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AN EMPIRICAL STUDY ON RISK AND OPPORTUNITIES OF USE OF ARTIFICIAL INTELLIGENCE IN THE INDIAN INSURANCE SECTOR

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Abstract

Studies have been done to understand the use cases of AI or Artificial Intelligence in the insurance sector. Specifically, they aim to explore the scope and market penetration of Artificial Intelligence in the insurance sector to overcome ongoing issues for better consumer satisfaction. Based on the concept of Artificial Intelligence, the conceptual model has been developed. This conceptual model mainly aims at measuring the relation between Artificial Intelligence and its use case in the insurance sector. These studies conclude specific practical insights that are considered helpful for the insurance companies while responding to the dissatisfied consumers and the other operational issues.

Previously, the party to the insurance contract, the insurer and insured, used to have different information. It is crucial for understanding the insurance economies as asymmetry causes strategic behavior. The insurer tries to get maximum data so that the behavior of the insured may be inferred.

Keywords: insurance, AI, Artificial Intelligence in insurance

Introduction

Ranging from handling claims automatically to improved customer services, the insurers are now leveraging Artificial Intelligence for a secure, accurate, and efficient process. Widespread technology adoption benefits the agents, customers, and employees, making it helpful for the insurance companies. There are endless possibilities when it is about the adoption of Artificial Intelligence in the Insurance sector. It has changed the insurance sector in several ways.

Artificial Intelligence has a significant effect on pricing for insurers. Personalized pricing and policies which go accordingly are something customers demand now. Artificial Intelligence helps the insurers in profiling the customers and understanding their requirements in a better

way, helping them offer custom policies that are competitively priced (**Kumar, Srivastava, and Bisht, 2019**).

Management of claims and payout is usually time-consuming and manual tasks. With Artificial Intelligence, many such claims regarding these processes may be automated, reducing the cost of hiring and fast processing. It additionally enables the insurers to provide circumstances-based customization for the customers.

Insurance enterprises lose a considerable amount of money each year to frauds. Artificial Intelligence helps detect fraud and risk management through the assessment of claims data. It also helps in the identification of abnormalities as well as false information offered by the customers for high payouts or low premiums.

Another good solution that is being adopted is NLP or Natural Language Processing. Emails, chats, and documents are forms of textual data that insurance enterprises need to adopt regularly. Leveraging mainly on the language models helps reduce the efforts and time needed to respond to the customers since NLP helps collate the relevant information.

Artificial Intelligence helps in streamlining the internal process like billing and underwriting. It efficiently means high volume and speed, ensuring higher customer engagement and better user satisfaction. The main aim of transforming the efforts much better is to provide a better customer experience. High ratings on customer experience signify better retention of customers, high-profit margin, and efficiency for fighting competition (**Corea, 2017**).

Literature Review

During formative years, the machines used to be highly successful for demonstrating Intelligence while undertaking the low-level tasks which required just an autonomous behavior. Subsequent failure while performing the high-level functions that necessitated thinking, learning, and understanding caused Artificial Intelligence winters. The anticipated Artificial Intelligence spring unfolds gradually and exhibits assured results while undertaking lesser predetermined tasks (**Malali, Gopalakrishnan, 2020**).

Artificial Intelligence exhibits new abilities, such as voice acknowledgment, standard language preparing (NLP), consciousness, managing intricacy, profound learning, design

acknowledgment, PC vision, prescient and prescriptive bits of knowledge, and emoting. From performing fundamental recursive capacities ideally, AI arrangements, with the guide of self-sorting out cycles and support learning, are moving towards imaginatively tackling complex and vague issues, subsequently diminishing the requirement for human heading and intercession **(Dhanabalan and Sathish, 2018)**.

In the new Connected Life, the interweaving of everything and everybody and heap standard of conduct changes produce vast volumes of organized and unstructured information. Artificial Intelligence is being investigated to absorb this information to acquire context-oriented experiences and play out a collective or substitutive job contingent upon the casing of reference (**Rajamohan and Dhanabalan, 2013)**.

Artificial Intelligence is being tried to play out the job of Robo-specialists (client overhauling), Robo-counselors (deals and the portfolio the executives), Robo-managers (checking work), Robo-authors (content age, to exhort, empower, screen, and help individuals in mechanizing errands and cycles (**Sathish, 2018)**.

Due to guarantors' reluctance to embrace innovations that disrupt the status quo, the scope of AI is limited to business measure computerization and development sectors, for example, n Underwriting: Capabilities for rapid follow-up and mechanization, where master frameworks and case-based thinking may aid in a more rapid and dependable dynamic n Claims: Using advanced design in conjunction with processes and decision trees, identifying fraudulent behavior and determining its source (Rina Maiti and Mishra, 2018). Gathering on the web and one subtlety of clients ceaselessly to offer contextualized and in-the-second administrations n Automated work□ow the executives: Following up assignments until the consummation, lessening reliance on manual intercession and following n Straight-through preparing: Triggering activities dependent on preset conditions for quicker business measure yield with diminished exchange costs (**Gramegna and Giudici,2020).**

The desire to remain pertinent in the associated world drives guarantors to use AI in ample business measure robotization, giving rich client experience, lessening the cost of protection and conveying esteem added administrations (**Hengstler, Enkel, Duelli, 2016**).
In the short term, AI might be conveyed to coordinate various robotized measures and self-figured how to maintain consistent movement among these cycles. n Product organizing:

Launch inventive items that logically change for individual clients and consistently screen the conduct or other example changes to auto-adjust the inclusion, cost, and agreements of the agreement n Actuarial and item valuing (**Revathi, 2020)**.

AI-driven preventive consideration will build the life span of people and associated things. Because of this, recurrence and degree of preventive consideration drives will qualify as extra boundaries for evaluating. Simulated Intelligence will construct dynamic and new danger models for customized valuing n Sales and complaint the board (**Noorbakhsh-Sabet et al., 2019)**.

Utilization of voice analysis to interpret human dialogue, ascertain the client's disposition and feelings, and engage them in an appropriate and empathetic manner n Intuitive frameworks for ensuring: Deploy intelligent frameworks with advanced learning capabilities for endorsing capabilities that aid in prudent categorization, dependable choice, and risk assessment n Policy adjustment and client relationship **(Ostagar,2018)**. Utilization of NLP and relevant knowledge for robotizing Customer Relationship Management cycles, for example, lead qualification and connection. Connect with remote helpers for selling and overhauling strategies and Damage evaluation for claims: Initiate notice of misfortune consequently, perform modern picture handling to comprehend the degree of harm and reproduce the case's situation for all intents and purposes as a 3D model. Industry 4.0, which draws together existing digital frameworks, the Internet of Things (IoT), and the Internet of Services, will make an arranged environment and drive the following period of human living (**Ho et al., 2019)**.

Irksome overhauls in the capacities of Virtual Private Assistants (VPAs) in PDAs will engage pass-on alongside present-day AI support to individuals. The Wearables, regulators, drive proactive hardship lightening frameworks, and IOT associations, could lessen the occasion of a peril event, pre-illuminate when care activity is required, trigger action during an in peril situation, and assurance security reliably. Machine-to-Machine correspondence advancement will likewise change the security climate by decreasing human commitment in perilous events (**Nayak, Bhattacharyya, and Krishnamoorthy, 2019**).

Business cycles may be driven absolutely by mechanized interactions, devoid of any human touch. The entire methodology journey of the customer may happen by helping out canny machines in Smart Assistance Assist people with more significant pieces of information on

the substance and let them base on focus works out, for instance, between up close and personal interchanges and discretionary dynamic in **(Jiang et al., 2017)**.

Underwriter's progressive information will chip away at complex and become solid across all levels in Self-Learning and Automation. Can self-gain from essential data to robotize limits, such as changing ensuring rules to correct an anomaly distinguished by taking apart cases or perceiving troubled customers and proactively start the right game plan of action to prevent speed increase (**Sharma, Yadav, Chopra,2020)**.

The degree, range, and level of command to which AI reacts develops from a granular assignment level to coordinating the undertakings and clever dynamic. At this point, AI relies upon human knowledge to set the core value, course, objectives, and insight to settle on the final choice. With the early stages' new capacities of AI frameworks, the prompt center is to create sensibly precise results (**Kankanhalli, Charalabidis, Mellouli, 2019)**.

Safety net providers need to take on AI staged by picking the space for execution, relying upon their present needs regarding items, measures, client support principles, and difficulties. Long-term business responsibilities should buttress this assure outcomes from AI rely upon developing insight that can be accomplished exclusively by ceaseless AI (**Mikhaylov, Esteve, Campion,2018)**.

Safety net providers might have to begin with investigating one part of AI in specific business activity and navigate profound into it to make a specialty offering. The protection business is now changing itself into another worldview with the execution of ideas, for example, usage-based protection and health-based nonstop endorsing. Artificial Intelligence will speed up the cycle by making the protection business reshape itself, bounce the advancement bend, and redefine their computerized venture (**Marda, 2018)**.

Computerized reasoning (AI) discovers comprehensive utilization in a few enterprises, and the protection area is not resistant to its effect. The headways in AI, like Machine Learning, Deep Learning, Natural Language Processing, and Convolutional Neural Networks, to give some examples, are achieving a seismic, tech-driven shift (**Tuan, Thanh, Tuan, 2019)**.

Indeed, it is accepted that protection will before long relinquish its recognize and fix approach and embrace a more modern anticipate and relieve center. This sensational change

opens different roads for AI to penetrate the protection area. Henceforth, it should not shock anyone that McKinsey projects the yearly worth of AI tech in protection could contact a valuation of USD 1.1 trillion (**Casares, 2018**).

By utilizing Artificial Intelligence in protection, the protection players can acquire many advantages like better usefulness, upgraded client experience, proficient cases the executives, diminished fakes, and that is only the tip of the iceberg (**Sun, Medaglia, 2019**).

Objectives of the Study:

1. To find the role of artificial Intelligence in the Indian insurance sector - risk and opportunities
2. To ascertain the significance of artificial Intelligence's role in the Indian insurance sector - risk and opportunities.

Research Methodology:

The present study is descriptive wherein the factors determining the role of artificial Intelligence in the Indian insurance sector - risk and opportunities were analyzed. The sample taken for the study is 150. The information was gathered, assisted by an organized poll on a five-point scale, and investigated with the mean qualities and t-test.

Table1 Demographic profile of the respondents

Variables	**Number of respondents**	**% age**
Gender		
Males	81	54%
Females	69	46%
Total	**150**	**100%**
AI has revolutionized the insurance sector		
Yes	103	69%

No	47	31%
Total	**150**	**100%**
With AI entering the insurance sector, more and more people are trusting this sector.		
Yes	108	72%
No	42	28%
Total	**150**	**100%**
AI makes the process safe and accurate		
Yes	111	74%
No	39	26%
Total	**150**	**100%**

Table 1: presents the overall demographic profile of the respondents on the role of artificial Intelligence in the Indian insurance sector - risk and opportunities. There are 54% males and 46% females in the study. Among the respondents, 69% believe that AI has revolutionized the insurance sector, and 31% believe that AI has not revolutionized the insurance sector. 72% of the respondents think that with AI entering the insurance sector, more and more people trust this sector, and 28% think that AI entering the insurance sector has not made any difference. The percentage of respondents who think that AI makes the process safe and accurate is 74%, and 26% think it has not.

Table 2: Mean Value of artificial Intelligence's role in the Indian insurance sector - risk and opportunities.

Sr. No.	**Role of Artificial Intelligence in the Indian insurance sector - risk**	**Mean**

	and opportunities	**Score**
1.	The use of AI in the insurance sector has improved the level of customer satisfaction	4.12
2.	The use of AI benefits the agents as well as the customers	4.15
3.	AI also affects the pricing of insurance	4.08
4.	Automation of claims makes the process short and consumes less time	4.16
5.	AI also reduces the number of frauds	4.10
6.	AI streamlines the process, and thus there are fewer chances of error	4.07
7.	AI improves the experience of the customers and thus helps in customer retention	4.05
8.	AI performs even the lesser predetermined tasks efficiently	4.01
9.	All the insurance enterprises are adopting AI	4.19
10.	AI improves the efficiency of insurance enterprises and thus helps them fight competition in a better way	4.18

Table 2 shows the opinions of the respondents. It is observed that All the insurance enterprises are adopting AI with a mean value of 4.19. AI follows it improves the efficiency of the insurance enterprises and thus helps them fight competition in a better way (4.18), Automation of claims makes the process short and consumes less time (4.16), Use of AI benefits the agents as well as the customers (4.15). Further Use of AI in the insurance sector has improved the level of customer satisfaction (4.12), AI also reduces the number of frauds (4.10), AI also has an effect on the pricing of insurance (4.08), AI streamlines the process, and thus there are fewer chances of error (4.07). AI improves the customers' experience and thus helps in customer retention (4.05) were also considered necessary. Reasons like AI performs even the lesser predetermined tasks efficiently (4.01) were also viewed as necessary.

Table 3

Sr. No.	Role of Artificial Intelligence in the Indian insurance sector - risk and opportunities	Mean Score	t-Value	Sig
1.	The use of AI in the insurance sector has improved the level of customer satisfaction	4.12	7.675	0.000
2.	The use of AI benefits the agents as well as the customers	4.15	7.568	0.000
3.	AI also affects the pricing of insurance	4.08	6.586	0.000
4.	Automation of claims makes the process short and consumes less time	4.16	6.401	0.000
5.	AI also reduces the number of frauds	4.10	6.107	0.000
6.	AI streamlines the process, and thus there are fewer chances of error	4.07	6.542	0.000
7.	AI improves the experience of the customers and thus helps in customer retention	4.05	6.559	0.000
8.	AI performs even the lesser predetermined tasks efficiently	4.01	6.727	0.000
9.	All the insurance enterprises are adopting AI	4.19	8.271	0.000
10.	AI improves the efficiency of insurance enterprises and thus helps them fight competition in a better way	4.18	8.204	0.000

Table 3 shows the results of the t-test. It is found from the table that the significance value for all the statements is below 0.05, hence all the statements regarding the role of artificial Intelligence in the Indian insurance sector - risk and opportunities are significant.

Conclusion

With the applications of Artificial Intelligence in general, the regulators of insurance may take steps to better monitor the developments of Artificial Intelligence by requiring the governance structure that manages it in insurance enterprises. It would specifically be necessary for the regulators of insurance to request the intervention of humans when

unintended results or bias may be detected from the decisions of Artificial Intelligence. The regulators may have to assess if Artificial Intelligence results in undesired bias or any discriminatory practices.

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