awareness	150	2	5	4.14	1.071
Claim Settlement Transparency	150	2	5	4.01	.753
Algorithmic Fairness	150	1	5	4.32	1.239
Ease of Complaint Registration	150	3	5	4.11	.528
Mis-Selling Prevention	150	4	5	4.65	.478
Customer Support Quality	150	4	5	4.20	.399

Source: Primary Data

Table 1.1 presents the descriptive statistics for the determinants of consumer protection measures in technology-driven insurance models. Respondents rated Grievance Redressal as the most significant factor, with a mean value of 4.71 and a standard deviation of 0.454, indicating a strong consensus on its importance. Data Privacy Protection (mean = 4.26) and Consumer Awareness (mean = 4.14) were also rated highly, highlighting the critical role of secure handling of personal information and informed decision-making in digital insurance platforms. Transparency (mean = 4.04) and Claim Settlement Transparency (mean = 4.01) were moderately important, suggesting that clear communication of policy terms and claims processes positively influences consumer trust. Fair Pricing received a mean of 4.00 with a relatively low standard deviation of 0.553, indicating general agreement among respondents that fair and equitable pricing is an essential aspect of consumer protection. Overall, the analysis demonstrates that consumers prioritize effective grievance redressal, robust data privacy, and awareness initiatives, while transparency and fair pricing also contribute to perceived protection in technology-driven insurance services.

MULTIPLE DICHOTOMY ANALYSIS

Key Regulatory Challenges Faced By Insurtech Firms.

Table - 1.2

Key Regulatory Challenges Faced By Insurtech Firms.

Particulars	Frequency	Percentage
Data Privacy Compliance	32	21.3
Cybersecurity Requirements	25	16.6
Reporting and Disclosure Obligations	20	13.3
Algorithm and AI Governance	48	32
Solvency and Capital Adequacy Norms	15	10
Consumer Protection Requirements	10	6.6
Total	150	100.0

Source: Primary Data

Table 1.2 presents the key regulatory challenges faced by InsurTech firms as perceived by the respondents. The highest proportion of respondents, 32 percent, identified Algorithm and AI Governance as the most significant challenge, indicating that managing algorithmic

fairness, transparency, and explainability is a major concern for technology-driven insurance firms. This is followed by Data Privacy Compliance (21.3%) and Cybersecurity Requirements (16.6%), highlighting the critical importance of protecting consumer data and securing digital platforms. Reporting and Disclosure Obligations were selected by 13.3 percent of respondents, suggesting that regulatory reporting requirements pose a moderate challenge. Solvency and Capital Adequacy Norms (10%) and Consumer Protection Requirements (6.6%) were considered less pressing, though still relevant. Overall, the analysis indicates that InsurTech firms face the greatest challenges in governing AI and algorithms, while data protection and cybersecurity remain key priorities, reflecting the regulatory complexity in technology-driven insurance environments.

1.9 FINDINGS OF THE STUDY

The study revealed that among the determinants of consumer protection in technology-driven insurance models, Grievance Redressal emerged as the most significant factor, with a mean score of 4.71, indicating strong agreement among respondents on its importance. Data Privacy Protection (mean = 4.26) and Consumer Awareness (mean = 4.14) were also highly rated, emphasizing the critical role of secure handling of personal information and informed decision-making. Other factors such as Transparency, Claim Settlement Transparency, Fair Pricing, Customer Support Quality, Algorithmic Fairness, and Mis-Selling Prevention were moderately important, suggesting that consumers value clear communication, ethical practices, and responsive support in technology-driven insurance services. Overall, these findings indicate that effective grievance redressal, robust data protection, and consumer awareness are the most influential measures in ensuring consumer protection in digital insurance platforms.

Regarding the regulatory challenges faced by InsurTech firms, Algorithm and AI Governance was identified by the highest proportion of respondents (32%) as the most critical challenge, highlighting the importance of transparency, fairness, and explainability in algorithm-driven operations. Data Privacy Compliance (21.3%) and Cybersecurity Requirements (16.6%) were also significant concerns, indicating that securing consumer data and maintaining robust digital infrastructure are top priorities. Other challenges included Reporting and Disclosure Obligations (13.3%) and Solvency and Capital Adequacy Norms (10%), while Consumer Protection Requirements (6.6%) were considered less pressing. Overall, the findings suggest that InsurTech firms face the greatest hurdles in governing AI and algorithms, ensuring data privacy, and maintaining cybersecurity, underscoring the need for effective regulatory frameworks that balance innovation with consumer protection.

1.10 POLICY FOR IMPLICATIONS

➢ Data privacy and cybersecurity regulations should be enhanced to protect sensitive customer information.

➢ Consumer awareness initiatives should be implemented to educate policyholders about policy terms, claim processes, and digital insurance tools.

➢ Transparency in policy communication and claim settlements must be ensured to minimize confusion and disputes.

➢ Guidelines for algorithmic fairness should be established to prevent bias in AI-driven underwriting and claim processing.

➢ Mis-selling practices should be closely monitored through audits and stricter regulatory checks.

➢ Reporting and disclosure requirements should be simplified to balance compliance with operational efficiency

CONCLUSION

The study highlights that consumer protection and regulatory compliance are critical for the sustainable growth of technology-driven insurance models. Among the key determinants of consumer protection, grievance redressal, data privacy protection, and consumer awareness emerged as the most significant factors influencing consumer trust and satisfaction. InsurTech firms face the greatest regulatory challenges in algorithm and AI governance, data privacy compliance, and cybersecurity, reflecting the complexity of operating in a technology-driven environment. The findings underscore the need for robust regulatory frameworks that balance innovation with consumer protection, ensuring fair, transparent, and ethical practices. Strengthening grievance mechanisms, ensuring transparency, and promoting awareness among consumers can enhance trust and adoption of digital insurance services. Overall, the study emphasizes that aligning regulatory policies with consumer expectations is essential for fostering innovation while safeguarding the interests of policyholders in the rapidly evolving InsurTech sector.

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