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Award Winning Essays 2023

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NON THEME

The Journal of Insurance Institute of India is registered in University Grants Commission - UGC CARE List.

The Journal of Insurance Institute of India

Since 1974 Volume

OCTOBER-DECEMBER - 2023

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EDITORIAL

The insurance institute of India has been regularly conducting a series of essay competitions every year. High quality Essays on topics related to insurance are called for from members and prizes are given to selected papers. A total of seven awards are given every year. For some of the award's topics are selected and announced beforehand, while for others, participants are permitted to choose their topics. For the year 2022-23, essays have been selected. This issue is almost entirely devoted to publishing these award-winning essays.

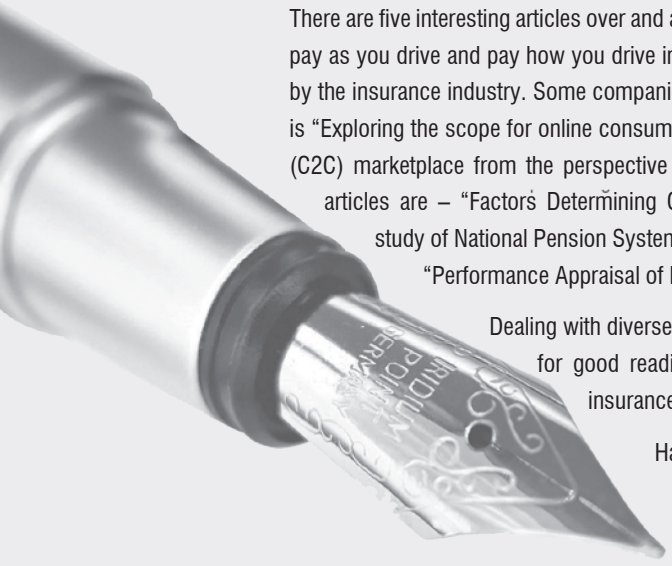
The selected essay on the award-winning essay for SK Desai Memorial essay writing competition is titled "Insurance landscape in 2030". A relatively short time frame has been chosen and delves into the expected changes in the contours of the sector.

The next Competition is SUBRAMANIAN award essay writing competition. The topic selected for the essay is "Strategic action to insure all Indians by 2047". This is on the call given by Chairman IRDAI that by the Centennial year of independence of the country ie.2047, insurance should be part of every individual's portfolio in the country.

There are three Technical Paper competitions- one for life, one for General, and one for Health. The title for the essay for Life is "Use of data analytics and artificial intelligence to enhance customer experience at all touch points". For General, the topic is "Product innovations through Insuretech". For Health the topic is "Leveraging technology to drive health insurance". As can be seen, all the three topics are related to the use of technology in the relevant fields of life, general and health. Insuretech is the current buzzword, and a lot of importance is being given to promote the usage of the same in insurance. There was also an announcement by chairman, IRDAI, that Insuretech firms would be met regularly by the regulator to understand their plans and sort out issues faced by them if any.

The two competitions instituted in the name of Shri GV Rao have brought interesting papers which have been selected for awards. One is on "Innovation in insurance products and services". The second is titled "Insurance, Indian insurance industry: the need for more insurance".

There are five interesting articles over and above the award-winning essays. One is titled "Understanding pay as you drive and pay how you drive insurance covers". This is on the new concept being explored by the insurance industry. Some companies have already come out with products for this. The second is "Exploring the scope for online consumer – generated advertising, (CGA) and customer to customer (C2C) marketplace from the perspective of the insurance Indian insurance sector". The other three articles are – "Factors Determining Choice of Investor's in Annuity Selection", "A Comparative study of National Pension System and Old Pension System from Employees' perspective" and "Performance Appraisal of Public and Private Sector Life Insurance Companies in India".



Dealing with diverse topics, these high-quality essays and articles should provide for good reading and offer a wealth of information on topics related to insurance.

Happy reading.

Editorial Team

Merit Winner

S.K.Desai Memorial Essay Writing Competition

Insurance Landscape in 2030

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The author is a Direct Recruit Officer of 26th batch in LIC of India. He is a Fellow of the Insurance Institute of India and a B.Tech. in Computer Science from Indraprastha University, Delhi. He has worked in various branches of LIC as HOD Accounts, Office Services, New Business and Policy Services for more than 11 years. Prior to joining LIC, he has worked as Software Engineer in BirlaSoft for 2 years.

Abstract

The insurance industry plays a vital role in managing risks and providing economic stability and financial security to individuals, businesses, and nations. By 2030, the insurance landscape in India is poised to witness significant transformations and growth.

The country's growing economy, technological advancements, evolving customer expectations, regulatory reforms, rising middle class and increasing awareness are all factors that will drive this unprecedented growth.

Technological innovation, with AI, machine learning, and robotic automation, will reshape underwriting, claims and customer interactions. IoT and telematics will usher in real-time data for usage-based insurance. Blockchain ensures security and efficiency. Customer expectations will pivot towards digitalization and personalization. Demographic shifts mandate long-term care insurance, urbanization necessitates property and disaster coverage, and climate change ushers in environmental risks. Regulatory reforms, sustainable practices, and green insurance will gain prominence.

Challenges include data privacy, cybersecurity, ethical use of technology, regulatory compliance, and addressing the insurance protection gap. Opportunities lie in data analytics, dynamic pricing, expanding coverage to underserved segments, and collaborations with InsurTech and FinTech innovations.

Keywords

Technological Advancements, Changing Customer Expectations, Regulatory Reforms, Market Dynamics

Introduction

Insurance

Insurance is a contract between an individual or an entity (the insured) and an insurance company (the insurer). It provides financial protection against potential losses or damages in exchange for regular premium payments. Insurance operates on the principle of "Pooling of Risk". The policyholder pays regular premiums to the insurance company, and in return, the insurer agrees to compensate the policyholder for covered losses as outlined in the insurance policy.

Genesis of Insurance

The genesis of insurance dates back to ancient civilizations such as Babylonia and China, where merchants and traders engaged in early risk-sharing and compensation practices to safeguard goods and provide financial support to members facing losses. In India, concepts of pooling resources were evident in ancient texts like ***Manusmriti*** and ***Arthashastra***.

Ancient Greece and Rome saw the emergence of ***"Benevolent Societies"*** and ***"Burial Clubs"***, respectively. The Middle Ages

introduced guilds that operated on the principle of mutual aid, while indigenous practices like ***"Yogakshema"*** and ***"Anaya"*** thrived in India, offering financial aid to individuals in crises. The modern insurance industry took shape in the late 17th century with Edward **Lloyd's** coffee house in London becoming a hub for marine insurance. In India, the Oriental Life Insurance Company was established in 1818, followed by the Triton Insurance Company in 1850, marking the formalization of insurance.

Insurance in India initially catered mainly to the European community but expanded with the growth of the Indian economy and the rise of the middle class. The Bombay Mutual Life Insurance Society, founded in 1870, was the first Indian-owned life insurance company. Nationalization occurred in 1956 with the establishment of the Life Insurance Corporation of India (LIC) and in 1972 for non-life insurance companies.

The establishment of the Insurance Regulatory and Development Authority of India (IRDAI) in 1999 marked a paradigm shift, liberalizing the insurance sector. Today, India's insurance industry covers a wide array of risks, shaped by technological advancements, regulatory reforms, and evolving customer needs, offering protection and risk mitigation to individuals and businesses.

Indian Economic Overview

The Indian economy is the third-largest in the world by nominal GDP and the seventh-largest by purchasing power parity. It is a fast-growing economy, with an average annual growth rate of 7% over the past decade.

"India is expected to become a $7 trillion economy by 2030", India's Chief Economic Advisor V Anantha Nageswaran predicted on 27-01-2023 before presentation of Economic Survey 2022-23. He said *"The country's GDP size is likely to be $3.5 trillion by March 2023 and historically, over the last 30 years, India's dollar-GDP has grown at 9 per cent in spite of the rupee's depreciation. There are episodes where the rupee has strengthened, and in that period India's GDP has grown at a double-digit rate. So, in general, if we take 10 per cent growth rate in dollar terms, the value doubles in seven years. So, if India's dollar GDP grows at 10 per cent per annum from April 2023 onwards, it could be a 7 trillion economy by 2030."*

Figure 1: India's Economy set to grow rapidly during the next decade.

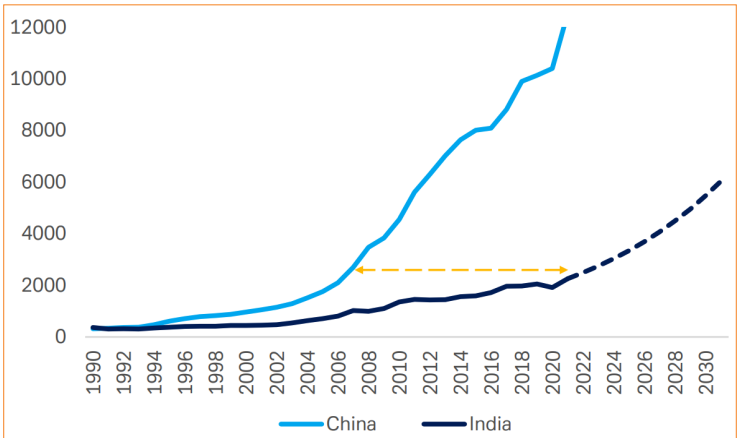
According to a report by Swiss Re, it is estimated that total insurance premiums (life and non-life) will grow by an average 14% per annum in nominal local currency terms (9% per annum in real) over the next decade. At this pace, India will become the sixth largest insurance market in the world in terms of premium volume by 2032, up from 10th largest in 2021. **[1]**

Insuring India

According to **Invest India** initiative of **National Investment Promotion & Facilitation Agency**, *India is projected to become the 6th largest insurance market by 2032.* **[2]** India's insurance premium volume stands at $ 127 Bn as of 2021 (Life – 76%, Non-Life – 24%). Total insurance premium in India increased by 13.5% in 2021 as against a global average of 9%.

1. In terms of total premium volumes, India is the 10th largest market globally and the 2nd largest of all emerging markets, with an estimated market share of 1.9%. It is expected

Figure 2: Per capita GDP (USD) forecast for India: China was at India's current level in 2006-07



Source: Refinitiv, DataStream, Deutsche Bank AG. Data as of February 2023.

that premiums will grow by an average 9% p.a. (in real terms) over the next decade.

2. India has 67 insurers of which 24 are life insurers, 26 are general insurers, 5 are stand-alone health insurers, and 12 are re-insurers (March 2022).

3. **Snapshot of key insurance metrics**

   a. Insurance density in India has increased from $ 11.1 in 2001 to $ 91 in 2021 (Life insurance – $ 69, Non-life insurance – $ 22).

   b. Insurance penetration in India has been steadily increasing (from 2.7% in 2000 to 4.2% in 2021).

   c. The insurance penetration in the life insurance sector was 3.2% in 2021 -twice more than emerging markets and slightly above the global average.

   d. In FY22, the gross direct premium of non-life insurers and life insurers witnessed a YoY growth of 10.8% and 10.2%, respectively.

   e. In FY23, the New Business Premium of the life insurance industry grew at 17.91% with private insurers accounting for 37% of the NBP of ~$45 bn.

Importance of Insurance

Insurance holds immense importance in modern society due to its multifaceted role in promoting economic stability and safeguarding individuals, businesses, and communities from financial turmoil resulting from unexpected events. Here's a breakdown of its significance:

1. **Risk Mitigation and Financial Protection:** Insurance shields individuals and businesses from unforeseen financial losses, ensuring they can recover and maintain stability after accidents, disasters, or health issues.

2. **Promoting Investment and Entrepreneurship:** By mitigating risks, insurance encourages entrepreneurs to undertake new ventures and provides security to investors and lenders, fostering economic growth.

3. **Enhancing Business Continuity:** Insurance aids in the swift recovery of businesses after setbacks, preserving jobs, supply chains, and economic growth.

4. **Facilitating Trade and Commerce:** Insurance reduces uncertainties in cross-border transactions, facilitating international trade and cooperation by safeguarding goods and payments.

5. **Social Stability and Welfare:** Health, life, disability, and long-term care insurance support individuals and families during challenging times, maintaining social cohesion and well-being.

6. **Risk Pooling and Financial Resilience:** Insurance spreads risks across a diverse pool, enhancing financial resilience for individuals and businesses while minimizing the impact of losses on the economy.

7. **Economic Growth and Stability:** Insurance encourages investment, entrepreneurship, and innovation, contributing to economic growth and providing stability to the financial sector.

8. **Disaster Management and Rebuilding:** Insurance plays a vital role in disaster recovery efforts, offering financial resources for rebuilding and rehabilitation, aiding communities in regaining stability.

Technological Advancements

The insurance industry is on the cusp of a technological revolution that will fundamentally transform the way it operates. Advancements in technologies such as AI and ML, IoT, blockchain and smart contracts, RPA, and data analytics are poised to have a profound impact on the industry by 2030. These innovations hold the potential to streamline processes, enhance efficiency, improve risk assessment accuracy, and deliver personalized customer experiences.

Artificial Intelligence (AI), Machine Learning (ML) and Internet of Things (IOT)

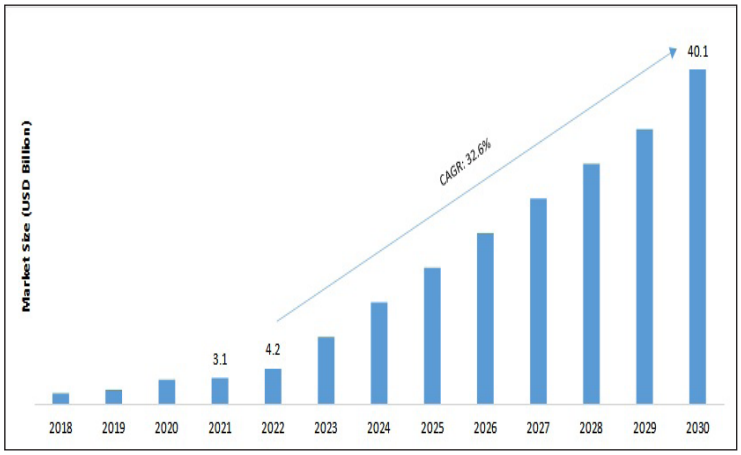
Artificial Intelligence is the ability of algorithms to imitate human behaviour in applying knowledge. AI can automate repetitive tasks, enhance customer experience, and make intelligent decisions based on data.

Machine Learning is the means of achieving AI by training an algorithm with data. ML can learn from errors and activities, and evolve to perform better over time by leveraging deep learning, artificial neural networks, and natural language processing.

Internet of Things refers to the network of interconnected physical devices, vehicles, and other objects embedded with sensors, software, and internet connectivity that enable them to collect and exchange data to control other devices or influence the real world.

"AI In Insurance Market is expected to reach USD 40.1 Billion with 32.6% CAGR from 2022 to 2030" - Report by Market Research Future (MRFR). **[3]**

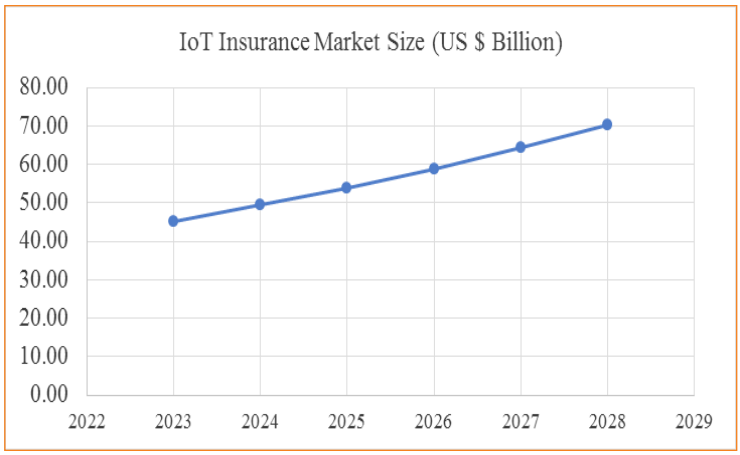
Figure 3: AI in Insurance Market Size Share



Source: Secondary Research, Primary Research, MRFR Database and Analyst Review.

"The IoT Insurance Market size is expected to grow from USD 45.23 billion in 2023 to USD 70.26 billion by 2028, at a CAGR of 9.21% during the forecast period (2023-2028)." - IoT Insurance Market Size Report by Mordor Intelligence **[4]**

Figure 4: IoT in Insurance Market Size Share



Source: IoT Insurance Market Size Report by Mordor Intelligence

AI and ML are poised to revolutionize the insurance industry by 2030 in the ways listed below –

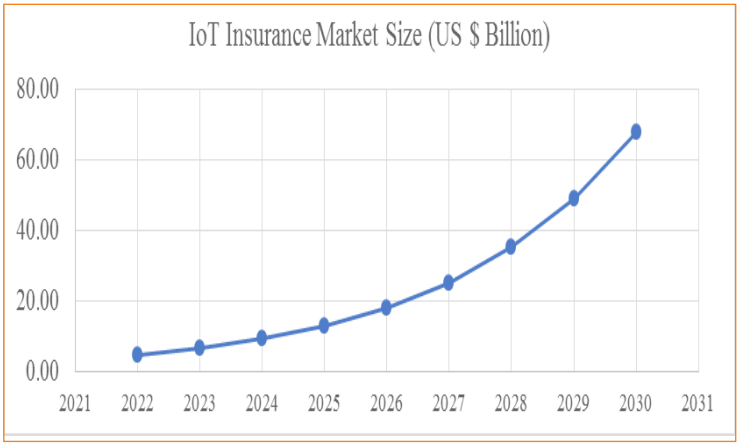
1. **Underwriting and Risk Assessment**: AI and ML will play an increasingly significant role in underwriting. IoT devices will provide real-time data, such as vehicle telematics and home sensors, enabling insurers to assess risks accurately and customize policies. Data analytics and predictive modelling will automate underwriting processes and offer tailored insurance solutions.
2. **Claims Processing and Fraud Detection**: IoT-connected devices will streamline claims processing, with smart home sensors detecting incidents and improving the claims experience. Automation and AI-powered chatbots will handle claims information, while ML algorithms will enhance fraud detection, leading to faster settlements.
3. **Customer Experience and Personalization**: AI and ML will elevate customer experiences, with advanced chatbots and virtual assistants providing personalized recommendations and interactive communication. IoT data will enable tailored products and services, such as health monitoring through wearable devices.
4. **Risk Management and Loss Prevention**: AI, ML, and IoT will enhance risk management by collecting real-time data, enabling proactive risk identification, and triggering alerts. This will be applied to various domains, like analyzing driving patterns to improve safety or assessing property risks for loss prevention.
5. **Automated Underwriting and Product Development**: Automated underwriting systems will use data analytics to streamline policy issuance and offer real-time quotes. ML algorithms will identify new product opportunities, leading to innovative, customized insurance offerings.

Blockchain Technology and Smart Contracts

Blockchain technology and smart contracts are poised to revolutionize the insurance industry by enhancing security, efficiency, and transparency. Blockchain, a distributed ledger, offers verifiable and immutable transaction records. Smart contracts, coded on the blockchain, self-execute based on predefined conditions. While adoption is in its early stages, the potential benefits are significant.

By 2030, these technologies are expected to transform policy management through secure, automated processes. Claims processing will become faster and more accurate, with transparent records and automated settlements. Fraud detection will improve through real-time monitoring. Regulatory compliance will be streamlined, and interoperability will foster collaboration among stakeholders, creating a more efficient insurance ecosystem.

Figure 5: Blockchain in Insurance Market Size Share



Source - Blockchain in Insurance Market Research Forecast 2030 by MRFR.

"Valuation is poised to reach USD 67.9 billion by 2030, registering a 39.20% CAGR throughout the forecast period (2022–2030)" - Blockchain in Insurance Market Research Forecast 2030 by Market Research Future (MRFR). **[6]**

Robotic Process Automation (RPA) and Claims Processing

Robotic Process Automation (RPA) is a transformative technology automating repetitive, rule-based tasks in the insurance industry, notably in claims

processing. RPA streamlines operations, enhancing efficiency, accuracy, cost-efficiency, and customer satisfaction. McKinsey predicts that by 2030, over half of claims activities will be automated.

1. **Increased Efficiency**: RPA liberates employees from mundane tasks like data entry, document processing, and customer communication. This allows staff to focus on more complex responsibilities such as customer service and claims adjudication, significantly improving operational efficiency.

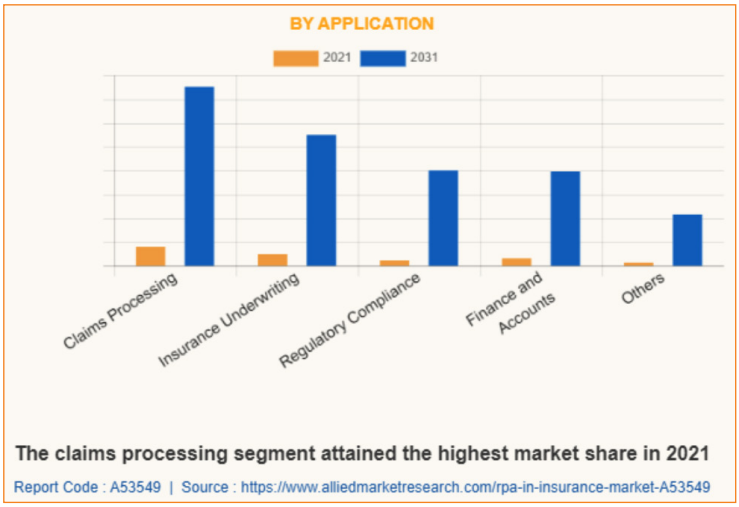
2. **Improved Accuracy**: RPA reduces errors in claims processing by automating tasks prone to human mistakes. This not only saves time and resources but also elevates customer satisfaction by ensuring accuracy throughout the process.

3. **Reduced Costs**: By automating tasks currently performed by humans, RPA cuts down claims processing costs. This cost-saving effect can be reinvested to enhance other aspects of the claims process, particularly customer service.

4. **Enhanced Customer Satisfaction**: RPA accelerates claims processing and minimizes errors, ultimately reducing processing times. This boosts customer satisfaction, fostering loyalty and repeat business.

"The global RPA in insurance market was valued at $98.6 million in 2021, and is projected to reach $1.2 billion by 2031, growing at a CAGR of 28.3% from 2022 to 2031." - RPA In Insurance Market Research, 2031. **[7]**

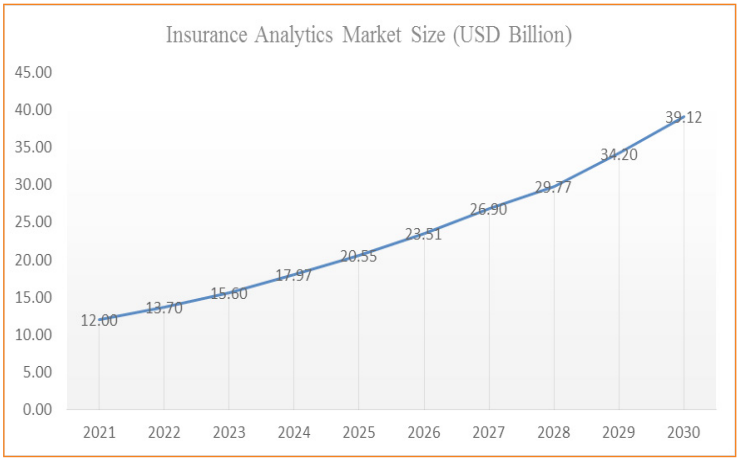
Figure 6: RPA in Insurance Market Size Share



Data analytics and predictive modelling for risk assessment

Data analytics in insurance involves collecting and analyzing data to gain insights, assess risk, price policies, and prevent fraud. Predictive modeling, a subset of data analytics, uses statistics to forecast future outcomes, such as claim likelihood, cost, and fraud risk. *"The global insurance analytics market size was worth USD 12 billion in 2021 and is projected to reach USD 39 billion by 2030, growing at a CAGR of 14.4%." - Straits Research* **[8]**

Figure 7: Global Insurance Analytics Market Size Share



By 2030, technological advancements like AI, ML, IoT, blockchain, smart contracts, RPA, and data analytics will boost efficiency and customer experiences. These technologies will enable precise risk assessment, real-time data utilization, enhanced security, automation, personalization, and proactive

risk management. Insurers must embrace these innovations to remain competitive.

Changing Customer Expectations

The insurance industry is undergoing a major shift due to digital transformation and changing customer expectations, departing from traditional practices.

Digital Transformation and Personalized Customer Experiences

Digital transformation has become a driving force across industries, including insurance. Customers now expect seamless digital experiences, personalized services, and real-time interactions. *According to Accenture's Global Insurance Consumer Study 2021, "75% of customers are more likely to purchase insurance from a company that offers personalized advice or recommendations based on their individual needs."* **[10]**

By 2030, digital transformation will be fully integrated into the insurance industry, with personalized customer experiences becoming the norm. Advanced analytics and artificial intelligence (AI) will enable insurers to understand customer preferences and offer tailored coverage options. *Deloitte predicts that "By 2030, 95% of customer interactions in the insurance industry will be supported by AI."* **[11]** *A recent study by PwC found that "67% of insurance customers are willing to switch insurers if they don't have a good digital experience." The study also found that "75% of customers expect to be able to manage their insurance policies entirely online."* **[12]**

Usage-Based Insurance and Telematics

Usage-based insurance (UBI) and telematics have gained momentum in recent years. These technologies collect data from various sources, such as telematics devices or mobile apps, to assess individual driving behaviour and calculate insurance premiums accordingly. Customers, especially younger generations, are increasingly interested in personalized pricing based on their actual usage and risk profiles.

By 2030, usage-based insurance and telematics will become mainstream, replacing traditional rating models thanks to increased adoption of connected devices and IoT, enabling precise risk assessment and fairer premiums. *According to a report by P&S Intelligence, "Usage-based insurance (UBI) policies will represent 45% of all auto insurance premiums by 2030."* **[13]**

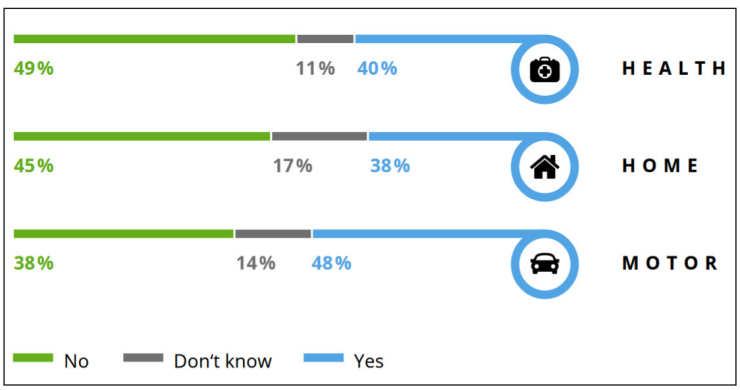
On-Demand Insurance and Microinsurance

On-demand insurance and microinsurance are growing due to the sharing economy and changing lifestyles. By 2030, they will become standard offerings as insurers use digital platforms and partnerships to offer instant coverage for short-term needs. *According to McKinsey, "The global microinsurance market is projected to reach $84 billion in premiums by 2030, driven by increased access through digital channels."* **[14]**

Customer-Centricity and Improved Claims Experience

Customers have long desired a simpler, quicker, and more transparent claims process in the insurance industry. In the digital age, customer-centricity is crucial, and insurers are responding by prioritizing automation, digitization, and AI in claims processing. By 2030, these

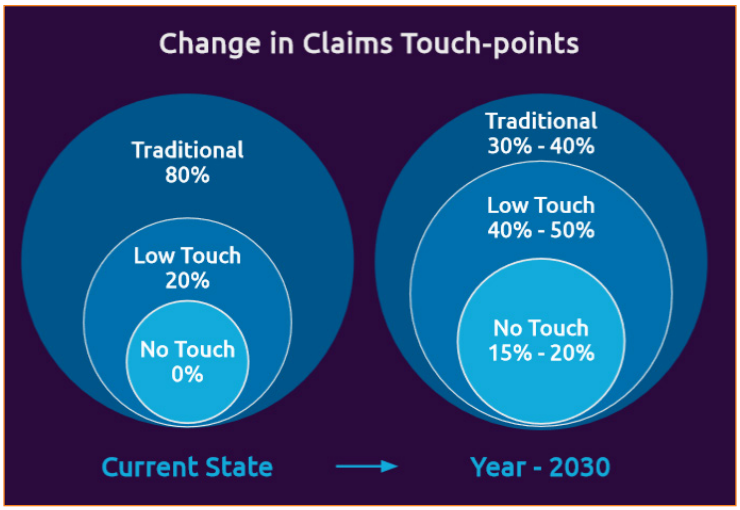
Figure 8: Proportion of Customers who would be willing to track their behaviour and share this data with insurers for a more accurate premium



Source - Artificial Intelligence in Insurance by Deloitte [11]

efforts will lead to personalized and efficient customer experiences, aided by blockchain for transparency. *According to a report by Capgemini, "Only 30% of insurance claims will be settled by traditional methods by 2030 as opposed to 80% now. 70% insurance claims will be settled using "Zero Touch" or "Low Touch" methods."* **[15]**

Figure 9: Change in Claims Touch Points



Rise of InsurTech Start-ups and Their Impact on Traditional Insurers

InsurTech start-ups are reshaping insurance through technology and innovation. By 2030, their influence will expand, prompting traditional insurers to collaborate with or acquire them to stay competitive and offer enhanced customer experiences. *In its 2023 Insurance Outlook report, Deloitte predicts that "By 2030, at least 30% of the insurance value chain will be driven by InsurTech start-ups, leading to a redefined industry ecosystem. The InsurTech industry is expected to grow at a compound annual growth rate (CAGR) of 40% from 2020 to 2025."* **[16]**

The insurance industry is experiencing a profound transformation driven by evolving customer expectations, digital innovation, and the rise of InsurTech start-ups. As these changes unfold, The insurance industry must embrace change to meet the changing needs and expectations of its customers in the coming decade.

In the words of Charles Darwin, "It is not the strongest of the species that survives, nor the most intelligent; it is the one most adaptable to change."

Regulatory Reforms

Regulatory reforms are pivotal in ensuring fairness, consumer protection, and innovation in the insurance sector. The Insurance Regulatory and Development Authority of India (IRDAI) is the governing body responsible for overseeing and advancing the insurance sector in India. Established in 1999, it has a multifaceted mission, including safeguarding policyholders' interests, encouraging fair competition, ensuring insurers' financial stability, fostering innovation, and supervising intermediaries. India's insurance industry stands at a crucial juncture, with the success of IRDAI's reforms determining its future growth and prosperity.

In recent times, IRDAI has introduced several initiatives poised to reshape the Indian insurance landscape:

1. **Bima Sugam**: A digital platform designed as a one-stop-shop for insurance-related activities, streamlining policy purchase, claim settlements, and insurance guidance. It aims to facilitate e-insurance accounts and expedite the acceptance of innovative products.
2. **Bima Vahak**: This new category of insurance intermediaries will help sell policies through Bima Sugam, offering unbiased information and support to customers while receiving nominal fees from IRDAI rather than insurers or customers.
3. **Bima Vistaar**: Geared toward expanding insurance coverage in rural and social sectors, Bima Vistaar allows insurers more flexibility in product design and distribution channels. It rewards top performers and fosters insurance awareness in underserved communities.

4. **Regulatory Sandbox**: This approach permits insurers to experiment with innovative products and services under relaxed regulatory conditions, promoting customer-centricity, efficiency, and transparency while managing risks.
5. **Capital and Ownership Changes**: IRDAI has approved various changes, including allowing private equity funds to invest directly in insurers, enabling banks to partner with multiple insurers, and permitting insurers to invest in alternative avenues. These changes enhance industry growth, profitability, diversification, and competitiveness.

Looking ahead to 2030, IRDAI aims to adapt its regulatory framework to emerging industry trends and challenges, emphasizing consumer-centric regulations, transparency, robust risk management practices, and digital innovation. Collaboration with InsurTech startups and technology-driven initiatives will be pivotal for industry growth.

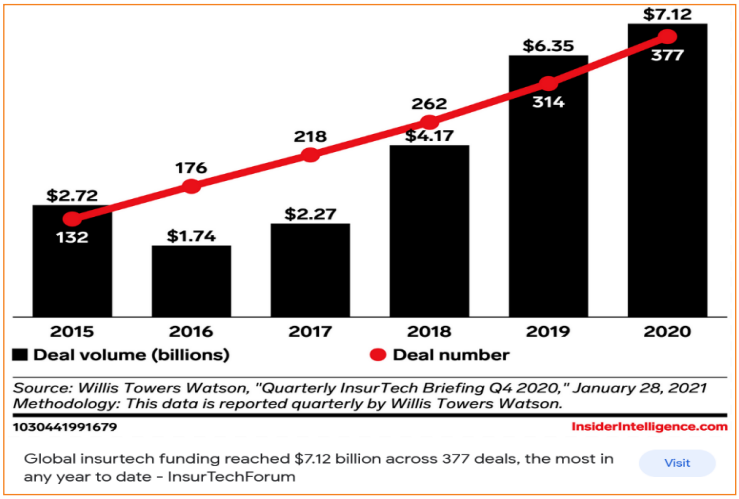
According to the IRDAI's annual report for the year 2020-2021, the Indian insurance industry witnessed a growth of 10.9% in total premium underwritten during the fiscal year, reaching INR 7.32 trillion ($98.8 billion).

InsurTech Regulation and Sandboxing

InsurTech, the application of technology and innovation in insurance, has seen substantial growth. Regulators worldwide are using regulatory sandboxes to oversee InsurTech's evolution while managing risks. By 2030, regulatory sandboxes will be firmly established, with regulators like IRDAI refining frameworks to promote innovation. These sandboxes enable controlled testing of new insurance technologies and products, ensuring compliance and consumer protection.

According to a report by PwC, "Global investment in InsurTech reached $7.1 billion in 2020, representing a 12.5% increase compared to the previous year. The InsurTech market in India is expected to reach $1 billion by 2025." **[17]**

Figure 10: Annual Global InsurTech Funding



Open Banking and Collaboration between Insurers and Fintech Companies

Open banking, promoting secure data sharing between banks and third-party providers, is poised to reshape insurance. Insurers and fintech firms collaborating will foster innovation, seamless customer experiences, and personalized offerings. By 2030, open banking will become prevalent in insurance, with regulators like IRDAI implementing guidelines for secure data sharing and privacy protection. This collaboration will lead to tailored insurance solutions, efficient underwriting, and improved customer experiences.

Juniper Research has reported that "The open banking market in India is expected to reach $10 billion by 2025". **[18]**

According to a survey by Accenture, "90% of insurers believe that collaboration between traditional insurers and fintech companies will be essential for driving innovation and growth in the industry." **[19]**

Customer Data Protection and Privacy Regulations

Regulatory reforms will bolster customer data protection and privacy regulations in insurance by 2030. Regulators, including the IRDAI, will enforce strict compliance, data

breach notifications, and consent protocols. Insurers will prioritize data governance, cybersecurity, and responsible data analytics to maintain customer trust.

According to a survey by Deloitte, "83% of consumers are concerned about how their personal data is being used by third parties." **[20]** This data highlights the importance of robust data protection regulations and responsible data management practices.

New Product Development and Innovation-Friendly Policies

To remain competitive and meet evolving customer needs, insurers must continuously innovate and develop new products and services. Regulatory reforms that foster an innovation-friendly environment are critical for promoting creativity, encouraging experimentation, and driving product development.

By 2030, regulators, including the IRDAI, will introduce policies that support new product development and innovation.

According to a survey by KPMG, "86% of insurance executives believe that innovation is a top priority for their organizations." **[21]**

As the renowned economist Joseph Schumpeter once said, "Innovation is the lifeblood of economic change." Regulatory reforms that embrace innovation will be crucial in shaping the future of the insurance industry, fostering its growth and relevance in the years to come.

Market Dynamics

The insurance industry is undergoing changes due to evolving customer needs, technology, and risk factors, impacting market dynamics and sustainability practices.

According to research by The Business Research Company, "The Global Insurance (Providers, Brokers and Re-Insurers) Market was estimated to be valued at $6440.96 billion in 2022. The growth rate of the Global Insurance (Providers, Brokers and Re-Insurers) Market is 5.7%, with an estimated value of $8036.89 billion by 2026." **[22]**

Insurance penetration in rural and semi-urban areas is set to increase significantly by 2030, with a projected rise from 12% in 2020 to 20%. Initiatives by governments, regulators, and insurers will promote financial inclusion and leverage technology to bridge the insurance gap. **Digital distribution channels** will replace traditional methods, offering customers convenient, personalized experiences through online platforms, mobile apps, and digital aggregators. Advanced analytics and AI will help insurers understand customer preferences and customize their products. This transformation will align with evolving customer expectations and enhance access to insurance products.

According to a report by PwC, "Digital channels will account for more than 60% of insurance distribution by 2030." **[23]**

Table 1: Market Share of Distribution Channels

Distribution Channel	Market Share (%)	
	Current (2023)	Projected (2030)
Direct-to-consumer (digital)	20	60
Independent agents	40	20
Banks and other financial institutions	20	10
Other channels (e.g., call centers, brokers)	20	10

The insurance industry is witnessing **increasing competition**, with new entrants like InsurTech startups and non-traditional players like tech companies disrupting the market. This has led to **market consolidation** as established insurers merge or acquire smaller companies to gain a competitive edge. By 2030, competition and consolidation will intensify further. Established insurers will seek partnerships and acquisitions to bolster their technological capabilities and expand their product range, potentially making it harder for smaller insurers to compete.

Emerging risk factors driven by technology, demographics, and global events are shaping the risk landscape. Insurers are responding by developing **specialized products** to address new risks like cyber threats, climate change-related perils, and pandemics. Parametric insurance, which uses predefined

triggers instead of indemnification, will become prominent for climate-related risks.

Moreover, insurers are focusing on **sustainability** and integrating climate-related risks into their operations. They'll adopt sustainable investment practices, consider ESG factors in decision-making, and incentivize policyholders to adopt sustainable behaviors. Innovative insurance products will also emerge to tackle **climate-related risks**, such as parametric coverage for extreme weather events and green insurance for renewable energy projects.

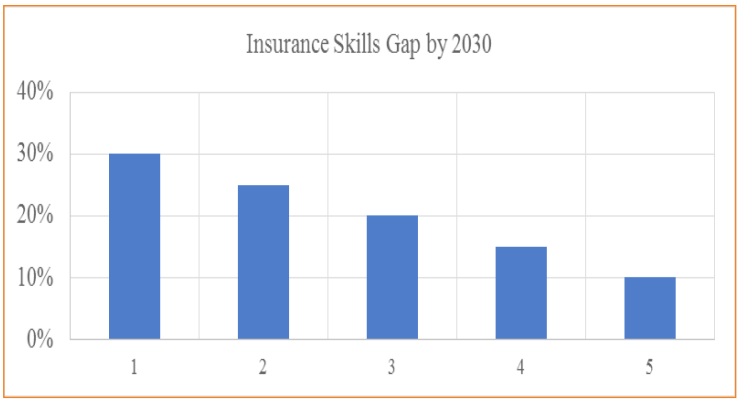
The insurance industry is undergoing constant change driven by various factors. Challenges and opportunities coexist in this dynamic landscape. Insurers need to adapt by embracing technology, innovating products, improving customer experiences, and promoting sustainability to succeed in the evolving market. Adapting to change is crucial for meeting customer expectations in 2030 and beyond.

In the words of Winston Churchill, "To improve is to change; to be perfect is to change often."

Challenges and Opportunities

The insurance industry faces a transformative era marked by evolving customer expectations, technological advancements, and complex risk landscapes. Challenges include cybersecurity risks, changing customer preferences, workforce upskilling, regulatory compliance, and data analytics. Insurers must invest in balancing innovation with compliance, and leverage latest technologies and skilled workforce for improved risk assessment and pricing. By 2030, it is estimated that 30% of the workforce will need to be upskilled in Artificial Intelligence (1), 25% in Blockchain (2), 20% in Cybersecurity (3), 15% in Data Analytics (4), and 10% in Internet of Things (IoT) (5).

Figure 11: Insurance Skills Gap by 2030



Collaboration among insurers, regulators, and technology experts is essential to address these challenges. By 2030, the industry will be defined by innovation-driven cybersecurity, personalized omni-channel experiences, a digitally skilled workforce, regulatory innovation sandboxes, and advanced data analytics shaping competitive insurance solutions.

Conclusion

The insurance industry is undergoing rapid transformation, driven by technological advancements, evolving customer expectations and shifting risk landscapes. While challenges such as cybersecurity risks, changing customer preferences, regulatory compliance and skill gaps exist, the industry also presents exciting opportunities for growth and innovation. By addressing cybersecurity risks, adapting to changing customer preferences, upskilling the workforce, balancing innovation with regulatory compliance, and leveraging data analytics, the insurance industry can thrive in the years to come. The key lies in embracing these challenges as opportunities and nurturing a culture of continuous learning, innovation, and customer-centricity. Insurers that are able to successfully address these challenges and opportunities will be well-positioned for success in the future.

In the words of Albert Einstein, ***"In the middle of difficulty lies opportunity."*** **The insurance industry must embrace the challenges it faces and transform them into opportunities for growth, resilience, and customer value in the dynamic landscape of the future.** TJ

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Merit Winner

D. Subrahmaniam Award Essay writing Competition

Insurance for All by 2047

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Abstract

This essay delves into the insurance industry's journey towards achieving "Insurance for All" by 2047, addressing the challenge of low insurance penetration. It underscores the crucial role of awareness and education through financial literacy campaigns, partnerships with educational institutions, and digital platforms to reach the wider public.

Additionally, the essay highlights the significance of product innovation, tailoring insurance solutions to diverse needs, and exploring emerging sectors like cyber insurance. It emphasizes technology adoption, including insurtech innovations, to enhance customer experiences and streamline processes.

The essay stresses the importance of regulatory reforms, such as transparent practices and cross-border collaboration, illustrated by examples like the "Use and File" procedure extension. These reforms aim to simplify licensing, strengthen risk management, and attract foreign investments.

In summary, this comprehensive overview outlines strategic actions within the insurance industry, emphasizing awareness, education, innovation, technology, regulatory changes, international collaboration, and distribution channels. These actions collectively work towards the ambitious goal of achieving "Insurance for All" by 2047.

Introduction

Imagine a future where every citizen of India is shielded from the uncertainties of life, where their health, property, and loved ones are protected by the reassuring embrace of insurance. Envision a nation where thriving enterprises find solace in robust insurance solutions, empowering them to navigate risks with confidence. This future is not a distant dream but a resolute commitment made by the Insurance Regulatory and Development Authority of India (IRDAI): to enable 'Insurance for All' by 2047.

The 'Insurance for All' initiative by the Insurance Regulatory and Development Authority of India (IRDAI) is a visionary commitment aimed at providing every Indian citizen, regardless of their background or economic status, with access to essential life, health, and property insurance coverage by 2047. Historically, India has faced low insurance penetration due to awareness, affordability, and accessibility challenges, leaving many vulnerable to financial hardships. This initiative seeks to address these barriers and create an inclusive insurance ecosystem that safeguards individuals and enterprises, promotes financial security, and contributes to the nation's overall well-being, reflecting the monumental task of ensuring comprehensive coverage in a diverse and populous country like India.

Indian Insurance Landscape

Overview of the Indian Insurance Sector

The Indian insurance sector has experienced significant growth and transformation over the years, becoming a crucial component of the country's financial services industry. The sector is regulated and supervised by the Insurance Regulatory and Development Authority of India (IRDAI), which plays a vital role in ensuring the stability, integrity, and growth of the insurance market. India ranks as the fifth largest market for life insurance among emerging insurance markets globally, displaying an impressive annual growth rate of 32-34%. (INDIAN BRAND EQUITY FOUNDATION, n.d.)

In India's insurance industry, there are a total of 57 insurance companies operating, with 24 dedicated to life insurance and 33 focusing on non-life insurance. The life insurance segment consists of a single public sector company, namely Life Insurance Corporation (LIC), while the non-life insurance sector comprises six public sector insurers. Additionally, the market includes a national re-insurer called General Insurance Corporation of India (GIC Re). Various stakeholders, including individual and corporate agents, brokers, surveyors, and third-party administrators, contribute to the functioning of the Indian insurance market, particularly in servicing health insurance claims. (INDIAN BRAND EQUITY FOUNDATION, n.d.)

The Indian insurance sector can be broadly classified into two categories: life insurance and non-life insurance (also known as general insurance).

However, despite the progress made, insurance penetration in India still remains relatively low compared to global standards. The challenge lies in increasing awareness, affordability, and accessibility of insurance products, particularly in rural and underserved areas.

At this juncture, the Indian insurance sector is a dynamic and evolving industry that encompasses both life insurance and non-life insurance. With ongoing regulatory reforms and a focus on inclusive growth, the sector aims to address the insurance needs of individuals, protect assets, and contribute to the overall economic development of the country

Growth and Potential of the Indian Insurance Industry

The Indian insurance industry presents significant growth prospects with various contributing factors. Although insurance penetration, measured by premiums relative to GDP, is increasing steadily, it remains relatively low on a global scale. India's vast population of over 1.3 billion represents an enormous untapped market, as a large portion of the populace remains underinsured or uninsured, offering insurers ample opportunities to cater to unmet needs.

The Indian government has actively initiated programs like Pradhan Mantri Jan Dhan Yojana (PMJDY) and Pradhan Mantri Suraksha Bima Yojana (PMSBY) to boost insurance penetration and financial inclusion, especially among underserved sections.

India's demographic advantage, with a substantial young population entering the workforce and starting families, further enhances the insurance industry's potential. The digital revolution in the country has created new avenues for insurers to reach customers, streamline operations, and improve customer experiences through insurtech solutions.

Moreover, the COVID-19 pandemic has underscored the importance of health insurance, driving increased demand for comprehensive coverage. Insurers can tap into this demand by offering innovative and affordable health insurance products.

Lastly, as India's economy grows and infrastructure projects expand, there is a corresponding need for insurance coverage to mitigate associated risks in sectors like construction, manufacturing, transportation, and logistics.

With ongoing innovation, customer-centric solutions, and digital enhancements, the Indian insurance industry is poised for sustainable growth in the years ahead.

Current Challenges & Limitations

The Indian insurance industry has witnessed significant evolution and growth in recent years. However, amidst the potential for further development, it is crucial to acknowledge and address the challenges and limitations within the current insurance landscape. As we strive towards achieving the

ambitious goal of "Insurance for All" by 2047, it becomes imperative to tackle several key challenges within the insurance ecosystem. These challenges necessitate focused efforts and strategic interventions to ensure a robust and inclusive insurance sector. Some of the major challenges that require attention include:

1. **Low Insurance Adoption:** Despite significant progress, insurance penetration in India remains relatively low, particularly in rural and economically disadvantaged areas. Lack of awareness, cultural barriers, and limited understanding of insurance products hinder widespread adoption.
2. **Lack of economical products:** Affordability of insurance products is a significant challenge, especially for individuals with low incomes. Many potential policyholders find it difficult to allocate funds for insurance premiums, leading to low uptake of insurance coverage.
3. **Inadequate Product Customization:** The insurance industry needs to offer more tailored products that cater to the specific needs of individuals and businesses. The current product offerings often do not adequately address the diverse risks and requirements of customers.
4. **Distribution Challenges:** Access to insurance products and distribution networks remains a challenge, particularly in rural and remote areas. The insufficient presence of insurance agents, the limited reach of insurance companies, and the lack of technology-driven distribution channels hinder the expansion of insurance coverage.
5. **Underinsurance:** A significant portion of the population remains underinsured, with inadequate coverage for life, health, and property risks. Many individuals and businesses do not possess sufficient insurance protection to mitigate potential financial losses in the event of unforeseen events.
6. **Regulatory and Legal Barriers:** Certain regulatory and legal constraints create challenges for the insurance industry. Cumbersome compliance procedures, outdated regulations, and complex claim settlement processes can hinder the growth and efficiency of insurers.
7. **Deception:** Instances of fraud and mis-spelling pose a challenge to the insurance sector. Unscrupulous agents or intermediaries may engage in fraudulent practices, misleading customers and tarnishing the industry's reputation.
8. **Low tech advancements:** While technology offers immense opportunities for the insurance sector, its adoption, and implementation have been relatively slow. Insurers need to embrace digitization, advanced analytics, and artificial intelligence to improve operational efficiency, customer experience, and risk management.

Addressing these challenges and limitations requires a collaborative effort from insurance companies, regulators, and other stakeholders. The industry needs to develop innovative and affordable products, expand distribution networks, leverage technology for efficient operations, and enhance customer engagement.

Strategic Actions for Achieving 'Insurance for All' and Enhancing Global Attractiveness

Strategic actions are instrumental in realizing the vision of "Insurance for All" and enhancing the global attractiveness of the Indian insurance sector. Intending to provide appropriate life, health, and property insurance coverage to every citizen, and supporting enterprises with suitable insurance solutions, the Insurance Regulatory and Development Authority of India (IRDAI) has set forth a roadmap for the future. By implementing a comprehensive range of strategic actions, including regulatory reforms, technological advancements, market development, and stakeholder collaborations, India's insurance sector can position itself as a globally attractive destination. As we explore the strategic actions necessary to achieve these goals, we embark on a transformative journey that will shape the future of the insurance industry, promote financial inclusion, and safeguard the well-being of individuals and businesses alike.

1. AWARENESS AND EDUCATION

Awareness and education serve as the crucial first and foremost steps in promoting the ambitious goal of "Insurance for All" by 2047. As insurance plays a vital role in providing financial security and mitigating risks, it is essential to ensure that individuals and businesses are equipped with the knowledge and understanding necessary to make informed decisions about insurance coverage. To enhance awareness and financial literacy, the insurance industry can implement several strategic initiatives:

Promoting Financial Literacy and Insurance Awareness Campaigns: Collaborative efforts between insurance companies, regulators, and government agencies can be undertaken to conduct widespread financial literacy and insurance awareness campaigns. These campaigns should aim to educate individuals about the importance of insurance, the various types of insurance products available, and the benefits of having adequate coverage. Public awareness programs, workshops, seminars, and media campaigns can be utilized to disseminate information.

Collaborations with Educational Institutions and NGOs: Establishing partnerships with educational institutions, such as schools, colleges, and universities, can be instrumental in integrating insurance education into the curriculum. Additionally, collaborations with non-governmental organizations (NGOs) working in the field of financial literacy can help in reaching out to underserved communities and promoting insurance awareness among vulnerable populations. For instance, as a member of the Technical Group of Financial Inclusion and Financial Literacy (TGFIFL) and the Core Committee of the National Centre for Financial Education (NCFE), IRDAI assumes a pivotal role in guiding and implementing the National Strategy for Financial Education. IRDAI officers collaborate with the representatives of the Core Committee of NCFE and TGFIFL to facilitate their meetings and ensure effective coordination for the successful execution of financial education initiatives. (IRDAI, n.d.)

Leveraging Digital Platforms and social media: In today's digital age, leveraging technology and social media platforms can be an effective way to raise insurance awareness. Insurance companies can develop user-friendly websites, mobile applications, and online tools that provide easy access to information about insurance products, coverage options, and premium calculations. Social media platforms can be utilized to engage with a wider audience, share educational content, and address common misconceptions about insurance. Digital campaigns, webinars, and interactive online sessions can also be conducted to educate individuals on insurance-related topics. For instance, The consumer education website of IRDAI, *www.policyholder.gov.in*, effectively communicates the advantages of different insurance products, provides clear guidelines on best practices and grievance redressal, and disseminates valuable information in a user-friendly manner.

Furthermore, collaborations with influencers, bloggers, and content creators in the finance and insurance domain can help disseminate accurate and relevant information to a broader audience. Utilizing

digital platforms not only enables wider outreach but also provides an opportunity for interactive engagement, making it easier for individuals to seek information, compare policies, and make informed decisions about insurance.

2. PRODUCT INNOVATION & CUSTOMISATION

Product innovation and customization serve as strategic actions that can propel the Indian insurance sector toward achieving the goal of "Insurance for All" by 2047. By identifying unmet insurance needs, developing tailored insurance products, addressing microinsurance and rural insurance requirements, and exploring new insurance sectors, the industry can enhance its offerings and expand its reach.

One of the key strategic actions is to identify unmet insurance needs. By conducting market research, analyzing demographic trends, and understanding the evolving risks faced by individuals and businesses, insurers can identify gaps in insurance coverage. This proactive approach enables them to develop products that address these gaps and cater to the specific needs of various customer segments. For example, gig economy workers and freelancers. To cater to their unique requirements, insurance companies have developed innovative products like "Pay as You Go" or "On-Demand" insurance, allowing individuals to purchase coverage for specific periods or activities. This customization addresses the gap in traditional insurance offerings and provides tailored solutions for these emerging segments.

Developing tailored insurance products is another critical aspect. Generic insurance products may not adequately serve the diverse needs of individuals and businesses. Hence, insurers need to customize their offerings to suit different customer profiles, such as specific age groups, professions, or industries. This involves designing policies with features and benefits that align with the unique requirements and risk profiles of target segments. By offering personalized coverage, insurers can enhance customer satisfaction and improve insurance penetration. For instance, insurance products designed specifically for women, such as "Women's Health Insurance" or "Women-Centric Life Insurance," offer coverage for critical illnesses, maternity benefits, and financial protection.

Microinsurance and rural insurance requirements deserve special attention as part of the strategic actions. Microinsurance targets individuals with low incomes and limited access to traditional insurance products. By creating affordable and simplified insurance solutions, microinsurance can provide financial protection to underserved populations. Additionally, rural insurance focuses on addressing the specific risks faced by rural communities, such as crop insurance for farmers and livestock insurance. Customized policies tailored to the needs of rural areas can contribute to financial stability and resilience in these regions. For example, organizations like the Life Insurance Corporation of India (LIC) have introduced microinsurance plans that offer affordable coverage for individuals in rural and semi-urban areas.

By identifying unmet insurance needs, developing tailored products, addressing microinsurance and rural insurance requirements, and exploring new sectors like cyber insurance, the industry can enhance its offerings, expand its customer base, and create a more inclusive and resilient insurance ecosystem. These strategic actions not only cater to the diverse needs of individuals and businesses but also contribute to the overall economic growth and stability of the nation.

3. DISTRIBUTION CHANNELS AND MARKET REACH

Expanding distribution channels is a strategic step that helps insurers achieve the goal of "Insurance for All" by reaching a wider customer base, improving accessibility, fostering personalized customer engagement, raising product awareness, and establishing collaborations with relevant stakeholders. By expanding distribution channels, insurers can ensure that insurance becomes more inclusive, accessible, and relevant to all individuals and businesses, thereby promoting financial protection and enhancing the overall well-being of society. The insurance industry can effectively enhance its presence and accessibility by implementing strategic measures such as expanding the scope of insurance agents and intermediaries,

leveraging technology to facilitate online insurance sales, establishing insurance access points in rural and remote areas, and reinforcing bancassurance and corporate agencies models. These initiatives aim to broaden the reach of insurance services and ensure that individuals and businesses have convenient access to the protection they need.

- **Expanding the Reach of Insurance Agents and Intermediaries**

One strategic action is to expand the reach of insurance agents and intermediaries. These professionals play a pivotal role in promoting and selling insurance products. By increasing the number of trained and qualified agents, insurance companies can penetrate deeper into untapped markets and reach a wider customer base. Furthermore, empowering agents with innovative tools, training programs, and incentives can enhance their efficiency and effectiveness in educating customers, facilitating policy issuance, and providing after-sales services.

To ensure policyholders and prospects have a wider range of choices and improved access to insurance through diverse distribution channels, the Insurance Regulatory and Development Authority of India (IRDAI) has taken significant steps during a meeting conducted at its headquarters in Hyderabad on Friday, 25th November 2022 & sanctioned multiple regulations and guidelines. One such action is the increase in the maximum number of tie-ups allowed for Corporate Agents (CA) and Insurance Marketing Firms (IMF). Previously, a CA could tie up with three insurers, but now they can establish partnerships with up to nine insurers in each line of business, including life, general, and health insurance. Similarly, IMF can now collaborate with six insurers, as opposed to the previous limit of two, in each line of business. (MINT, n.d.)

- **Leveraging Technology for Online Insurance Sales**

Leveraging technology for online insurance sales is another crucial aspect. With the proliferation of digital platforms and the increasing preference for online transactions, insurance companies can capitalize on this trend to broaden their market reach. Establishing user-friendly websites, mobile apps, and online portals enables customers to research, compare, and purchase insurance products conveniently. Implementing digital marketing strategies, such as search engine optimization and social media campaigns, can also attract potential customers and drive online sales. For instance, Insurtech companies like Policy Bazaar and Cover Fox have revolutionized the Indian insurance landscape by offering online platforms that allow customers to compare and purchase insurance policies from multiple insurers.

In a recent development, the Insurance Regulatory and Development Authority of India (IRDAI) has introduced innovative initiatives to enhance the insurance sector's reach and efficiency. One notable measure is the conceptualization of three key platforms: 'Bima Vahak,' 'Bima Vistaar,' and the digital platform called 'Bima Sugam. his platform serves as a comprehensive one-stop shop for all insurance-related queries, policy purchases, claim settlements, and insurance advice. The vision behind Bima Sugam is to establish a trusted and reliable platform that simplifies and digitizes the insurance marketplace. The portal operates in collaboration with various entities such as web aggregators, brokers, insurance agents, and bank agents, who act as facilitators for selling insurance policies. Policyholders who possess an e-insurance account (E-IA) can avail themselves of the facilities provided by the portal.

One of the primary objectives of Bima Sugam is to streamline and digitize the insurance marketplace, making it more efficient and user-friendly. Through this platform, policyholders can conveniently buy insurance policies, renew their existing policies, and process claims settlements. Additionally, Bima Sugam serves as a centralized window that allows policyholders to view all their policies, policy details, and renewal information in one place.

By leveraging Bima Sugam, the insurance industry aims to eliminate the need for lengthy paperwork and reduce commissions paid to intermediaries. The portal simplifies the insurance process, making it quicker and more accessible for customers. Furthermore, Bima Sugam enables the swift acceptance of new or sandbox products, allowing

for the introduction of innovative insurance solutions on time. (IRDAI: Bima Sugam, Bima Vahaks and Bima Vistaar, n.d.)

- **Establishing Insurance Access Points in Rural and Remote Areas**

To address the insurance needs of rural and remote areas, establishing insurance access points is a strategic action. This entails setting up physical offices or service centers in underserved regions, ensuring that individuals in these areas have convenient access to insurance services. Mobile insurance vans or kiosks can also be deployed to reach remote communities. By bringing insurance closer to these populations, barriers to access can be minimized, and awareness and adoption of insurance products can be increased.

In addition to that, *Bima Vahak* is an innovative initiative introduced by the Insurance Regulatory and Development Authority of India (IRDAI) to enhance insurance penetration in rural areas and ensure that insurance products reach the last mile. Under this program, each Gram Panchayat (village council) will have a designated 'Bima Vahak' who will act as an insurance sales and service representative. The role of Bima Vahak is similar to that of banking correspondents in rural banking, serving as a vital link between insurance companies and the rural population.

One significant aspect of Bima Vahak is its focus on women-centric insurance distribution channels. By involving women such as Bima Vahaks, the program aims to foster greater trust and build awareness about insurance products in rural areas, particularly among women who often play a pivotal role in managing household finances. This approach recognizes the importance of gender inclusivity and empowerment in the insurance sector, ensuring that women have equal access to insurance coverage and can make informed decisions to protect themselves and their families.

To facilitate the implementation of Bima Vahak, insurance companies adopt a specific state and collaborate with the respective state governments. This partnership allows for the development of state-level insurance plans that align with the unique needs and challenges of each region. By working closely with the state governments, insurance companies can tailor insurance products to address specific risks prevalent in that state, ensuring greater relevance and effectiveness of insurance coverage.

Similarly, Bima Vistaar is a social safety net insurance product specifically designed to cater to the untapped geographies of India. It will be made available through the platform called "Bima Sugam." The primary objective of Bima Vistaar is to develop an affordable, accessible, and comprehensive insurance cover for the rural population, particularly in the event of natural disasters such as floods, earthquakes, and other calamities.

Both *Bima Vahak* and *Bima Vistaar* collectively contribute to the objective of increasing insurance penetration in semi-urban areas, rural towns, and villages. By leveraging Bima Vahak as a distribution channel and introducing Bima Vistaar as a specialized insurance product, efforts are made to reach the underserved population and provide them with the necessary insurance coverage. This strategic approach recognizes the importance of expanding insurance services beyond urban areas and catering to the unique needs and vulnerabilities of rural communities. (IRDAI: Bima Sugam, Bima Vahaks and Bima Vistaar, n.d.)

- **Strengthening Bancassurance and Corporate Agency Models**

Strengthening bancassurance and corporate agency models is another strategic action for expanding market reach. Bancassurance involves partnering with banks to offer insurance products through their branches. This collaboration taps into the existing customer base of banks, thereby reaching a vast audience and enhancing the distribution network. Similarly, the corporate agency model involves forming alliances with corporate entities to distribute insurance products to their employees or customers. These partnerships provide opportunities for cross-selling and reaching diverse customer segments.

By implementing these strategic actions, such as expanding distribution channels, leveraging technology, establishing access points, and strengthening partnerships, the insurance industry can make significant progress toward

the vision of "Insurance for All" by 2047. Through initiatives like Bima Sugam, Bima Vahak, and Bima Vistaar, the industry demonstrates its commitment to promoting financial inclusion, protecting individuals and businesses against risks, and ensuring that every citizen until the last mile has access to appropriate insurance coverage.

4. TECHNOLOGY ADOPTION AND DIGITAL TRANSFORMATION

Technology adoption and digital transformation play a pivotal role in shaping the future of the insurance industry and achieving the goal of "Insurance for All." By embracing the latest advancements and leveraging innovative technologies, insurance companies can enhance operational efficiency, improve customer experience, and streamline critical processes.

One key aspect of technology adoption is implementing robust IT infrastructure and security measures. Insurance companies need reliable systems and networks to handle the growing volume of data, ensure data privacy and protection, and prevent cybersecurity threats. By investing in secure and scalable IT infrastructure, insurers can effectively manage policyholder information, facilitate seamless communication, and safeguard sensitive data.

Enhancing customer experience is another crucial aspect of technology adoption. Digital platforms and mobile apps allow policyholders to access insurance information, purchase policies, file claims, and track their policy status conveniently For instance, some insurance companies have integrated chatbots on their websites or mobile apps to assist customers with policy inquiries and claims filing.

In a move to foster technological innovation within the insurance industry, the Insurance Regulatory and Development Authority of India (IRDAI) has introduced the concept of an Open House for InsurTech/FinTech entities. This initiative, as announced in a press release by the IRDAI, aims to facilitate a platform for dialogue and collaboration between regulatory bodies and technology-driven entities.

The Open House concept reflects the IRDAI's commitment to embracing innovation and leveraging the potential of technology in the insurance sector. By providing a forum for InsurTech and FinTech companies to engage with regulatory authorities, the IRDAI seeks to create an environment conducive to knowledge-sharing, idea exchange, and problem-solving. This collaborative approach recognizes the significance of industry-wide collaboration in addressing the evolving needs and challenges of the insurance landscape.

Through the Open House, InsurTech and FinTech entities can showcase their innovative solutions, products, and services to the IRDAI and industry stakeholders. This platform encourages them to present their ideas and initiatives that have the potential to revolutionize the insurance industry and enhance customer experience. The aim is to foster a mutually beneficial relationship between technology-driven entities and regulators, leading to the development of solutions that align with regulatory requirements while driving innovation. (IRDAI's Open House Eyes Tech Innovation In Insurance Sector, n.d.)

5. REGULATORY REFORMS AND POLICY FRAMEWORK

Regulatory reforms and a robust policy framework are vital components for achieving the goals of "Insurance for All" and enhancing the global attractiveness of the Indian insurance sector. The Insurance Regulatory and Development Authority of India (IRDAI) plays a pivotal role in formulating and implementing these reforms to create a conducive environment for the industry.

➢ Simplifying Licensing and Regulatory Procedures

One key aspect of regulatory reforms is the simplification of licensing and regulatory procedures. The IRDAI has been working towards streamlining the licensing process for insurance companies and intermediaries, reducing bureaucratic hurdles, and expediting the approval process. By simplifying these procedures, the IRDAI aims to attract more players to enter the market, foster competition, and ultimately benefit consumers with a wider choice of insurance products and services.

In the latest proactive actions taken by IRDAI to work on achieving the goal. The amendments made to the regulations regarding the registration of Indian insurance companies aim to enhance the ease of doing business

and streamline the process of establishing an insurance company in India. These amendments introduce several key highlights:

Firstly, the option for investment through a Special Purpose Vehicle (SPV) has been made optional for Private Equity (PE) Funds. This change allows PE funds to directly invest in insurance companies, providing them with more flexibility in their investment approach.

Secondly, subsidiary companies are now permitted to act as promoters of insurance companies, subject to certain conditions. This revision expands the scope of potential promoters, enabling a wider range of entities to establish and support insurance companies.

Thirdly, the threshold for treating an investor has been raised. Previously, investments up to 10% by individual investors and 25% collectively by all investors were considered as 'investor' status. Now, investments up to 25% by a single investor (or 50% collectively by all investors) will be classified as 'investor' status, while investments exceeding these limits will be considered as 'promoter' status.

Fourthly, a new provision has been introduced that allows promoters to dilute their stake up to 26%. However, this is subject to the condition that the insurer has maintained a satisfactory solvency record for the preceding five years and is a listed entity.

Fifthly, indicative criteria have been established to determine the 'Fit and proper' status of investors and promoters. These criteria help assess the suitability and integrity of individuals o entities seeking to invest in or promote insurance companies.

Lastly, a lock-in period for investments by investors and promoters has been implemented, which varies based on the age of the insurer. This lock-in period ensures the stability of investments and promotes a long-term commitment to the insurance company.

- **Ensuring Transparent and Consumer-friendly Practices**

Transparency and consumer protection are at the core of regulatory reforms. The IRDAI is committed to ensuring that insurers and intermediaries follow fair and consumer-friendly practices. This includes measures to enhance the disclosure of policy terms and conditions, improve claims settlement processes, and enforce stringent grievance redressal mechanisms. By promoting transparency and consumer trust, the IRDAI aims to instill confidence in the insurance sector and encourage more individuals and businesses to avail themselves of insurance coverage. For instance - Standardization of Policy Wordings, Mandatory Disclosure of Key Information, Grievance Redressal Mechanism, etc.

- **Strengthening Risk Management and Solvency Regulations**

Another crucial aspect of regulatory reforms is strengthening risk management and solvency regulations. The IRDAI continuously reviews and updates the risk management guidelines and solvency norms for insurers to ensure their financial stability and ability to honor claims. This ensures that policyholders are adequately protected and insurers maintain a sound financial position, contributing to the stability and sustainability of the insurance industry.

- **Encouraging Cross-border Collaboration and Foreign Investment**

To enhance the global attractiveness of the Indian insurance sector, the IRDAI actively encourages cross-border collaboration and foreign investment. It facilitates partnerships between domestic insurers and international players, fostering knowledge exchange and promoting best practices. The IRDAI also creates a favorable policy framework to attract foreign direct investment in the insurance sector, allowing for greater capital infusion and technological advancements.

- **Ease of Doing Business**

Apart from that, in a significant move to promote innovation and enhance the ease of doing business in the insurance sector, the Insurance Regulatory and Development Authority of India (IRDAI) has extended the "Use and File" procedure to a wide range of insurance products. Previously, insurance companies were required to obtain prior approval from the regulator before launching new products. However, with the extension of the "Use and File" procedure, insurers now have the flexibility to introduce health

insurance products and most general insurance products, including those related to fire, motor, marine, and engineering, without prior approval.

The implementation of the "Use and File" procedure signifies a paradigm shift in the regulatory framework, aimed at streamlining the product approval process and promoting a more business-friendly environment. By removing the requirement for prior approval, the IRDAI aims to foster innovation and agility within the insurance industry. This move empowers insurance companies to respond swiftly to emerging market needs, adapt to changing customer demands, and introduce new and customized insurance products efficiently.

Furthermore, this regulatory reform holds significant benefits for both insurers and policyholders. Insurers can now proactively design and launch products that cater to specific market segments and address evolving customer needs. This flexibility promotes healthy competition among insurers, driving product diversification and differentiation. Policyholders, on the other hand, stand to benefit from a wider range of insurance options, tailored to their requirements.

Conclusion

The Indian insurance sector is on a transformative journey towards achieving "Insurance for All" by 2047 and enhancing global appeal. Key strategies include awareness and education, tailored product innovation, expanded distribution channels, technology adoption, regulatory reforms, and international collaboration. These actions empower individuals, improve accessibility, and foster a customer-centric approach. Collaborative efforts with stakeholders ensure progress, with ongoing evaluation for adaptability. The sector's future vision emphasizes increased penetration, customer-centricity, and global leadership through technology, innovation, and supportive regulations. The ultimate goal is comprehensive coverage for all citizens while attracting global investments. In conclusion, these strategies promise a thriving, inclusive Indian insurance sector. TJ

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Merit Winner

Technical Paper Writing Competition (Life)

Use of Data Analytics and Artificial Intelligence to Enhance Customer Experience at All Touchpoints

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Abstract

In today's digital age, customer experience is a pivotal differentiator for businesses, including the life insurance sector. AI and data analytics are increasingly driving enhancements across all customer touchpoints. During purchase and onboarding, these technologies enable insurers to offer personalized recommendations and simplify the application process, resulting in improved satisfaction and lasting relationships.

In the claims management stage, AI automates processes, expediting claims processing and enhancing fraud detection. AI-driven chatbots provide continuous support, reducing customer frustration and elevating the claims experience.

For renewals and retention, AI analyzes customer data to identify churn risks and offer tailored incentives, ensuring customer loyalty. Omnichannel interactions, powered by AI, provide contextually relevant and convenient customer experiences.

However, ethical challenges like data privacy, security, and bias in AI algorithms must be addressed to maintain customer trust and regulatory compliance. In summary, AI and data analytics have revolutionized the life insurance industry by delivering personalized, efficient, and seamless customer experiences throughout the customer journey.

Keywords

Artificial Intelligence, Customer Experience, Data Analysis, Insurance.

Introduction

In this day and age, data has become a fundamental aspect of nearly every industry and facet of life. From business operations to personal interactions, data is at the core of decision-making, innovation, and progress. In today's digital era, businesses are leveraging advanced technologies and data to understand their customers better and provide enhanced experiences. Two such technologies, artificial intelligence (AI) and data analytics, have emerged as powerful tools for improving customer experiences across various industries. By harnessing the power of AI and data analytics, businesses can gain valuable insights, personalize offerings, and streamline operations to meet the ever-evolving needs of their customers. Artificial Intelligence has become a game-changer in improving customer experiences for businesses across various industries.. This enables them to offer personalized recommendations, tailored marketing campaigns, and efficient customer service.

With vast amounts of data available at fingertips, life insurance is one such industry that can reap benefits significantly from Artificial Technology, Machine Learning & Data Analytics. Life Insurance Companies can now leverage advanced analytics techniques and AI algorithms to gain

valuable insights, make data-driven decisions, and enhance every aspect of their interactions with customers. From marketing to underwriting and claims administration, AI offers enormous promise across the whole insurance value chain. The sector is rapidly expanding and is predicted to exceed $2.5 billion by 2025. Between 2019 and 2025, this milestone represents a compound annual growth rate of 30.3%. (somani, n.d.). In this paper, we will explore how data analytics and AI can significantly impact the customer's experience in the life insurance industry, enabling insurers to deliver tailored solutions and create lasting relationships with their policyholders.

The emergence of the COVID-19 pandemic has also accelerated the adoption of AI and data analytics in the life insurance industry. The unprecedented challenges posed by the pandemic, such as remote work, social distancing, and increased customer demands, have highlighted the need for digital solutions and automation. AI-powered chatbots and virtual assistants have become essential tools for providing real-time support and information to policyholders. Data analytics has enabled insurers to assess the impact of the pandemic on mortality rates, claims patterns, and customer behaviours, allowing for more accurate risk assessment and underwriting. Moreover, the use of AI algorithms for fraud detection has become even more critical during these times of heightened financial uncertainty.

Literature Review

The rapid advancement of artificial intelligence (AI) has sparked significant interest in its potential applications across various industries, including the life insurance sector. In recent years, researchers and industry practitioners have explored the impact of AI on improving the customer experience in the life insurance industry. This literature review aims to provide an overview of the existing studies and findings on how AI can enhance the customer experience in the context of life insurance.

1. ***Personalized & Custom-made Policy Recommendations*:** AI-centric software have the potential to crunch a plethora of customer data, such as lifestyle, demographics, health statements, and financial status. This data-powered approach enables insurers to offer personalized policy recommendations tailored to the specific needs and risk profiles of individual customers. Research by Smith and Jones (2019) demonstrates that AI-based recommendation systems can significantly improve customer satisfaction and increase policy uptake by presenting suitable coverage options based on customer data analysis. (Smith, n.d.)

2. ***Streamlined Underwriting Process*:** Traditionally, the underwriting process in the life insurance industry is complex and time-consuming. However, AI can streamline this process by automating data collection and analysis. AI algorithms can quickly assess an applicant's risk profile by analyzing data from various sources, such as medical records, social media, and financial data. This streamlines the underwriting process, reduces manual errors, and expedites policy approvals, leading to a faster and more efficient customer experience (Anderson et al., 2020).

3. ***Virtual Assistants*:** AI-powered chatbots and virtual assistants have gained prominence as effective tools for enhancing customer interactions in the life insurance industry. For example- LIC's virtual assistant *Mitra* provides routine information instantaneously. These intelligent virtual agents can provide real-time assistance to customers, addressing their queries, providing policy information, and guiding them through the claims process. Research by Johnson and Smith (2021) suggests that the use of AI-based chatbots leads to increased customer engagement, improved response times, and greater convenience, ultimately enhancing the overall customer experience. (Smith J. &., n.d.)

4. ***Fraud Detection and Prevention*:** AI algorithms have proven effective in detecting fraudulent activities within the life insurance industry. By analyzing large volumes of data and identifying patterns indicative of fraud, AI systems can help insurers mitigate risks and protect honest policyholders. Studies by Brown et al. (2018) highlight the significant impact of

AI-based fraud detection systems in reducing financial losses, enhancing trust, and ensuring a positive customer experience. (brown, n.d.)

5. ***Predictive Analytics for Customer Lifetime Value:*** AI enables insurers to assess the customer lifetime value (CLV) and develop proactive strategies to retain and engage policyholders. By churning historical data and following digital footprints, AI algorithms can predict customers' buying patterns & identify cross-selling & upselling opportunities and suggest personalized retention strategies. Research by Lee and Johnson (2022) demonstrates that the use of AI-based predictive analytics can increase customer loyalty, reduce attrition rates, and foster long-term customer relationships. (Johnson, n.d.)

Methodology

To understand, how AI-backed algorithms and Data analytics can optimize customer experiences in its complete customer lifecycle, from awareness to loyalty, a quantitative analysis has been done. Below are the sub-methods used to analyze customers' needs, opinions and gather in-depth insights.

- ***Interviews*:** Detailed interviews were conducted with semi-structured questionnaires to gather information on how AI would help their experiences. Customers or potential customers between the age group 21-60 were interviewed to analyze their preferences, opinions, and needs that could be catered to by AI and data analytics. There were certain open-ended questions to encourage participants to share their experiences, and emotions related to their AI-driven interactions in buying insurance products.. Through follow-up questions, a deeper understanding was probed of the underlying factors influencing customer perceptions and behaviors. Few employees working in life insurance companies such as LIC were also asked questions to understand their perspective on smoothening customer experiences.
- ***Observations:*** Various factors were analyzed to find out customer experience enhancement via making observations. Customers were observed in their natural environments such as branch offices or online platforms, surfing various life insurance companies' websites, etc. The crucial points, the current usage of AI, and their reactions, emotions, and behaviors have been documented and analyzed through observations. Certain behavioral patterns were observed and analyzed specifically via interactions between customers and AI systems.. Various factors such as speed, accuracy, or ease of use were certain ways that could amplify the process. The challenges or limitations faced by customers such as no human touch or empathy when interacting with AI technologies were also taken into account.
- ***Narrative Analysis:*** Several insurance employees & focus groups have been interviewed and their experiences, case studies, etc have been analyzed to find out the gaps, and hurdles to providing an efficient customer experience to customers at all touchpoints. Their experiences, perceptions, and emotions related to AI-driven interactions, highlighting specific instances or scenarios that stood out to them, were taken into account for broader analysis. By delving into the nuances of the stories shared, by customers and employees, certain analyses were made on how AI has influenced customers' perceptions of trust, convenience, personalization, or decision-making.
- ***Secondary Data:*** Lastly, secondary data analysis was adopted to leverage existing sources of information, providing a broader perspective on customer experiences with AI in the insurance industry. By examining and synthesizing data from various secondary sources, researchers can gain valuable insights, identify research gaps, and inform their understanding of how AI influences customer satisfaction. Surveys conducted by insurance companies, social media reviews, and online platforms with forums and customer reviews, etc are taken into account to gather in-depth knowledge of current AI implementation. Government reports, and regulatory bodies such as IRDAI's reports to gather information on customer

protection, privacy, and ethical considerations associated with AI are also taken for study.

Enhancing Customer Experience in Different Stages- Findings

In today's highly competitive business landscape, understanding the customer journey and identifying key touchpoints have become crucial for organizations aiming to deliver exceptional customer experiences. The customer journey refers to the series of interactions a customer has with a brand from initial awareness to post-purchase engagement. Each interaction, known as a touchpoint, offers an opportunity to engage, delight, and build long-term relationships with customers.

The customer journey encompasses various stages that customers go through before, during, and after making a purchase. It typically consists of the following stages: awareness, consideration, decision, and post-purchase. Understanding each stage allows businesses to align their strategies and create meaningful experiences at the right moments. Similarly, A customer goes through different stages in buying life insurance product and AI & data analytics could help in enhancing their experiences at all steps.

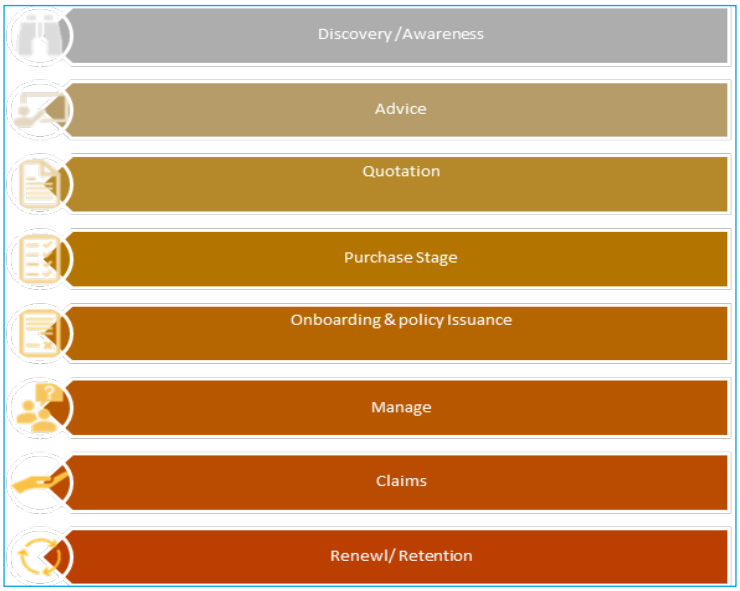

Fig 1 – Customer Journey in an Insurance Industry.

I. Awareness Stage

At this stage, customers become aware of their insurance needs and start researching potential insurance providers. Touchpoints during this stage include:

Advertising: Customers may come across insurance advertisements through various channels such as TV, radio, online platforms, or print media.

Referrals: Word-of-mouth recommendations from friends, family, or colleagues can also create awareness about insurance providers.

Online Presence: Customers may discover insurance companies through search engines or social media platforms.

AI can significantly assist in the awareness stage of the customer journey in the insurance industry. Here are a few ways AI can enhance awareness:

- **Targeted Advertising:** AI algorithms can analyze customer data and behavior patterns to identify the most relevant audience segments for insurance products. By leveraging machine learning techniques, AI can optimize advertising campaigns and target potential customers with personalized messages through various channels. This ensures that advertisements reach the right audience at the right time, increasing the effectiveness of awareness-building efforts.
- **Natural Language Processing (NLP):** AI-powered chatbots and virtual assistants equipped with NLP capabilities can interact with customers in real-time, answering their queries and providing information about insurance products and services. These AI systems can understand and respond to natural language queries, offering personalized recommendations and guiding customers through the research process. This helps customers gain awareness and understanding of insurance options conveniently and efficiently. (joseph, n.d.)

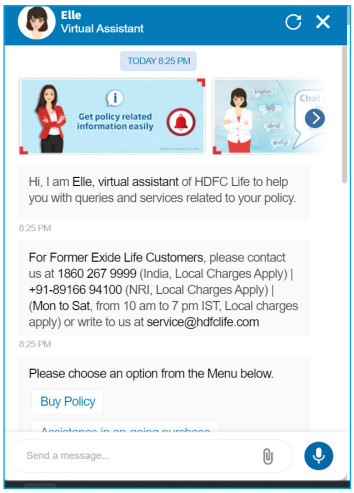

Fig 2 – Virtual Chatbot of HDFC life insurance

(hdfc life insurance, n.d.)

- **Social Media Listening:** AI tools can monitor social media platforms and analyze conversations related to insurance. By employing sentiment analysis and topic modeling techniques, AI can identify trends, customer preferences, and pain points in insurance discussions. This information can help insurers understand customer needs better and tailor their awareness-building strategies accordingly.
- **Content Generation and Curation:** AI technologies like natural language generation (NLG) can generate informative and engaging content related to insurance. AI algorithms can analyze vast amounts of data, such as insurance policies, customer testimonials, and industry trends, to create personalized content that educates and informs potential customers.
- **Personalized Recommendations:** AI algorithms can analyze customer data, such as demographics, browsing history, and online behavior, to offer personalized insurance recommendations. By understanding customers' specific needs and preferences, AI systems can suggest suitable insurance products during the awareness stage. These recommendations can be delivered through targeted emails, personalized website content, or mobile app notifications, increasing the chances of attracting customers' attention and generating interest.
- **Data Analytics for Market Insights:** AI can analyze vast amounts of data, including market trends, customer behavior, and competitor analysis, to provide valuable insights into the insurance industry. By identifying market gaps, emerging customer needs, and competitive advantages, AI enables insurance companies to devise effective awareness strategies. These insights help insurers stay ahead of the competition and deliver compelling messaging and offerings to potential customers.

II. Advice stage

At this stage, a potential customer would want to seek more information about the product best suited as per his/her requirement based on demographics, need, premium affordability, etc. Below are certain points which show how an AI-centric website would help in enhancing customer's experience –

- **Personalized Recommendations:** AI algorithms, combined with data analytics, can analyze customer data such as demographics, lifestyle, and past interactions to provide personalized insurance advice. By understanding each customer's unique needs and risk profile, AI can recommend tailored insurance products and coverage options that best align with their requirements. This level of personalization enhances the advice-giving process and increases the likelihood of customer satisfaction.
- **Risk Assessment:** AI and data analytics can assess risk more accurately and efficiently than traditional methods. By analyzing various data sources, including historical data, market trends, and external factors, AI algorithms can evaluate risk profiles and provide insights for insurance advisors. This enables them to offer more informed advice based on objective risk assessments, ensuring that customers receive appropriate coverage for their specific situations.
- **Scenario Analysis:** AI-powered systems can simulate and analyze different scenarios to help customers understand the potential outcomes and consequences of their insurance decisions. By inputting various parameters, such as coverage options, deductibles, and premiums, AI can generate projections and visualizations that enable customers to make more informed choices. This helps customers feel more confident

in their decision-making process and enhances the quality of advice provided.

- **Real-Time Assistance:** AI-powered chatbots and virtual assistants can offer real-time advice and support to customers during the advice stage. These AI systems can engage in interactive conversations, answer queries, and provide relevant information about insurance options. By leveraging natural language processing and machine learning techniques, AI can offer instant and accurate responses, ensuring that customers receive timely advice at their convenience.
- **Data-Driven Insights:** Data analytics can provide valuable insights into customer behavior, market trends, and industry benchmarks. Insurance advisors can leverage these insights to enhance their advice-giving process. By analyzing customer data, AI can identify patterns, preferences, and potential cross-selling or upselling opportunities. These insights enable advisors to provide more targeted and relevant advice to customers, improving the overall customer experience.
- **Compliance and Regulation:** AI and data analytics can help insurance advisors stay compliant with regulatory requirements. By analyzing vast amounts of data and flagging potential compliance issues, AI systems can assist advisors in ensuring that their advice aligns with legal and ethical guidelines. This helps advisors provide accurate and compliant advice to customers, enhancing trust and credibility.

III. Quotation Stage

At this stage, the Customer seeks a quotation based on his or her information. And below are the ways how AI is beneficial at this touchpoint. AI and data analytics offer significant advantages in the quotation stage of the customer journey in the insurance industry. Here's how they can help:

- **Automated Quoting Process:** AI-powered systems can automate the quotation process by extracting relevant information from customer inputs and generating accurate quotes instantly. By analyzing customer data, such as demographics, previous insurance history, and risk factors, AI algorithms can provide personalized quotes tailored to each customer's specific needs. This automation eliminates manual calculations, reduces processing time, and improves overall efficiency.

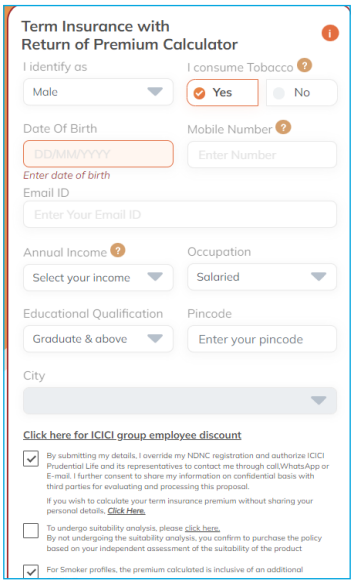

Fig 3. Automated Quoting Mechanism by ICICI life

- **Risk Assessment and Pricing:** AI and data analytics can assess risks associated with each customer and determine appropriate pricing for insurance coverage. By analyzing historical data, market trends, and external factors, AI algorithms can accurately evaluate risk levels and assign appropriate premiums. This helps insurance companies offer competitive pricing while maintaining profitability and ensuring fair pricing for customers based on their risk profiles.
- **Dynamic Pricing and Customization:** AI can enable dynamic pricing models that adjust premiums based on real-time data and customer behavior. By analyzing data such as driving habits (in the case of auto insurance) or health and fitness information (in the case of life or health insurance), AI algorithms can customize pricing and coverage options to reflect individual risk profiles. This personalized approach enhances transparency and fairness, allowing customers to have more control over their insurance costs.
- **Data-Driven Underwriting:** AI and data analytics can streamline the underwriting process by leveraging vast amounts of data. By analyzing customer data, AI algorithms can assess risk factors and make informed underwriting decisions. This data-driven approach reduces manual underwriting efforts, expedites the quotation process, and improves accuracy.

- **Cross-Selling and Upselling Opportunities:** AI and data analytics can identify cross-selling and upselling opportunities during the quotation stage. By analyzing customer data and historical patterns, AI algorithms can suggest additional coverage options or policy enhancements that align with customer needs and preferences. This enables insurance providers to offer personalized recommendations and increase the value of the quotation, leading to potentially higher customer satisfaction and revenue generation.
- **Competitive Analysis:** AI and data analytics can help insurance providers analyze market trends, competitor offerings, and customer preferences. By collecting and analyzing external data, AI algorithms can identify competitive advantages, benchmark pricing strategies, and tailor quotations to meet customer expectations. This market intelligence enables insurance companies to position themselves strategically and offer compelling quotes that attract and retain customers.

IV. Purchase & Onboarding Stage

After the purchase is made, customers enter the onboarding and policy issuance stage. Key touchpoints include:

***Policy Documentation*:** Insurance companies provide policy documents to customers, detailing coverage terms, conditions, and exclusions.

***Payment and Confirmation*:** Customers complete premium payments, and insurance companies confirm policy issuance.

***Welcome Materials*:** Insurance providers may send welcome emails or mailers that provide additional information, contact details, and resources for policyholders.

This process generally gets tedious due to long paperwork, underwriting, etc. To eliminate this, the use of AI comes in handy at different stages. Such as –

AI can significantly enhance the purchase and onboarding stage in the insurance industry. Here are some ways AI can help:

- **Automated Underwriting:** AI algorithms can automate the underwriting process by analyzing vast amounts of data, including customer information, risk factors, and historical patterns. This enables insurers to assess risks quickly and accurately, leading to faster policy approvals and minimizing manual intervention. Automated underwriting streamlines the purchase stage, making it more efficient for customers. Automated underwriting saves time, reduces human error, and improves the efficiency of policy issuance.
- **Fraud Detection:** AI-powered fraud detection systems can identify suspicious activities during the purchase and onboarding stage. By analyzing various data points and patterns, these systems can detect fraudulent applications or claims, protecting both the insurer and the genuine customers. This helps in maintaining the integrity of the insurance process and ensuring a smooth onboarding experience for legitimate customers.
- **Document Processing:** AI technologies, such as optical character recognition (OCR), can extract relevant information from customer documents, such as identification cards or proof of address. This streamlines the document verification process, reduces manual effort, and speeds up the onboarding stage. It also minimizes errors and improves accuracy in capturing essential details.
- **Predictive Analytics:** AI-based predictive analytics models can assess customer behavior and predict their insurance needs during the purchase and onboarding stage. By analyzing historical data and patterns, these models can anticipate customers' coverage requirements and offer customized policy options. This helps in creating a personalized experience, increasing customer satisfaction, and facilitating a smoother onboarding process.
- **Seamless Integration:** AI systems can integrate with various platforms and channels, providing a seamless experience for customers. For example, customers can initiate the purchase process through a website, continue it on a mobile app, and complete the onboarding via an automated chatbot. This integration ensures consistent interactions and a cohesive experience across different touchpoints.

V. Manage & Retention Stage

Life insurance is a long-term contract. Once the customer is onboarded, he remains with the company for an average of 10-30 years. The policy servicing part is one of the crucial stages, where a company should cater to customer's needs efficiently. This helps in retention as well as ensures more business in the future.

AI and data analytics enhance the customer experience by providing convenience, personalization, and proactive support throughout the policy management journey. –

- **Personalized Policy Management:** AI algorithms can analyze customer data and preferences to provide personalized recommendations for policy management. By understanding the customer's evolving needs and life circumstances, AI can suggest policy updates, coverage adjustments, or additional riders that align with their changing requirements. This ensures that customers have the most relevant and suitable insurance coverage in place.
- **Automated Policy Updates & Notification Alert:** AI can automate the process of policy updates, such as address changes, beneficiary updates, or coverage modifications. Instead of relying on manual paperwork or lengthy phone calls, customers can easily make updates through self-service portals or mobile apps. AI algorithms can validate and process these changes swiftly, ensuring that customers have up-to-date policy information without unnecessary delays. AI-driven systems can also send automated notifications and reminders to customers regarding policy renewals, premium payments, or upcoming policy changes. These proactive alerts ensure that customers stay informed and take necessary actions promptly. AI can also provide personalized reminders based on specific policy requirements, such as documentation updates or preventive health check-ups.

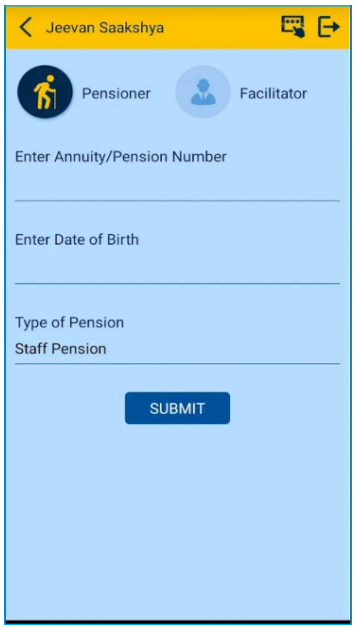

Fig 4 Jeevan Sakshay App by LIC to update life certificates

- **Personalized Customer Support:** AI-driven chatbots and virtual assistants can provide personalized customer support for managing insurance products. Customers can engage with AI-powered systems to inquire about policy details, request policy documents, or get assistance with common policy-related queries. AI chatbots can understand natural language and provide accurate and prompt responses, ensuring a seamless and convenient customer support experience. Example - LIC has initiated WhatsApp service to its premium registered users. Users can get information in real time.

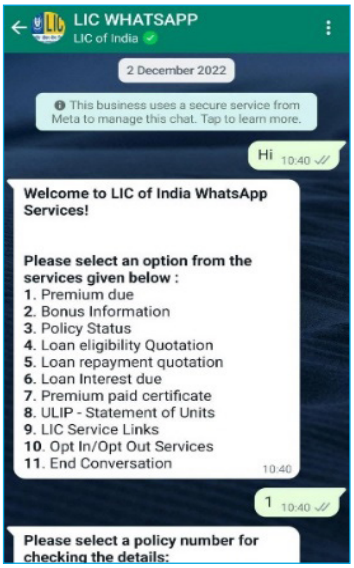

Fig 5 Personalised WhatsApp Chatbot of LIC

- **Data-Driven Insights:** Data analytics can extract valuable insights from customer data to help onboarded customers make informed decisions about their insurance products. By analyzing customer behavior, claims history, and market trends, data analytics can identify patterns, risks, or opportunities. This enables insurers to proactively offer relevant recommendations, such as policy upgrades, coverage optimizations, or premium adjustments, to onboarded customers.

- **Personal Finance Management:** AI and data analytics can integrate with personal finance management tools to provide a holistic view of a customer's financial well-being. By analyzing spending patterns, savings habits, and life events, AI can offer personalized advice on how insurance products fit into the customer's overall financial plan. This helps customers make informed decisions about their insurance needs, ensuring their coverage aligns with their financial goals.

VI. Claim Management Stage

The claim management process holds utmost importance in the life insurance business as it is the primary reason why individuals purchase life insurance policies in the first place. It is a critical process that ensures policyholders receive the financial benefits they are entitled to during challenging times. Positive claim experiences lead to satisfied customers who are more likely to renew policies and recommend the insurer to others. To ensure the same, AI can facilitate the smoothening of the process in the following ways –

- **Fraud Detection:** Data analytics and AI algorithms can analyze large volumes of data, including historical claims data, customer profiles, and external sources, to identify patterns and anomalies that indicate potentially fraudulent activities. By flagging suspicious claims in real-time, insurers can prioritize investigations, reduce fraudulent pay-outs, and safeguard the integrity of the claims process.
- **Claim Triage and Assessment:** AI can analyze both structured and unstructured data to automate the first screening and evaluation of claims. Natural Language Processing (NLP) algorithms can extract pertinent information from correspondence and claim papers, allowing for quicker and more precise claim routing and classification. This minimizes manual labor and speeds up the claims processing process.
- **Automated Claims Processing:** AI can automate certain aspects of the claims process, such as data entry, document verification, and payment processing. Optical Character Recognition (OCR) technology can extract relevant information from claim documents, eliminating the need for manual data entry. AI-powered systems can also validate claim information against policy terms and conditions, speeding up claim approvals and reducing errors.
- **Predictive Analytics for Claim Settlement:** By analyzing historical claim data and customer profiles, AI algorithms can predict the likelihood of claim approval or rejection. This helps insurers prioritize and expedite straightforward claims while ensuring that complex claims receive appropriate attention. Predictive analytics also assist in estimating claim costs and reserves, enabling better financial planning for insurers.
- **Intelligent Claims Routing:** AI algorithms can analyze claim details, customer profiles, and available resources to intelligently route claims to the appropriate adjusters or specialists. This ensures that claims are handled by the most suitable personnel, enhancing efficiency and accuracy in the claims management process.
- **Customer Experience Enhancement:** AI-powered chatbots and virtual assistants can provide real-time support and assistance to claimants, guiding them through the claims process and addressing common queries. Chatbots can answer frequently asked questions, provide claim status updates, and offer proactive communication, thereby improving customer satisfaction and reducing wait times.
- **Claims Analytics and Insights:** Data analytics can provide valuable insights into claims data, enabling insurers to identify trends, patterns, and potential areas for process improvement. By analyzing claims data, insurers can gain insights into claim costs, turnaround times, claim severity, and customer satisfaction. These insights help optimize claim management strategies, streamline processes, and identify areas for fraud prevention and cost containment.

The integration of AI and data analytics has revolutionized the way businesses enhance customer experiences at all touch points as discussed above. From initial interactions to purchase, onboarding, claim management, and renewal,

these technologies have proven invaluable in delivering personalized, efficient, and seamless experiences.

Challenges & Limitations

While AI and data analytics offer numerous benefits, there are also certain drawbacks and challenges associated with their use. Here are some demerits to consider:

1. **Data Privacy and Security Concerns:** The extensive use of AI and data analytics involves the collection, storage, and analysis of large amounts of customer data. This raises concerns regarding data privacy and security. Mishandling or unauthorized access to sensitive customer information can lead to breaches, identity theft, or misuse of personal data. Safeguarding data and ensuring compliance with data protection regulations is essential but can be complex and resource-intensive.
2. **Lack of Human Interaction and Empathy:** AI-driven customer experiences may lack the human touch and empathetic understanding that customers desire. While AI-powered chatbots and virtual assistants can provide quick and efficient responses, they may struggle to truly understand complex emotions or provide nuanced support during sensitive situations. Some customers may prefer human interaction and find it unsatisfying or frustrating when dealing solely with AI systems.
3. **Overreliance on Technology:** The increasing reliance on AI and data analytics can lead to a loss of human judgment and decision-making. Relying solely on algorithmic outputs without human oversight can result in unintended consequences or missed opportunities. It is crucial to strike a balance between automated processes and human intervention to ensure that critical judgments and subjective assessments are adequately considered.
4. **Limited Contextual Understanding:** AI algorithms primarily rely on historical data and patterns to make predictions and recommendations. However, they may struggle to understand or adapt to new or unique situations without sufficient contextual understanding. Unforeseen events or rapidly evolving customer needs may pose challenges for AI systems that are unable to adapt quickly or accurately.

It is important to be aware of these demerits and address them proactively through robust data governance, ethical considerations, ongoing monitoring, and continuous improvement of AI and data analytics systems. By understanding and mitigating these challenges, organizations can maximize the benefits while minimizing the potential drawbacks associated with the use of AI and data analytics

Future Opportunities & Trends

The future directions and opportunities in the field of AI for enhancing customer experience in the insurance industry are vast and promising. Here are some potential areas to consider:

1. **Advanced Chatbots and Virtual Assistants:** The development of more sophisticated AI-powered chatbots and virtual assistants can enable more seamless and human-like interactions with customers. Natural language processing and sentiment analysis capabilities can be further improved to better understand customer needs and emotions, leading to enhanced customer satisfaction.
2. **Personalization at Scale:** AI can enable hyper-personalized experiences by leveraging customer data to deliver tailored insurance products and services. Advanced machine learning algorithms can analyze vast amounts of data to identify customer preferences, behaviors, and life events, allowing insurers to offer customized recommendations, pricing, and coverage options.
3. **Internet of Things (IoT) Integration:** The integration of AI with IoT devices can provide insurers with real-time data on customer behaviors, health metrics, or driving habits. This data can be utilized to offer personalized incentives, adjust premiums based on actual usage, and provide proactive risk management solutions.
4. **Claims Automation and Streamlining:** AI can further enhance claim management processes by automating document processing,

verification, and claim settlement. Advanced image recognition and OCR technologies can extract relevant information from claim documents, reducing manual effort and improving accuracy. Claims analytics can also be leveraged to identify bottlenecks, optimize workflows, and expedite claim settlements.

5. **Emotion and Sentiment Analysis:** AI can advance its capabilities to understand and analyze customer emotions and sentiments. By incorporating emotion recognition algorithms, insurers can gain deeper insights into customer satisfaction levels and proactively address any issues or concerns. This can lead to improved customer retention and loyalty.
6. **Collaborative Ecosystems:** The future of AI in the insurance industry lies in fostering collaborations between insurers, technology providers, and data experts. Creating open platforms and partnerships can accelerate innovation, facilitate data sharing, and drive industry-wide advancements in customer experience enhancement.

Conclusion

In conclusion, AI and data analytics hold immense potential for enhancing business operations and customer experiences. They excel in processing vast data, automating tasks, and delivering personalized solutions, fostering customer satisfaction and loyalty. However, challenges like data privacy, bias, and complex implementation must be navigated carefully.

Despite these hurdles, the benefits of AI and data analytics are undeniable. They empower businesses to gain insights, optimize operations, and improve decision-making. When used effectively, these technologies provide a competitive edge, streamline processes, and nurture lasting customer relationships.

As AI and data analytics evolve, businesses must stay informed, embracing these technologies responsibly. By doing so, organizations can unlock new opportunities, meet customer needs, and thrive in the digital era. While the journey requires a strategic approach, the rewards include improved customer satisfaction, loyalty, and business success. TJ

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Merit Winner

Technical Paper Writing Competition (General)

Product Innovations through Insurtech

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Abstract

This paper explores the emergence of insurtech and its impact on general insurance product innovation. Insurtech, a term that refers to the application of technology in the insurance industry, has disrupted traditional insurance models and brought about significant changes in product development, distribution, and customer experience. Through a comprehensive analysis of the insurtech landscape, this paper examines various technological advancements and their influence on general insurance products. It also discusses the challenges and opportunities faced by insurance companies as they embrace insurtech and work towards creating innovative products. By presenting case studies and examples, this paper aims to provide insights into the future direction of general insurance product innovation in the era of insurtech.

Keywords

Insuretech, Artificial Intelligence, Machine Learning, Internet of Things, Data Analytics, Predictive Modelling, Sensors.

1. Introduction

Background and significance of insurtech

Insurtech, a term derived from "insurance technology," refers to the application of technology and digital innovations within the insurance industry. It encompasses a wide range of technological advancements, including artificial intelligence (AI), machine learning, blockchain, data analytics, Internet of Things (IoT), and mobile applications, among others. Insurtech has gained significant attention and disrupted traditional insurance models due to its potential to enhance operational efficiency, improve customer experience, and foster product innovation.

2. Insurtech Landscape

2.1 Definition and evolution of insurtech

Insurtech, a portmanteau of "insurance" and "technology," refers to the use of technology, data analytics, and innovative business models to transform and improve the insurance industry. It encompasses a broad range of technological advancements and applications that aim to enhance various aspects of insurance, including product development, distribution, underwriting, claims processing, risk assessment, and customer experience.

The evolution of insurtech can be traced back to the early 2000s when technology started to disrupt various industries, including finance and insurance. The term "insurtech" gained prominence around 2010 as the insurance industry recognized the need to embrace technology-driven innovations to address industry challenges and meet changing customer expectations.

The evolution of insurtech can be categorized into several stages:

1. Digitization and Online Presence
2. Data Analytics and Underwriting Automation
3. Personalization and Customer Engagement

4. IoT and Telematics
5. Blockchain and Smart Contracts
6. Insurtech Ecosystem and Partnerships
7. Advanced Technologies

These are discussed in detail at later stages. The evolution of insurtech has led to significant changes in the insurance industry, driving innovation, improving operational efficiency, enhancing customer experiences, and expanding the range of insurance products and services available to consumers. Insurers are increasingly embracing insurtech as a strategic imperative to stay competitive, adapt to market demands, and deliver value to policyholders in a digital-first world.

3. The Need For Insuretech

Customer expectations and changing market dynamics

Customer expectations and changing market dynamics have a significant impact on the insurance industry. Insurers need to understand and respond to these evolving expectations to stay competitive and relevant. Here are some key aspects of customer expectations and changing market dynamics:

- **Personalization:** Customers today expect personalized experiences and tailored insurance solutions that cater to their specific needs.
- **Digitalization and Seamless Experience:** Customers increasingly expect seamless digital experiences across all touchpoints. They want to research, purchase, and manage insurance policies through user-friendly digital platforms.
- **Transparency and Trust:** Transparency is crucial for building trust with customers. Customers expect insurers to provide clear and transparent information about premiums, coverage, terms and conditions, pricing, and claims processes.
- **Speed and Efficiency:** They want instant quotes, fast claims processing, and timely customer support.
- **Omnichannel Experience:** Customers now interact with insurance companies through multiple channels, including websites, mobile apps, social media, call centers, and in-person interactions. They expect a consistent and seamless experience across these channels.
- **Proactive Risk Management:** They expect insurers to provide risk prevention guidance, safety recommendations, and personalized advice to mitigate risks.
- **Enhanced Customer Support:** They expect prompt and accurate assistance when they have questions, need assistance with claims, or require help with policy changes.
- **Value-Added Services:** This can include access to wellness programs, discounts on preventive services, personalized advice for managing risks, and additional perks or benefits. Insurers can differentiate themselves by offering such value-added services that align with customer needs and provide a holistic approach to insurance.

To meet these changing market dynamics and customer expectations, insurance companies need to embrace digital transformation, leverage advanced technologies, adopt customer-centric strategies, and continuously innovate their products, services, and processes. By staying attuned to customer needs and market trends, insurers can build stronger customer relationships, enhance customer satisfaction, and drive business growth in a rapidly evolving industry.

4. Technologies Involved in Insurtech

4.1 Digital platforms and ecosystems

Definition of Digital Platforms: Digital platforms are online systems or infrastructures that facilitate interactions and transactions between multiple participants, such as insurers, customers, agents, brokers, and third-party service providers.

4.2 Artificial Intelligence (AI) and Machine Learning (ML)

Here's an overview of AI and ML in the insurance industry:

✓ **Artificial Intelligence (AI):** AI refers to the development of intelligent machines that can perform tasks that typically require human intelligence. In the insurance industry, AI techniques such as natural language processing, computer vision, and expert systems are employed to automate processes, extract

insights from data, and improve decision-making.

- ✓ **Machine Learning (ML):** Machine Learning is a subset of AI that focuses on enabling machines to learn from data without being explicitly programmed. ML algorithms analyze large datasets, identify patterns, and make predictions or decisions based on the patterns discovered. ML techniques, such as supervised learning, unsupervised learning, and reinforcement learning, have numerous applications in insurance such as in
  - o Risk Assessment and Underwriting:
  - o Claims Management:
  - o Customer Experience and Personalization
  - o Chatbots and Virtual Assistants:
  - o Fraud Detection and Prevention:
  - o Predictive Analytics and Pricing:
  - o Underwriting Automation

The applications would be elaborated in subsequent chapters

4.3 Internet of Things (IoT) and telematics

The Internet of Things (IoT) and telematics are two interconnected technologies that are revolutionizing the insurance industry by providing insurers with real-time data, enhanced risk assessment capabilities, and personalized customer experiences. Here's an overview of IoT and telematics in the insurance industry:

- o **Internet of Things (IoT):** IoT refers to a network of physical objects, devices, vehicles, and other items embedded with sensors, software, and connectivity that enables them to collect and exchange data. In the insurance industry, IoT devices can include connected cars, wearable devices, smart home devices, and industrial sensors.
- o **Telematics:** Telematics is a branch of IoT that specifically focuses on the collection and analysis of data related to vehicle movement, behavior, and performance. Telematics devices, such as GPS trackers and onboard diagnostics, are installed in vehicles to gather data on factors like speed, acceleration, location, and driving patterns.

The applications of the same include in product designs such as

- o Usage-Based Insurance (UBI)
- o Risk Assessment and Pricing
- o Claims Management and Fraud Detection
- o Risk Mitigation and Preventive Services
- o Customer Engagement and Experience
- o Loss Prevention and Risk Management
- o Product Innovation and Differentiation

As IoT devices collect and transmit vast amounts of sensitive data, data privacy and security are paramount concerns. Insurers need to ensure robust data management techniques.

4.4 Data analytics and predictive modeling

Data analytics and predictive modeling are essential tools in the insurance industry that enable insurers to gain valuable insights, make informed decisions, and improve business outcomes. Here's an overview of data analytics and predictive modeling in insurance:

- ➢ **Data Analytics:** Data analytics involves the collection, organization, and analysis of large volumes of data to identify patterns, trends, and correlations. In the insurance industry, data analytics can be applied to various areas, including customer behavior analysis, risk assessment, claims management, and fraud detection.
- ➢ **Data Sources:** Insurers have access to diverse sources of data, such as customer information, policy data, claims data, telematics data, external data sources (e.g., weather, socioeconomic data), and even unstructured data from sources like social media. By leveraging these data sources, insurers can gain deeper insights into their business operations and customer behavior.
- ➢ **Predictive Modeling:** Predictive modeling utilizes statistical algorithms and machine learning techniques to analyze historical data and make predictions about future events or behaviors. Insurers can use predictive modeling to assess risk, estimate claim probabilities, optimize

pricing models, and make informed underwriting decisions.

- The above technologies help in
- Risk Assessment
- Claims Management
- Customer Segmentation and Personalization
- Pricing Optimization
- Fraud Detection
- Portfolio Management
- Business Insights and decision making

It's important to note that effective data analytics and predictive modeling require robust data governance, data quality assurance, and adherence to data privacy regulations. Insurers must ensure the accuracy, integrity, and security of the data they collect and analyze to derive meaningful insights and drive business success.

4.5 **Blockchain and smart contracts**

Blockchain is a decentralized and distributed ledger technology that enables the secure and transparent recording of transactions across multiple parties. In the insurance industry, blockchain can provide several benefits, such as enhanced security, transparency, efficiency, and trust.

Blockchain technology helps insurers in

- ✓ Immutable and Transparent Transactions
- ✓ Streamlined Claims Processing
- ✓ Fraud Detection and Prevention
- ✓ Improved Underwriting and Risk Assessment
- ✓ Efficient Reinsurance Processes

Smart contracts are self-executing contracts with predefined rules and conditions written in code. They automatically enforce the terms of the agreement, execute actions, and trigger transactions when predetermined conditions are met. In insurance, smart contracts can automate policy issuance, claims processing, premium payments, and other transactions, reducing manual intervention and improving efficiency.

It helps insurers to

- Automated Claims Settlement
- Developing Parametric Insurance products
- Data Privacy and Security

5. Case Studies: Insurtech Success Stories

This section discusses, how few insurers from the industry has induced innovation in one of segments of their insurance value chain;

- ✓ Marketing & Product Development
- ✓ Policyholder Acquisition
- ✓ Insurance Underwriting
- ✓ Policy Serving
- ✓ Claims & Benefits

5.1 Marketing & Product development.

- **Zubie,** which manufactures a dongle that plugs into any automobile, has partnered with **Progressive Auto Insurance** to quote the device's users with usage-based rates. It works by giving Progressive users the Zubie plug-in device, have them drive with it for six months, then offer them a new insurance rate based on their driving habits. The in-car monitor also pushes user alerts if something like the engine needs repairing, and will even diagnose the likely problem. The partnership allows Progressive to offer a new usage-based pricing without having to provide its own proprietary hardware. In the past, it sent users hefty black boxes to wire into the cars to record the drivers for the six-month period.
- **Censio,** which makes an app that uses smartphone data to track user driver habits, has also teamed up with **Progressive Auto Insurance** to share user data with the insurer. The app tracks similar data to what Zubie follows (see above), but intends to be a smartphone-only way to collect driving data. The app uses the smartphone sensors and accelerometers to analyze car movements. For instance, if a car stops suddenly or makes a hard turn. For Censio users, the app helps instill good driving practices. For Progressive, it offers another product that powers usage-based pricing while avoiding hardware costs.
- Another example is **Aviva Drive app** that really is making your car insurance cheaper. Aviva Drive is a free app that monitors your driving skills. Once you've driven 200 miles, you'll get an individual driving score out of 10 and gives a discount of up to 20%. Safer drivers scoring 7.1 or more could save an average of £150 on Aviva comprehensive car insurance - a

saving that could be achieved by 44% of them. As per Aviva Nov 2013 – Apr 2014 reports, 29% qualified for the max saving of 20% and a further 32% qualified for 10%. Discount on first car per policy and depends on score and premium – min £200. Discount applied after any eligible offers are deducted and excludes optional extras. Aviva Drive automatically starts recording your journey by detecting movement via your phone's GPS. The user gets a notification when the app starts if he/she had actually driven and to select.

- **Vivint**, the connected home device maker with a large portfolio of connected consumer security products, has struck a partnership with **Liberty Mutual** that gives insurance customers discounts on Vivint equipment and installation, as well as discounts on insurance. Vivint's products let users know via a mobile app when a window is broken, if someone is using the front door, and even keeps track of lights and heating. Vivint has a long roster of high-profile roster of debt and equity investors, including Bank of America, Goldman Sachs, Peterson Partners, and U.S. Bancorp.
- Connected home security involves all aspects of a home. **Panasonic,** for example, has a partnership with **Allianz** that will give German users of Panasonic devices offers centered on Allianz's home protection services. Using Panasonic's devices, if a water leak is detected or sensors discover broken glass, the devices inform both the user's mobile device and alert Allianz, which dispatches repair teams to deal with the issue as quickly as possible or trigger a burglary alert. A locksmith service is bundled into the package.
- **Lemonade** is a well-known insurtech company that has disrupted the traditional insurance model with its innovative approach to homeowners and renters insurance. Lemonade utilizes artificial intelligence (AI) and machine learning algorithms to provide fast and hassle-free insurance coverage. Their platform allows customers to get quotes, purchase policies, and file claims quickly and easily through a mobile app. Lemonade's use of technology has enabled them to streamline operations, reduce overhead costs, and offer competitive premiums to customers. The company's success has been recognized through its rapid growth and significant funding rounds.

5.2 Policyholder acquisition.

- Chinese peer-to-peer insurance platform **TongJuBao** protects members in unusual financial distress situations such as taking care of an aging parent or divorce. They apply a "back-to-the-roots" model of mutual protection, with each member creating or signing up for a community that shares the risk up to a pre-agreed limit.
- **Lemonade** has launched the peer-to-peer (P2P) insurance model. Typically P2P sites invite users to form small groups of policyholders who pay premiums into a pool to pay claims. If there is money left in the pool at the end of the policy period, the members get money back.
- **Dynamics**, a newly formed Peer-to-Peer Insurance Insurance company is using **Blockchain**, Bitcoin's underlying technology, to create an insurance DAO which is capable of evolving to meet policy holders needs through the use of new consensus mechanisms, an organization which is completely transparent, and auditable and answers only to its policy holders. **Ethereum**, a decentralised platform that runs **smart contracts**: applications, is the tool that will make that change possible. With experts in the insurance and blockchain industries, the team are seeking to create an Ethereum based peer to peer supplemental unemployment insurance protocol which uses policy holders' social capital to replace underwriters.

5.3 Underwriting.

- In another Canadian example, **Intact Financial** leverages contextual systems and geocoding to enable underwriters to make more informed and faster decisions regarding new and renewal policies, **visually presenting internal and external risks to underwriters in real-time**. The system resulted in a 15 percent reduction in processing time, with a projected improvement in loss

ratio due to better risk selection and premiums that reflect a customer's specific exposure.

- **American Family Insurance**, which is also an investor in the startup that develops the **Ring doorbell system**, is providing its home and condo insurance policy holders a $30 discount and the chance to qualify for a 5% deduction from their premiums once the device is installed. Moreover, in the event of a burglary Ring offers its users a refund on the insurance deductible. Using a motion detector, the doorbell records videos of whoever approaches the door and uploads it to the cloud, even before they ring the doorbell. According to Ring's CEO Jamie Siminoff, company data shows that using an internet-connected doorbell "dramatically reduces the likelihood of home break-ins." Automatic co-founder Matt Mullenweg, True Ventures, and Upfront Ventures are among the investors in Ring.
- European insurance provider **AXA is working with British Gas**, which is offering their customers AXA-underwritten home insurance policies. Part of the partnership centres on the latter company's popular Hive app. Hive is a connected home heating system that lets users control their home heating and hot water via mobile devices. Among other things, the Hive helps homeowners and landlords with frost protection. Users who buy Hive products are redirected to AXA's website. Similarly, Airlines/ flight ticket aggregates too give bundled insurance at the time of booking.

5.4 Policy servicing.

- German insurer **Versicherungskammer Bayern** (VKB) is using cognitive computing system Watson to analyse customer communications such as letters and emails. It recognizes the reason for the mail, as well as customer mood when receiving complaints and customer expectations for resolution. The results of the cognitive system is far superior to "classical" input solutions using **simple key word search** and helps the (human) back-office clerk react to customer request quickly and adequately.

5.5 Claims & Benefits.

- Quite a few insurers, such as U.S. insurer **AIG**, have been exploring the **use of drones**, or unmanned aerial vehicles (UAVs), for claims. Besides efficiency gains, this could improve job safety for claims inspectors. "UAVs can help accelerate surveys of disaster areas with high-resolution images for faster claims handling, risk assessment, and payments. They can also quickly and safely reach areas that could be dangerous or inaccessible for manual inspection."

These case studies highlight how insurtech companies are leveraging technology to redefine the insurance landscape, improve customer experiences, and drive innovation in the industry. Through their innovative business models and technology-driven solutions, these companies have gained market recognition and transformed traditional insurance practices.

6. Future Trends in Product Innovation

Usage-based insurance (UBI) and personalized pricing are innovative approaches in the insurance industry that leverage technology and data to tailor insurance premiums based on individual behavior, usage patterns, and risk profiles. Here's an overview of usage-based insurance and personalized pricing:

6.1 Usage-Based Insurance (UBI): UBI refers to insurance policies that determine premiums based on actual usage or behavior. Traditionally, insurance premiums were based on general demographic factors, such as age, location, and vehicle type. However, with the advent of telematics technology and IoT devices, insurers can now collect real-time data on factors like mileage, driving behavior, and even location to determine risk and set premiums more accurately. UBI is commonly used in auto insurance, where devices or smartphone apps monitor driving habits like speed, acceleration, braking, and time of day.

Benefits of UBI:

- ✓ **Fair Pricing:** UBI allows insurance companies to reward safe drivers with lower premiums, incentivizing good driving behavior.
- ✓ **Risk Mitigation:** By analyzing individual driving patterns, insurers can identify high-risk

behaviors and provide feedback to policyholders, encouraging safer driving practices.

- ✓ **Cost Savings:** UBI can lead to cost savings for policyholders who drive less frequently or exhibit safer driving behaviors.
- ✓ **Customer Engagement:** UBI programs provide policyholders with access to real-time data about their driving habits, fostering engagement and encouraging behavior modification.
- ✓ **Personalized Pricing:** Personalized pricing involves tailoring insurance premiums to an individual's specific risk profile. Insurers leverage data analytics, machine learning, and predictive modeling to assess risk factors unique to each policyholder and calculate premiums accordingly. This approach allows insurers to move away from traditional rating factors and consider a wide range of personalized data, such as credit scores, health indicators, lifestyle habits, and more.

6.2 Parametric insurance and smart contracts

Parametric insurance and smart contracts are two innovative concepts in the insurance industry that leverage technology to provide more efficient and automated insurance solutions. Let's explore each of them:

Parametric Insurance:

Parametric insurance is a type of insurance that pays out a predetermined amount based on the occurrence of a specific event or trigger, rather than assessing the actual loss or damage incurred by the insured. The payout is determined by predefined parameters, such as weather conditions, seismic activity, or other measurable variables. Parametric insurance uses advanced data analytics and modeling techniques to calculate the payout based on the occurrence or severity of the predefined trigger event.

Benefits of Parametric Insurance:

- o **Fast Payouts:** Since parametric insurance relies on objective triggers, payouts can be processed quickly without the need for lengthy claims assessment or negotiation processes.
- o **Transparent and Objective:** Parametric insurance removes the subjectivity associated with traditional claims assessments, providing a transparent and objective basis for determining payouts.
- o **Customization and Flexibility:** Parametric insurance can be tailored to cover specific risks and provide coverage for events that may not be insurable through traditional methods.
- o **Risk Mitigation:** By transferring specific risks to the insurance provider, parametric insurance can help policyholders manage and mitigate their exposure to certain events.

Examples of Parametric Insurance:

- ✓ **Weather Insurance:** Policies that provide compensation to businesses or individuals affected by adverse weather conditions, such as excessive rainfall, drought, or temperature fluctuations.
- ✓ **Catastrophe Bonds:** Financial instruments that provide insurance coverage against specific catastrophic events, such as earthquakes, hurricanes, or floods.

6.2.1 Smart Contracts:

Smart contracts are self-executing contracts with the terms of the agreement written into code. These contracts automatically execute predefined actions once certain conditions are met, without the need for intermediaries or manual intervention. Smart contracts are built on blockchain technology, which ensures transparency, immutability, and security.

Benefits of Smart Contracts:

- ❖ **Automation and Efficiency:** Smart contracts automate insurance processes, reducing the need for manual paperwork, intermediaries, and the associated administrative costs.
- ❖ **Transparency and Trust:** Smart contracts are stored on a decentralized blockchain network, providing transparency and immutability. This enhances trust between parties involved in the insurance contract.
- ❖ **Accurate and Timely Execution:** Smart contracts execute predefined actions automatically once the specified conditions are met, ensuring accurate and timely fulfillment of the contract terms.
- ❖ **Claims Processing:** Smart contracts can automate claims

processing by automatically validating claims against predefined criteria and triggering payment without the need for manual verification.

Examples of Smart Contract Applications in Insurance:

- ✓ **Flight Delay Insurance:** Smart contracts can automatically trigger compensation payouts to policyholders if their flights are delayed beyond a predefined threshold.
- ✓ **Crop Insurance:** Smart contracts can automate the claims process for crop insurance by using data from IoT devices and weather stations to determine loss or damage and initiate payouts.

6.3 Peer-to-peer insurance models

Peer-to-peer (P2P) insurance is an alternative insurance model that brings individuals together to form a community or network. In this model, policyholders pool their premiums and share the risk among themselves. P2P insurance leverages technology platforms to facilitate the formation of these communities, enabling direct interaction and participation of individuals in the insurance process. Here's an overview of P2P insurance models:

Collaborative P2P Insurance:

In collaborative P2P insurance, individuals join together to form a group or community to share insurance risks. The community members contribute a portion of their premiums into a common pool, which is used to pay out claims. If there are no claims within the community during a specific period, a portion of the unused premiums may be returned to the policyholders as a refund or used to lower future premiums. Collaborative P2P insurance fosters a sense of collective responsibility and mutual support among community members.

Examples of Decentralized P2P Insurance:

Lemonade: Lemonade is a well-known insurtech company that offers P2P insurance through its digital platform. It utilizes AI and machine learning algorithms to automate underwriting and claims processing. Excess premiums not used for claims are donated to charitable causes chosen by policyholders.

P2P insurance models have the potential to disrupt the traditional insurance industry by fostering community participation, transparency, and cost efficiency. However, there are challenges to address, including regulatory compliance, risk management, and scalability. As P2P insurance continues to evolve, collaborations between insurtech companies, traditional insurers, and regulators can help shape the regulatory framework and drive the growth of P2P insurance models.

6.4 Integration of insurtech with emerging technologies (e.g., AI, IoT)

The integration of insurtech with emerging technologies such as artificial intelligence (AI) and the Internet of Things (IoT) is revolutionizing the insurance industry. These technologies offer new opportunities to improve operational efficiency, enhance risk assessment and underwriting, enable personalized customer experiences, and streamline claims processing.

6.5 Adoption of data-driven decision making and automation

The adoption of data-driven decision making and automation is transforming the insurance industry by enabling insurers to make more informed and efficient business decisions. Here's how data-driven decision making and automation are being embraced in the insurance sector:

Data-Driven Decision Making:

Data-driven decision making involves using large volumes of structured and unstructured data, coupled with advanced analytics techniques, to derive insights and make informed decisions. Insurers are leveraging the following approaches:

a. **Advanced Analytics:** Insurers are using advanced analytics techniques such as predictive modeling, machine learning, and data mining to analyze vast amounts of data. These analyses help insurers gain deeper insights into customer behavior, risk profiles, claims patterns, and market trends, enabling them to develop more accurate underwriting strategies, pricing models, and risk management practices.

b. **Real-Time Data Analysis:** Insurers are leveraging real-time data feeds and technologies like big data analytics to analyze incoming data as it is generated. This allows insurers to monitor risk conditions, identify emerging trends, and respond promptly

to changes in the market or risk landscape.

c. **Customer Segmentation and Personalization:** Data-driven decision making enables insurers to segment their customer base more effectively and offer personalized insurance products and services. By analyzing customer data, insurers can understand individual preferences, behaviors, and needs, leading to tailored recommendations, targeted marketing campaigns, and personalized pricing.

d. **Fraud Detection and Prevention:** Insurers are using data analytics to detect patterns and anomalies indicative of potential fraudulent activities. By applying advanced algorithms to claims data and external data sources, insurers can identify suspicious claims and take proactive measures to prevent fraud, reducing losses and improving operational efficiency.

6.5.1 Automation:

Automation involves the use of technology to streamline and automate manual processes, reducing human intervention and improving operational efficiency.

The adoption of data-driven decision making and automation enables insurers to enhance operational efficiency, improve risk assessment accuracy, streamline processes, reduce costs, and deliver personalized experiences to customers. However, it is crucial for insurers to address data privacy, security, and ethical considerations, and ensure transparency and explainability of automated decisions to maintain customer trust and comply with regulatory requirements.

7. Conclusion

In summary, insurtech is revolutionizing the general insurance industry by leveraging technology to drive product innovation, enhance customer experiences, improve operational efficiency, and transform traditional processes. Technological advancements such as AI, IoT, data analytics, and blockchain are key enablers of this transformation. While insurtech offers significant opportunities, insurers must address challenges and considerations to successfully integrate these solutions and meet evolving customer expectations in a rapidly changing market and address regulatory compliance, data security, and ethical considerations to ensure sustainable growth and customer trust.

It would be prudent to say that the major products impacted are the mass driven products such as Car, Home, Health, Crops, Flight delay and some miscellaneous products. The Fire and Engineering related products targeted towards the industry are still out of the gambit of new innovations. However, underwriting strategies are more streamlined and the claims processing are significantly impacted for these products using the technology. TJ

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- Video – Viewpoint-How will Insuretech disrupt the traditional insurance model? Juniper Research Nick Maynard

Merit Winner

Technical Paper Essay Competition (Health)

Leveraging Technology to Drive Health Insurance

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The author, with degrees in Engineering and an MBA, holds specialized diplomas in Marine, Fire, and Health Insurance, along with an FIII qualification. His expertise spans Corporate Health Underwriting, Vehicle Insurance, Bancassurance, and general insurance administration. With notable contributions in business development and marketing, his background and insights make him a credible voice in the insurance sector.

Abstract

This essay delves into the transformative role of technology in India's health insurance landscape. Beginning with the industry's evolution and challenges, like low penetration and insurance fraud, the study then examines the impact of technological advancements on the sector. Key technologies, such as AI, ML, blockchain, and data analytics, are discussed for their roles in risk assessment, claims processing, fraud detection, and enhancing customer experiences. The advent of telemedicine and its implications for policies are also scrutinized, supported by case studies from the Indian context. The paper projects future trends, addressing ethical concerns like data privacy and regulatory adaptations. In conclusion, the essay emphasizes technology's pivotal role in reshaping India's health insurance sector towards increased accessibility, efficiency, and customer-centricity, highlighting challenges and potential solutions. This comprehensive exploration aims to inform insurers, healthcare providers, technologists, and consumers about the industry's potential trajectory.

Keywords

- Technology and Health Insurance
- Digital Transformation in India
- Enhanced Customer Interactions
- Customized Insurance Products
- Emerging Industry Trends
- Ethical Challenges in Digital Integration
- Future of Health Insurance in India.

I. Introduction

Healthcare has been a cornerstone of the global discourse for several decades. However, the focus has gained unprecedented momentum in the 21st century, and in India, the narrative is no different. As a country with one of the largest populations globally, healthcare and its financial implications hold a particularly pivotal role in India's socio-economic framework. At the heart of this conversation lies health insurance, an industry that has seen phenomenal growth and transformation.

A. The Health Insurance Industry in India

The health insurance sector in India stands at a unique intersection of challenge and opportunity. India has a diverse demographic profile, marked by a burgeoning middle class and a large economically vulnerable population, making health insurance not just a necessity but also a growth industry. Yet, as per the National Statistical Office's survey in 2017-18, the penetration of health insurance in India is still significantly low.

Despite the challenges, the industry has witnessed promising growth. The

advent of private players, regulatory reforms, and increased health risk awareness have paved the way for the development of a diverse range of products and services. However, the industry is still grappling with issues of accessibility, affordability, service quality, and transparency, warranting a radical shift in the operational paradigm.

B. The Role of Technology in the Health Insurance Sector

Technology is a transformative force in India's health insurance industry. This essay uncovers its role in enhancing efficiency, enriching customer interactions, and driving data-informed decisions. We'll highlight real-world applications, such as digital platforms streamlining insurance processes and data analytics tailoring products. Drawing from key industry examples, we'll also discuss emerging trends and address potential ethical challenges from increased digital integration. Dive in to grasp how technology is not just supporting but defining the future of health insurance in India.

II. Overview of Health Insurance in India

Health insurance in India has evolved from its initial altruistic intentions to a multifaceted industry influenced by economic, socio-political, and infrastructural factors. Today, while increased health awareness and a growing middle class drive demand, the sector also faces challenges like low penetration and limited consumer awareness.

This overview will discuss the industry's journey, its present status, and prevailing challenges. Later sections will dive into how technology can address these issues, harnessing the sector's potential. This exploration sets the stage for understanding the symbiotic relationship between technology and India's health insurance landscape.

A. Evolution of the Health Insurance Industry in India

The Indian health insurance sector, with roots in the pre-independence era, took a definitive form with Mediclaim's introduction by the General Insurance Corporation (GIC) in 1986. The 2000s saw a market surge with private players like ICICI Lombard, HDFC ERGO, and Max Bupa after insurance liberalization. These players diversified offerings, covering areas like pre-existing conditions and maternity.

Recognizing the need for broader accessibility, the government introduced schemes like the Rashtriya Swasthya Bima Yojana (RSBY) and later, the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PMJAY) in 2018, the world's largest government-funded healthcare initiative.

While traditional policies persisted, innovations like defined-benefit policies and health insurance portability emerged due to IRDAI regulations. Despite the public sector's dominant role, private insurers with diverse products are gaining prominence.

From Mediclaim to diverse health coverage, India's insurance evolution, though significant, faces challenges like low penetration and limited awareness. This essay emphasizes technology's potential in transforming the sector.

B. Current Challenges in the Health Insurance Sector

The health insurance sector in India, despite its advancements, faces numerous challenges:

Low Penetration: According to the National Family Health Survey (NFHS-5) 2019-20A, only about 33% of Indian households had an insured member. A vast majority, especially in rural areas, remain uninsured, exposing them to significant out-of-pocket medical costs.

Affordability: Insurance premiums often deter potential buyers. While government initiatives like Ayushman Bharat PMJAY target low-income families, many remain uncovered, finding private policies expensive.

Awareness and Perception: Many, especially in rural sectors, view health insurance as an avoidable cost rather than essential protection. The sector's complexity further exacerbates this perception.

Standardization Issues: The industry struggles with inconsistencies in policy conditions, claim procedures, and pricing, leading to customer mistrust.

Fraudulent Claims: The sector grapples with deceptive claims, raising costs for insurers and subsequently premiums for consumers.

Service Quality: Issues like claim settlement delays and subpar customer service persist. A 2020 Policybazaar survey revealed that 70% of participants found health insurance claims non-transparent.

Despite these issues, they underline significant opportunities for the industry's growth. Subsequent sections will discuss how technology can tackle these problems, emphasizing its pivotal role in reshaping health insurance in India.

III. Role of Technology in Health Insurance

In today's digital era, technology is reshaping sectors, especially health insurance. Insurers are using tech to improve efficiency, customer experiences, and proactive health care. This section delves into how technology tackles industry challenges, using real-life examples from India. We'll spotlight how tech is changing the future of health insurance in the country.

A. Impact of Technology on the Health Insurance Industry

Technology's transformative touch on the Indian health insurance sector is evident across its entire value chain:

Customer Acquisition & Policy Issuance: Previously marked by tedious paperwork, today's insurance acquisition process has been simplified by online platforms like Policybazaar. These digital avenues allow users to compare, understand, and purchase policies seamlessly.

Claims Processing: Digital advancements have made claims processing swifter and more user-friendly. ICICI Lombard's 'InstaSpect' feature, for instance, allows real-time incident recording for faster claim approvals.

Fraud Detection: Data analytics aids in pinpointing fraudulent claims. Religare Health Insurance utilizes it to spot potential fraud, ensuring integrity in settlements.

Personalized Policies: Insurers now use data analytics for tailored health insurance offerings. Collaborations like Max Bupa and GOQii provide policies based on individual health data.

Preventive Healthcare: The sector is embracing wearable tech to promote preventive healthcare, encouraging healthier lifestyles while helping insurers assess risks. HDFC ERGO's 'my:health Woman Suraksha' policy is a testament, providing wearables to monitor health.

In essence, technology is not just addressing existing challenges but also ushering in new opportunities in health insurance. The subsequent sections will explore these burgeoning opportunities and technology's potential to redefine the sector.

B. Technology Shaping Customer Experiences and Expectations

Technology's integration in health insurance has revamped operational aspects and reshaped the customer experience, offering value-added services beyond traditional coverage:

Digital Onboarding: Customers can now purchase policies digitally, skipping physical visits or agent interactions. Platforms like Coverfox allow easy policy comparisons, and e-KYC technologies make onboarding smooth.

Self-service Platforms: Insurers offer portals and apps for convenient policy management. Bajaj Allianz's 'Insurance Wallet' app lets users renew policies, track claims, and find nearby network hospitals.

Telemedicine: Insurers are incorporating telehealth options. ManipalCigna Health Insurance, for instance, provides virtual consultations, reducing the need for physical doctor visits.

AI Chatbots: AI-driven chatbots like HDFC ERGO's 'DIA' offer round-the-clock customer service, simplifying queries about policies and claims.

Health and Wellness Incentives: Insurers are encouraging healthier lifestyles through tech-driven benefits. Aditya Birla Health Insurance's 'Activ Health' rewards healthy behaviors, motivating users towards better health.

In essence, with technology, health insurance in India has evolved

from mere risk coverage to holistic health management. As technology continues to progress, so will its potential to further enhance customer experiences in the sector.

IV. Technological Innovations Affecting Health Insurance

The digital era is changing many industries, including health insurance. Technology isn't just making operations smoother; it's creating new business methods and improving customer relationships. In health insurance, tech helps detect fraud, offers tailored coverage, and improves user experience. This part will discuss Data Analytics and Artificial Intelligence's role, using Indian examples to show their big impact on the future of health insurance.

A. Artificial Intelligence and Machine Learning in Health Insurance

AI and ML are changing the health insurance industry in big ways:

Risk Assessment: By analyzing data like medical history and habits, AI helps insurers decide how risky a person might be to insure. This means better pricing for policies.

Claims Processing: AI speeds up and improves the claim process. It quickly checks claims, reducing mistakes and making customers happier.

Fraud Detection: AI spots patterns that might show cheating or fraud in claims, saving insurance companies money.

In short, AI and ML make insurance faster, fairer, and more efficient.

Case Study: ICICI Lombard and AI in Claim Processing

ICICI Lombard, an Indian health insurance company, uses AI to quickly approve insurance claims. Their system checks medical reports against policy terms and decides instantly if a claim is valid. This makes the process much faster and makes customers happier. This shows how AI can make insurance better and faster.

Next, we'll look at how Data Analytics is also changing health insurance.

B. Blockchain Technology in Health Insurance

Blockchain, first known for cryptocurrencies, is now used in many sectors, including health insurance. Its decentralized, unchangeable, and clear features can improve efficiency and trust in health insurance.

Improving Trust: Blockchain is a decentralized system that securely records transactions. In health insurance, it can safely store patient and policy details. Since changing data needs network agreement, it's secure and builds trust between companies and clients.

Making Processes Easier: Blockchain can simplify many insurance tasks. For example, claims can be automatically managed using smart contracts, which are self-fulfilling agreements. This makes claims faster, lowers costs, and makes customers happier.

Case Study: Apollo Munich Health Insurance and Blockchain

Apollo Munich Health Insurance in India is working with IBM to use blockchain for better health insurance claims. This new system lets everyone see the claim's status, making things clear and fast. It uses a feature called "smart contract" to quickly approve and give out claims, which helps customers. Although blockchain is still new in Indian health insurance, Apollo Munich shows it can be game-changing. Next, we'll discuss the challenges and opportunities of using technology in health insurance and what this means for its future in India.

C. Data Analytics in Health Insurance

Data analytics is transforming health insurance by offering deeper insights for better decisions.

Spotting Health Trends: By analyzing diverse data, analytics can spot health and disease patterns based on lifestyle, environment, and genetics. This helps insurers set accurate prices and create custom health programs.

Knowing Customers: By examining data from web use, app activity, and purchase history, insurers understand customer desires and behaviors. This lets them offer tailored services, boosting customer loyalty and satisfaction.

Case Study: Max Bupa Health Insurance and Data Analytics

Max Bupa Health Insurance in India teamed up with a data company called Qlik to better serve its customers. They looked at information like customer feedback and claim histories to understand what people wanted or struggled with. For example, they found out that many customers didn't know how to claim insurance. So, Max Bupa made special messages to help them, improving customer happiness. This data also helped them offer more products to existing customers. Max Bupa's story shows that using data isn't just about numbers; it's about making better decisions for business and customers.

Now, let's discuss the future of technology in health insurance using what we learned from cases like this.

D. Telemedicine and Digital Health Platforms in Health Insurance

Telemedicine and digital health platforms are changing the landscape of health insurance, bridging gaps in healthcare accessibility, and introducing a new dimension to health risk assessment and management.

Insurance Policies and Claims: Telemedicine services can help insurers to broaden the scope of their coverage, including virtual consultations and remote health monitoring. This can lead to more inclusive and flexible policies. Further, digital health platforms can provide real-time health data, aiding in proactive risk management and expediting the claim process.

Integration of Technologies: Integrating telemedicine and digital health platforms with health insurance operations can enhance customer engagement. Policyholders can enjoy the convenience of availing healthcare services from the comfort of their homes and receive personalized health advice based on their health data. Moreover, these technologies can be utilized for health promotion and preventive care, potentially reducing the risk of severe health conditions and high-cost claims.

Case Study: Star Health Insurance and Telemedicine

Star Health Insurance has effectively integrated telemedicine for its users, especially during the COVID-19 pandemic. This service lets policyholders consult doctors virtually, reducing physical hospital visits and potential disease exposure. Initially for select policies, due to its success and demand, it's now available across all their products. This move shows how technology is shifting health insurance from just handling claims to actively managing a policyholder's health. This sets the stage for our next discussion on the future union of technology and health insurance.

V. Future Trends and Likely Predictions

In the digital age, technology is reshaping health insurance, ushering in an era of efficiency, customization, and enhanced user experience. The industry's future seems set to be more than just covering health risks; it's moving towards a holistic health management platform, blending healthcare services with financial planning.

Two trends steering this transformation are "Personalized Insurance Policies and Pricing" and "Integrated Health Management Platforms".

Emerging Trends in Health Insurance Tech:

Personalized Policies: Advanced data analytics and AI allow insurers to predict health risks accurately. This can lead to customized policies, where premiums reflect one's lifestyle. Regular exercisers or those with a healthy diet might get lower premiums, encouraging better lifestyles.

Health Management Platforms: Beyond mere coverage, insurers are looking to offer services like telemedicine, health consultations, and wellness programs, promoting preventive care and potentially reducing high-cost claims.

Digital Dominance: A shift towards fully digital processes in health insurance is imminent, from policy management to claims. AI chatbots might provide round-the-clock support, streamlining the customer experience.

Blockchain for Trust: As blockchain develops, its adoption in health

insurance will grow, enhancing transparency and trust, especially in claim settlements.

Implications for India:

These trends promise to reshape India's health insurance landscape. Personalized policies can increase customer loyalty, while health platforms might address healthcare gaps, especially in underserved areas. Embracing digital tools can boost customer satisfaction, and blockchain can reinforce trust.

In summary, the fusion of technology with health insurance in India aims to offer solutions that ensure financial protection and actively enhance individual health, reflecting the broader purpose of comprehensive health management.

VI. Ethical and Regulatory Considerations

As we envision the future of health insurance, it is equally crucial to acknowledge the ethical and regulatory considerations that accompany the widespread use of advanced technologies. The integration of technology in the health insurance sector, while offering numerous benefits, also brings forth complex challenges that demand thoughtful reflection and proactive policy-making.

Ethical Concerns:

Data Privacy: Technology in health insurance uses lots of customer details. This can help create better insurance plans, but it can also risk people's private data being stolen or misused.

Fairness: Charging people based on their health data might make those with health issues or certain genes pay more. This raises questions about fairness.

Case Study: In 2019, 'SingHealth', a big health group in Singapore, had a data breach where private information of 1.5 million people got stolen. This shows the need for strong data protection in health insurance.

Rules and Regulations:

Staying Updated: Technology changes quickly, so rules about using it in health insurance need to keep up. This includes how data is used and stored, and ensuring fairness in pricing.

Balancing Personalization with Fairness: Regulators need to make sure that while insurance becomes more personalized, it doesn't unfairly target or discriminate against certain groups.

Case Study: IRDAI, which looks after insurance in India, is working on understanding and creating rules around technology use. They are looking at how AI impacts insurance and making rules about data privacy. But they need to always stay updated with new technology changes.

To conclude, as we think about health insurance's future, we should keep in mind the balance between using new technologies and ensuring that they are used fairly and safely.

VII. Conclusion

In the past decade, technology and a growing awareness of health have majorly changed India's health insurance scene. This essay discusses how technology has changed health insurance and the challenges it brings.

Earlier, health insurance in India was filled with paperwork and long waits. Now, thanks to technology, it's becoming faster, more focused on the customer, and more digital. This change has many benefits, but it also has challenges like scattered data and limited knowledge about technology.

New tech tools like AI, machine learning, and blockchain are changing how the industry works. For example, AI helps in quickly processing claims. Blockchain makes transactions more transparent and secure.

We looked at real-life examples from India to understand these changes better. For instance, AI has sped up how quickly claims are processed, and blockchain helps make transactions more trustworthy. We also saw how data helps companies understand what customers want and how online doctor visits and health platforms affect insurance.

In the future, we might see even more personalized insurance plans and more digital services. But, this also brings up questions about fairness and privacy. For example, is it fair to charge someone more because they were born with a health issue? And how do we keep people's health data safe?

Regulations will be important in this future. Bodies like IRDAI in India will set rules to make sure technology is used right in health insurance.

To wrap up, technology is making health insurance in India better and more user-friendly. But as things change, we need to make sure it's done fairly and safely. The goal is to make sure everyone has good health coverage in the future.

VIII. Looking Forward: Technology as the Torchbearer of Health Insurance in India

In concluding this exploration, it's evident that technology is no longer a supplementary force in India's health insurance sector. Instead, it stands front and center, transforming the industry. With the infusion of AI, ML, data analytics, blockchain, and digital platforms, adopting technology isn't just innovative—it's essential for staying competitive in an increasingly digital landscape.

However, this technological shift presents challenges like data privacy, fair policy pricing, and regulatory compliance. Overcoming these hurdles is paramount for the sector's continuous evolution.

Looking ahead, technology promises a future with hyper-personalized policies, intuitive experiences, and proactive healthcare. For this potential to be realized fully, stakeholders—policy-makers, providers, and consumers alike—must guide the sector's technological evolution while upholding ethical and regulatory standards.

Technology has the power not just to enhance operational facets but to fundamentally change healthcare delivery in India, prioritizing wellness over mere illness treatment. When wielded with responsibility and clarity, technology can redefine health insurance as an inclusive, transparent, and trusted investment in health. On this transformative journey, technology will light the path towards a holistic health-focused future for India. TJ

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Merit Winner

G.V. Rao Memorial Essay Competition

Innovation in Insurance Products and Services

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The author is working with Reliance General Insurance as a Motor Claims Manager having 10+ years of overall experience in claims assessment and customer service. He has completed MBA in Marketing from Wesley PG College and B-Tech in Mechanical Engineering from Sree Nidhi Institute of Science and Technologies. He has also acquired Licentiate Certification from Insurance Institute of India and he has working towards his goals viz., Associate, Fellowship and Research in Insurance.

Abstract

Innovation is reshaping the landscape of insurance products and services, driving transformation in an industry historically rooted in risk mitigation. This journal delves into the dynamic evolution of the insurance sector, with a specific focus on the Indian context. The exploration encompasses diverse innovations, from customized health insurance solutions to blockchain-powered operations. Key drivers, benefits, challenges, and future trends are analyzed, offering insights into the intricate interplay between innovation and insurance. Through case studies and emerging trends, this journal underscores the pivotal role of innovation in not only meeting evolving customer expectations but also expanding insurance's reach to previously underserved segments.

Keywords

Innovation, Insurance, Products, Services, Indian Insurance Industry, Future Trends.

I. Introduction

Background of the Insurance Industry

The insurance industry has a long history of providing individuals and businesses with a safety net against unforeseen risks. From its origins in maritime trade to modern-day complex financial products, insurance has consistently served as a means of managing uncertainty. Insurers have evolved over time to cater to changing needs, adapting their products and services to align with societal developments, technological progress, and economic shifts.

Importance of Innovation in Shaping the Industry

Innovation stands as a cornerstone in the industry's evolution. It is not merely an option but a necessity for insurance companies seeking to stay relevant and thrive in the dynamic business landscape. Innovation enables insurers to address evolving customer expectations, emerging risks, and advancements in technology. Those who fail to embrace innovation risk falling behind competitors and losing touch with customers' rapidly changing preferences.

Focus on the Indian Insurance Sector

The Indian insurance sector, one of the largest and fastest-growing markets globally, presents a unique context for understanding innovation's impact. With a burgeoning middle-class population, increasing digital penetration, and changing consumer behaviors, the Indian insurance industry is at the cusp of transformation. Innovations here are poised to reshape how insurance is perceived, purchased, and experienced by millions, making it a fertile ground for studying the dynamics of innovation in insurance.

Definition of Innovation in the Insurance Context

Innovation in the insurance sector

refers to the process of introducing novel ideas, technologies, processes, or practices that result in significant improvements or enhancements to insurance products, services, or operations. It encompasses a wide spectrum, ranging from introducing entirely new insurance products to leveraging cutting-edge technologies to streamline claims processing.

Role of Innovation in Driving Positive Change

Innovation isn't just a buzzword; it's the driving force behind positive change in the insurance industry. It serves as a catalyst for growth, enabling insurers to adapt to evolving customer needs, regulatory changes, and market dynamics. Innovation helps insurers become more customer-centric, efficient, and competitive, fostering a culture of continuous improvement and evolution within the industry.

II. Evolution of Insurance Products and Services

Historical Overview of Insurance Products and Services

Insurance products have come a long way from their early forms of simple risk-sharing agreements among traders. Historical records reveal that insurance-like arrangements were present in ancient civilizations, indicating a fundamental human need for protection against loss. Over the centuries, these rudimentary arrangements evolved into structured insurance contracts, covering diverse risks such as fire, shipwrecks, and life.

Transition from Traditional to Innovative Offerings

The insurance industry's evolution gained momentum with the advent of technology and globalization. Traditional offerings, while effective, faced limitations in addressing modern complexities. However, as technological advancements unfolded, insurers started introducing innovative products that encompassed previously uncovered risks. For instance, the rise of the sharing economy led to new insurance solutions tailored to peer-to-peer transactions and gig economy workers. This transition reflects the industry's responsiveness to changing societal structures and the adoption of technology in creating tailored solutions.

Key Drivers of Innovation in the Insurance Industry

1. Technological Advancements and Digital Transformation

Technological breakthroughs have significantly reshaped the insurance landscape. The adoption of advanced data analytics, artificial intelligence (AI), machine learning (ML), and the Internet of Things (IoT) has revolutionized how insurers gather, analyze, and utilize data. This data-driven approach enables more accurate risk assessments, personalized offerings, and streamlined claims processing.

2. Changing Customer Expectations and Preferences

In today's era of instant access and seamless experiences, customers demand more convenience, transparency, and tailored solutions. Insurers must respond by embracing digital channels for communication, offering user-friendly online platforms, and providing on-demand services that cater to individual needs.

3. Rise of Insurtech Startups and Disruptive Competition

The emergence of insurtech startups has injected new energy into the insurance industry. These startups leverage innovative technologies to address pain points in traditional insurance processes, such as underwriting, distribution, and claims. Their agility and willingness to challenge the status quo have spurred established insurers to accelerate their own innovation efforts to remain competitive.

III. Types of Innovation in Insurance

Product Innovation - Introduction of New Insurance Products and Enhancement of Existing Insurance Products

Introducing new insurance products involves identifying gaps in coverage and crafting solutions to address evolving risks. Insurers are constantly developing offerings that cater to emerging trends, such as cyber liability insurance, usage-based insurance, and climate risk coverage.

Instead of reinventing the wheel, insurers often enhance existing products to better align with customer expectations. For instance, by adding value-added services, expanding coverage options, or simplifying policy terms, insurers can make their

offerings more attractive and relevant to modern consumers.

Service Innovation - Improving Customer Experience

Service innovation revolves around reimagining how customers interact with insurers. Digital channels, such as mobile apps and online portals, provide customers with greater control over their policies. Personalized services and real-time support enhance customer satisfaction and build lasting relationships.

Technological Innovation - Integration of Technology

Technology is at the heart of modern insurance innovation. Automation streamlines administrative processes, AI and machine learning enhance risk assessments, and blockchain ensures transparency and security in transactions. These advancements collectively result in a more efficient and customer-centric insurance ecosystem.

Benefits of Innovation in Insurance

1. Improved Risk Assessment and Underwriting Processes

Innovation enables insurers to gather and analyze vast amounts of data, leading to more accurate risk assessments. This results in fairer premiums and better alignment between coverage and actual risks, reducing adverse selection and enhancing the industry's overall stability.

2. Enhanced Customer Experience and Satisfaction

Innovations like digital platforms, self-service options, and personalized offerings empower customers, making interactions with insurers more convenient and engaging. This leads to higher customer satisfaction levels and stronger brand loyalty.

3. Increased Efficiency and Cost-Effectiveness

Automation and technology-driven processes reduce administrative burdens, allowing insurers to allocate resources more efficiently. Additionally, innovations that expedite claims processing and policy issuance minimize operational costs while enhancing overall efficiency.

4. Expansion of Insurance Coverage to New Markets

Innovations in distribution channels, such as mobile platforms and digital partnerships, extend insurance accessibility to previously underserved markets. This democratization of insurance not only benefits consumers but also contributes to the industry's growth.

The evolution of insurance products and services is marked by a harmonious blend of tradition and innovation. By recognizing and harnessing the potential of innovation, the insurance industry can continue to provide reliable protection while adapting to the ever-changing needs of the modern world.

IV. Challenges and Barriers to Innovation

Regulatory and Legal Constraints

Innovation in the insurance industry is often held back by the intricate web of regulations and legal frameworks that insurers must navigate. Regulatory bodies play a crucial role in ensuring consumer protection and industry stability, but their conservative nature can hinder the swift implementation of new ideas. Insurance companies must strike a balance between innovation and compliance, seeking ways to align their offerings with legal requirements while pushing the boundaries of traditional practices.

Data Privacy and Cybersecurity Concerns

As insurers collect and utilize vast amounts of customer data for personalized products and streamlined processes, data privacy and cybersecurity become paramount concerns. With high-profile data breaches becoming more frequent, consumers are increasingly vigilant about sharing their information. Balancing the benefits of data-driven innovation with the need for robust data protection measures presents a formidable challenge for insurers.

Resistance to Change within Traditional Insurance Companies

Innovation requires a fundamental shift in mindset, from entrenched traditional practices to a culture of experimentation and adaptation. Established insurance companies with deeply ingrained processes can struggle to embrace change. The inertia of legacy systems, organizational structures, and resistance to new ways of doing business can slow down or even thwart innovation efforts.

Lack of Awareness and Understanding of Innovation Opportunities

Innovation opportunities often remain hidden due to a lack of awareness or understanding among insurance professionals. Many industry players might not fully comprehend the potential of new technologies, business models, or customer preferences. Overcoming this barrier necessitates a concerted effort to educate and upskill the workforce about the benefits and possibilities of innovative approaches.

V. Case Studies

Microinsurance Initiatives Targeting Underserved Segments

Microinsurance, designed to provide financial protection to low-income and underserved populations, showcases the industry's commitment to inclusivity. Weather-based crop insurance and livestock insurance are prime examples of how microinsurance caters to farmers in developing countries, shielding them from the volatility of climate-related risks that threaten their livelihoods.

Customized Health Insurance Solutions

Health insurance has witnessed remarkable innovation with the introduction of disease-specific insurance and wellness programs. These offerings address individual health needs, providing coverage for specific ailments and promoting healthier lifestyles through incentivized wellness initiatives. By tailoring coverage to individual health profiles, insurers enhance the value they deliver to customers.

Innovative Distribution Channels for Wider Reach

Insurance's accessibility has been expanded through innovative distribution channels. Mobile-based insurance solutions bring coverage within reach of individuals who might otherwise be excluded due to geographical or logistical barriers. E-commerce partnerships enable insurers to tap into existing platforms, making insurance products seamlessly available to a wider audience.

Successful innovative insurance products and services in India

1. Weather-Based Crop Insurance by ICICI Lombard

ICICI Lombard, one of India's leading insurance companies, introduced a weather-based crop insurance product in collaboration with local agricultural cooperatives. This innovative product leverages satellite data and weather forecasts to assess crop losses due to adverse weather conditions. Farmers are compensated based on the actual weather conditions in their region. This solution has helped address the uncertainties faced by smallholder farmers due to unpredictable weather patterns.

2. Arogya Sanjeevani health product launched by IRDA

Launched by IRDA and offered by all top insurance companies, the Arogya Sanjeevani Policy, a standardized health insurance product that offers coverage for a wide range of medical expenses. This product simplifies the insurance-buying process by offering a comprehensive policy with standardized terms across various insurers. It caters to the growing demand for easily understandable and accessible health insurance coverage.

3. Pay-As-You-Drive Motor Insurance by Bharti AXA General Insurance

Bharti AXA General Insurance introduced a pay-as-you-drive motor insurance policy, known as "Pay-How-You-Drive." This policy utilizes telematics technology to monitor the driving behavior of policyholders. Safe driving habits are rewarded with premium discounts, incentivizing responsible driving and creating a win-win situation for both the insurer and the insured.

4. One-Tap Hospitalization Claim Settlement by HDFC ERGO

HDFC ERGO revolutionized the claims settlement process with its "One-Tap" feature. Using this innovative service, policyholders can file and settle hospitalization claims in just one tap on their mobile devices. This streamlined process eliminates the need for extensive paperwork and speeds up the reimbursement process, enhancing customer experience.

5. Diabetes-Specific Health Insurance by Max Bupa

Max Bupa (Now Niva Bupa) Health Insurance introduced a diabetes-specific health insurance product catering to individuals with diabetes. This innovative product offers coverage for diabetes-related medical expenses, including regular check-ups, medications, and treatments. By

addressing the unique health needs of diabetics, Max Bupa aims to provide comprehensive support and financial security.

6. E-Commerce Platform Partnership by Bajaj Allianz General Insurance

Bajaj Allianz General Insurance collaborated with prominent e-commerce platforms to offer insurance products to customers while they shop online. Through this partnership, customers can easily purchase travel insurance, mobile insurance, and other coverage options as they complete their online shopping. This integration of insurance into the e-commerce experience enhances accessibility and convenience.

These case studies highlight the innovative endeavors of various insurance companies in India, showcasing their commitment to addressing specific customer needs, leveraging technology, and enhancing the overall insurance experience.

VI. Future Trends and Outlook

Adoption of Artificial Intelligence and Machine Learning

The future of insurance is increasingly intertwined with artificial intelligence and machine learning. These technologies are poised to revolutionize underwriting, claims processing, and customer interactions. AI-driven algorithms can assess risks more accurately and efficiently, leading to improved customer experiences and enhanced business outcomes.

Integration of Blockchain Technology in Insurance Operations

Blockchain's decentralized and tamper-proof nature holds immense promise for insurance operations. It can streamline policy administration, improve transparency in claims processing, and enhance fraud detection. The secure and traceable nature of blockchain technology bolsters customer trust while reducing inefficiencies.

Shift towards Proactive Risk Management and Prevention

Insurance is evolving beyond a reactive approach to risk management. The integration of data analytics, IoT devices, and AI enables insurers to predict and prevent risks before they materialize. This shift reduces claim frequency and severity, benefiting both insurers and policyholders.

Expansion of Insurance Offerings in Emerging Markets

As emerging markets experience economic growth and increased connectivity, they present untapped opportunities for insurance expansion. The rising middle class in these regions creates demand for innovative insurance products that cater to their unique needs and aspirations.

Some innovative insurance products and services that are still to be launched in India

1. Insurance for climate change: This type of insurance would cover the financial losses that are caused by climate change, such as floods, droughts, and storms. As climate change becomes more severe, there is a growing need for this type of insurance.
2. Insurance for the gig economy: This type of insurance would cover workers who are self-employed or who work on a contract basis. It could cover things like lost income, medical expenses, and legal fees. The gig economy is growing rapidly in India, so there is a need for insurance products that cater to this segment.
3. Insurance for mental health: This type of insurance would cover the cost of mental health care, such as therapy, medication, and hospitalization. Mental health issues are becoming more common, so there is a need for insurance products that can help people afford the care they need.
4. Insurance for wearable devices: This type of insurance would cover the cost of replacing or repairing wearable devices, such as fitness trackers, smartwatches, and smart glasses. Wearable devices are becoming increasingly popular, so there is a need for insurance products that can protect them from damage.
5. Insurance for social media influencers: This type of insurance would cover the financial losses that are caused by a negative social media campaign, such as a smear campaign or a boycott. Social media influencers are becoming increasingly influential, so there

is a need for insurance products that can protect them from reputational damage.

6. Gene-based insurance: This type of insurance uses genetic information to assess the risk of a person developing a certain disease. This can help to tailor insurance policies to the individual's needs.
7. Social impact insurance: This type of insurance provides coverage for environmental or social risks. For example, it could provide coverage for farmers in the event of a drought or for businesses in the event of a natural disaster.
8. Parametric Disaster Insurance: With India being prone to various natural disasters like cyclones, floods, and earthquakes, introducing parametric insurance could be revolutionary. This type of insurance pays out based on predefined parameters such as the intensity of a disaster rather than traditional loss assessment. This allows for faster claims processing and quicker financial assistance to affected communities.
9. Income Protection for Gig Workers: As the gig economy grows, insurance tailored for gig workers' needs could emerge. Income protection insurance could offer coverage for periods of reduced or lost income due to illness, accidents, or temporary job loss, providing financial stability to this segment of the workforce.
10. Personalized Cybersecurity Insurance: With the rise of digital transactions and cyber threats, insurance policies that offer personalized cybersecurity coverage might be developed. These policies could consider an individual's online behavior and digital footprint to tailor coverage against cyber risks like identity theft, phishing attacks, and data breaches.
11. Livestock and Crop Insurance with Satellite Imaging: Advanced satellite imaging technology could be used to create highly accurate data on crop health and livestock conditions. This data could then be utilized to offer innovative insurance products that cater to farmers, providing them with real-time information and coverage against losses caused by diseases, adverse weather, and other factors.
12. Usage-Based Home Insurance: Similar to usage-based car insurance, this type of policy could use smart home devices to monitor and assess risks within a home. Insurance premiums would be based on factors like home security systems, fire safety measures, and other IoT-enabled safeguards.
13. Mental Health and Wellness Insurance: As mental health awareness increases, there's potential for insurance products that cover mental health services, therapy sessions, and wellness programs. These policies could encourage individuals to seek professional help while providing financial support for mental well-being.
14. Drone Insurance: Drone insurance is indeed an innovative insurance product that has gained traction in various parts of the world. Given the increasing use of drones in various industries such as agriculture, surveying, photography, and even delivery services, drone insurance addresses the unique risks associated with drone operations.
15. Celebrity insurance or body part insurance: Insurance coverage for specific body parts, such as a singer's voice or a sportsman's legs or hands, falls under the category of "celebrity insurance" or "body part insurance." In India Singer Lata Mangeshkar and Actors like Amitabh Bachchan and Rajini Kanth have insured their voices. Sania Mirza has insured her hands. These kinds of unique and exclusive insurance products to be developed as per the requirement of celebrities to cater their needs. Insurance companies should reach out the celebrities or sport stars to offer such products.

These are just a few examples of the many innovative insurance products and services that could be launched in India. As the insurance industry continues to evolve, we can expect to see even more innovative products and services being developed in the future. By analyzing these future trends and outlooks, insurers can position themselves to leverage emerging technologies and market shifts, paving the way for a more

resilient and customer-centric insurance industry. In navigating these challenges, leveraging case studies, and embracing future trends, the insurance industry can forge a path toward transformative innovation, ensuring its relevance and effectiveness in an ever-evolving landscape.

VII. Conclusion

Innovation, a force that propels industries forward, has proven to be an essential catalyst in the insurance sector. As we reflect on the journey through the realms of innovation in insurance products and services, it becomes evident that its impact is profound and far-reaching.

Recap of the Importance of Innovation in Insurance

The insurance landscape is in a state of perpetual transformation, and at the heart of this transformation lies innovation. We've explored how innovation drives positive change, reshapes risk assessment, enhances customer experiences, and paves the way for more efficient and inclusive insurance products and services. Innovation is not just a competitive edge; it's a survival strategy for insurers seeking to remain relevant and responsive.

Summary of Key Findings and Insights

Throughout our exploration, several key findings emerge. We've witnessed how the insurance industry's historical evolution, driven by societal shifts and technological advancements, has laid the foundation for the innovations we witness today. We've delved into the challenges that insurers must navigate, from regulatory constraints to data privacy concerns, all of which underscore the intricate balancing act innovation requires. We've examined real-world case studies showcasing the transformative power of innovative insurance products, targeting underserved segments and harnessing technology for wider reach. Moreover, we've glimpsed into the horizon, foreseeing a future where artificial intelligence, blockchain, and proactive risk management will steer the industry toward uncharted territories of growth.

Call to Action for Insurance Companies to Embrace Innovation

As we draw this journey to a close, we extend a resounding call to action to insurance companies, both traditional behemoths and agile startups, to embrace innovation as a fundamental tenet. The time for half-measures has passed; innovation must be integrated into the fabric of your operations, culture, and strategies. It is no longer sufficient to merely adapt to change; the insurance industry must boldly drive change. It's a call to foster a culture that nurtures creative thinking, welcomes experimentation, and empowers employees to envision and enact new possibilities.

The road ahead is teeming with opportunities waiting to be seized. Embrace innovation not as an isolated endeavor, but as a collective pursuit that stretches across departments, companies, and borders. Let's push boundaries, redefine standards, and reshape the insurance landscape to better serve the needs of our customers, our industry, and society as a whole.

As we part ways today, let's carry forward the insights gained here and embark on a journey of transformation—one where innovation is not just a destination but a path of perpetual growth and progress. TJ

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Merit Winner

G.V. Rao Memorial Essay Competition

Indian Insurance Industry: The Need for More Insurers

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Abstract

India has become the most populous country in the world with over more than 1.4 billion people. Major portion of this population is not having an adequate insurance coverage. Rate of insurance penetration of India is very low as compare to other countries. The Indian Insurance industry is regulated by IRDAI and the regulatory framework has traditionally being very strict, the requirements for insurance licensing and capital are very tough. These are also some of the reasons for having less number of insurers in Indian insurance industry but recently, IRDAI, the Indian regulator has changed a lot and has proposed so many measures to facilitate the entry of new insurers in India. The Indian Insurance regulator is promoting product innovation and competition in the Indian insurance industry. The regulator is also aiming to create a conducive environment for achieving a goal of insurance for all by 2047. It is possible that in the near future Indian insurance industry will see a good number of new insurance players like the ways other countries are having, some of the important factors like competition, regulatory compliance, fulfilment of capital requirements and building trust among policyholders will continue to play a very important role in shaping the entry and growth of new insurance players.

Keywords

Insurance Penetration, Insurance Density, Gross Domestic product (GDP), Artificial Intelligence (AI), Insurance Protection Gap (IPG),Out of Pocket Expenses(OPE), National Health Service (NHS)

Type of Insurers - Allowed In Indian Insurance Industry

In any country, it is in the interest of policyholder if insurance industry is having diverse range of insurers to cater different types of needs of consumers and businesses.

The Current Status of Indian Insurance industry is as follows.

Table-1: Type of Insurers Allowed - Indian Insurance Industry

Category	Numbers
Life	24
General	25
Health	5
Specialised	1
Total Insurers	**55**
Reinsurers	1
*FRBs	12

Source: GI Council
* Foreign Reinsurance Branches

Reinsurers

The General Insurance Corporation of India (GIC Re) is the national reinsurer operating in India and holds a dominant position in Indian reinsurance market., The Indian Regulator (IRDAI) has also allowed foreign reinsurance branches (FRBs) and Lloyd's India to operate in India, Currently there are around 12 FRBs are operating in India. (Refer Table 2)

Table-2: INSURERS OPERATING IN INI AS AT MARCH 31, 2023		
S. No.	**Reinsurers**	**Home Country / Regulator**
	Public Sector	
1	General Insurance Corporation of India	India
	Branches of Foreign Reinsurers	
1	Allianz Global Corporate & Speciality SE. India Branch	Germany
2	AXA France Vie - India Reinsurance Branch	France
3	General Reinsurance AG - India Branch	Germany
4	Hannover Ruck SE - India Branch	Germany
5	Munchener Ruckversicherungs-Gesellschaft Aktiengesellschaft - India Branch	Germany
6	RGA Life Reinsurance Company of Canada. India Branch	Canada
7	SCORSE-India Branch	France
8	Swiss Reinsurance Company Ltd. India Branch	Switzerland
9	XL Insurance Company SE. India Reinsurance Branch	United Kingdom
10	Lloyd's India Reinsurance Branch	United Kingdom
11	Factory Mutual Insurance Company. India Branch	United States
12	Markel Services India Private Limited	United States
Source: IRDAI Handbook		

From the last 10 years, Indian Insurance industry is working with almost same number of Insurers, despite the fact that India is having very less insurance penetration and insurance density. (Refer Table: 3)

Recently the Indian Insurance Regulator IRDAI has taken few bold steps and issued licence to following four Insurers, but they are yet to start their operations.

IRDAI has given the certificate of registration to commence life insurance business to below three Insurers.

Under Life Insurance:

Acko Life Insurance Limited

Credit Access Life Insurance Limited

Go Digit Life Insurance Limited

Under Non-Life:

Kshema general Insurance Limited

*The regulator had given the last Licence to any general insurer in 2017.

The Indian regulator is also looking at around 20 more applications, which are lying at various stages.

Some of the Important Reasons – Why India Need More Insurers

India Insurance regulator is focusing on the following three prolong approach **Availability, Accessibility and Affordability for achieving the goal of insurance for all by 2047,**

Table-3: Summary of Indian Insurance Sector										
PROFILE	**Unit**	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**
No of Insurers (Life and Non Life)	Nos.	53	53	54	55	59	60	58	57	56
Number of Foreign Reinsurers' Branches	Nos.				7	9	10	10	10	11
Insurance Penetration	Per cent	3.9	3.3	3.44	3.49	3.69	3.70	3.76	4.2	4.2
Insurance Density	US $	52	55	54.7	59.7	73	74	78	78	91
BUSINESS FIGURES										
Number of New Policies Issued	Lakhs	1,456.95	1,461.32	1,524.99	1,807.19	1,989.68	2,198,26	2,703.56	2,748.60	2,947.83
Total Premium	₹Crore	3,94,236	4,15,253	4,66,276	5,49,448	6,12,247	6,80,615	7,65,103	8,30,813	9,16,617
Market Share of PSUs (including Specialized)	Per cert	72	70	69	68	65	61	61	59	57
Source: IRDAI Hand Book FY 21-22										

The Indian Insurance Regulator IRDAI is striving to create **an Uber or OLA kind of Moment** in the insurance sector through launching of 3Bs Like Bima Sugam, Bima Vistar and Bima Vaahak

Some of the important reasons for having more insurers in India are as follows-

Need for expanding insurance coverage:

India is a country with huge population and large portion of this population is either not having an insurance coverage at all or having inadequate insurance coverage, By Increasing the numbers of insurers will definitely help in expanding the insurance services to those areas wherein there is very low insurance penetration and density numbers. Non-Life Insurance penetration of India is 1% and for life insurance, the same is 3.2%. (refer table 4)

Table: 4 Insurance Penetration - Life and Non Life

Insurance penetration and Insurance density in India are very low as compared to other countries. The per capita premium expenditure on Insurance premium in India is around $91, but when we compare this with USA and Canada, The same is $7782. The per capita density for the world is $ 874, the same is also very high as compared to India hence there is a huge scope for new Insurers to capture the untapped market. (refer table: 5)

Table 5 : Density- India Vs The World

Improve accessibility to insurance products and services:

If there will be more insurers in the market, the same will definitely increase competition among Insurers, which will reduce premiums and insurers will provide more affordable insurance products to the public. The insurers will also improve their other services like fast claim settlement, policy related services to attract and retain more customers. Increasing in number of insurers will result in providing better coverage, more competitive Pricing, and wide range of tailored products to customers.

Will promote innovation and technology:

Number of more insurers will promote innovation and technology, which will make insurance products more convenient and easy to buy. New age insurers will definitely bring artificial intelligence (AI), data analytics and other tools to streamline insurance operations and for simplifying insurance buying and selling process. Use of new technology will definitely change the relationship of insurer with policyholder by ensuring regular touch with the policyholder beyond a claim submission and sending him a renewal notice.

General Insurance industry is one of the least innovative areas for consumer's experience

Need WOW Experience- I.e. OLA, Uber

Table 6 : Median Age / Smartphone Users

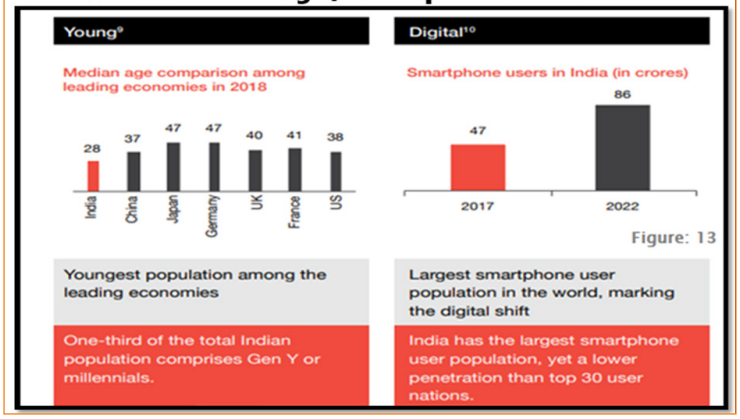


Figure: 13

Will promote specialised products:

If there are more insurers in Indian insurance industry, they will bring some expertise of certain fields such as cyber insurance, or extended Warranty insurance etc. This specialization will enable insurers to better understand the need of the customers and accordingly they will provide coverage to the customers.

Will energize the Indian economy:

If there is a presence of robust insurance sector in India, the same will play a very important role in deploying insurance funds into productive investments and will help in achieving Make in India Goal.

Will help in increasing insurance awareness:

With a large numbers of insurers in the market will promote competition in ensuring marketing and advertisement of insurance products through TV, Radio and with other modes. The same will increase insurance awareness among public. The expansion of insurers will lead to increase of more distribution channels such as more insurers' branches, more agents, more brokers and more digital platforms, the same will facilitate better access to insurance information.

Will bring innovative pricing models:

If there, will be more insurers in the market, the same will promote competition and the same will force the insurers to bring innovative pricing models for making insurance products more affordable like pay as you drive, wellness discount, group discount etc.

Will stimulate the reinsurance market:

The entry of more insurers in India will also revive reinsurance market because reinsurers provides capital support to these insurers and allow them to underwrite large risks.

Employment opportunities:

Currently under non-life, there are around 162906 employees working in different offices of non-life insurers and around 25 Lac people are working as an agent under Non-Life Industry. The Industry is also providing employment opportunities to surveyors, risk engineers, workshops etc. If some more insurers enter in Indian insurance industry, the same will also put a positive impact on employment opportunities. Insurers also requires a range of professionals like underwriters, claim adjusters, customer service providers and other support staff, The expansion of Indian insurance industry will definitely contribute in generating employment opportunities.

Partnerships Collaboration and Takeovers Mergers:

Most of the non-life insurers except few are into underwriting losses, Due to this, we have seen many takeovers and collaborations, Like Bhart Axa and ICICI Lombard in 2020.

HDFC Ergo has acquired Apollo Munich Health Insurance Company limited in 2019.

The above-mentioned cases are just few examples of mergers and takeovers that have occurred in Indian insurance industry, some of the motivations for these mergers were to expand business, gain market share and getting diversification in product portfolio etc.

Will help in enhancing risk management solutions:

If there are more insurers in Indian Insurance industry, the same will promote a wide range of risk management solutions. Effective risk management solutions are very much required for getting sustainable economic development and through this India can make their position strong on the global stage. The Indian

Insurance industry is having so many products with wide range with different coverage options hence risk management is very much required for business enterprises.

Will help in filling Insurance Protection Gap

The Insurance Protection Gap (IPG) is the difference between actual insurance coverage required, actual coverage in the country.it shows the extent to which Indian population, and businesses are underinsured. Difference between economic losses and insured losses can also be called as insurance protection gap.

Table 7 : Country Wise Protection Gap

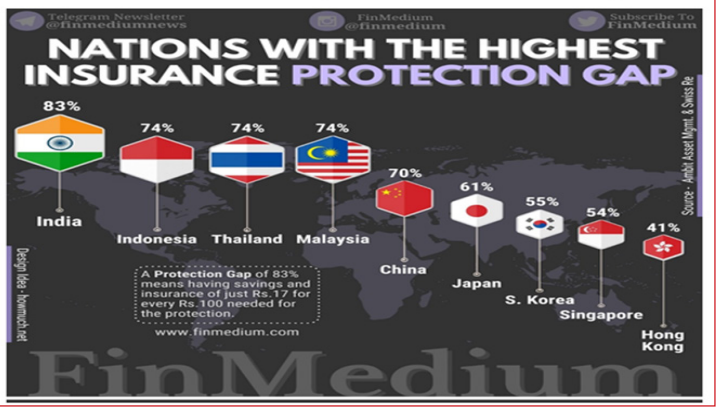


Table 8 : Economic Losses Vs Insured Losses

Year	Type of Disaster	Reejon	Economics basses	Insured Losses
2005	Flood	Maharashtra/Mumbai	15,000	2,200
2006	Flood	Gujarat/ Surat	5,000	500
2014	Cyclone Hudhud	AP/Odisha/Chhatisgarh/MP/UP	50,000	2,000
2014	Flood	Uttarakhand	3,000	1,200
2014	Flood	Jammu and Kashmir	40,000	2,500
2015	Flood	Tamil Nadu/Chennai	20,000	3,000
2016	Cyclone	Tamil Nadu/Andhra Pradesh/ Puducherry/Vardah	7,000	700
2018	Flood	Kerala	25,000	2,000
2019	India Rood	NA	70,000	2,000
2019	Cydone Fani	Odisha/West Bengal	10,000	650
2020	Cydone Amphan	West Bengal/Odisha/Bangladesh	60,000	2,500
2021	Cydone lauktae	West Cost/Kerala/ Lakshwadeep/ Maharashtra/Goa/Karnataka	15,000	1,500
2021	Cydone Yaas	West Bengal/Odisha	20,000	700

Source: Munich Re Net Cat Service Amount in Crs

The protection gap arises only when economic losses are more than insured losses, India is having a huge protection gap and hence more insurers in India will help in reducing this protection gap.

The Insurance protection gap may occur due to following various reasons

- **Due to Underinsurance:**
- **Uninsured Risks**: Like OPD etc.
- **Due to certain policy exclusions:**
- **Insured perception about certain risks:** Sometimes insured actually underestimate the likelihood of certain risks and hence ask insurer to exclude those coverage from their policy

Entry of more insurers in Indian insurance industry will definitely put positive impact on decreasing this protection gap by ensuring insurance awareness, enhancing insurance accessibility and by improving risk management solutions and developing innovative insurance products like proposed product by Indian regulator BIMA Vistaar, parametric product etc.

Will encourage financial Inclusion:

The Indian regular IRDAI and Indian government is focusing on promoting financial inclusion which includes Insurance for all by 2047, if there are more insurers in the market, it will increase competition in the market which will increase innovation, will reduce premiums and public will have broader access to different insurance products and services not only in metro cities but also in tier 2, 3 cities.

New Insurers will support economic growth:

The entry of new insurers will increase insurance penetration and insurance density, which will provide more financial security for individuals, businesses and the country as a whole. The same will help in providing stability to the Indian economy.

Growing Economy:

In spite of facing COVID-19, India's economy is experiencing steady growth over the last few years, which is a very positive sign for potential insurers. As the economy is expanding, the demand for insurance products and services are increasing both by individual and business enterprises.

Regulatory Liberalization:

The Liberalization of insurance sector in India that began in 2000 has opened up the market for private players, this is changing the market dynamics and customers are getting more choices now in terms of products. Recently IRDAI, the Indian regulator has also taken very bold initiatives for giving ease of operations to insurers.

Infrastructure development and Investments:

Almost under all sectors, like transportation, energy, roads, India is experiencing huge development and Insurers are playing a very important role in mitigating risk in these big projects by providing proper insurance covers. As and when investment in these projects will increase, this will increase the demand for insurance and hence will require more insures with specialized expertise to cover these risks. To take this forward, recently IRDAI has also asked all insurers to launch products on surety bond and trade credit.

Changing Risk Landscape:

Some of the emerging risk like cybersecurity, climate change require more insurers who are expert in this field can cater needs of this segment. New Insurers can bring innovative products for Indian insurance market and even more risk management solutions for addressing these emerging risks effectively.

Demographic factors:

The Country like India wherein there is huge population and that to with different demographic features require more insures to cater need for different segments. India is having the youngest population in the world, which require different type of insurance products. (Refer Table 9).

Table 9 : India Age Breakdown

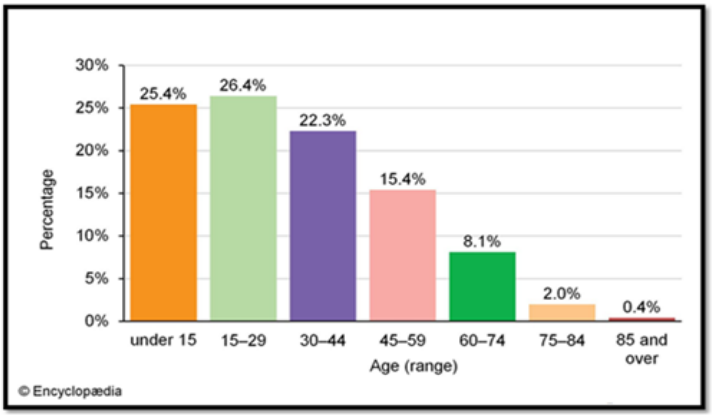
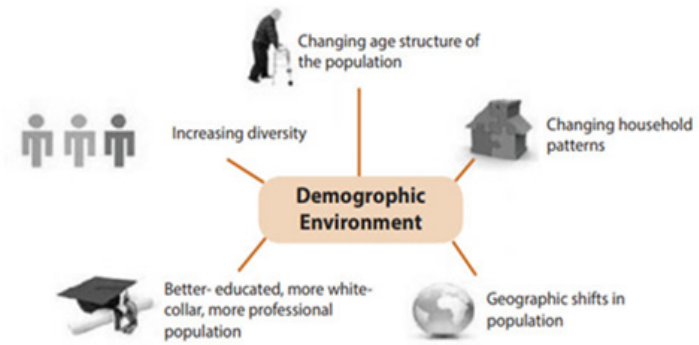


Table 10 : Demographic Enviornment



Will help in making India as Future Reinsurance hub:

If More new Insurers come in Indian insurance market, this will help India in making as future reinsurance hub because India will always have an advantage over other neighbouring countries such as Singapore and Dubai." India has the potential to become the world's reinsurance hub and India may become as future reinsurance hub because recently, IRDAI has proposed very bold steps like removing compulsory obligatory session of 4% to GIC re, Moreover recently Indian insurance market has become little liberal and is opening its sector more. The existing government is also working very hard for achieving the goal of Insurance for all by 2047. Non-life insurance penetration in India is under 1% of GDP, which, while comparing favourably to other states in the region such as Pakistan and Indonesia – which are both around half this figure – is low when compared with markets such as Malaysia (1.7%) and Singapore (1.6%). Therefore, unless India enlarges its insurance industry through ensuring India as reinsurance hub and integrates more fully with the mature global markets, insurance penetration will not increase to a comfortable level. Lloyd's did a study of 42 countries and found that 17 of these countries were underinsured against their exposures and eight of these countries were in Asia. India itself had an annualized premium gap of just under US$27bn and that over 80% of its natural catastrophe losses remain uninsured. Therefore, whenever insurance penetration will remain low, the burden will always falls on governments and taxpayers to fill the gap. As the costs of natural catastrophes will increase in the future, the same will become unsustainable for the government. If India become the reinsurance hub, All the new reinsurers will provide the additional capacity which is required in the Indian market and they will provide it with international expertise. Cedants will also be able to get easy access of new and innovative products. All the above measures will definitely accelerate insurance penetration in India.

Why Insurance Sector is Important for any Economy?

Provide Proper Security, Safety and Protection:

We all live in a world, which is full of uncertainties, and insurance always serves as a very important tool for protecting individuals and Businesses' future and provide them financial security.

Generate Financial Resources:

The insurance industry collects huge premiums from different policyholders, which are then invested in government securities and stocks subject to fulfilment of IRDAI Guidelines on Investments.

Encourages Savings through Life Insurance:

Life insurance encourages savings by educating policyholders to pay their premium regular. The same also serves as a mode of investment and create a habit of saving money.

Providing Medical Support:

Various Health Insurance Policies cater to various health risks and offer all individuals to access to better medical support during emergencies. NITI Aayog in his report on "health insurance for India's missing middle" which was published in 2021 has shown the gaps in the health insurance coverage and has offered solutions to address those gaps.

Promote Awareness, Insurtech, and Product Innovation etc.

Insurance sector help in enhancing insurance awareness and enhance financial literacy, recently due to arrival of Insurtechs, The Operational efficiency is being improved, and Insurance sector is coming up with innovative products for providing coverage for cyber and other risks.

Collaboration with Fintech Start-ups:

The insurance sector is leveraging the expertise of fintech start-ups for developing innovative channels of distribution, streamline processes, and enhancing customer experience...

Role of IRDAI for giving entry to new insurance players?

The Insurance regulatory and development authority of India (IRDAI) is the main regulator for Indian insurance industry and is responsible for overseeing and regulating Indian insurance business of India. The role of IRDAI is very crucial in giving licence to new Insurers; this is the duty of the IRDAI to ensure that all the new insurance players operate in compliance with regulatory guidelines.

IRDAI also ensure the following-

Make stringent eligibility criteria:

This is duty of the IRDAI to make specific criteria for insurers to obtain a licence. This Includes requirement of minimum capital, maintaining financial stability and governance standards and making sure that all the insurers work within the guidelines given by IRDAI. Through this IRDAI, ensure that only those business houses get licence who are financially sound and can protect policyholder's interest in the event of any eventuality.

Decide fit and proper criteria:

Based on fit and proper criteria, The Indian regulator, IRDAI assesses the suitability of the promoters and KMPs of prospective insurers, Some of the factors like integrity, competence, and financial soundness are evaluated by the regulator, IRDAI also ensure that individuals who will be running the insurance company must have proper qualification, experience and most importantly reputation in the market to run insurance business.

Risk Based capital requirement and prudential norms:

IRDAI also ensure that all the insurers maintain proper financial stability and required solvency ratio. The same is required because insurer must have adequate capital to absorb potential losses and they should be financial sound to protect policyholder's interest. The Indian regulator regularly reviews these solvency limits and make changes wherever the same is required.

Table 11: Public Sector General Insurers

RANK	INSURER	SOLVENCY RATIO (2022)	SOLVENCY RATIO (2021)	SOLVENCY RATIO (2020)	SOLVENCY RATIO (2019)
1	New India	1.66	2.13	2.11	2.13
2	National	1.09	0.62	0.02	1.04
3	United India	1.02	1.41	0.30	1.52
4	Oriental Insurance	0.15	1.40	0.92	1.57

Table 12: Large Private Sector General Insurers

RANK	INSURER	SOLVENCY RATIO (2022)	SOLVENCY RATIO (2021)	SOLVENCY RATIO (2020)	SOLVENCY RATIO (2019)
1	Bajaj Allianz	3.44	3.45	2.54	2.55
2	ICICI -Lombard	2.46	2.90	2.17	2.24
3	Go Digit	2.01	2.01	3.24	2.27
4	Tata-AIG	1.97	2.22	1.84	1.63
5	Cholamandalam MS	1.95	2.08	1.58	1.55
6	SBI General	1.85	2.00	2.27	2.34
7	IFFCO -Tokio	1.68	1.73	1.58	1.66
8	Reliance General	1.66	1.65	1.52	1.6
	Future Generali	1.66	1.61	1.51	1.54
9	HDFC Ergo	1.64	1.90	1.89	1.75

Table 13 : Small Private Sector General Insurers

RANK	INSURER	SOLVENCY RATIO (2022)	SOLVENCY RATIO (2021)	SOLVENCY RATIO (2020)	SOLVENCY RATIO (2019)
1	Shriram General	4.62	3.63	3.67	3.47
2	Liberty General	2.87	2.92	2.18	2.15
3	Raheja QBE	2.22	3.66	2.46	3.83
4	Royal Sundaram	2.10	1.87	1.69	1.93
5	Universal Sompo	1.92	1.90	2.28	2.24
6	Navi General	1.91	2.12	3.35	2.60
7	Kotak Mahindra General	1.79	1.95	2.13	1.86
8	Magma HDI	1.76	1.79	1.71	1.58
9	Acko	1.68	1.91	4.24	1.78
10	Edelweiss (ZUNO)	1.67	2.09	2.36	2.40

Table 14 : Standalone Health Insurers					
STANDALONE HEALTH INSURERS					
RANK	INSURER	SOLVENCY RATIO (2022)	SOLVENCY RATIO (2021)	SOLVENCY RATIO (2020)	SOLVENCY RATIO (2019)
1	Care Health	1.85	2.45	1.55	1.56
2	Aditya Birla Health	1.77	1.82	1.81	1.62
3	Max Bupa	1.72	2.09	1.77	1.77
4	Manipal Cigna	1.68	2.12	1.90	2.23
5	Star Health	1.67	2.22	1.88	2.01

Note: The IRDAI prescribed minimum solvency ratio is 1.5 to be maintained at all times. This ratio is based on the net written premium and net written claims.

Source: IBAI Report

Continuous monitoring and supervision:

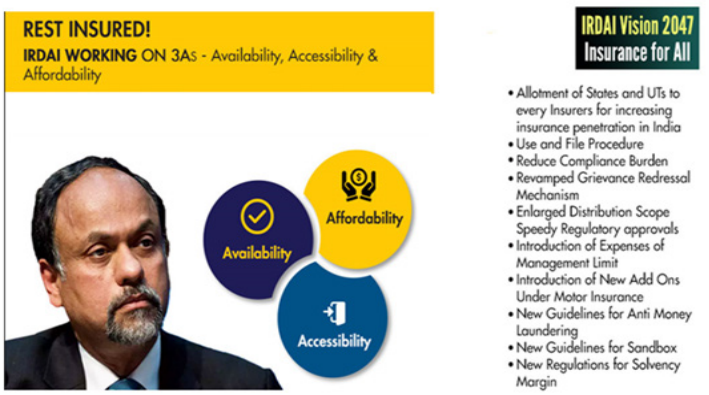
The role of IRDAI after giving licence to insurer is very important because once insurer is licensed, IRDAI continuously monitor and supervise insurer's operations and ensure that Insurer follows all the rules and regulations given by the regulator, regulator also ensure regular inspections, audits to assess the financial health of the insurer. Regulator is also authorized to impose penalty if any noncompliance or deviation in guidelines are found.

IRDAI takes initiatives on market development:

The Indian insurance regulator is also accountable for taking initiatives on promoting insurance penetration through marker development and expansion. For achieving the same, regulator ensure a conductive regulatory environment, encourage digitization, introduce new products etc. The purpose of these initiatives is to attract new insurance players in the market.

Some of the Initiatives taken by IRDAI are as follows

Table 15 : OTHERS REFORMS INTRODUCED BY IRDAI



- **Issued Guidelines on Standardization of Insurance Policies:**
  - o Bharat Griha Raksha: This product is for providing coverage of home building and home
  - o "Bharat Sookshma Udyam Suraksha: This product is for all those business houses wherein the total value at risk is only up to ₹5 crore,
  - o "Bharat Laghu Udyam Suraksha" This product is for all those business wherein the total value at risk is more than ₹5 crore and up to ₹50 crore.

Challenges and Problems – If There Are More Insurers

If there are more insurers in Indian insurance industry, it will bring many positive changes but there are certain potential challenges also, the same are as follows.

May put huge burden on regulator (IRDAI) on ensuring regulatory compliance:

From the last few years, IRDAI has hardly given any new licence to any insurers except four Insurers who got the licence recently. If the market gets open for new insurers for which IRDAI has proposed that there will be segment based / state based / specialised insurer, it may pose challenges for regulator to monitor and ensure compliance from all these Insurers and the same can put a negative impact on policyholder's interest.

It may create market fragmentation:

The entry of more insurers in Indian market may lead to market fragmentation wherein it will be difficult for insurers to achieve economies of scale because once there are more insurers in Indian market, it will increase lot of competition among insurers which will potentially result in price war and the same will reduce the margins of insurers particularly for new insurers who will have no Unique selling proposition (USP) to show and it will force them to undercut their premium for attracting new customers.

May create confusion among potential customers:

If there are more insurers in the market, it may create confusion for potential customers who already have lot of options to purchase insurance. It will be difficult for customers to compare and select suitable policy for them because he is already having less insurance awareness, hence more and products that are more technical can confuse him, he can also end up purchasing wrong product due to various options.

May impose solvency risk:

There are many insurance products wherein the exposure is of long tail specially liability products, The severity of Liability claims are also very high hence financial stability of an insurer is very critical factor in checking their ability to pay policyholder's big claims hence if there are many insurers in the market, it can pose a threat on capital adequacy of insurers and their ability to bear big catastrophic losses. Hence, insufficient capital may impose solvency risk, which will ultimately hit policyholder interest.

May promote fraud and misconduct in the market:

If there are more insurers in the market, Intermediaries can take advantage out of this and can impose a risk of selling fraudulent policies of those new insurers. Moreover for achieving economies of scale, insurers may indulge in selling their products with wrong commitment which will ultimately hit the policyholder's interest in the long run and will also put a bad impression on the industry as a whole.

Acquisition of right talent and their retention will be a challenge:-

There is already a shortage of skilled staff in Indian insurance industry, the more number of insurers will further create more demand for skilled insurance professionals in the Indian insurance industry hence it may be difficult for old insurers to retain their qualified and old talent specially those who are specialised in underwriting, claims and risk management solutions. This situation will lead to talent shortage hence will potentially force the insurers to compromise on quality of talent which will ultimately put impact on policyholder's interest.

Will promote industry consolidation through Merger and Acquisition:

Once there are more insurers in the Indian insurance market, it will be very difficult for small players to compete with large and old players hence the situation will force them to merge with big players, No doubt the same will help in achieving economies of scale for insurers but at the same time, it will reduce the diversity of market participants and may potentially limit customer choices.

Taking into account all the above-mentioned challenges, it is very essential for regulator and other big stakeholders to address these challenges very effectively through implementation of proper regulations and educating customers by increase their insurance awareness.

Future of Indian Insurance Industry By 2032

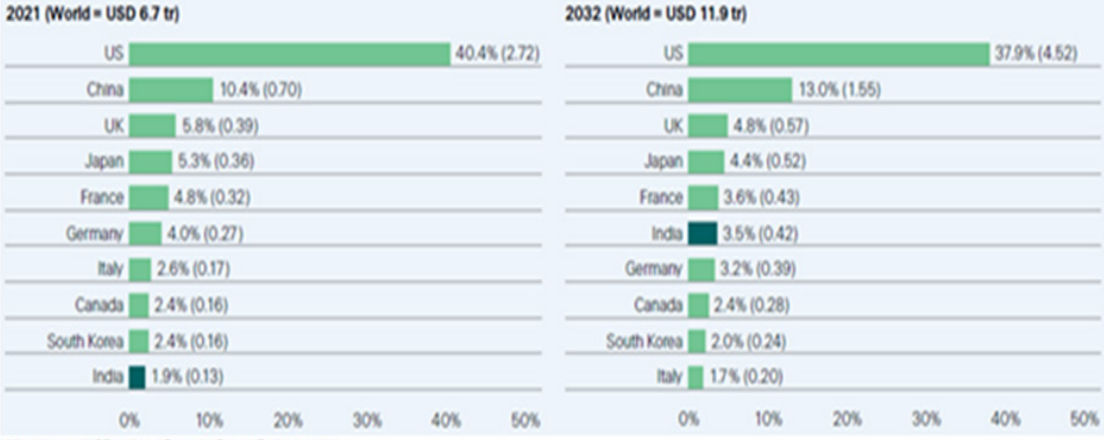
According to one of the Swiss Re's report, Insurance premiums in the Indian insurance market is expected to grow by 9% over the next 10 years. This growth is higher than the growth rate of 7.5%, which India achieved during last 6 years.

If we go by this projection, India will reach at the sixth rank globally in terms of premiums by 2032, and India will surpassed country like Germany, Canada, Italy and South Korea.

India is now currently holding rank 10th in the global insurance market

Table 16 : India Set to Become Sixth Largest Insurer by 2032

We estimate that total insurance premiums (life and non-life) volumes will grow by an average 14% per annum in nominal local currency terms over the next decade, making India the sixth largest insurance market in the world, up from 10th largest in 2021.



All values in USD trillion. Source: Swiss Re Institute

Table 17 : India's Standing Globally in Insurance

Where India Stands Globally -In Insurance

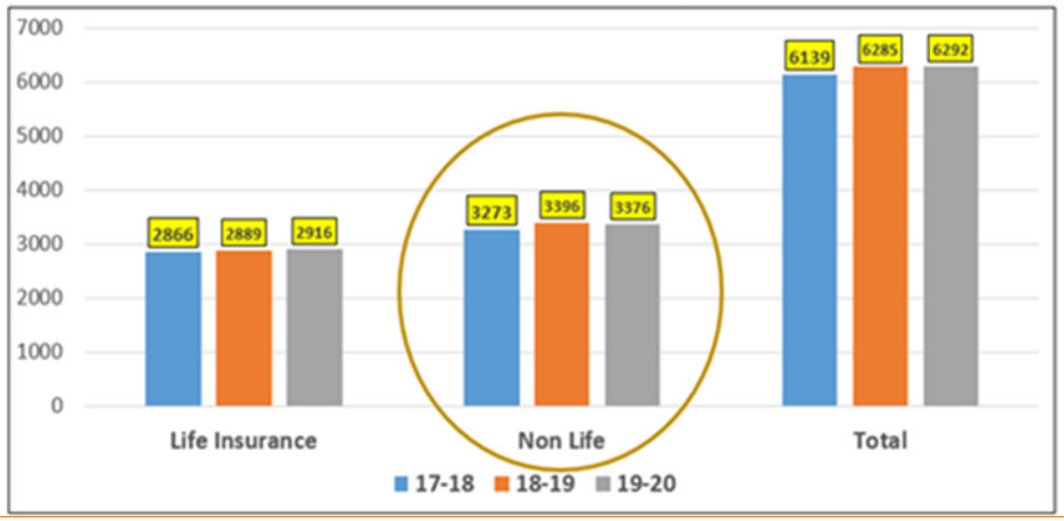
Rank 10th

Rank	Global Market share- FY 20-21		
1	US	40.40%	2707
2	China	10.40%	697
3	UK	5.80%	389
4	Japan	5.30%	355
5	France	4.80%	322
6	Germany	4.00%	268
7	Italy	2.60%	174
8	Canada	2.40%	161
9	Soutah Korea	2.40%	161
10	India	1.90%	127
Others Countries		20.00%	1340
Total		**100%**	**6700**

Source: Swiss Re

Total Insurance Premium By Segment, $ Billion- Worldwide

Table : 18

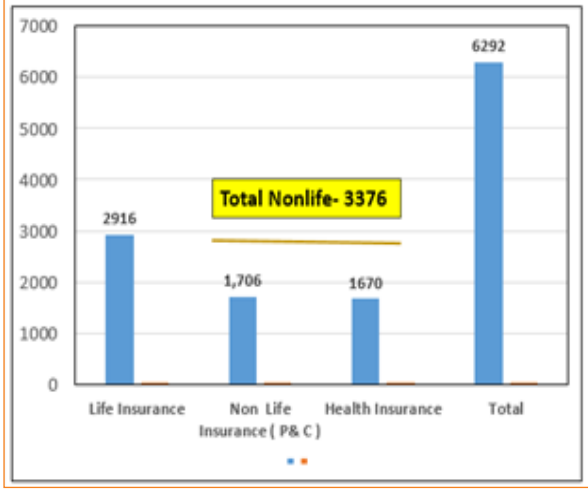


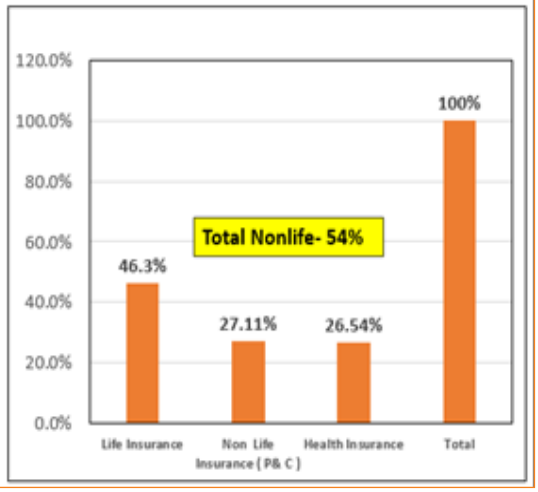
The Global Insurance industry is driven by Life insurance, Both Non Life (P& C) and health Insurance contribute around 27% of total Premium

Total Insurance Premium By Segment, $ Billion- Worldwide

Table: 19

Non Life Bifurcation – P& C and Health Insurance- FY 19-20

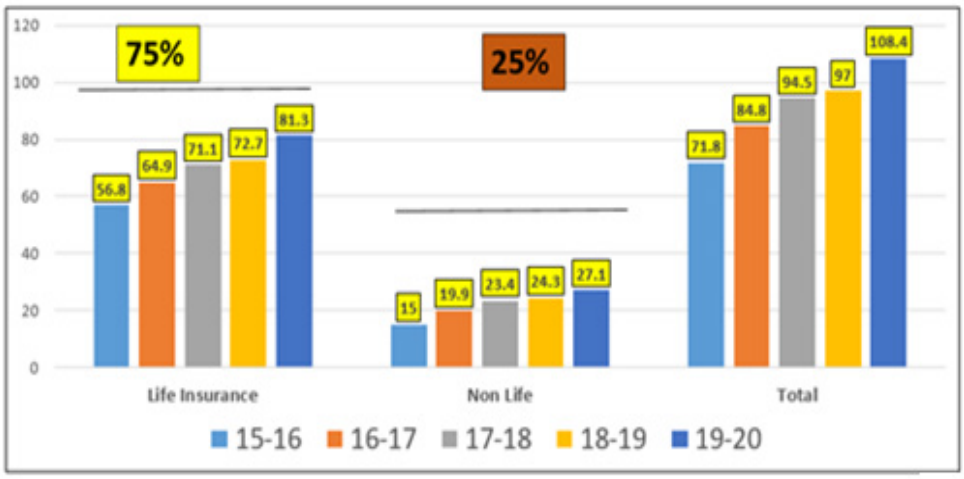




Indian Insurance industry is mostly driven by Life insurance which contribute around 75% of the Total GWP

Table: 20

Total Insurance Premium By Segment, $ Billion- Indian Insurance Industry



There are many factors, which has been taken into account while forecasting this growth, some of the factors, which were taken into account, are improvement in economic growth, increased income, higher awareness of risks, the development of innovative technology and the recent evolution of regulations.

Insurance industry- India Vs Other Countries

The insurance market of United States is holding the top position in the world in terms of high premium and number of Insurers. Most of the developed countries are having more than 100 Insurers. United States is having the highest numbers of insurers in the world, the same is around 5954, the same way UK and Germany is working with more than 700 and 400 Insurers. On the Other Hand Country Like India which is having around 17% of the World population and recently become number one in terms of Population, But holding 10th Position in the world in terms of premium and having only 60 Insurer.

Table 21: Developed Countries

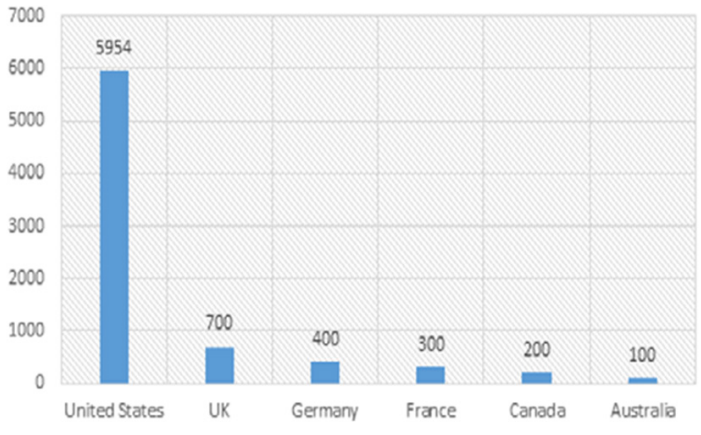


Table 22: Developing Countries

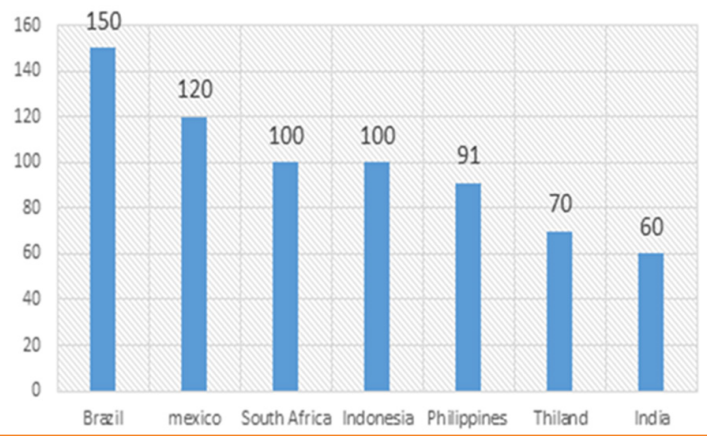
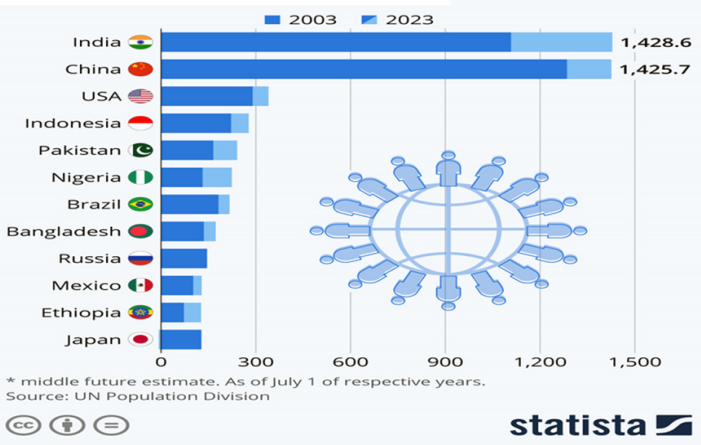


Table 23 : India's Most Populous Nations on earth



Indian Insurance industry is having many different unique characteristics, which makes it different from other countries. Some of the key ways in which Indian insurance market is different are as follows

United States VS India

Insurance Penetration and Market Size:

The United States is working with mix of public and private funding system.

Employer sponsored health Insurance is very common in The United States where employers contribute for covering their employee for health coverage. There are certain schemes wherein government provides publicly funded programmes like Medicare for elderly and Medicaid for low-income individuals. The United States is having highest level of insurance penetration and density and insurance coverage is widespread across all line of business including Motor, health, Life, property, Liability, casualty etc. and hold Rank 1st in the world in terms of premium.

In India, Insurance is primarily funded through individual premium paid by policyholders, Government of India also provide some subsidized insurance schemes such a Pradhan Mantri Jan Arogya Yojana (PMJAY) Pradhan mantra Suraksha Bima Yojaza (PMSBY) etc. Indian insurance industry is having very less insurance penetration and density hence the same proves that there is a substantial untapped potential for growth and the same require more insurers in the Indian insurance industry.

Regulatory Norms:

In the United States, The regulatory framework is very robust and the same is being regulated at state level. There are multiple bodies responsible for overseeing different aspects of United States insurance industry, Such as National Association of Insurance Commissioners (NAIC) and State insurance departments. In contrast, India is having only one regulator, IRDAI, who regulates the entire insurance industry.

Dominance of Public Sector Vs Private Sector:

The Insurance market of the United states is dominated by private insurers, there are more than 5000 Insures who are operating in the market and offers wide range of products and services, on the other hand, Indian insurance industry was initially dominated by Life insurance corporation of India (LIC) while

private insurers have gained some shared after regulator opened the sector. In general insurance also, there are four PSUs like National Insurance, Oriental Insurance, United and New India, which dominate the sector followed by Private Sector Insurer ICICI Lombard.

Product Range:

The product range, which is there in United States, is very diverse and comprehensive and cater all kind of needs of the customers starting from Life, Non-Life, health etc. India is also having so many products to offer but due to regulations, have some variations as compared to Unites states.

Distribution channels:

The role of Insurance agents and brokers are very prominent in the United States, although direct sales, online platforms and employer-sponsored group insurance are also playing their part in growing USA market but in India, agents are playing very important role in gaining market share, Bancassurance and online platforms are also gaining good share. IRDAI has also Proposed One Stop shop Platform called Bima Sugam for purchasing online policies.

Use of technology:

So many Insurtechs are offering their services like digital solutions, Artificial intelligence, Data analytics, and Mobile applications for faster underwriting, and claim settlement in United States but in India Insurtech has started working recently but still the impact is very less as compared to United States.

India Vs UK

United Kingdom is also having high insurance penetration and density as compared to India

In UK The regulation is primarily overseen by the Prudential Regulation Authority (PRA) and the Financial Conduct Authority (FCA) These bodies ensure the fair competition, market stability and consumer protection,,In India, IRDAI is the body who regulates everything.

The UK has a public funded healthcare system National Health Service (NHS) that provides comprehensive products to UK residents. If anyone one to take additional coverage, private players are there to support.

If we have to determine the best insurance system, the same will depend on various factors, country demographic features etc. some of the countries like Switzerland is known for their well-developed and efficient insurance system. Switzerland is known for their strong emphasis on consumer protection, the insures who are operating in this country are renowned for their strong financial stability and for providing strong customer service and offering innovative products to their customer,

The same way Singapore is known for their advance technology adoption this country is also serving as a regional reinsurance hub and attracting many global insurers.

Germany and Netherlands are also very strong in terms of setting high consumer protection standards.

Impact of Climate Change on Entry of New Insurance Players

Climate change will have a very significant impact on Indian Insurance Industry.

Some of the Potential effects will be as follows

- Increased Frequency and severity of natural disasters:
- Will lead to Increase of premiums:
- Will promote those Insurers who are strong in Risk Cat Modelling:
- Will Increase the demand of specialised products:
- Will promote environmentally friendly and sustainable insurance products:

How More Insurers Will Bring More Revenue For The Indian Economy?

Investment Income:

All the insurance companies invest their premium for generating investment income, if there are more insurers in the country, the same will result in more investment, which will contribute to economic growth,

Job Creation and Economic Growth:

If there are more insurers in the market, it will create more job opportunities across various sector, these includes, sales agents. Underwriters, claim processors, claim help desk service providers, Risk assessors etc.

More tax revenue through GST:

All the insurance companies collect premium subject to various taxes such as GST, Corporate Income Tax, goods and service tax (GST) Stamp duty etc. With more insurers, operating in the country will result in more revenue for the Government.

Will Support Ancillary Services and other Industries:

The same will also support other related industries like advocates, Technology providers, different management institute who are offering courses in insurance etc.

Top of Form

Way Forward

India is heading toward becoming one of the fastest growing insurance markets in the world and as per one of the survey, by 2032; it may become the sixth largest insurance market in the world. India demographic is exposed to a wide range of natural catastrophes including earthquakes, tropical cyclone, floods and wildfires. We estimate that non-life insurance premiums will continue to grow in 2023 and 2024 due to recent reforms introduced by regulator. Industry estimate that motor premiums will also grow in 2023 and 2024, mainly due to boom in the economic activity and higher plying of the vehicles on the road after pandemic. Due to intense rainfall and higher drought risk, Industry will also come up with Innovative re/insurance solutions such as parametric or index-based insurance which will play an important role in helping in reducing the protection gap by making insurance products more accessible and affordable. The environment is very positive for new insurers to come and operate in Indian insurance industry. There is huge potential lying in the industry for new Insurers due to high protection gap, Low Insurance penetration and Insurance density.

A series of regulatory developments, which are being introduced by IRDAI for improving in insurance penetration and for increasing capital inflow and improving valuation, will definitely facilitate the entry of new, small and specialised insurance player in Indian insurance market. The regulator is also pushing India towards becoming as reinsurance hub

The foreign direct investment limit increased by Government of India in insurance from 49% to 74% is also a positive move towards facilitating the entry of new foreign insurance players in Indian insurance industry.

In Nutshell, we can say that if there are more insurers in the Indian insurance market, this will bring so many opportunities for Indian insurance market, the same will increase competition, which ultimately will lead to better products better claim services and better pricing options for the potential customers. New Insures may target those areas wherein reach of insurance is not there, they will also try to increase insurance awareness. They will also bring specialised insurance products in the market like cyber insurance, surety bond insurance or trade credit insurance etc. Indian insurance industry is now in a very mature phase and has already crosses around INR 10 Lac Cr of premium But Still there is a need for more insurers to cater the different needs of 1.4 billion people. TJ

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Understanding Pay-As-You-Drive and Pay-How-You-Drive Insurance Covers

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Mr. Arun Kumar Bhatia is a Post Graduate in Science from University of Delhi and an Associate of Insurance Institute of India. He has rich experience of more than 36 years in Banking, Income Tax and Insurance Industry out of which he has over 33 years of experience in the insurance industry. He has held senior positions in The New India Assurance Co. Ltd., Bajaj Allianz General Insurance Co. Ltd and SBI General Insurance Co. Ltd. He comes with immense experience in the areas of Underwriting, Claims and Marketing of Insurance products and has dealt with all sales channels such as Brokers, Agency, Bancassurance, Direct and Motor OEMs etc. Mr. Bhatia's interest include travelling, reading and keeping abreast of current affairs and listening to any music which is interesting.

Introduction

The motor insurance industry has been witnessing a significant shift in the way the policies are designed and priced. The traditional methods of underwriting are giving way to innovation as a result of which insurance companies are now keen to come up with new innovative covers which are not available in India. Already the companies have started focussing on technology to explore ways and means to reach out to new segments both in the urban and the rural segment. With costs of establishing brick and mortar offices being sky high, companies are focussing on technology to lure the market. Focus today is on developing technology based covers which can appeal to millennials who are perceived as key segment of focus for pushing new and innovative covers.

IRDAI too is rising to these challenges and keeping in mind the rapid pace of technological changes and demands of the insuring public, they came out with a press release on 6th July, 2022 in which they permitted general insurers to introduce tech-enabled sophisticated usage based add-ons in Motor Own Damage (OD) Cover (Reference Circular no. IRDA/NL/CIR/136/07/2022 dated 05-07-2022).

As per this press release the key intention of permitting the companies to offer these add-ons to the basic Motor OD policy was to give the much needed fillip to Motor OD insurance in the country since many motorists bought only the mandatory TP policies. Another intention of IRDAI was to give a boost to insurance penetration in the GI Sector in India as the nation is having a low penetration of only about 1% so far.

Post this press release, the General Insurers in India are of the opinion that the introduction of these add-ons will nudge customers towards a utility based "Pay-as-you-drive (use)" model, lending greater flexibility and convenience in customer choice. These covers will give additional protection for those customers who have a lesser frequency of vehicle usage. Leading underwriters are also of the opinion that this is a positive development for the industry since these covers will allow change from purely asset-based rating mechanism to a mechanism which encourages better driving behaviour and optimum usages. Some underwriters also acknowledge the fact that the driving behaviours have already changed since the pandemic and such covers will definitely appeal to people who work from home more often and such a motor insurance will be more cost effective for them. The insure-tech companies, which are already growing in numbers, have latched on to this opportunity and have already started offering these covers. They are of the opinion that this is a customer centric and a positive move from the regulator's side which will also assist the insurers to expand their business base to newer

market segments. Hence, it is evident that this new paradigm takes into account the actual usage patterns of individual policyholders, and allows for personalized, fairer insurance coverage and affordable insurance premium.

Understanding Pay-as-you-drive (PAYD) or Pay-how-you-drive (PHYD)

Pay-as-you-drive (PAYD) or Pay-how-you-drive (PHYD) covers are also known as Usage Based Motor Insurance. To provide these covers, insurers employ Telematics technology to gather data about the policy holder's driving habits. The insurance companies install either a device plugged into the OBD-II Port or via a smart-phone application. The OBD-II Port (On-board diagnostics) is a standardized diagnostic port located usually underneath the steering wheels. It is used for collecting information such as mileage, emission, speed, frequency of use and driving prowess of the driver and install the GPS tracker etc. The device also collects data on other parameters such as acceleration, braking pattern and time of driving the vehicle.

The OBD reader is a small electronic device which allows access to the data. It can be used to read the error memory and data that is recorded on the vehicle systems and it can be connected to the smart phone via WLAN or Bluetooth.

How it Works?

The data generated from the device is obtained by the insurance companies on real time basis. This data is run through sophisticated algorithms and then compiled for detailed analysis. The information obtained helps the insurers to assess the risk associated with the driver or the policy holder. The driver's risk profile is accurately represented by observing the various aspects such as number of times brakes are applied, force with which the brakes are applied, speed at which the vehicle is driven etc. With the risk profile available before the underwriters, it would be possible for them to fix premium rates accordingly. Drivers with better driving habits would be categorised as preferred risks and all efforts would be made to on-board them by providing them discounts. Similarly drivers with bad risk profile can either be avoided or their premium loaded suitably. Such drivers can be given the reasons for loading so that they too can work to improve their driving habits and earn discounts for their renewals.

Benefits for Insurers

The PAYD and PHYD policies offer several advantages to insurance companies. They enable more accurate risk assessment and thus help in reducing the possibility of underwriting losses. Insurers can price their policies with the actual risk faced by policyholders. Overall, it would result in a more balanced pricing structure.

Since this approach would encourage safer driving habits among the policyholders, it would lead to reduction in the frequency and severity of accidents. The overall claims experience may become much more favourable and profitability would improve drastically.

Digit General Insurance Company took the lead and became the first insurance company to offer these covers. The company offered these add-on covers to individuals who drive less than an average of 15,000 kilometres a year and offered discounts for slab opted. Maximum discount offered is 25% and it would be based on odometer reading. Very soon other insurers such as ICICI Lombard, HDFC Ergo and New India Assurance Company also started offering these add-on covers. These companies view this policy as a low cost model since they can do away with physical inspection of the vehicle and use the data to understand and underwrite. Reduction of fraudulent claims and better tracking in case of theft of vehicle with the help of telematics technology is another favourable point for promoting these covers. Companies expect to provide a much better customer experience through these covers.

Benefits for Policyholders

One of the key and direct benefit to the insureds is significant reduction in premium that they pay. Discounts can be as high as 25% for a person who drives up to 2500 kilometres in a year (HDFC Ergo General Insurance Co. Ltd.). The discounts work as incentives for all and provide an encouragement to others who look forward to control their outgo. Indirectly, these measures help to promote safe driving habits amongst the motorists and reduce the accidents and associated fatalities on road.

Social Benefits

Continuing further, it can be construed that by opting for these covers insured would be subject to monitoring of their driving habits of persons and would be more conscious while driving. This behaviour would thus, lead to more responsible driving and in turn help provide social and environmental benefits. It would also discourage unnecessary driving by the policy holders and prevent driving fatigue.

Benefits of the technology used for providing these covers are manifold. It can be used to provide drive-through payments, road side assistance in times of accident or breakdown of vehicles etc. Continuous tracking of driver and real time processing of the information received would help to enhance both personal security of the driver as well as the security of the vehicle.

Challenges and Considerations

What are the challenges posed by the technology based PAYD and PHYD motor insurance policies? Personal information is being collected, continuously, by the insurers. It means that information is also being shared when the vehicle is parked and not being used by the policy holder.

Secondly, there would always be the privacy concerns. The data collected by the insurers is prone to leakage and misuse hence there is a criminal breach of individual's privacy. The privacy laws of the country have been very ineffective in preventing any leakage or taking any swift action to control the misuse of personal information. The draft amendments of the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 are still under critical evaluation by various stake holders and it would take a while to notify them. These laws are needed as there is a need to ensure that the interests and constitutional rights of netizens are not being contravened by tech platforms and second to strengthen the grievance redressal framework in the Rules. Till the government comes up with stringent laws to deal with breach of data etc. there is a heightened responsibility upon the insurers to ensure that their actions are such that they provide comfort to policy holders so that they are not hesitant in getting their driving habits monitored or do not resist installation of the OBD-II trackers. The interests of the policy holders should be treated as supreme and every individual should be made aware of the benefits of these policy add-ons. The policy holders may also resist if they become aware that their data is being provided to the insurers and hence, due to their poor driving habits, their premium may be increased.

Thus the insurance companies launching such products need to be very careful and transparent about data collection, its usage and must ensure that they adopt tough data security measures and policies to prevent any illegal use or leakage of customer data. Adoption of these tough security measures only can instil confidence in policyholders.

Another major issue could be convincing the policyholders to allow the insurers to install the telematics device in their vehicle. Many people continue to use their vehicles much beyond the desired 15 years. Hence, millions of cars in India are not having OBD-II ports and such cars are not compatible and cannot be targeted for providing these new innovative add-ons. Not having smart phones may also pose accessibility challenges for certain demographics.

Insurance companies launching these products must ensure that they invest in the required infrastructure. They need to partner with multiple vendors who can access the data, assess the data and interpret the data on real time basis so that right inputs can be provided to the policy holders and enhance their customer experience.

Patents

Worldwide companies are very excited about these products. Many of the manufacturers in the field of Telematics Auto Insurance are filing and patenting their inventions to maximise the benefits. Some of the patents already filed are

1. U.S. Pat. No. 5,955,942- This monitors events in vehicles in which electrical outputs representative of events in the vehicles are produced.
2. U.S. Pat. No. 5,041,976- it is a diagnostic system using pattern recognition for electronic automotive control systems and particularly for diagnosing the faults in the engine of a motor vehicle.

3. Patent no. 20230079450-systems and methods for sensor based detection and alerting of Hard Braking events (Cambridge)
4. Patent no. 11587368- method and system for accident detection using contextual data (Cambridge).

Race to protect their patents zealously is on all the time. Companies do not hesitate to resort to litigatin if there is any infringement.

For example, in June, 2010 Progressive Auto Insurance filed a patent infringement lawsuit against Liberty Mutual over one of the Progressive's Pay – as – you- drive auto insurance patents.

International Trends

Internationally advances have been made in this field in countries like USA, Canada, Australia, UK and Italy etc. and there are increasing number of takers for these add-ons/policies. Even countries like Zambia and India are now promoting these covers. In fact, the Italian market has witnessed widespread acceptance of telematics-based policies with insurers offering encouragement and promoting safe driving practices. Discounts in OD premium are helping to encourage the policyholders to be more responsible drivers. It is expected that by 2019, Italy had almost 40% of vehicles insured by telematics based policies. Monti's decree of 2012, mandating Italian insurers to provide a telematics option, has made Italy the most active country in Europe in telematics insurance, with the overall penetration level approaching 5%. Since August, 2017 there is a law in Italy that recommends Telematics for all insurance. (L124/2017 – Market and competition act approved by the parliament on 4 August 2017).

The Association of British Insurers (ABI) has produced a good practice guide for providers of telematics-based motor insurance policies to help ensure that consumers better understand telematics motor insurance products and are being treated fairly and in line with relevant legislation and regulation. The guide has been developed in consultation with insurers and with assistance from the British Insurance Brokers' Association, and the Financial Conduct Authority, which regulates the insurance industry.

The US Market has experienced significant growth in the field of Telematics Auto Insurance. The US market is projected to tough $125 billion by 2027, growing at a CAGR of over 30%.

Role of Reinsurers

Like in any other LOB, Reinsurance plays a crucial role in supporting these new covers. Reinsurers can help to mitigate the risks that are associated with such policies. They have the data and the expertise to develop risk models and suggest pricing strategies to the direct insurers. The can collaborate with direct insurers to provide their expertise and help develop innovative covers, do a proper risk assessment and provide a detailed understanding on how to rate such risks. This approach can help the direct insurers immensely and they can consider exploring the markets where they are not present.

Conclusion

The new covers permitted by the IRDAI represent an exciting advancement in the insurance industry in India. They allow for personalized coverage and fairer premiums based on actual driving behaviour. By leveraging telematics technology, insurers can accurately assess the risk, promote driving habits and provide substantial cost savings for policy holders.

With advancements in technology, telematics is bound to gain traction and in times vehicles may come pre-fitted with such devices. Car manufacturers, telecom and internet companies are already investing a lot in connected car systems. In the interest of the nation, government will come out with incentives to promote safe driving habits so that accidents are prevented and no. of lives lost every year is reduced considerably. This will also help the nation to increase its GDP.

The Insurance companies are aware of the situation and face the challenge to come up with business models that would be based on telematics and comply with the legal framework and regulations of the land. There is a sense of urgency prevailing and the winners need to act fast so that they can take the advantage of first movers and attract better risks. The laggards would be left with unfavourable, risky drivers in their portfolio. TJ

Exploring the Scope for Online Consumer-Generated Advertising (CGA) In Customer To Customer (C2C) Marketplace from the Perspective of the Indian Insurance Sector

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Abstract

As insurance plays a very crucial role in Indian financial system and its various components, a constant expansion of this sector is crucial for the growth of economy and benefit of its nationals. It is the right strategy and approach which make it easier for the insurance companies and the insurance advisors to stand out from their competitors and make the final sale. This paper highlights the scope of online Consumer-Generated Advertising (CGA) in Customer to Customer (C2C) marketplace in the context of insurance sector of India. The study is a qualitative one, using the tool of in-depth interviews. The study highlights the aspects of perceived 'usefulness', 'ease of use', 'trustworthiness' and

'attitude' in context of online CGA and finds out its impact on customer's 'intention to purchase' an insurance policy. It is found that, Consumer-Generated Advertising (CGA) in the form of WhatsApp and other online communications is the way forward, as in spite of the rapid technological progress, it is having the humane touch and understanding of the need of individual customers, and thereafter providing customers the most suitable insurance solution.

Keywords

Insurance, Insurance Advisors, CGA, C2C, Online, Communication, WhatsApp.

Introduction

Insurance companies play a very crucial role in the Indian financial system. Insurance companies accumulates funds from the premiums collected, which are invested further in various other sectors of economy, contributing growth. These insurance companies support the overall financial system, different sectors of economy, industry, commerce, business sectors, individual customers with families, in various direct and indirect ways. Thus, the insurance industry's continued growth makes a substantial contribution to the country's overall GDP growth. Thus, it is important that the insurance sector expands to all the entities and nationals.

Insurance sector in India has experienced substantial growth during the last few decades. In recent time, with the launch of numerous advanced insurance products and advancement of technology, tough competition within the insurance companies is helping the market to develop further. Competition amongst the insurance companies and the involvement of insurance advisors or sales personnel play crucial role in terms of final sale of insurance products. Right strategic approach helps insurance advisors and sales professionals differentiate themselves from competitors and make final sales.

It is necessary for salespeople and insurance advisers to generate leads. However, as time goes on, it becomes increasingly important to nurture these leads until the sale is closed. Retention of these customers is also important to keep the option of making future sales and generating new leads.

Maintaining a positive and lasting impression is crucial for building and maintaining cordial relationships with potential customers. Insurance advisors and sales professionals can effectively utilize online Consumer-Generated Advertising to generate leads, nurture relationships, and maximize return on limited marketing budgets for final sales.

Literature Review

Insurance Industry & Economic Growth

The efficient operation of every modern economy is greatly influenced by insurance. It was acknowledged during the United Nations Conference on Trade and Development's (UNCTAD) very first meeting in 1964 that a healthy national insurance market is a crucial component of any country's economic development. Numerous studies have recognized and examined the connection between the insurance industry's contribution to economic growth through the prevention of unexpected and catastrophic events (Muthuswamy. A, 2008); (Arena, 2006); (Haiss & Sumegi, 2008); (Wadlamati. K, 2008); (Han, 2010); (Michael Ojo, 2012); (Horng, 2012); (Lee, 2013); (Olalekan. Yinusa, 2013); (Taiwo. Akino, 2014). India's insurance industry positively impacts economic growth, with strong empirical and theoretical evidence (Ghosal. Monalisa, 2012). Insurance industry in India's early stages facilitated infrastructure growth and regulated trade and commerce. Presently, India's second stage of development prioritizes private life protection, financial security, and retirement.

Market Expansionary Strategies

Insurance companies explore new market expansion methods to seize untapped opportunities inclusive of protection gap. A competitive market's expansion of the insurance industry is typically characterized by overall growth of the various insurance providers. Every business aims to impress clients with knowledgeable, morally upright insurance advisors and high-quality service. This basic business expansion approach involves working with individuals or organizations across various sectors of the

economy. This tactic, meanwhile, risks in market with competing insurance providers targeting accessible population groups. In most cases, this results in a condition that sparks unrestricted pricing rivalry to lower the premium charged and eventually congregate to a market or demographic segment where profit is higher. The company may achieve its sales turnover, margin, and profitability in the short- to medium-term, but further expansion in unprofitable areas will suffer greatly in the long run, which will ultimately cause a reduction in profit and raise concerns about the company's long-term viability in the market. This is risky given the high capital requirements in the insurance sector. Given the aforementioned issue, businesses might adopt a variety of alternate positioning techniques in their market expansionary plan (Das, 2004). These tactics can overlap and are not necessarily mutually exclusive.

- ***Needs based Positioning:*** This widely accepted positioning addresses diverse consumer needs. If a company has special abilities to better serve a particular segment of client needs than others, it can accomplish this with success. Different customer groups have varying insurance needs. Young families with small children have different insurance needs compared to families with income-earner near retirement. The majority of life insurance companies in India, however, offer a wide range of policies that are designed for various consumer needs; no company focuses on a specific customer need. A good example would be a life insurance business that only targets High Net-worth Individuals (HNI). The needs of HNIs would differ significantly from those of the general consumer, necessitating a whole different mix in everything from the kind of products offered and how they are distributed to the strategies used for promotion.
- ***Access-based-Positioning*:** Customers' accessibility can also be used to position them. Even distinct client groups with similar requirements, may be accessed differently. Access often depends on the location or scale of the customer. Insurance industry benefits from access-based positioning targeting rural sectors. Rural insurance market differs significantly from urban market in needs, income, distribution (e.g. seasonality), and media penetration.

Understanding Customer's Mindset

Humans often first think about themselves and resist the hard truth of their mortality. Therefore, it is simple to persuade people about 'what will happen to me' in terms of retirement or hospitalisation costs. The thought 'what will happen to my family if I die' often come much later. Also, nowadays, in many cases since the wife is working, insurance need for the family comes later in life. In post-pandemic era, number of health insurance policies registered huge growth (Beema Beekshan, Indian Insurance Institute, Mar'23). Single premium polices, which mostly represents pension and annuity policies, have also grown (Beema Beekshan, Indian Insurance Institute, Mar'23).

Therefore, it is often best to build people's perceptions of insurance's relevance indirectly. Selling insurance is different from regular selling. Insurance advisors sell an intangible product with un-experienced benefits. Many customers feel they are paying more with less benefit and continue to be dissatisfied. Customers, especially the younger age, frequently buy insurance as an investment instrument. Therefore, it is crucial for insurance advisors to establish deep-rooted relationships and trust with their customers and their families. A significant portion of insurance is the consequence of establishing relationships; very few are initiated by customers. In today's era of internet and social media, policy details are easily accessible to the customers, similar to advisors. Therefore, insurance advisors should provide confidence to provide the best solution and to ensure understanding customer's needs more than them. Insurance advisors should foster strong relationships with customers, emphasizing on forever friendship with customer's family. LIC's iconic slogan: 'Zindagi Ke Saath Bhi Zindagi Ke Baad Bhi', carries that message.

Growing Importance of Online Consumer-Generated Advertising (CGA): How Insurance Advisors Can Apply that?

Advertisements significantly impact buyer's purchase decisions. Digital transition of advertisement aims at targeting customers at reduced costs with increased conversion rates (Durmaz, 2016). Digital media improves brand relevance, user experience, and consumer retention (V Kuberappa, 2016). Insurance sector is yet to utilize technology's positive aspects fully for business models (PWC report (2012) - "Life Insurance 2020: Competing for a future").

Insurance companies use agency model for personalized, trust-based marketing of products. Insurance buying behaviour is influenced by service quality, relationship management, trust, and emotional advertisements (Murugesan, 2014). Emotional stimuli of advertisement should be compelling enough to hold customer's attention (Hanaizadeh & Behboudi, 2012). Increased social media use for selling leads to increased consumer usage of social media (Delafrooz, 2017). Insurance industries in India primarily use social media for marketing, sharing product launches and milestones with customers (Seth, 2020). Repeated customer interactions improve relationships and firms' long-term reputation through enhanced relationships (Floreddu, 2014). Internet advertising persuasion was investigated by (Nabi, 2003), with a focus on favourable responses.

Amongst many of the advertising strategies, Consumer Generated Advertising (CGA) on online platforms has become increasingly popular among various sectors due to considerable rise in smartphone usage. Given the above-mentioned issues, the concept of Consumer-Generated Advertising (CGA) in a Customer to Customer (C2C) marketplace has a crucial role to play for the insurance companies to expand their market and developing the insurance sector in general in a rapidly growing digitised world. CGA was described by (Berthon, 2008) as "any publicly disseminated, consumer-generated advertising message whose subject is a collectively recognised brand/ product." The present study broadens the definition of CGA and conceptualises it from the viewpoint of a customer who uses the C2C market to generate profit for themselves without necessarily having a B2C organisational structure or strategy. Customer to Customer (C2C) consumer-generated classifieds advertisements, which are 'short' advertisements in print, electronic, radio, and digital media, are one subfield of Consumer-Generated Advertising (CGA). Online CGA on social media platforms and e-commerce websites, for instance, unorganised business more from a small office/home office (SOHO) etc attract viewers to boost ad reaction. The power of CGA in the C2C sector is enormous. When compared to other internet advertising strategies, CGA performs significantly better at gaining consumer trust and thereby engaging customers more (Ertimur, 2011); (Knoll, 2016); (Lawrence, 2013). CGA is highly trusted since it is seen as more real, credible, recognisable, engaging, and non-corporate consumer source (Lawrence, 2013). Around 9 out of 10 consumers rely on user-generated material for purchase decision (Roesler, 2017). CGA can be easily adopted by the insurance advisors to sell insurance products. Insurance advisors thus need promote through Consumer-Generated Advertising (CGA) aggressively in form of WhatsApp and other online communications to expand their customer base.

WhatsApp, facebook, YouTube are top communication tools in modern times. Young generation rely on facebook and WhatsApp even for choosing life partner. WhatsApp and other online medium are trusted by people from diverse age groups. Insurance selling can enhance higher level customization through CGA on WhatsApp or other online communication channels. Insurance advisors can communicate insurance policy details by creating Consumer-Generated Advertising on WhatsApp and other online communication channels and generate purchase intention. Insurance advisors must also be thorough in understanding family factors like exams, studies, job joining dates, and share best wishes effectively through online channels on time. Thus, the customer gains trust

on insurance advisor as well-wisher, who is selling policies keeping customer's interest in mind, to safeguard family in his/ her absence.

Research Gap & Research Propositions

It is essential for businesses to transition by using digital means as a result of increasing internet usage and a rapid shift in people's use of digital devices. Many research works have been carried out in insurance firms in Italy, Kenya, the USA, and Asia. In context of Indian insurance industry, there is lot of scope to add new information and communication strategies. A survey of the literature revealed, Indian insurance industry is yet to utilize full benefit of social media communication. Understanding Indian insurers' use of technology and customer's perceptions of social media marketing is highly crucial.

Research Propositions

Following propositions were tested with the help of information gathered via a Qualitative study.

1. *Perceived 'usefulness' and 'ease of use' of Online CGA in C2C marketplace should positively influence consumer's 'attitude' creating 'intention to purchase insurance policy'.*
2. *Perceived 'trustworthiness' of Online CGA in C2C marketplace should positively influences consumer's 'attitude' creating 'intention to purchase insurance policy'.*
3. *The consumer's positive 'attitude' towards CGA should have a 'favourable impact on his or her decision of purchasing an insurance policy'.*

Methodology

In order to analyse the role of online Consumer-Generated Advertising (CGA) in Customer to Customer (C2C) marketplace in context of Indian insurance Sector, a structured methodology and design for the study was adopted. The study was carried out at the grassroot level involving responses from 70 insurance advisors associated with 6 insurance companies (both general and life insurance), to capture diverse perspectives on insurance products offered by different companies. In this study, insurance advisor's detailed insights were extracted through 'In-depth interviews' (IDI), a qualitative data collection method, mostly long-duration, direct, one-on-one engagement through face-to-face, telephonic, video-call conversations. During interviews, respondents were listened carefully, notes taken, paying extra attention to subtle and meaningful cues in their expressions. The study verified research propositions. The study identified important factors influencing selling through insurance advisors and companies, and suggested some action points. Statements associated to research theme were identified from gathered data. Similar patterns were identified, classified and grouped into set of 15 questions and answers.

Questions:

1. *How easy is online Consumer-Generated Advertising (CGA) for instant reach, relationship building, engage and entertain customers to sell insurance policies?*
2. *How convenient is online Consumer-Generated Advertising (CGA) for the promotion & pitch of insurance policies?*
3. *How simple is it to provide after-sales service online, while pushing for further sales using online Consumer-Generated Advertising (CGA)?*
4. *How effective is online Consumer-Generated Advertising (CGA) for the sale of health, auto, and general insurance plans, as well as policy renewals?*
5. *How convenient is online Consumer-Generated Advertising (CGA) for information sharing geared towards selling insurance policies?*
6. *How simple is it to use online Consumer-Generated Advertising (CGA) to avoid travel?*
7. *How does an insurance advisor present a professional image to clients and establish trust while using Consumer-Generated Advertising (CGA) on WhatsApp and other online platforms?*
8. *How online Consumer-Generated Advertising (CGA) creates trust factor for existing & repeat customers?*

9. *How do referred customers respond to online Consumer-Generated Advertising (CGA)?*
10. *How does online CGA for flying customers visiting an insurance company's office generate trust?*
11. *How does online Consumer-Generated Advertising (CGA) win over the trust of NRI clients?*
12. *How crucial is it for customers to believe the insurance plan shared by online CGA is the greatest fit?*
13. *CGA as WhatsApp documents: Are those reliable?*
14. *How successful are other online communication modes i.e. an insurance advisor's website, YouTube videos, blogs in building trust?*
15. *How does the source of online CGA affect credibility?*

Major Findings

Based on the responses from 70 insurance advisors, this was noticed that customer's perceived 'usefulness', 'ease of use', 'trustworthiness', as a whole 'attitude' towards online Consumer-Generated Advertising (CGA) in context of C2C marketplace influence 'intention to purchase insurance policy'. Major findings which came up from the interactions with the insurance advisors are detailed below:

How easy is online Consumer-Generated Advertising (CGA) for instant reach, relationship building, engage and entertain customers to sell insurance policies?

Online CGA is good for instant reach and relationship building. WhatsApp and other online platforms allow for instant communication with a huge group of people that would have been otherwise difficult to reach one-to-one. After reading the message, interested potential customers call or message insurance advisor to gather more information. In general, young generation with fast work-life and flexible people from diverse age groups, message back. Older generations still believe in calling back or speak with an insurance advisor and collect information directly from them. Though, some of the group messages sent to disinterested individuals go unnoticed and ignored, in general WhatsApp and other online platforms helps insurance advisors to build and maintain good relation with customers.

CGA on WhatsApp and other online platforms is easy to entertain and engage customers to push sales. Birthday and anniversary greetings e-cards are generated through different apps available and shared via WhatsApp with the clients to empower regular engagements. Since, insurance selling is not an ordinary selling, the insurance advisor should also send good wishes for the family on the occasion of child's exam, joining new job and other important family matters, to take customer engagement and entertainment to a higher level. The customer's personal time is respected in digital communication. Sending a message at certain time might have significant impact with higher engagement and positive intention to purchase insurance policy.

How convenient is online Consumer-Generated Advertising (CGA) for the promotion & pitch of insurance policies?

CGA on WhatsApp and other online platforms is easy mode for insurance advisors to promote insurance policies to customers. Insurance advisors maintain a number of WhatsApp broadcast groups for their customers where they share a variety of information to enlighten, engage them and push sales on a regular basis. Insurance advisors also share some information on their WhatsApp 'status', so that the information reaches to all contacts including people outside their broadcast groups and generate purchase intention. However, as each group member has unique financial situation and insurance necessity, the questions that are raised in response to the posts on the broadcast group demand individualized attention and answers.

Every year, insurance advisors need to generate a significant number of prospects. It is always challenging to generate potential new contacts. For example, in many cases, around 20% of the individuals contacted by insurance advisors digitally, come up with favourable response. Therefore,

good number of new leads must be developed annually to achieve certain number for an insurance advisor.

CGA on WhatsApp and other online platforms is easy for client pitch and plays a vital role in the initial pitch to a large, untapped database. It also occasionally gathers referred clients, frequently pitches new policies to existing clients, and powerfully attracts NRI clients. In many situations, WhatsApp has taken the place of email systems.

WhatsApp communication is useful for financial diagnosis, presentation highlighting benefits, sharing documents branded with the company logo, comparison with offers by other companies, queries, and eventually completing the purchase by providing the most suitable policy for the right individual based on their need. Upon request, the client receives a hard copy of the policy document. There are many apps available now for making presentations. Sometimes, an insurance advisor can replicate WhatsApp messages of other insurance advisors.

Before making the initial call or visit to an unknowing client, many insurance advisors gather information about them on facebook, including their availability, hobbies, connections, and if there is any common connection etc. Some Insurance advisors get connected to their clients on facebook, and thus maintain client profile, and get a reminder notification on birthdays etc.

Some Insurance advisors receives old clients of irregularly serving insurance advisors. These referred cases are generally nurtured by cold calls, exchange of policy details through WhatsApp and other online platforms, successful after-sales service, and selling of new insurance policy.

Identifying the true reason behind an insurance policy for not getting sold, act as a learning. Strategies are built accordingly to sell the plan in future, with better control on customers' mindset.

How simple is it to provide after-sales service online, while pushing for further sales using online Consumer-Generated Advertising (CGA)?

Client servicing online, while pushing for further sales through CGA, is easier especially via WhatsApp. It is now simpler to generate premium paid certificates and share via WhatsApp and other online platforms, know loan interest, nominee, know surrender value of the policy, push sales, and pay future premiums.

How effective is online Consumer-Generated Advertising (CGA) for the sale of health, auto, and general insurance plans, as well as policy renewals?

CGA on WhatsApp and other online platforms is useful for health, car, general insurance sales especially for renewals, where exchange of documents and payment link involves the greatest amount of work. Insurance advisors also like to connect over WhatsApp to save time and energy because there isn't much opportunity to sell one additional mediclaim policy to a particular family other than increasing the insurance amount. Getting access to current policy of a car, makes pushing sales of car insurance via WhatsApp simple. Payment is handled via sharing a link on WhatsApp and other online platforms.

Advisors frequently choose to visit clients in order to sell them an additional life insurance policy post taking appointment on WhatsApp. Online policy selling is easier whenever client demands it, whereas physical visits are crucial in case the customer needs a push to purchase.

How convenient is online Consumer-Generated Advertising (CGA) for information sharing geared towards selling insurance policies?

CGA on WhatsApp and other online platforms pushes for information exchange. WhatsApp makes it simple to exchange policy features, quotes, comparison with other company products, along with other pertinent information. Since several apps have been introduced, only some document sharing via WhatsApp and other online platforms can complete the policy generation process, avoiding filling up forms physically.

To give potential customers a comparative perspective, screenshots from the apps of various insurance companies are shared with them via WhatsApp and other online platforms, keeping parity with the fast-paced world of today. Existing clients can also get the documents they need via WhatsApp, such as 'premium certificates' that can be retrieved

from a portal and sent to the client immediately by insurance advisor.

Given that Facebook is mostly used for entertainment, business communication on that site is less common. Facebook messages could occasionally be misinterpreted as well.

WhatsApp is easy for information storage for future reference as well as to drive towards paperless world. Insurance advisors, in many cases, save the documents received on WhatsApp for future references. For instance, if an insured says he/she is 'not taking medicine' while applying for health insurance and provides a doctor's certificate as proof, the insurance advisor may retain the document or mail it to them with the certificate attached as record for future reference and to avoid hazards while filing a claim. At the same time, in case the customer is hospitalized, and family requires the insurance policy instantly, insurance advisor could help by sharing stored document immediately.

It is speculated that, within the next few years, a greater number of the insurance policy generation work of Life insurance would be done paperless. Presently, general, health and car insurance are highly paperless. It requires more online communication and less visits. With increased awareness, life insurance is anticipated to follow a similar pattern. Currently, direct visits account for higher portion of life insurance sales, while online communication accounts for rest.

How simple is it to use online Consumer-Generated Advertising (CGA) to avoid travel?

CGA on WhatsApp and other online platforms is easy mode to push selling of insurance policies, avoiding unnecessary travelling to distant places, saving travelling time, cost and energy. Visits are still necessary to places with weak or no internet connectivity, e.g. many of the Indian villages. With the rise in internet usage and online communication, this problem is expected to be resolved.

How does an insurance advisor present a professional image to clients and establish trust while using Consumer-Generated Advertising (CGA) on WhatsApp and other online platforms?

Insurance advisor has to create professional trustworthy impression on clients while using CGA on WhatsApp and other online platforms. Customer's acceptance of the insurance advisor is crucial for influencing customers' willingness to purchase the policy. A professional WhatsApp, facebook or LinkedIn profile picture plays crucial role here. Digital visiting card of the insurance advisor with website link, shared via WhatsApp, creates brilliant professional impression. Professional communication and conduct are of utmost importance.

How online Consumer-Generated Advertising (CGA) creates trust factor for existing & repeat customers?

CGA on WhatsApp and other online platforms creates greater trust factor for existing clients because trustworthy relationship has already been established and regularly nurtured. Repeat clients already received good service from the insurance advisor and have trust.

How do referred customers respond to online Consumer-Generated Advertising (CGA)?

Referred cases are trusted more. Satisfied clients frequently get influenced by CGA on WhatsApp and other online platforms and recommend insurance advisor's name to friends, family, and coworkers for the purchase of insurance policy. In case of referred customers, CGA on WhatsApp and other online platforms communication generates more trust and are properly entertained, compared to leads generated through purchased databases.

Some insurance advisors primarily handle referred cases only; they do not deal with purchased databases. In family, fathers who understand value of saving money, have trust on insurance, refer young earners to purchase insurance policy. There are also instances where due to past bad experience with issues related to insurance, old members of the family discourage young members purchasing insurance policy.

How does online CGA for flying customers visiting an insurance company's office generate trust?

Flying customers who visit an insurance office, occasionally interact favorably with insurance advisors. This visit is followed up

by the insurance advisor by sending Consumer-Generated Advertising (CGA) on WhatsApp and other online platforms. Due to such interactions, CGA generates trust and intention to purchase.

How does online Consumer-Generated Advertising (CGA) win over the trust of NRI clients?

Through CGA on WhatsApp and other online platforms, selling policy to NRI clients is trustworthy due to possibility of swift and good number of communications. WhatsApp also help NRIs to complete the policy generation. The relevant documents, which may include confidential information, are photographed and exchanged over WhatsApp. After generating the policy, the insurance advisors can send the customer a screenshot of the deleted confidential documents on WhatsApp chat as proof, to establish confidence and trust.

How crucial is it for customers to believe the insurance plan shared by online CGA is the greatest fit?

It is crucial to have customer's trust on the insurance plan shared as 'CGA on WhatsApp and other online platforms' and to believe that it is the best insurance solution for the customer. In this case, financial background analysis of the customer by the insurance advisors plays a significant role. To offer the most suitable policy to the right person, they should research spending power and Human Life Value (HLV).

CGA as WhatsApp documents: Are those reliable?

CGA as WhatsApp documents are quite trusted. Even if a new client hasn't met the insurance advisor, he or she may undoubtedly trust the documents shared via WhatsApp, with the insurance company's logo printed on the documents, along with personalized message.

How successful are other online communication modes i.e. an insurance advisor's website, YouTube videos, blogs in building trust?

Website of the insurance advisor generates trust. Website performs incredibly well in financial sector. Some Insurance advisors, who are too busy and not that tech savvy, take help from professional agency to maintain website and social media handles. Review, testimonials, how many people have purchased insurance policies and received after-sales support, along with insurance advisor's team structure, contact information, etc. are all found on the insurance advisor's website and contribute to building and maintaining trust on advisor's expertise and truthfulness. Advertising and communications on facebook pages for client's knowledge enhancement generate more effective results when they include a website link for additional information.

YouTube video of the insurance advisor generates trust. A trend to engage customers and establish trust is to upload videos on YouTube with its links shared on Facebook post, WhatsApp and Instagram. Queries generated after seeing the video are communicated more easily on WhatsApp than facebook. Sometimes, such video communications are one way, without capturing responses from 'no response' clients. Some Insurance advisors are bloggers too, and use this tool smartly to generate sales leads.

How does the source of online CGA affect credibility?

Since, Insurance sells commitment, 'source' of CGA on WhatsApp and other online platforms is crucial for generating trust. Customers responds in much better way if they are communicated via WhatsApp, facebook, LinkedIn messages from a known source, compared to unknown source. Higher level of trust is generated by known messengers. Compared to other social media, WhatsApp and LinkedIn messages along with facebook messenger provide some level of privacy, which raises the perceived level of trust.

Discussions

The present study identifies that in Indian insurance sector, customer's experience with Online CGA in C2C marketplace through WhatsApp and other online platforms in terms of perceived 'usefulness' and 'ease of use', should positively influence consumer's 'attitude' creating 'intention to purchase insurance policy'. Insurance advisors can easily reach, entertain, engage, maintain relation, promote, pitch, extend after sales service, sale,

push for renewals, easily exchange information and store information for future reference, avoid travel etc, empowered by online CGA on WhatsApp and other platforms.

Perceived 'trustworthiness' of online CGA in C2C marketplace through WhatsApp and other platforms should positively influences customer's 'attitude' creating 'intention to purchase insurance policy'. How through online CGA insurance advisor create professional impression on clients, trust factor for existing/ repeat/ referred cases along with flying/ distant/ NRI clients, trust on the best solution insurance plan, trust on documents exchanged on WhatsApp have been studied. How trustworthy is website, YouTube videos and blogs by the insurance advisor along with source of communication influencing customer's intention to purchase insurance policy have also been studied.

The above study shows, perceived 'usefulness', 'ease of use' and 'trustworthiness', in context of online CGA in C2C marketplace, contributed towards 'attitude' of the customers towards 'intention to purchase insurance policy'. Here the insurance advertiser guesses the general thinking of the target group of his/ her product / service, and reflect that message through online CGA. Therefore, insurance advisors should focus on boosting 'perceived usefulness', 'perceived ease of use' along with 'perceived trustworthiness' and design their advertising tactics accordingly. From the sellers' perspective, it is a question of media consumption, media exposure and reach. Thus, CGAs with more perceived 'usefulness' along with 'ease of use' and 'trustworthiness' encourage users to develop more favourable 'attitude' towards 'purchase intention'. Advertising should be carried out in a way that users of an area considered 'social but private' do not find excessive or upsetting in order to preserve a favourable attitude towards it. Thus, the qualitative study supports all three research propositions.

Conclusion

Indian insurance sector undergoes transformative phase with technology advancements and increased public awareness. With the advancement of Artificial Intelligence and Machine Learning, insurance companies are going to give the option of more customised products, where the insurance advisors and sales professionals will have more flexibility to offer customised products to their clients with varied features. Generating the lead and maintaining the relationship with the probable clients will be crucial to sell these customers products. In this case, Consumer-Generated Advertising (CGA) on WhatsApp and other platforms can become a game changing strategy if adopted efficiently by insurance advisors in the Indian market. Therefore, it is evident that Consumer-Generated Advertising (CGA) in C2C marketplace, in the form of WhatsApp communication and on other platforms, is the way forward because in spite of the rapid technological progress, it is the humane touch and understanding the need of individual customers and thereafter providing him/her the exact customised insurance product which will ultimately play the crucial role in the expansion of insurance in the country.

Academic Contribution & Managerial Implications

'Consumer Engagement' is primary necessity for business sustainability and profit generation. C2C business needs to master in engaging consumers and interacting in a beneficial and long-lasting way. The present study developed concept in Indian insurance context keeping in mind C2C business scenario and power of social media. The current study contributed to the literature on insurance, computer-mediated communications, and advertising by examining Consumer Engagement in the context of online CGA in C2C platforms. Therefore, this study adds a key perspective towards theories of engagement. By offering a valuable insight into the consumer mentality, the study's findings will benefit the literature on customer engagement.

The study emphasizes prominent determinants towards generating intention to purchase, which would direct insurance advisors who prefer online communication to adapt strategies tailored to respond customer requirement, enhance intention to purchase, acquire new customers, keep old ones, and create a competitive edge.

The research findings will provide marketing managers valuable information on long-term relationships with consumers and create profitable online business, monetize and promote services on CGA platform, online scaling up of business. Insurance advisors can showcase their products/ services through online CGA powered by technology e.g. via smartphone, and produce communication of almost professional grade, keeping in mind 'perceived usefulness', 'perceived ease of use' and 'trustworthiness'. This study aids insurance businesses in considering their product dispersion strategy by shedding light on the factors that drive consumer involvement in online CGA.

The study recommends expanding the introduction and implication of various apps:

- Data entry and purification is simpler through app
- Visiting clients physically not needed always
- Policy is generated digitally, hard copy of the policy is sent to the customers

The study suggests yearlong training programmes for insurance advisors on online CGA:

Nowadays, some of the insurance advisors take short digital marketing courses and apply the knowledge in selling. Most of the insurance advisors absorbed usage of social media 'partly'. Arranging workshops on digital marketing covering basic technical skills and Artificial Intelligence, especially for insurance advisors who are 50yrs+, is highly needed. Many times, advisors have to depend on younger generations for that. Therefore,

- Workshops on 'communication' especially on 'online communication' is highly needed.
- Trainings to increase knowledge of 'financial sector' and 'world insurance scenario' are highly needed to communicate effectively.
- Insurance Advisors should attend continuous training on upgraded product knowledge, change in circulars to avoid mis-communication during selling, claim settlement etc.

TJ

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Factors Determining Choice of Investor's in Annuity Selection

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Abstract

The investment attributes of annuities / pension plans, viz., return and risk, have been a subject of interest among academics and practitioners alike. Investors should carefully consider these factors when choosing an annuity policy to ensure they receive the best return on their investment while managing their risk appropriately. Overall, the findings of the study suggest that individuals' perceptions of their life expectancy play an important role in their decision-making while choosing a pension plan. Our study aims to investigate the place occupied by pensions in the investor's portfolio and examine whether economic, financial, and social changes drive the process of selection of a pension product by the investor vis-à-vis other alternative assets such as risk-free bonds and stocks. One of the major findings of our study is that as the rate of return (ROR) on an immediate life annuity is very low and the risk is high, its demand at lower levels of mortality is declining, while the demand for risk-free bonds and stocks has risen substantially. The study suggests that annuity providers should link immediate annuities to the equity market so as to improve the rate of return and thereby, this will attract more investors.

Introduction

The distinction between need and demand is widely recognized, with demand being a need supported by purchasing power. It is the result of customers' calculations about the availability, usefulness, and prices of various products. Pensions have been regarded so much as a need, almost on the same level as basic needs as food, shelter, clothing, etc. that they have rarely been considered as desires, as objects of choice. Although this attitude is quite natural (especially, amongst the citizens and policymakers in the developing countries) considering that pensions are a life support for senior citizens, who have otherwise no access to means of livelihood, an unintended consequence seems to have been a lack of research on the demand for pension products and pension product designs as the objects of active consumer choice.

Literature Review

A survey of the literature on life products i.e. insurance and pension demand and supply will inevitably reveal a glaring lopsidedness in its development: the literature on the selling, marketing, costing and pricing of annuity / pension plans has developed disproportionately as compared to the literature on how it is bought. Insurance companies, who are selling annuity products and their intermediaries, have developed a massive sales literature in the form of pamphlets, brochures, product information leaflets and life-cycle financial planning exercises. Much of this literature is in normative form: it seeks to describe and prescribe under varying conditions how much annuities the customer should buy. Evidently the literature is developed more for the immediate purposes of the intermediary than for the purposes of aiding the customer to make the final choice. The literature on this is remarkably limited, however some studies have examined the performance of annuity policies on its investment attributes and product designing and the following

is a literature review of some of these studies, however none of the study investigates how does investor choose to buy pension plans?

Author & Year	Findings
Milevsky and Posner (2001)	Immediate annuities had the lowest expected return, while deferred annuities had the highest expected returns. Linked or variable annuities had higher expected returns than fixed or non-linked annuities, but with higher risk and volatility.
Bacinello and Ortu (2013)	Variable annuities had higher risk than fixed annuities but also had higher expected returns.
De Waegenaere et al. (2011)	Variable annuities in the United States had high return and higher risk than fixed annuities. Interest rates, equity returns, and mortality rates significantly impacted the risk of annuities.
Joshi Medha (2003)	In developed countries with high life expectancy and wealth, people preferred linked life insurance/pension plans and stocks over non-linked annuities and risk-free bonds.
Wachter and Warusawitharana (2009)	Variable annuity policies in the United States with guaranteed minimum withdrawal benefits had lower risk but also lower expected returns than policies without these benefits.
Lin and Cox (2016)	Annuity policies in Taiwan with higher charges had higher expected returns but also carried higher risk.

Objectives of the study

The research investigates the demand for different kinds of pension plan in the presence of alternative financial assets

(a) To investigate the place occupied by annuities in the portfolios of investors and

(b) To find what economic/financial/ social changes drive the process of pension product innovation.

To this end we shall look at annuity plans as investment vehicles, that is to say in terms of the returns risks and liquidity they offer to investors in the course of fulfilling their basic purpose viz. to protect the income of individuals in the contingency of living too long. Annuities being contingent products i.e. as long as annuitant is surviving, he will receive annuity and in the event of his death annuity will be seized.

Methodology

The first step is to derive the probability distribution of the rates of return on pensions which investors can expect to earn. Let dt (t = 1,2 , …w) be the investor's subjective probabilities of death, w represents the last year of his life so that $\Sigma\, d_t = 1$ and P_t be the benefits received in year t. The distribution of returns would also depend upon the mode and size of the contributions under the plan. For example, in case of a single contribution immediate annuity, if the investor dies in the first year the ROR earned is the solution of

$$-C + \frac{0}{(1+r)} = 0 \;\; i.e. \;\; r_1 = 1$$

with probability d_1

If investor's death occurs in 2nd year he earns ROR is the solution of

$$-C + \frac{P}{1+r} = 0 \quad i.e.\ r_2 = \frac{P_1}{C} - 1$$

with probability d_2

And so on. In general, if a death occurs in the t[th] year the ROR is solution of

$$-C + \frac{P_1}{1+r} + \frac{P_2}{(1+r)^2} + \cdots\cdots + \frac{P_{t-1}}{(1+r)^{t-1}} = 0$$

i.e. r_t with probability d_t.

If the scheme is a deferred annuity the equation is only a bit more detailed. The ROR is the solution on

$$-C_1 - \frac{C_2}{(1+r)} - \cdots\cdots - \frac{C_k}{(1+r)^k} + \sum_{i=k+1}^{t} \frac{P_i}{(1+r)^i} = 0$$

i.e. r_t with probability d_t.

If the plan returns the contribution in the event of death during the period of deferment the rates of return will be zero during the deferment period and if it does not the rates of return will be –1.

If the plan returns the contribution in the event of death this will be added to the benefit P_t as will any benefit paid say to the spouse or nominee.

Second step is to follow the procedure detailed above generates the probability distribution of returns and calculate risk, return and liquidity of the assets under consideration The expected return of the pension plan would simply be

$$R = \sum_{t=1}^{w} d_t r_t$$

The real difficulty lies in measuring risk. It is customary to measure risk by the variance of returns in the investment literature. But this will not be appropriate in case of annuity returns whose probability distribution exhibit a left-skew (Refer Figure 1) i.e. with the lower probability of death in the initial years of the policy, it will fetch low returns and with high chances of death in the later years, policy gives high returns. A better measure would be semivariance, i.e. variance below the mean.

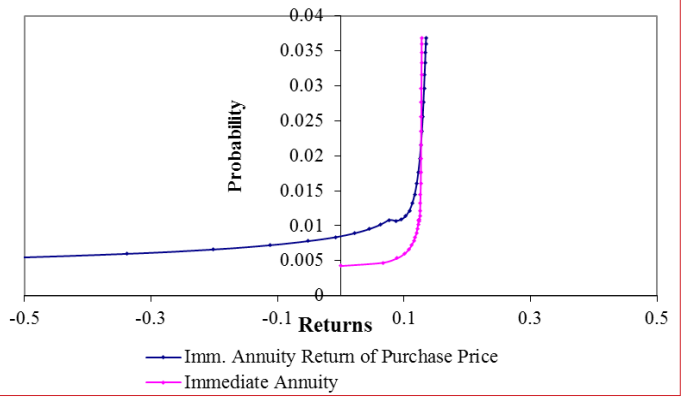
$$S = \sum d_t (r_t - \bar{r})^2 \quad for \quad r_t \leq \bar{r}$$

The skewness of the distribution can then be measured by,

$$K = \frac{Variance}{2\,Semi\,Variance}$$

as suggested by Markowitz (1959). Clearly K<1 for left skew distributions, K=1 for the symmetrical case and K>1 for right skew distributions which characterize life insurance plans. Skewness is a desirable investment attribute. The greater the skewness the greater are the upside returns in relation to the downside risks.

Figure 1 : Probability Distribution of Annuities Returns



Other measures include shortfall variance i.e. variance below the return of medium-term government bond, or shortfall probabilities, i.e. probability of not earning the expected return or for that matter a benchmark return.

We shall however use for the portfolio calculations although reference will be made to other measures in the appropriate context.

The semivariance is,

After evaluating return and risk, the next step is to derive liquidity of pension plans. In case of pension plans contribution is paid in a single lumpsum at the time of purchase and annuity is payable monthly or yearly depending upon the annuitant's choice. The probability weighted duration of the plan could be taken as a measure of liquidity which takes into account initial cash outflow i.e. contribution and number of cash inflows.

$$D_U = \frac{\sum \frac{d_t P_t t}{(1+r)^t}}{\sum \frac{d_t P_t}{(1+r)^t}}$$

Covariance : Consider two products A and B and their return distributions. The covariances between returns are calculated by using the formula

$$\sum d_t (r_A - \bar{r}_A)(r_B - \bar{r}_B)$$

The semi-covariance is the covariance of product A and Product B where, $r_A \leq \bar{r}_A, r_B \leq \bar{r}_B$

This formula will be applicable for all products having the same maturity. It is observed that annuity plans have positive correlation among themselves.

Computations

The Table 1 and Table 2 show the summary of investment parameters for the pension products offered by life insurance companies in India as on 1/4/2023, the data for which have been extracted from NSDL website. These plans have been considered to study the place occupied by pensions in overall portfolios of individuals. The general methods will apply to plans sold by all insurance companies. The three subjective mortality assumptions are made on the basis of IRDA Annuitants Mortality Table 2012-15.

a) Low Mortality is identical to IRDA Annuitants mortality assumption

b) Medium Mortality = 2 X IRDA Annuitants mortality assumption and

c) High Mortality= 3 X IRDA Annuitants mortality assumption.

When considering the perspective of the annuitant, a low mortality assumption corresponds to a longer life expectancy, while a high mortality assumption corresponds to a shorter life expectancy.

Features of Annuity Plans considered for computation of Investment Parameters.

Immediate Annuity for Life with Return of Purchase Price/ return of contribution: Annuitant will receive the annuity for lifetime and on death of the annuitant, payment of annuity ceases and 100% of the purchase price will be returned to the nominee(s).

Immediate Life Annuity: Annuitant will get annuity for lifetime and on death of the annuitant, payment of annuity ceases and no further amount will be payable.

We have calculated Average Rate of Return (Avg. RoR), Semivariance, Skewness and Duration, other parameters have been calculated on pretax basis for all annuities offered by Indian Insurance companies and summary of which is presented in the table given below. It is also observed from Tables 1 and 2 that the average ROR on Immediate Life Annuity with return on purchase price ranges from 4.86% to 7.04% and that of Immediate life annuity is between 6.31% to 9.08% with different levels of risk, and therefore the annuity products become comparable to risk-free bonds.

Duration measures the time period, in years, for an investor to be repaid his initial contribution. Duration measures the liquidity of the financial asset, shorter the duration more will be liquidity, longer the duration lower will be the liquidity. From the Table 1 and 2 it is clearly observed that the duration of immediate life annuity ranges between 14.39 to 8.89 for immediate life annuity and 11.33 to 15.7 from high mortality to low mortality respectively. Secondly observe that as subjective mortality rates of the investor decline the expected return on pension plans increases which is obvious but the riskiness actually declines making pensions doubly attractive from the investor's viewpoint. This observation underlines the great increases in the demand for pensions in a society, which is experiencing significant increases in life expectancy. The correlation coefficients between the above pensions which are high at low rates of subjective mortality and steadily increasing at higher mortality rates.

Downside risk is the possibility that investor will not get the average ROR on annuity and we found that across the policy the downside risk is almost same for immediate life annuity without return of policy and with return of purchase price are 0.18103, 0.142051, 0.213076 for low, medium and high levels of mortality.

Across the different pension plans it is observed that skewness is greater ranging between 0.5342 and 0.6536 for immediate life annuity and 0.5354 to 1.39 for immediate life annuity return of purchase price which are substantial for pension distribution which indicate greater upside returns in relation to the downside risks.

Table 1 Summary of Investment Parameters: Immediate Life Annuity

Contribution : INR 30,00,00 annuity payable by the insurers will be different. Please refer annexure 1 for rates of annuity payable by the insurer.

Investor's Subjective Probability of death	Average Rate of Return			Semivariance			Skewness			Duration		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
Name of the Insurer												
MAX Life	0.0908	0.0834	0.0828	0.0001	0.0002	0.0028	0.5335	0.6531	1.39	13.73	10.43	8.69
Shriram Life .	0.0900	0.0827	0.0821	0.0001	0.0002	0.0027	0.5336	0.6532	1.39	13.79	10.46	8.70
LIC of India	0.0886	0.0814	0.0808	0.0001	0.0002	0.0026	0.5337	0.6533	1.39	13.89	10.51	8.74
HDFC Life	0.0869	0.0799	0.0793	0.0001	0.0002	0.0025	0.5338	0.6533	1.39	14.01	10.57	8.78
ICICI Prudential Life	0.0869	0.0799	0.0793	0.0001	0.0002	0.0025	0.5338	0.6533	1.39	14.01	10.57	8.78
Kotak Mahindra Life	0.0854	0.0784	0.0778	0.0001	0.0002	0.0025	0.5339	0.6534	1.39	14.13	10.62	8.81

Investor's Subjective Probability of death	Average Rate of Return			Semivariance			Skewness			Duration		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
SBI Life	0.0819	0.0752	0.0746	0.0001	0.0002	0.0023	0.5342	0.6536	1.39	14.40	10.74	8.90
Bajaj Allianz Life	0.0805	0.0739	0.0733	0.0001	0.0001	0.0022	0.5343	0.6537	1.39	14.50	10.79	8.93
Aditya Birla Sun Life	0.0795	0.0730	0.0725	0.0001	0.0001	0.0021	0.5343	0.6537	1.39	14.57	10.83	8.95
PNB Metlife India	0.0781	0.0717	0.0711	0.0001	0.0001	0.0021	0.5345	0.6538	1.39	14.69	10.88	8.99
IndiaFirst Life	0.0780	0.0716	0.0710	0.0001	0.0001	0.0020	0.5345	0.6538	1.39	14.69	10.88	8.99
Star Union Dai-ichi Life	0.0774	0.0711	0.0705	0.0001	0.0001	0.0020	0.5345	0.6538	1.39	14.74	10.90	9.00
Edelweiss Tokio Life	0.0745	0.0684	0.0679	0.0001	0.0001	0.0019	0.5347	0.6540	1.39	14.96	11.00	9.07
TATA AIA	0.0694	0.0636	0.0631	0.0001	0.0001	0.0016	0.5351	0.6542	1.39	15.38	11.18	9.20
Max	0.0908	0.0834	0.0828	0.0001	0.0002	0.0028	0.5351	0.6542	1.39	15.38	11.18	9.20
Min	0.0694	0.0636	0.0631	0.0001	0.0001	0.0016	0.5335	0.6531	1.39	13.73	10.43	8.69
Average	0.0820	0.0753	0.0747	0.0001	0.0002	0.0023	0.5342	0.6536	1.39	14.39	10.74	8.89

Table 2: Summary of Investment Parameters: Immediate Life Annuity With Return Of Purchase Price

Contribution : INR 30,00,00 annuity payable by the insurers will be different. Please refer annexure 1 for rates of annuity payable by the insurer.

Investor's Subjective Probability of death	Average Rate of Return			Semivariance			Skewness			Duration		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
Name of the Insurer												
MAX Life	0.07043	0.0646	0.0641	0.000075	0.000114	0.0017	0.53501	0.6541	1.3899	15.29	12.76	11.15
Bajaj Allianz Life	0.07001	0.0643	0.0637	0.000074	0.000100	0.0017	0.53504	0.6541	1.3899	15.33	12.78	11.16
TATA AIA	0.06968	0.0639	0.0634	0.000074	0.000110	0.0016	0.53506	0.6542	1.3899	15.35	12.79	11.17
SBI Life	0.06920	0.0635	0.063	0.000073	0.000120	0.0016	0.53509	0.6542	1.3899	15.39	12.82	11.19
HDFC Life	0.06894	0.0633	0.0627	0.000072	0.000100	0.0016	0.53511	0.6542	1.3899	15.41	12.83	11.20
ICICI Prudential Life	0.06894	0.0633	0.0627	0.000072	0.000140	0.0016	0.53511	0.6542	1.3899	15.41	12.83	11.20
Shriram Life .	0.06761	0.062	0.0615	0.000069	0.000100	0.0015	0.53521	0.6542	1.3900	15.52	12.89	11.25
Kotak Mahindra Life	0.06743	0.0619	0.0614	0.000069	0.000110	0.0015	0.53522	0.6543	1.3900	15.54	12.90	11.25
Canara HSBC Life .	0.06495	0.0596	0.0591	0.000064	0.000100	0.0014	0.53539	0.6544	1.3901	15.74	13.02	11.34
Aditya Birla Sun Life	0.06410	0.0588	0.0583	0.000062	0.000110	0.0014	0.53544	0.6544	1.3901	15.81	13.06	11.37
LIC of India	0.06402	0.0587	0.0582	0.000062	0.000100	0.0014	0.53545	0.6544	1.3902	15.82	13.06	11.37
PNB Metlife India	0.06313	0.0579	0.0574	0.000061	0.000130	0.0013	0.53551	0.6544	1.3902	15.89	13.11	11.40
IndiaFirst Life	0.06022	0.0552	0.0548	0.000055	0.000120	0.0012	0.53570	0.6545	1.3903	16.13	13.24	11.51
Edelweiss Tokio Life	0.05675	0.052	0.0516	0.000049	0.000110	0.0011	0.53592	0.6546	1.3905	16.43	13.41	11.63
Star Union Dai-ichi Life	0.05344	0.049	0.0486	0.000043	0.000100	0.0010	0.53613	0.6547	1.3907	16.71	13.57	11.75
Max	0.07043	0.0646	0.0641	0.000075	0.000140	0.0017	0.5361	0.6547	1.3907	16.7	13.57	11.75
Min	0.05344	0.049	0.0486	0.000043	0.000100	0.001	0.5350	0.6541	1.3899	15.3	12.76	11.15
Average	0.06526	0.0599	0.0594	0.000065	0.0001	0.0014	0.5354	0.6543	1.3901	15.7	13.00	11.33

Annuities in Portfolios

Consider the Markowitz (1959) model of risk return optimization.

Maximize $Z = -\lambda R_p + S_p$ subject to $\sum x_i = 1$

where R_p is the expected portfolio return, S_p is the semivariance of the portfolio return, i.e. portfolio risk, x_i are the proportion of unit wealth invested in asset *i* and $\lambda = \partial S_P / \partial R_P$ is the investor's risk tolerance coefficient ($0 < \lambda < \infty$) Joshi M. Parhcure R (2001)

These simulations are based on some considerations which are given below :

a) Bond i.e. risk free asset and shares distribution of return is independent of annuities i.e. their covariances with annuities and other assets are zero.

b) The simulations are done by varying mortality rates and risk and return of bonds, stocks

At every stage we find the desired asset allocation x_i as solved by using Markowitz (1959) system of equations:

$$\begin{bmatrix} 2S_{11} & 2S_{12} & \ldots & 2S_{1n} & -1 \\ 2S_{21} & 2S_{22} & \ldots & 2S_{2n} & -1 \\ \vdots & \vdots & \ldots & \vdots & \vdots \\ \vdots & \vdots & \ldots & \vdots & \vdots \\ 2S_{n1} & 2S_{n2} & \ldots & 2S_{nn} & -1 \\ 1 & 1 & \ldots & 1 & 0 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ \vdots \\ \vdots \\ x_n \\ \mu \end{bmatrix} = \begin{bmatrix} \lambda_1 R_1 \\ \lambda_2 R_2 \\ \vdots \\ \vdots \\ \lambda_n R_n \\ 1 \end{bmatrix}$$

where the S_{ij} $(i \neq j)$ are the semicovariances, S_{ii} are the semivariances and μ is the Lagrange multiplier associated with the wealth constraint $\Sigma x_i = 1$.

It is not correct to consider both the annuities plan together as their semi covariances are highly positive which causes numerical difficulties while computing matrix inverse and then numerical results will become inconsistent. Also as the subjective probability of death increases, their semivariance fluctuates erratically.

Now, consider three alternative assets say a fixed deposit (which can vary well serve as a proxy for say a risk-free annuity plan), a portfolio of stocks and two representative plans, immediate life annuity and the immediate annuity with return of contribution.

We have considered current return on the fixed deposit is 0.065 with a semivariance of 0.0001, and the expected return on stocks in 0.019 with a semivariance of 0.008. The semicovariances between the fixed deposit vis-à-vis stocks and annuity plans are assumed to be zero.
We shall assume that correlation coefficient between pension returns with the above two assets are zero.

We have reported the simulations as given below. In the first instance, we simulate the system using the risk-free asset, a stocks portfolio the immediate Life annuity with return of contribution and the immediate Life annuity. We do this for different levels of subjective mortality and different values of the λ risk tolerance coefficient.

Table 2 Proportion of Assets in the Investor's Portfolio

Asset	Low Mortality			High Mortality		
	λ			λ		
	0.025	0.07	0.1	0.025	0.07	0.1
Risk free bond	0.721	0.421	0.195	0.746	0.472	0.292
Share	0.262	0.519	0.713	0.261	0.551	0.724
Immediate Life Annuity	0.017	0.06	0.092	-0.007	-0.023	-0.016

* Low Mortality means Annuitant mortality as per IRDA Indian Annuitant Mortality Table 2012-15.
** High mortality means Annuitant's subjective mortality = 3 X Low mortality

Ideally, as the mortality rate goes down the demand for Immediate life annuity should rise and as the risk tolerance coefficient (λ) goes on increasing, which means there is an increase in wealth, demand for stocks will rise in the normal course but the ROR on immediate life annuity is not improving much, so the demand for immediate life annuity shows decline. An increase in ROR of stocks and alternate assets would lead to improvement in demand for those assets and demand for immediate life annuity will drop. Table 2 clearly shows that when mortality rates are low, the proportion of immediate life annuity plans is in the negative, but the allocation of risk-free asset rises increases rapidly in comparison the increase in stock allocation. Also, in a high subjective mortality scenario, there is decline in the percentage of the risk-free asset while the proportion of immediate annuity improves. However, the proportion of stocks in the portfolio remains constant. It is also observed that at any given value of λ the demand for stocks rises rapidly.

When the return on the risk-free asset increases from 6.5 per cent to 8.5 per cent has the following effect shown in Table 3.

Table 3 Risk free bond return increased by from 6.5% to 8.5%

	Low Mortality#		
Assets	λ		
	0.025	0.07	0.1
Immediate Life Annuity	0.772	0.519	0.352
Risk free bond	0.224	0.462	0.619
Stocks	0.004	0.019	0.029

It could be seen from the above table 3, that there is considerable increase in proportion of pensions especially at low levels of risk tolerance, as also in the proportion devoted to stocks but obvious finding is the proportion of risk-free asset is rising as the return on Risk free bond. When the expected return on shares rises it results into the decline in demand for risk free bond considerably but makes too large a dent into the demand for the immediate life annuity.

Table 4 Low Mortality (Stock's return increased to 25%)

Low Mortality#	λ		
Assets	0.025	0.07	0.1
Immediate Life Annuity	0.558	0.305	-0.071
Risk free bond	0.419	0.643	0.99
Stocks	0.023	0.052	0.081

The risk tolerance coefficient (λ) reflects an investor's openness to taking on risk. When λ increases, it signifies a higher risk tolerance, leading to a larger proportion of stocks in the investor's portfolio.

However, as risk rises with a consistent expected return on stocks, it also affects the demand for risk-free assets, which increases across various λ values. Nonetheless, the demand for Immediate life annuity (pensions) shows an initial rise and then declines at higher values of λ. This indicates that at higher levels of risk, investors tend to favor risk-free bonds over annuities, and the demand for stocks diminishes.

Next consider the plan immediate life annuity with return of purchase price. This plan is included along with the risk-free bond and the portfolio of stocks. From Table 1 above and Table 5 (below) we may infer that,

Table 5 Low Mortality: Annuitant mortality as per Indian annuitant mortality

	Low Mortality#			High Mortality**		
Assets	λ			λ		
	0.025	0.07	0.1	0.025	0.07	0.1
Immediate Life Annuity with Return of Purchase Price	0.505	0.328	0.211	0.063	0.108	0.137
Risk free bond	0.296	0.123	0.008	0.732	0.341	0.080
Share	0.199	0.548	0.781	0.204	0.551	0.782

Table 5's findings can be elucidated by considering two factors: (1) Perceived life expectancy and (2) Wealth and risk tolerance. It can be deduced that when people believe they have a long life ahead (with low mortality rates), they are more inclined to invest a larger portion of their portfolio in immediate life annuities (0.505), which guarantee a return of their initial investment. Conversely, when people perceive a shorter life expectancy, they tend to avoid immediate life annuities(0.063) due to concerns that these plans might not yield the desired returns. Instead, they prefer to invest in risk-free bonds and shares.

As the individual's wealth and risk tolerance increase, and their perceived life expectancy rises (indicating lower mortality), the proportion of immediate annuities with a return of purchase decreases. Conversely, when the perceived life expectancy is low (indicating higher mortality), the proportion of immediate life annuities with a return of purchase price increases. In both scenarios, this shift happens at the expense of the proportion of risk-free bonds in their investment portfolio. The allocation to stocks remains constant throughout. These results may initially appear surprising, but they unmistakably highlight the fact that due to the relatively high return and low risk of immediate life annuities with a return of purchase, they reduce the demand for risk-free assets at all mortality levels, especially at lower mortality levels and higher levels of risk tolerance. However, this investment strategy does not affect the demand for stocks.

Next, if the yield of the risk-free asset rises from 6.5% to a higher 8.5% with negligible risk, there is a significant rise in the allocation of the risk-free asset across all levels of risk tolerance. Simultaneously, the proportion of shares also increases as risk tolerance rises, resulting in a substantial impact on the immediate life annuity with PP, as indicated in Table 6.

Table 6 Risk free bond return increased from 6.5 % to 8.5%

Low Mortality#	λ		
Assets	0.025	0.07	0.1
Risk free bond	1.816	4.378	6.086
Share	0.187	0.514	0.732
Immediate Life Annuity with PP	-1.002	-3.892	-5.818

In comparison to the outcomes presented in Table 3 for the immediate life annuity, it is evident that the former is less affected by fluctuations in the interest rate than the Immediate Life Annuity with PP. Put differently, the immediate life annuity with return of purchase price exhibits a high sensitivity to changes in the interest rate.

Table 7 Stock's return increased from 19% to 25%

Low Mortality	λ		
Asset	0.025	0.07	0.1
Risk free bond	0.259	0.020	-0.139
Share	0.292	0.810	1.155
Immediate Life Annuity with Return Of Purchase Price	0.448	0.170	-0.016

An increase in the expected return of stocks is found to have similar effects – it raises wealth allocated to stocks as well as the immediate life annuity return of purchase price plan at the cost of risk-free asset.

Analysis

This paper has investigated the behaviour of the demand for pensions in terms of their investment attributes. A brief summary of our findings is as follows:

The aim of this paper was to examine how the characteristics of pension investments influence the demand for pensions. The key findings can be summarized as follows:

1. Based on the simulation results, changes in subjective factors such as the investor's life expectancy, wealth, risk aversion, and returns on other financial assets affect the demand for pensions and the type of pension products demanded by the investors. As expected, an increase in subjective life expectancy leads to an increase in demand for pensions. Unexpectedly, the study found that as subjective life expectancy rises, the demand for low-risk pension plans that return the purchase price upon death increases in comparison to safe bonds. When perceived life expectancy is very high, the demand for immediate life annuities slightly increases, along with demand for risk-free bonds. Surprisingly, the demand for stocks also rises, possibly to support annuity income during retirement.
2. The selection of pension plans by individuals can vary based on their perception of subjective mortality, resulting in a hierarchy of preferences. When life expectancy is low, there is a higher demand for risk-free regular income assets, which are viewed as "self-provisions" for future income. As life expectancy increases, the preference shifts towards pensions that offer a return of purchase price, and ultimately towards risk-oriented immediate life annuities. This may help to explain why risk-free regular income schemes and fixed deposits are popular in developing countries with low life expectancies.
3. When investors become wealthier and more willing to take risks, it has a corresponding effect on their investment preferences. They tend to have a greater demand for stocks and annuities with higher levels of risk, while their interest in risk-free assets and annuities with a return of purchase price decreases. This trend, in addition to other related findings, can help to explain why return-linked pension plans have become popular in advanced countries with wealthy and long-lived investors.
4. The research infers that safe pension plans (immediate annuity return of purchase price) designed for investment purposes are more sensitive to changes in the potential return of alternative financial assets, such as interest rates, compared to immediate life

annuities that involve more risk. This indicates that in countries with unstable financial markets, people may prefer life annuities despite the substantial risk involved, as they may provide a more reliable return than safe contribution plans. This suggests that in well-developed countries with volatile financial markets, the preference for life annuities which carries substantial risk, may be robust as compared to the return of contribution plans which are safe.

Concluding Remarks

Subjective Mortality Perception and Hierarchy of Preferences : Low life expectancy is associated with a preference for risk-free regular income assets, ensuring stable income for the future. As individuals perceives themselves as having a longer life expectancy their preference shift to exhibit a higher desire for pensions, offering a return of the purchase price, protecting the investment even if not fully utilized, they show a greater preference for low-risk pension plans that guarantee the return of the purchase price upon their death, as this ensures that their beneficiaries will receive the invested amount. This emphasis on securing investments for their beneficiaries takes precedence over taking on higher risks for potential returns. Those with very high perceived life expectancy display a slight increase in demand for immediate life annuities, which carry some risk but for stable income during an extended retirement period. They also favor risk-free bonds, indicating a concern for financial security during an extended retirement period. Additionally, individuals with higher perceived life expectancy show an increased demand for stocks, possibly to supplement their annuity income and ensure a more comfortable retirement.

Wealth and Risk Appetite: Wealthier individuals' investment portfolio shows a greater choice for stocks and riskier annuities like immediate life annuities, seeking higher returns and accepting market risk to achieve financial goals. Their interest in risk-free assets and annuities with a return of the purchase price decreases.

Sensitivity to Economic Factors: Safe pension plans, such as immediate annuities with a return of the purchase price, are sensitive to changes in potential returns of alternative financial assets, like interest rates. In countries with unstable financial markets, individuals may still prefer immediate life annuities due to a reliable return, despite the higher risk.

Overall, these findings demonstrate how subjective factors like perceived life expectancy, wealth, and risk aversion influence individuals' preferences in selecting investment products, particularly in pension planning and retirement. Understanding these subjective perceptions can help financial institutions and policymakers design tailored pension products that cater to the diverse needs and preferences of investors. TJ

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Annexure

Annuity quotes by the Indian Life Insurers April 1, 2023.

Subscriber type	Private Sector Subscriber	
First Annuitant Age	60 years	
Purchase Price (excluding taxes in ₹)	30,00,000	
Annuity Service Provider	**Scheme Name**	
Name of the Insurer	With Return of Purchase Price	Without Return of Purchase Price
	(With ROP)	(Without ROP)
	Annuity for Life	Annuity for Life
	₹	₹
Aditya Birla Sun Life Insurance Co. Ltd	2,03,051	2,51,002
Bajaj Allianz Life Insurance Co. Ltd	2,21,432.4	2,53,892.1
Canara HSBC Life Insurance Co. Ltd.	2,05,701	Not Applicable
Edelweiss Tokio Life Insurance Co. Ltd	1,80,124	2,35,498
HDFC Life Insurance Co. Ltd	2,18,100	2,73,900
ICICI Prudential Life Insurance Co. Ltd	2,06,627	2,29,407
IndiaFirst Life Insurance Co. Ltd	1,90,963.0	2,46,203.0
Kotak Mahindra Life Insurance Co. Ltd	2,13,405	2,69,063
Life Insurance Corporation of India	2,02,806	2,79,000
MAX Life Insurance Co. Ltd	2,22,720	2,85,780
PNB Metlife India Insurance Co. Ltd	2,00,027.20	2,46,537.58
SBI Life Insurance Co. Ltd	2,18,897.0	2,58,232.0
Shriram Life Insurance Co. Ltd.	2,13,949.00	2,83,350.00
Star Union Dai-ichi Life Insurance Co. Ltd	1,69,790	2,44,390
TATA AIA Insurance Co. Ltd	2,20,408	2,19,372

Subjective Life Expectancy and Demand for Pensions: As expected, when individuals perceive their life expectancy to be longer, there is an increase in the demand for pensions. This makes sense because people are more likely to plan for retirement and secure their financial future if they anticipate living longer.

Effect on Low-Risk Pension Plans: Surprisingly, the study found that as individual's perceived life expectancy increases, the demand for low-risk pension plans also rises. These plans typically guarantee the return of the purchase price upon the investor's death. This suggests that individuals

with higher perceived life expectancy may prefer more conservative pension options that prioritize the return of their investment to their beneficiaries.

Immediate Life Annuities and Risk-Free Bonds: When people perceive their life expectancy to be very high, there is a slight increase in the demand for immediate life annuities. Immediate life annuities provide a steady stream of income throughout retirement and can be appealing to those with high life expectancy to ensure financial security. Additionally, there is also an increased demand for risk-free bonds, indicating a preference for safe and stable investment options.

Demand for Stocks: One surprising finding is that the demand for stocks increases among individuals with higher perceived life expectancy. This could be attributed to the need for additional income during retirement. By investing in stocks, which have the potential for higher returns, retirees may seek to supplement their annuity income and secure a comfortable retirement.

Overall, the study highlights the significant influence of subjective factors on the demand for pension products. People's perceptions of their life expectancy, risk aversion, and financial goals play a crucial role in shaping their preferences for specific pension plans. These findings could have implications for pension providers, financial advisors, and policymakers as they design and market pension products that cater to the diverse needs and expectations of investors.

This result suggests that the choice of pension plans by individuals can be influenced by their perception of how long they expect to live, which is known as subjective mortality. This perception can lead to a hierarchy of preferences in pension plans based on life expectancy.

In areas or periods where life expectancy is relatively low, people tend to have a higher demand for pension plans that provide a risk-free regular income. These plans are considered as a way for individuals to ensure they have a stable income in the future, even if they don't live for a long time. These risk-free regular income assets could be investments like fixed deposits or low-risk savings schemes that guarantee a steady stream of income.

As life expectancy increases, individuals may start to prefer pension plans that offer a return of the purchase price. In other words, they want to receive back the money they contributed to the pension plan, often with some interest or returns, even if they don't live long enough to receive all the payments they would have earned from the plan.

Finally, as life expectancy further increases, the preference shifts towards risk-oriented immediate life annuities. Immediate life annuities involve paying a lump sum upfront in exchange for guaranteed regular payments for life. This choice indicates that individuals are willing to take on more risk in their pension plans, possibly because they anticipate living longer and want to ensure they have a stable income for their extended lifespan.

The observation that risk-free regular income schemes and fixed deposits are popular in developing countries with low life expectancies aligns with the findings mentioned above. In these regions, people may prioritize securing a steady income for their future, given the relatively lower life expectancy. As life expectancies improve, it's likely that preferences will gradually shift towards more risk-oriented pension plans like immediate life annuities.

Overall, this result sheds light on how subjective mortality perceptions can influence people's choices regarding pension plans, leading to a hierarchy of preferences ranging from risk-free regular income assets to risk-oriented immediate life annuities as life expectancy increases.

A Comparative study of National Pension System and Old Pension System from Employees' perspective

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Abstract

Presently, the employee's associations are agitating across the nation to implement the Old Pension Scheme (OPS) instead of National Pension System (NPS). Some of the States in the country have already restored the Old Pension System for Government employees whereas the Government of India has also formulated a Committee under the Chairmanship of Finance Secretary for suggesting change in NPS to address the concern of the employees. The employees are concerned about the lower pension payout under NPS after the retirement. However no specific study has been carried out to know the actual difference in pension payout under NPS and OPS. The present study has been undertaken to know the quantitative difference between the two schemes under the assumption of different length of services and rate of return on NPS investment. The study reveals that OPS is much better than NPS from employees perspective. Initial pension under OPS is 2.5 times of pension under NPS in case of 20 years of service which is decreased to 1.3 times when length of service is taken as 35 years. Similar is the case for terminal pension. However, increase in length of service and increase in rate of return on NPS corpus decreases the relative difference in pension payout between the two schemes. Similarly, the amount invested to purchase annuity is another factor which affect the payout of pension under NPS. Further studies can be undertaken to know the effect of change in employer's contribution to NPS on pension payout. Another area for research is to know the possibilities of some hybrid mode of pension to Government employees.

Keywords

Old Pension Scheme, National Pension System, Pension.

Introduction

Sanyal and Singh (2013) have described the three payout modes in a pension system namely: (i) Defined Benefit (DB) Scheme in which benefits are clearly defined at the time of opting the scheme and the cost of pension is required to be born by young generation as payroll taxes

and amount is paid to retirees, (ii) Defined Contributory (DC) Scheme in which the contribution are fixed and the returns depends upon the investment made by the individual. At the time of retirement, the investment alongwith the returns on investment are converted into an annuity, and (iii) Non-Financial or Notional Defined Contribution (NDC) Scheme in which members have Individual Defined Contribution Accounts. The contribution rate is a fixed proportion of earnings. The returns are related to some non-financial variables, e.g. the growth rate in the country's GDP or the growth rate in national average earnings. At retirement, the notional capital in the member's account is converted to a life annuity using an annuity factor that reflects both the cohort life expectancy of the member and the rate of return over the annuity's expected term.

The Old Pension System (OPS) in India is a defined benefit plan that provides retirement benefits to government employees who have joined Central Government Services before 01st January, 2004. Similarly, it is applicable to State Government servants who have joined State Government services before the notification of the National Pension System (NPS) by the respective state. Old Pension System is based on "Pay-As-You-Go" basis where young workers agree to pay the pension of retired people in lieu of a promise that their generation will follow the suit. It is a Defined Benefit Scheme in which the benefits are known at the time of opting for the scheme and it is fully financed from the budget/tax revenue of the Government. The pension amount is based on the employee's length of service and their last drawn salary. The National Pension System is a Defined Contributory Scheme in which each individual of each generation contributes a share of their current income to a fund that accrues over a time period. It is a contributory scheme and the reserves are invested in a fund of identifiable and available assets which are specifically held for the purpose.

The World Bank (1994) in its report categorically emphasized the need to help both, the elderly people and the economy simultaneously. A country should make an appropriate strategy for the elderly people by: (i) shifting some income from their productive years to old age, (ii) providing them a minimum basic income to protect them from a substantial decrease in income during old age and (iii) insuring them against the unforeseen risk inherent in future like disability, inflation, increased longevity, and investment risk. The World Bank has suggested a 'Three Pillar Approach'for providing old age financial assistance. 'First Pillar' is related to a publically managed and tax-financed assistance scheme with the limited object of reducing old-age poverty. 'Second Pillar' is related to the fully funded and privately managed but publically regulated approach of financial assistance. The 'Third Pillar' is related to voluntary occupational or personal saving plans which provide additional protection to people who want more.

Holzmann and Hinz (2005) have extended the 'Three Pillar Approach' to 'Five Pillar Approach' on the basis of the experience of client countries of the World Bank, internal discussions and discussions with various academicians. 'Pillar I' of this approach is a mandatory public DB or NDC pension plan which is publically managed and is most important for employees of the formal sector. 'Second Pillar' is a mandatory, occupational/personal, fully funded DB or DC pension plan which is privately managed and is most important for employees of the formal sector. Similarly, the 'Third Pillar' is a voluntary, occupational/personal, fully or partially funded DB or DC pension plan which is privately managed and is most important for employees of both, the formal and informal sector.

The fully funded DB scheme for all employees results in a heavy burden on the public exchequer and the Government of India finds it financially unsustainable. Hence, in 1998, the Ministry of Welfare later renamed as the Ministry of Social Justice and Empowerment (MoSJE) commissioned the Invest India Microeconomics Foundation (IIEF) with the first comprehensive study of Old Age Social and Income Security (OASIS). The OASIS report became the basis for the development of NPS. The Government of India introduced the NPS from 01.01.2004 through a notification dated 22.12.2003 for new entrants to Central Govt. Services except for Armed Forces. NPS is regulated by the Pension Fund Regulatory and Development Authority (PFRDA). The PFRDA has appointed some fund managers to invest the corpus of NPS in various plans offered under NPS.

The OPS is considered to be a generous retirement benefit plan, as it provides a guaranteed pension amount to employees. The pension amount is also increased with the increase in inflation due to which it is capable of beating the rise in the price level. Whereas the investment in NPS is market driven and the final accumulated corpus and pension amount is based on the size of the investment, duration of investment and rate of return on the investment. It is widely affected by the general conditions of the market and there are wide fluctuations in the earnings of different kinds of asset classes in which the investment is made by the NPS trust. Similarly, the pension amount is based on the amount invested to purchase the annuity. The pension amount will remain fixed for the entire pensionable period however the amount depends upon the type of annuity plan chosen by the beneficiary. There is no increase in the pension amount with the increase in price level during the pensionable period due to which it is not able to beat inflation. At the time of implementation of NPS, it was projected to be as beneficial as OPS for the employees. The employees were assured that they will get handsome amount of pension after their retirement. Around 19 years have been completed since the implementation of NPS by the Central Government. Hence, it is high time to review the NPS and to make a comparison of pension amount in quantitative terms under both the schemes i.e. OPS with NPS.

Review of Literature

No specific study has been undertaken to know the difference in Pension amount payable to an employee under OPS and NPS in India. Most of the studies undertaken are either related to fund's performance under NPS or make the theoretical comparison between OPS and NPS in India. Akalonu and Ipinyomi (2014) made a comparative analysis of the benefits of the Nigerian Pension Act No. 102 of 1979 and the Pension Reform Act of 2004. The paper aims to compare the quantum of monetary benefits payable to retirees between the old and new schemes. Actuarial methods of estimating benefits using probability, statistics and life contingency mathematics were used to determine and compare the benefits of both schemes. The paper shows that the ratio of gratuity paid by the old scheme and that of the new scheme is a minimum of about 3.5:1 while the pension benefit stand at the minimum ratio of 2.3:1. The old pension scheme was proved better in terms of benefits payable to retirees. Kali (2014) carried out a comparative study on pension benefit of Government Employees in India and Chile. The study shows that the pension amount depends on the length of service and pension wealth of the individual retirement account of the employees. Aggarwal et al.'s (2023) have carried out a research to determine the difference between old and new pension systems under various assumptions. It was found that the ROI and age of entry into the job exert the most influence on the pension amount. Hence, the present study has been undertaken to know the actual amount of pension payable to employees of various classes with different length of service and under the assumption of different rate of return on NPS. The present study will be useful in formulation of strategy to fulfill the twin objectives viz. to formulate a sustainable pension scheme from the government point of view and to compensate the employees against the losses incurred due to reduction in pension amount due to implementation of NPS. Further study may be undertaken to estimate the difference after considering the taxation on pension amount, family pension and commutation of pension. The financial burden of OPS on Government exchequer can be also be studied. Similarly some alternative plan can be formulated to minimize the loss of employees due to implementation of NPS.

Objectives of the Study

The present study has been undertaken to know the difference in Pension amount payable to an employee under Old Pension Scheme and National Pension System under different scenarios.

Research Methodology

The present study has been undertaken to make a comparison of the National Pension System and Old Pension System from the employee's perspective. It is a descriptive study undertaken to know the financial implication of NPS from the employee's point of view. The present study is based upon certain assumptions as mentioned below:

1. The employee has joined the Government services as on 01.01.2006. The effective length of service is taken as 20 years, 25 years, 30 years and 35 years before retirement. The Basic Pay taken for the study is inclusive of Grade Pay.
2. The employees get the benefit of Assured Career Progression (ACP) after 8, 16 and 24 years of regular service and get the benefit of one additional increment at the time of granting ACP.
3. The Dearness Allowance (DA) is assumed to be increased by 4% on a biannual basis.
4. The benefit of pay commission is given to employees after every ten years starting from 01.01.2006. A common multiple of two has been taken as a multiplier for the fixation of pay in the new pay scale after the implementation of the pay commission. The DA is taken as nil from the date of implementation of pay commission.
5. The employees invest the whole amount of Government Contribution for the purchase of annuity after the retirement. They purchase the annuity of repayment of Principal alongwith interest on monthly basis for a period of 20 years.
6. The employee will not get the commutation of pension and will prefer to take full pension in OPS.
7. The employees will take the benefit of OPS upto 20 years after the retirement and benefit of family pension is ignored.
8. The Central Government has changed the Employer's Contribution from 10 percent to 14 percent w.e.f. 01.04.2019 but the State governments have implemented the said provision from a later date. Hence, it is assumed that the effective date of implementation of the decision is 01.01.2022.
9. The XIRR has been taken for computing the total amount of corpus available at the time of Retirement.
10. The effect of taxation and deferment of annuity are not considered in the present study.

The XIRR and Present Value are used as main statistical tools in the present study. XIRR or eXtended Internal Rate of Return is a single rate of return that provides the current value of the entire investment when applied to each Systematic Investment Plan (SIP). It is used where many transactions happen during a period. Similarly Present value (PV) is the current value of a future sum of money or stream of cash flows given a specified rate of return. Future cash flows are discounted at the discount rate and the higher the discount rate, the lower the present value of the future cash flows. The calculations have been carried out in MS Excel with the help of various formula and logics.

Results and Discussion

NPS Trust is running various schemes e.g. Central Govt. Scheme, State Govt. Scheme, Corporate CG Scheme, Atal Pension Yojna, Swavalamban Scheme etc. to fulfill the needs of various stakeholders e.g. Central/State Government employees, Self-Employed, Professionals, Corporate Employees and general public. Various Pension Fund Managers have been selected to invest and manage the corpus received as deduction from the employee's salary alongwith the employer's contribution. The Pension Fund Managers invest these funds into various classes of securities like Equity, Corporate Debt, Government Securities and Alternative Investment Funds. The Central Govt. Scheme of NPS is meant for Central Government employees and State Govt. Scheme of NPS is meant for State Government employees.

Table 1 shows that the return since inception in Central Govt. Scheme and State Govt. Scheme is above 9% which is above the interest rates on PPF and other risk free Government Securities. The return on NPS also beats the benchmark return of 10 years period which is 8.94%. In Center Govt. segment, SBIPF is the top performer in terms of return since inception whereas LICPF is top performer in State Govt. segment of NPS. However, other Pension Funds are also performing well and there is only a little difference in the returns of all the Pension Funds. In brief, it can be said that the performance of NPS is better as compared to risk free government securities.

Table 1: Return on NPS Scheme since Inception to31st March, 2023

Name of Scheme	SBIPF	LICPF	UTIPF
Central Govt. Scheme	9.49	9.29	9.25
State Govt. Scheme	9.16	9.24	9.19

Source: - Retrieved from NPS Trust Website https://npstrust.org.in/return-of-nps-scheme on 08.04.2023

However, the question to decide is whether the Old Pension Scheme is better than New Pension Scheme or not. If yes, then how much is the difference in pension payout of these two schemes? The above issue is discussed in the following sections under four different scenarios according to the length of active service of a government employee and under the assumption of different rates of returns on investment in NPS/ Annuity.

Scenario 1: Comparative benefit under NPS and OPS if the length of active service is 20 years

If an employee having basic pay of Rs. 7000/- at initial appointment serves the government for 20 years then his initial pension in OPS will be Rs. 25800/- pm and it will increased upto Rs. 90816/- pm on the terminal date of pension whereas the employee will get a pension of Rs. 10163/- pm (Presuming that XIRR on NPS Contribution is 10% and rate of interest on Annuity is 8%) under NPS and it will remain same during the entire 20 years of pension.

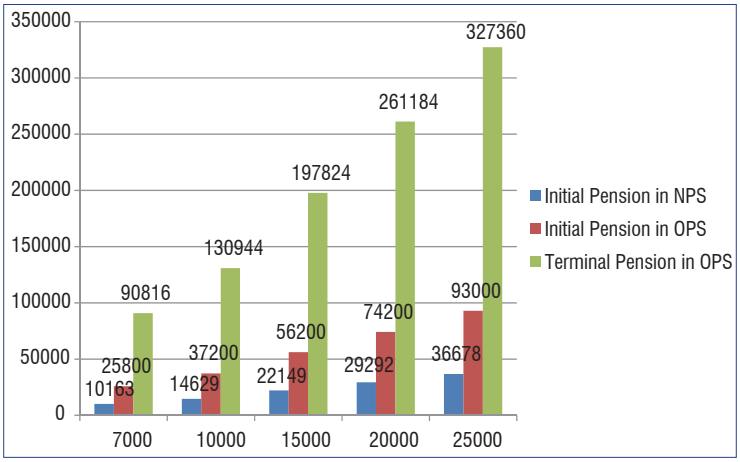
Similarly, if employees have a basic pay of Rs. 15000/- and Rs. 25000/- at initial appointment then their initial pension in OPS will be Rs. 56200/- and Rs. 93000/- pm respectively and it will increase upto Rs. 197824/- and Rs. 327360/- pm respectively on the terminal date of pensionwhereas the employee will get a pension of Rs. 22149/- and Rs. 36678/- pm respectively under NPS (Presuming that XIRR on NPS Contribution is 10% and the rate of interest on Annuity is 8%).

Table 2: Comparative benefit under NPS and OPS if the Length of Service is 20 Years

Particulars	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.
Initial Basic Pay as on 01.01.2006	7000	10000	15000	20000	25000
Gross Pay at the End of Service	45408	65472	98912	130592	163504
Initial Gross Pension (Basic + DA)	25800	37200	56200	74200	93000
Terminal Gross Pension (Basic + DA)	90816	130944	197824	261184	327360
Total Employee Contribution to NPS @ 10% XIRR	1123000	1616000	2446000	3235000	4050000
Total Employer Contribution to NPS @ 10% XIRR	1215000	1749000	2648000	3502000	4385000
PV of Pension @ 8% Discount Rate as on the date of Retirement	5366580	7737863	11689991	15434115	19344653
Pension under NPS if XIRR is 10% and rate of interest on Annuity is 8%	10163	14629	22149	29292	36678

Source: - Own Calculations

Figure 1: Difference in OPS and NPS if length of active service is 20 years.



Source: Data of Table 2

The initial pension under OPS is 2.5 times of pension under NPS whereas the terminal pension is around 8.9 times of pension under NPS for all categories of employees. So there is a wide gap in pension amount under NPS and OPS.

Scenario II: Comparative benefit under NPS and OPS if the Length of Service is 25 years

Table 3 shows that If some employees having a basic pay of Rs. 7000/-, Rs. 15000/- and Rs. 25000/- at initial appointment serves the government for 25 years then their initial pension in OPS will be Rs. 43120/-, Rs. 93940/- and Rs. 155260/- pm respectively and it will increase upto Rs. 167552/-, Rs. 365024/- and Rs. 603296/- pm respectively on the terminal date of pension. Whereas the employee will get a pension of Rs. 22291/-, Rs. 48597/- and Rs. 80382/- pm respectively (Presuming that XIRR on NPS Contribution is 10% and rate of interest on Annuity is 8%) under NPS for the entire 20 years of pension.

Table 3: Comparative benefit under NPS and OPS if the Length of Service is 25 Years

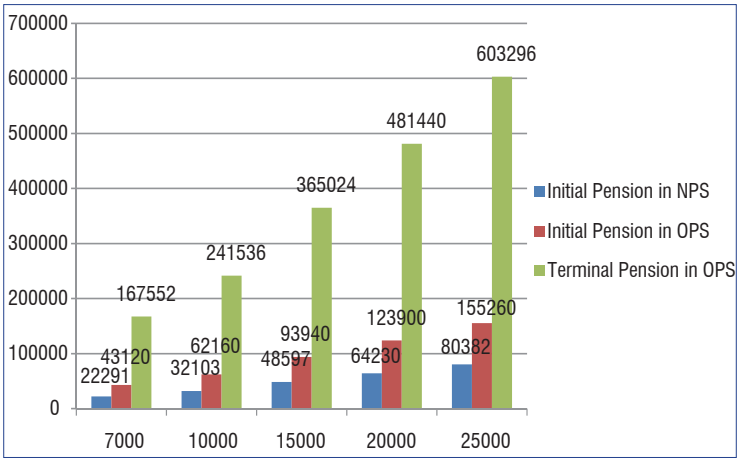
Particulars	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.
Initial Basic Pay as on 01.01.2006	7000	10000	15000	20000	25000
Gross Pay at the End of Service	83640	120632	182512	240720	301512
Initial Gross Pension (Basic + DA)	43120	62160	93940	123900	155260
Terminal Gross Pension (Basic + DA)	167552	241536	365024	481440	603296
Total Employee Contribution to NPS @ 10% XIRR	2315000	3330000	5045000	6670000	8350000
Total Employer Contribution to NPS @ 10% XIRR	2665000	3838000	5810000	7679000	9610000
PV of Pension @ 8% Discount Rate as on the date of Retirement	9048107	13043378	19711942	25998603	32579047
Pension under NPS if XIRR is 10% and rate of interest on Annuity is 8%	22291	32103	48597	64230	80382

Source: - Own Calculations

Further, the initial pension under OPS is 1.9 times of pension under NPS whereas the terminal pension is around 7.5 times of pension under NPS for all categories of employees. So there is a wide gap in pension amount under NPS and OPS.

Figure 2 shows that the absolute gap (ranged from Rs. 20829/- to Rs. 74878/-) between the initial pensions under both schemes widens with the increase in initial basic pay but in relative terms, it remains the same (1.9 times) for all category of employees. A similar analogy is found in the case of terminal pension under OPS and NPS.

Figure 2: Difference in OPS and NPS if length of active service is 25 years.



Source: Data of Table 3

Scenario III: Comparative benefit under NPS and OPS if the Length of Service is 30 years

Table 4 shows that, employees having Rs. 7000/-, Rs. 10000/-, Rs. 15000/-, Rs. 20000/- and Rs. 25000/- of starting basic pay at the time of first joining in government services and having 30 years of active government services will get a starting pension of Rs. 71400/-, Rs. 102800/-, Rs. 155600/-, Rs. 205200/- and Rs. 257200/- pm respectively under OPS whereas the employees will get a pension of Rs. 45318/-, Rs. 65259/-, Rs. 98758/-, Rs. 130585/- and Rs. 163440/- pm respectively under NPS (Presuming that XIRR on NPS Contribution is 10% and rate of interest on Annuity is 8%) for 20 years.

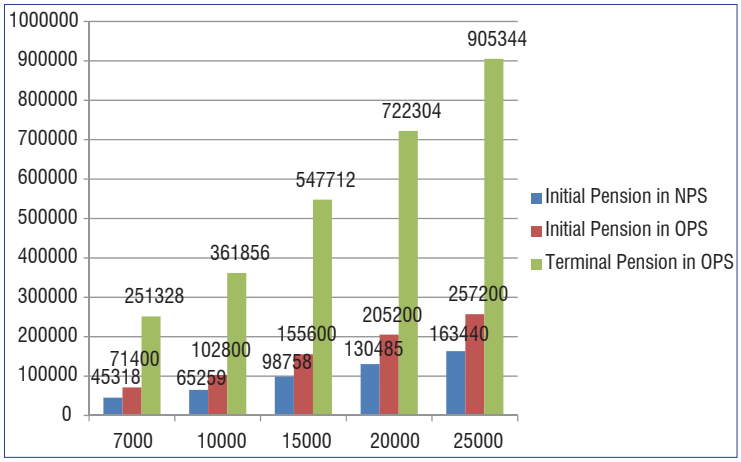
Table 4: Comparative benefit under NPS and OPS if the Length of Service is 30 Years

Particulars	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.
Initial Basic Pay as on 01.01.2006	7000	10000	15000	20000	25000
Gross Pay at the End of Service	125488	180928	273680	361152	452672
Initial Gross Pension (Basic + DA)	71400	102800	155600	205200	257200
Terminal Gross Pension (Basic + DA)	251328	361856	547712	722304	905344
Total Employee Contribution to NPS @ 10% XIRR	4535000	6530000	9880000	13050000	16350000
Total Employer Contribution to NPS @ 10% XIRR	5418000	7802000	11807000	15600000	19540000
PV of Pension @ 8% Discount Rate as on the date of Retirement	14851698	21383118	32365892	42683031	53499398
Pension under NPS if XIRR is 10% and rate of interest on Annuity is 8%	45318	65259	98758	130485	163440

Source: - Own Calculations

Figure 3 shows that the absolute difference in initial pension under the two schemes widens with the increase in basic pay and ranges from Rs. 26082/- in case of Basic pay of Rs. 7000/- to Rs. 93760/- in case of Basic Pay of Rs. 25000/-. Similarly, the absolute difference in terminal pension also widens with the increase in Basic Pay. But in relative terms, the initial pension in OPS is 1.57 times of pension under NPS and the terminal pension in OPS is 5.5 times of pension under NPS for all categories of employees.

Figure 3: Difference in OPS and NPS if length of active service is 30 years.



Source: Data of Table 4

Scenario IV: Comparative benefit under NPS and OPS if the Length of Service is 35 years

Table 5 shows that if the length of active government service is 35 years then employees having Rs. 7000/- , Rs. 10000/-, Rs. 15000/-, Rs. 20000/- and Rs. 25000/- of starting basic pay at the time of first joining in government services will get the initial pension ofRs. 115640/-, Rs. 166880/-, 252420/-, 333200/- and 417480/- pm respectively under OPS and Rs. 89332, Rs. 128644/-, Rs. 194723/-, Rs. 257038/- and Rs. 322029 pm respectively under NPS. The terminal pension under OPS will be Rs. 449344/-, Rs. 648448/-, Rs. 980832/-, Rs. 1294720/- and

Table 5: Comparative benefit under NPS and OPS if the Length of Service is 35 Years

Particulars	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.
Initial Basic Pay as on 01.01.2006	7000	10000	15000	20000	25000
Gross Pay at the End of Service	224672	324088	490416	647360	811104
Initial Gross Pension (Basic + DA)	115640	166880	252420	333200	417480
Terminal Gross Pension (Basic + DA)	449344	648448	980832	1294720	1622208
Total Employee Contribution to NPS @ 10% XIRR	8700000	12530000	18960000	25050000	31350000
Total Employer Contribution to NPS @ 10% XIRR	10680000	15380000	23280000	30730000	38500000
Total Employee Contribution to NPS @ 12% XIRR	11970000	17220000	26100000	34450000	43150000
Total Employer Contribution to NPS @ 12% XIRR	14320000	20620000	31200000	41250000	51660000
PV of Pension @ 8% Discount Rate as on the date of Retirement	24265361	35017343	52966669	69917171	87602105
Pension under NPS if XIRR is 10% and rate of interest on Annuity is 8%	89332	128644	194723	257038	322029

Source: - Own Calculations

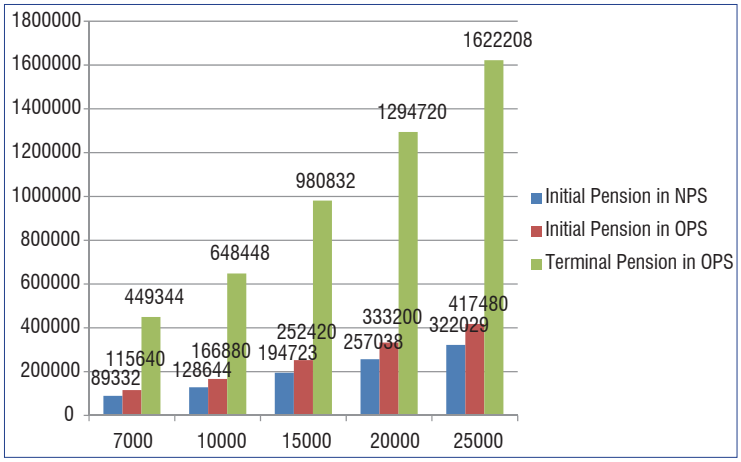
Rs. 1622208/- pm respectively whereas the pension will remain same under NPS for the entire period of 20 years. Figure 4 shows the same situation as depicted in the earlier figures. The absolute difference between initial pensions under the two schemes again widens with the increase in Basic Pay which ranges from Rs. 26308/- in case of Basic Pay of Rs. 7000/- to Rs. 95451/- in case of Basic Pay of Rs. 25000/- . Similar is the case for terminal pension under both the schemes. But in relative terms, the initial pension in OPS is 1.3 times of initial pension under NPS. The terminal pension under OPS is 5 times the terminal pension under NPS. Hence, still there is wide gap in pension amount payable under both the schemes.

Table 5 further shows that the initial pension amount under NPS beats the initial pension amount under OPS by a little margin only in case of return on investment is 12 percent and under the assumption that the employee will purchase the annuity with the amount of employer's contribution. However, within a year, the pension under OPS will surpass the pension under NPS due to increase in DA.

The pension under NPS can beat the pension under OPS only under the following circumstances:

1. The rate of return on investment should be approximately 12 percent.
2. The employee purchase the annuity with at least approximately 92 percent of the total amount of investment i.e. employee contribution plus employer contribution.

Figure 4: Difference in OPS and NPS if length of active service is 35 years.

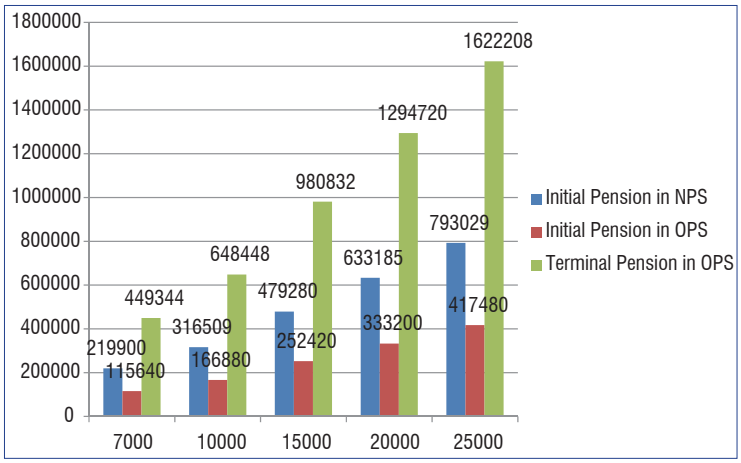


Source: Data of Table 5

3. The length of active service should be 35 years.

Figure 5 and Table 5 shows that if employees earn 12 percent return on their investment in NPS and invest full amount of funds accumulated in NPS (Employee Contribution as well as Employer Contribution) to purchase annuity then their initial pension under NPS will beat the initial pension under OPS. However, the terminal pension under OPS will remain higher as compared to pension under NPS. However, Present Value of funds accumulated in NPS at the time of retirement will surpass the present value (as on retirement date) of

Figure5: Difference in OPS and NPS if length of active service is 35 years and Annuity is purchased with the gross funds accumulated i.e. Employee's Contribution and Employer's Contribution



Source: Data of Table 5

pension receivable under OPS in 20 years.

The present value of pension amount under OPS as on retirement date @ 8 percent discount rate for employees having Basic pay of Rs. 7000/-, Rs. 10000/-, Rs. 15000/-, Rs. 20000/- and Rs. 25000/- will be Rs. 2.42 Cr., Rs. 3.5 Cr., Rs. 5.3 Cr., Rs. 7.0 Cr., and Rs. 8.76 Cr. respectively whereas the sum total of employee and employer contribution accumulated at 12 percent rate of return (XIRR) as on the date of retirement will be Rs. 2.6 Cr., Rs. 3.8 Cr., Rs. 5.7 Cr., 7.6 Cr. and Rs. 9.5 Cr. respectively. Hence, this is the situation in which NPS can beat the OPS however, employee will get nothing or very little amount in lump sum at the time of retirement.

Conclusion

From the above discussion it is clear that the pension payout under NPS is far less than that of OPS. However, the difference decreases with the increase in length of service and increase in rate of return. The relative difference in initial pension under OPS and NPS which was stood at 2.5 times in case of 20 years of service is decreased to 1.3 times when length of service is taken as 35 years. Similarly, the relative difference in terminal pension is also decreased from 8.9 times to 5 times in case length of service increases from 20 years to 35 years. Further the pension in NPS depends upon the rate of return and amount invested for purchase of annuity. If an employee have 35 years of active service, gets 12 percent XIRR on investment in NPS and invest approximately 92 percent of total accumulated funds in NPS to purchase the annuity, then the present value of future pension under OPS will become equal with the value of 92 percent of accumulated funds in NPS as on the date of retirement.

Further, the present study has been undertaken to find out the monetary difference in pension payout under OPS and NPS from employees' prospective only and it was found that there is significant difference between pension payout under both the schemes. Undoubtedly the payment of pension under OPS to all the government employees will creates massive pressure on the government exchequer and significant portion of the budget will be consumed in pension payout leaving very little amount for capital expenditure on infrastructure development which is very important for future development of the nation. The OPS for all government employees is not sustainable for long run. The government is not supposed to act like employment agency or businessmen. The main work of the government is to formulate and implement rules and regulations for establishment of 'Rule of Law' in the country and to provide good environment for growth of business in the country. Private sector will play a great role in employment generation in our nation in the coming decades and government's role will become very limited in employment generation. The government alone will not be able to generate the ample employment opportunities for its fast growing young population. Most of the jobs in future will be generated in private sector and young generation is required to focus upon the acquisition and updation of essential skills as per the demand of industries. However, government is supposed to act like a model employer and private sector is also supposed to follow the suit. Hence, government should also focus on providing sufficient old age income to retired employees as a model employer and should make rules and regulations for private sector to provide sufficient amount as old age social security to the retirees. The government should formulate sustainable policies for old age social security to maintain the balance between twin policy objectives i.e. minimum burden on public exchequer and sufficient income in old age. Further apart from the current study, other aspects like impact of pension payout on public exchequer under OPS, determination of different rates of contribution towards NPS for equalization/close approximation of the pension payout under NPS with pension under OPS, different types of hybrid pension schemes etc. may also be studied in future to formulate a acceptable pension plan for both, employer and employees. TJ

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Appendix

(1) Comparative benefit under NPS and OPS if the Length of Service is 20 Years

Particulars	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.
Initial Basic Pay as on 01.01.2006	7000	10000	15000	20000	25000
Gross Pay at the End of Service	45408	65472	98912	130592	163504
Initial Gross Pension (Basic + DA)	25800	37200	56200	74200	93000
Terminal Gross Pension (Basic + DA)	90816	130944	197824	261184	327360
Original Employee Contribution to NPS	509316	733278	1110390	1467096	1837554
Original Employer Contribution to NPS	586200	844146	1278114	1688340	2114646
Total Employee Contribution to NPS @ 8% XIRR	943000	1357000	2055000	2718000	3400000
Total Employer Contribution to NPS @ 8% XIRR	1032000	1485000	2249000	2974000	3725000
Total Employee Contribution to NPS @ 10% XIRR	1123000	1616000	2446000	3235000	4050000
Total Employer Contribution to NPS @ 10% XIRR	1215000	1749000	2648000	3502000	4385000
Total Employee Contribution to NPS @ 12% XIRR	1348000	1938000	2935000	3882000	4865000
Total Employer Contribution to NPS @ 12% XIRR	1444000	2076000	3143000	4158000	5210000
PV of Pension @ 8% Discount Rate as on the date of Retirement	5366580	7737863	11689991	15434115	19344653
PV of Pension @ 10% Discount Rate as on the date of Retirement	4463535	6435798	9722894	12836991	16089475
Pension under NPS if XIRR is 8% and rate of interest on Annuity is 8%	8632	12421	18812	24876	31157
Pension under NPS if XIRR is 10% and rate of interest on Annuity is 8%	10163	14629	22149	29292	36678
Pension under NPS if XIRR is 12% and rate of interest on Annuity is 8%	12078	17364	26289	34779	43579

Source: - Own Calculations

(2) Comparative benefit under NPS and OPS if the Length of Service is 25 Years

Particulars	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.
Initial Basic Pay as on 01.01.2006	7000	10000	15000	20000	25000
Gross Pay at the End of Service	83640	120632	182512	240720	301512
Initial Gross Pension (Basic + DA)	43120	62160	93940	123900	155260
Terminal Gross Pension (Basic + DA)	167552	241536	365024	481440	603296
Original Employee Contribution to NPS	913368	1315488	1990836	2628546	3292098
Original Employer Contribution to NPS	1151880	1659240	2510748	3314370	4151016
Total Employee Contribution to NPS @ 8% XIRR	1870000	2690000	4072000	5385000	6740000
Total Employer Contribution to NPS @ 8% XIRR	2195000	3160000	4780000	6315000	7908000
Total Employee Contribution to NPS @ 10% XIRR	2315000	3330000	5045000	6670000	8350000
Total Employer Contribution to NPS @ 10% XIRR	2665000	3838000	5810000	7679000	9610000
Total Employee Contribution to NPS @ 12% XIRR	2905000	4182000	6330000	8370000	10480000
Total Employer Contribution to NPS @ 12% XIRR	3287000	4730000	7153000	9460000	11850000
PV of Pension @ 8% Discount Rate as on the date of Retirement	9048107	13043378	19711942	25998603	32579047
PV of Pension @ 10% Discount Rate as on the date of Retirement	7506692	10821333	16353862	21569554	27028967
Pension under NPS if XIRR is 8% and rate of interest on Annuity is 8%	18360	26432	39982	52821	66146
Pension under NPS if XIRR is 10% and rate of interest on Annuity is 8%	22291	32103	48597	64230	80382
Pension under NPS if XIRR is 12% and rate of interest on Annuity is 8%	27494	39564	59831	79127	99118

Source: - Own Calculations

(3) Comparative benefit under NPS and OPS if the Length of Service is 30 Years

Particulars	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.
Initial Basic Pay as on 01.01.2006	7000	10000	15000	20000	25000
Gross Pay at the End of Service	125488	180928	273680	361152	452672
Initial Gross Pension (Basic + DA)	71400	102800	155600	205200	257200
Terminal Gross Pension (Basic + DA)	251328	361856	547712	722304	905344
Original Employee Contribution to NPS	1552728	2237784	3385902	4469172	5598858
Original Employer Contribution to NPS	2046972	2950452	4463826	5891256	7380474
Total Employee Contribution to NPS @ 8% XIRR	3515000	5065000	7659000	10120000	12680000
Total Employer Contribution to NPS @ 8% XIRR	4298000	6191000	9368000	12372000	15500000
Total Employee Contribution to NPS @ 10% XIRR	4535000	6530000	9880000	13050000	16350000
Total Employer Contribution to NPS @ 10% XIRR	5418000	7802000	11807000	15600000	19540000
Total Employee Contribution to NPS @ 12% XIRR	5960000	8580000	12990000	17170000	21500000

Particulars	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.
Total Employer Contribution to NPS @ 12% XIRR	6966000	10030000	15177000	20060000	25130000
PV of Pension @ 8% Discount Rate as on the date of Retirement	14851698	21383118	32365892	42683031	53499398
PV of Pension @ 10% Discount Rate as on the date of Retirement	12352560	17784933	26919609	35500670	44496929
Pension under NPS if XIRR is 8% and rate of interest on Annuity is 8%	35950	51784	78358	103484	129648
Pension under NPS if XIRR is 10% and rate of interest on Annuity is 8%	45318	65259	98758	130485	163440
Pension under NPS if XIRR is 12% and rate of interest on Annuity is 8%	58266	83895	126947	167790	210197

Source: - Own Calculations

(4) Comparative benefit under NPS and OPS if the Length of Service is 35 Years

Particulars	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.	Amount In Rs.
Initial Basic Pay as on 01.01.2006	7000	10000	15000	20000	25000
Gross Pay at the End of Service	224672	324088	490416	647360	811104
Initial Gross Pension (Basic + DA)	115640	166880	252420	333200	417480
Terminal Gross Pension (Basic + DA)	449344	648448	980832	1294720	1622208
Original Employee Contribution to NPS	2660628	3836292	5804166	7660860	9598050
Original Employer Contribution to NPS	3598038	5188362	7849392	10359624	12979350
Total Employee Contribution to NPS @ 8% XIRR	6500000	9360000	14160000	18700000	23420000
Total Employer Contribution to NPS @ 8% XIRR	8180000	11780000	17830000	23540000	29490000
Total Employee Contribution to NPS @ 10% XIRR	8700000	12530000	18960000	25050000	31350000
Total Employer Contribution to NPS @ 10% XIRR	10680000	15380000	23280000	30730000	38500000
Total Employee Contribution to NPS @ 12% XIRR	11970000	17220000	26100000	34450000	43150000
Total Employer Contribution to NPS @ 12% XIRR	14320000	20620000	31200000	41250000	51660000
PV of Pension @ 8% Discount Rate as on the date of Retirement	24265361	35017343	52966669	69917171	87602105
PV of Pension @ 10% Discount Rate as on the date of Retirement	20131580	29051882	43943391	58006264	72678427
Pension under NPS if XIRR is 8% and rate of interest on Annuity is 8%	68421	98533	149137	196898	246666
Pension under NPS if XIRR is 10% and rate of interest on Annuity is 8%	89332	128644	194723	257038	322029
Pension under NPS if XIRR is 12% and rate of interest on Annuity is 8%	119778	172474	260969	345032	432105

Source: - Own Calculations

Performance Appraisal of Public and Private Sector Life Insurance Companies in India

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Abstract

Uncertainty causes us to be afraid of taking risks in our daily lives. The fear of risk can be addressed by taking all precautions to avoid it. The primary aim of life insurance is to financially protect the earning person or dependents. So, dependents can maintain a minimal standard of living in the event of an untimely demise and support timely financial needs and goals. The present study is concentrated on the performance of public and private life insurance companies in India. The study covers the period from 2001 to 2022 and uses secondary data that is analyzed by descriptive statistics to determine the growth rate. The study on the performance of public and private life insurance companies in India has found that public-sector insurance company performed better than private-sector insurance companies in terms of customer response. While private-sector insurance companies focused more on claim settlement, rather than attracting new customers. On the other hand, the public-sector company was more successful in generating positive responses from policyholders. However, both sectors have faced significant challenges and are striving to adapt and innovate to meet the changing needs of their customers. Looking forward, insurers see several opportunities in the medium- to long-term, including increased demand for life insurance products as people become more aware of the importance of financial protection in uncertain times.

Keywords

Public Life Insurance, Private Life Insurance, Premium, and Claims.

1. Introduction

Insurance is a risk management tool that helps protect individuals and businesses from financial losses. It works by pooling the risks of many people together so that if one person experiences a loss, the others can help pay for it. This helps spread the risk and makes it more affordable for everyone.

Life insurance is a legally binding agreement between an insurer and an insured, wherein the latter promises to compensate the insured family with a predetermined sum (the death benefit) in the unfortunate event of an unexpected death. However, if the endowment policy matures during the life of the policyholder, a sum known as the maturity benefit is provided to the insured.

The insurance industry in India has gone through a major transformation in recent years. The government has opened up the market to private players, and there has been a significant increase in the number of insurance companies operating in the country. This has led to increased competition and innovation and has made insurance more accessible and affordable for Indian consumers.

This research uses secondary data, in which statistical methods like mean, covariance and growth rate are examined. The objective of the current study is to analyze the development and operation of Indian life insurance companies (both private and public insurance providers) in India.

The Origin of Insurance

Although the origins of insurance were not widely recognized when insurance transactions first began, historical evidence suggests that the earliest form of insurance was likely maritime insurance. Insurance has played a significant role in history, as evidenced by its use in ancient Buddhist societies, where it helped to support the families of deceased individuals by providing shelter and other resources. Over time, insurance has evolved into a variety of forms, including marine insurance, fire insurance, life insurance, and many others. Despite being a relatively new industry, the concept of insurance has been ingrained in Indian culture for centuries.

The first life insurance business, known as "the Oriental Life Insurance Company," was established in Calcutta in 1818. Life insurance transactions commenced in the Madras Presidency in 1829 with the Madras Equitable. The Triton Insurance Company was founded in Calcutta in 1850, while the Bombay Mutual Life Assurance Society, an Indian company, was established in 1870. This company offered Indians the opportunity to receive insurance protection at standard premium rates. General insurance was introduced to India during the period of British rule. India Mercantile Insurance Ltd. was founded in 1907, representing a significant milestone as a fully-fledged general insurance company.

The Snapshot of Insurance Development in India

There are many insurance companies in the country, which has raised competition and resulted in repeated calls for the business to be nationalized. As a result, more than 245 insurance companies and provident societies were combined to establish the state-owned Life Insurance Corporation of India (LICI). The corporation's motto, "yogakshemam vahamyaham," is written in Sanskrit and translates to "Your welfare is our responsibility" in English.

The nationalization of India's insurance sector occurred in 1956, which resulted in the formation of the Life Insurance Corporation (LIC) of India as the only public sector life insurance company. Subsequently, in 1972, the General Insurance Company (Nationalization) Act was enacted, leading to the nationalization of the general insurance business in India.

The LIC had a captive market over the life insurance market in India for a very long period. However, in 1993, the Indian government constituted the Malhotra Committee, chaired by RN Malhotra, a former governor of the RBI. The committee submitted a report containing several recommendations, including establishing an insurance regulator and allowing pvt enterprises to enter the life insurance market. To regulate and develop the insurance industry, safeguard financial stability, and enhance customer satisfaction, in 1999 the Insurance Regulatory and Development Authority of India (IRDAI) was established.

As per the Malhotra Committee's recommendations, private insurers were allowed access to the market. Additionally, foreign firms were allowed to acquire up to a 26% share in Indian insurance firms. Currently, Finance Minister Nirmala Sitharaman announced increasing the FDI limit in insurance companies to 74% with effect from August 2021 in Budget FY21. The raising of FDI limits in the insurance sector and the approval of 100% FDI in insurance intermediaries were also announced in the Budget.

The life insurance sector in India has observed an increase in the number of companies offering services, with each company striving to enhance its products and services to make insurance more accessible and affordable. At present, there are 24 life insurance companies operating in India, of which only the Life Insurance Corporation of India (LICI) is a public sector company and the remaining 23 companies are privately owned. The following is a list of insurance companies presently operating in India.

INDIAN LIFE INSURANCE COMPANIES (As of March 31, 2022)

S. No.	Insurer	Partners from abroad
	Public Sector	
1	Life Insurance Corporation of India	---
	Private Sector	
2	Ageas Federal Life Insurance Company Ltd.	Aegis Insurance International NV Netherlands
3	Bajaj Allianz Life Insurance Company Ltd.	Allianz, SE Germany
4	Aegon Life Insurance Company Ltd.	Aegon India Holdings BV, Netherlands
5	Bharti AXA Life Insurance Company Ltd.	AXA India Holdings, France
6	Edelweiss Tokio Life Insurance Company Ltd.	Tokio Marine & Nichido Fire Insurance Company Ltd. Japan
7	Canara HSBC OBC Life Insurance Company Ltd.	HSBC Insurance (Asia Pacific) Holdings Ltd. UK
8	Exide Life Insurance Company Ltd.	---
9	Future Generali India Life Insurance Company Ltd.	Participatie Maatschapij Graafsschap Holland NV, Netherlands
10	HDFC Life Insurance Company Ltd.	Standard Life (Mauritius Holdings) 2006, Ltd., UK
11	Pramerica Life Insurance Company Ltd.	Prudential International Insurance Holdings Ltd. USA
12	India First Life Insurance Company Ltd.	Carmel point investments India Pvt. Ltd.
13	Kotak Mahindra Life Insurance Ltd.	---
14	Aviva Life Insurance Company India Ltd.	Aviva International Holdings Ltd., UK
15	Star Union Dai-ichi Life Insurance Company Ltd.	Dai-ichi Life Insurance Company Ltd. Japan
16	Aditya Birla Sunlife Insurance Company Ltd.	Sun Life Financial (India) Insurance Investment Inc, Canada
17	TATA AIA Life Insurance Company Ltd.	American International Assurance Company (Bermuda) Ltd.
18	ICICI Prudential Life Insurance Company Ltd.	Prudential Corporation Holdings Ltd. UK
19	Shriram Life Insurance Company Ltd.	Sanlam Emerging Markets (Mauritius) Limited
20	MaxLife Insurance Company Ltd.	Mitsui Sumitomo Insurance Company Ltd., Japan
21	PNB Metlife India Insurance Company Ltd.	Metlife International Holdings Inc, USA
22	SBI Life Insurance Company Ltd.	BNP Paribas Cardif, France
23	Reliance Nippon Life Insurance Company Ltd.	Nippon Life Insurance Company Ltd. Japan
24	Sahara India Life Insurance Company Ltd.	

Source: https://irdai.gov.in/handbook-of-indian-insurance

2. Review of Literature

Vikas Sharma (2013) researcher collected secondary data from annual reports to conduct the study, where financial performance was measured using the solvency ratio, lapse ratio, and death claims of servicing. The author concluded that the entry of private insurance companies has intensified competition, and found that private insurers have higher solvency and lapse ratios compared to LIC. Moreover, the study revealed that the LIC tends to favor death claims more than private insurance companies.

Krishna Kant Mishra et al. (2015) conducted a comparison of Indian life assurance companies with private insurance companies. The public-sector company has undertaken a large variety of measures to compete with pvt companies, but it still needs to review its current situation after changing its strategy and principles in the following reform period. The author concluded that the LIC holds a majority of the new business premium and market share as compared to the private sector, whereas private insurers hold.

Dr. Vikas Gairola (2016) determined the performance and investigated the issue of fresh policies, total insurance premiums, and share of the market in both the private and public markets. The author observed that many private insurance companies have designed attractive products with different features to attract investors' attention. The public-sector company developed new strategies, which include improving customer service

and marketing communications. Finally, the author concluded that the public and private life insurance industries differ significantly.

Dr. Nilam Panchal (2018) carried out a comparative analysis of pvt and publicly owned insurance providers in the nation of India. The author emphasizes that policyholder responses and the desire to buy additional policies are essential to an insurance company's profitability. Hence, insurance businesses have to improve the standard of their goods at low costs because their survival depends on profitability, productivity, and better service. Finally, the study concluded that private and state life insurance companies operate very differently from one another. When compared to private life insurance firms, LIC collects more insurance premiums and makes more money.

Kalyani et al. (2019) determined how well the identified private and public life insurance firms in India performed. The study reveals that the financial background of LIC is more stable than that of Pvt life insurance firms. However, the performance of the LIC is less liquid as compared to Pvt life insurance firms. The authors suggest the LIC has to strengthen its liquidity position. Pvt life insurance firms should increase their profitability to sell more policies, and they should also take the necessary steps to reduce their losses.

Amish Patel et al. (2019) attempted a comparison and contrast examination of India's life assurance in the private and public insurance sectors. The author used descriptive statistical tools and secondary data to conduct this study. After liberalization, life insurance sales increased, but many Indians are still without coverage. Therefore, it becomes essential to figure out how well the life insurance industry meets the client some needs both before and after policy sales. Compared to their public-sector counterparts, private life insurance businesses hold a larger market share when it comes to premiums and newly granted policies. In contrast, compared to private life insurance businesses, the overall premium for public life insurance is higher.

Dr. Praveen Singh (2020) examined the rise in rates of state and private life insurance businesses in India. The IRDA's yearly reports were the source of the study's data. The least squares approach and linear trend analysis have been used to predict the new business premium and the total premium of both private and public businesses for the year 2020. As per the study's findings, liberalization has benefited the Indian insurance industry. It is anticipated that life Insurers' first-year and overall premiums will increase steadily, and LIC will maintain its market-leading position.

Vinod Kumar Mayala et al. (2020) analyzed and compared the financial performance of both government and private life insurance organizations. The author collected secondary data for a period of seventy years, i.e., 2001–2017. A t-test was used. The author concluded that the number of offices, the issuing of policies, and premium vary significantly between the public and private sectors.

Neha Tomar (2022) discussed the variables related to the market share of the premium, the issue of fresh policies, and the premiums of the life insurance sector. The study collected secondary data for a period of twenty years, i.e., from 2000–01 to 2019–20. The author concluded that the performance of pvt life insurance is showing positive growth and will continue with new and innovative products and better customer service.

3. Objective

The present study is conducted to evaluate the performance of private and public insurance companies working in India.

4. Research Methodology

The study is mainly descriptive, and the primary aim of the research study is to measure the performance of India's private and public sector life insurance businesses. For evaluating the performance of Indian life insurance companies, secondary data has been obtained for 2001–2022 from the websites of Indian life insurance companies, IRDA, annual reports, and handbooks. The Mean, Coefficient of variation, and Growth rate have been calculated.

5. Analysis of Secondary Data

The researcher has analyzed and interpreted the data on the **'Performance of Indian Private and Public Sector Life Insurance Companies** based on four important parameters.

A. Number of Offices

A good number of working offices to reach out to the public to cater to their needs are essential. Whatever the technological advancement may be, offices at the nearest location attract more customers, and face-to-face services are more effective. In this context, the study attempts to evaluate the development of private and public insurance companies' insurance branches (offices) to reach out to the public for their insurance needs.

Chart 1: Number of Life Insurance Offices

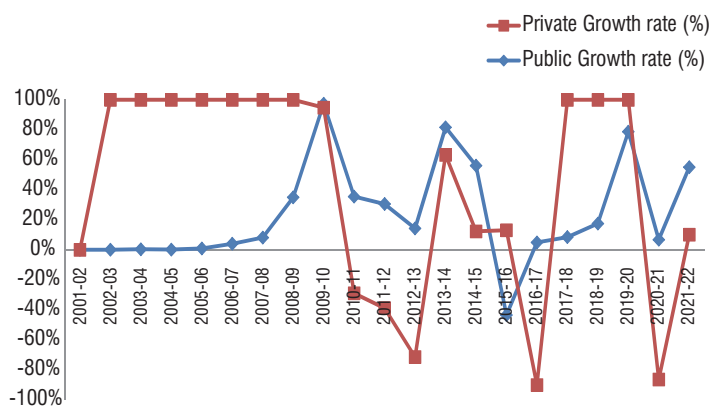


Table 1: Number of Life Insurance Branches

Year	Public	Growth rate (%)	Pvt	Growth rate (%)
2001-02	2190	-	116	-
2002-03	2191	0.0457	254	118.9655
2003-04	2196	0.2282	416	63.7795
2004-05	2199	0.1366	804	93.2692
2005-06	2220	0.9550	1645	104.6020
2006-07	2301	3.6486	3072	86.7477
2007-08	2522	9.6045	6391	108.0404
2008-09	3030	20.1427	8785	37.4589
2009-10	3250	7.2607	8768	-0.1935
2010-11	3371	3.7231	8175	-6.7632
2011-12	3455	2.4918	7712	-5.6636
2012-13	3526	2.0550	6759	-12.3574
2013-14	4839	37.2377	6193	-8.3740
2014-15	6156	27.2164	4877	-21.2498
2015-16	4892	-20.5328	6179	26.6967
2016-17	4897	0.1022	6057	-1.9744
2017-18	4908	0.2246	6204	2.4269
2018-19	4932	0.4890	6347	2.3050
2019-20	4955	0.4663	6355	0.1260
2020-21	4970	0.3027	6090	-4.1699
2021-22	4985	0.3018	6075	-0.2463
Mean	4.8050		29.1713	
CV	2.4704		1.6297	

Source: Information accessed and compiled from IRDA annual reports.

Table-1 shows the number of life insurance branches in India over 21 years, from 2001-02 to 2021-22. The growth rate (%) for each year is also provided, along with the mean and coefficient of variation. It is observed that the number of life insurance branches in 2001-02; there were 2190 public insurance offices and 116 private insurance offices. The growth rate of the number of pvt life insurance offices was 118.9655% in 2002-03. But during the subsequent study period, the growth rate in the number of offices in the private sector was substantially decreased. This shows that the private insurance sector in India still is not on a sound footing. It is noted that the growth rate of public life insurance branches increased over some time amid internal inconsistency to reach a negative growth in 2015–16 (–20.5328%), and thereafter, the growth rate began to increase. The drastic difference in number cannot reveal the real story of growth. It requires further statistical investigation.

The mean of the growth number of life insurance offices in India from 2001-2022 is 4.8050 for the LIC insurance company and 29.1713 for the pvt insurance companies. This indicates that on average, the number of private insurance offices has expanded significantly more quickly than the number of public insurance offices over the given period. The CV for the number of public life insurance offices is 2.4704, while the CV for private life insurance offices is 1.6297. It indicates that private life insurance companies have more consistency in opening offices than public company but this is not revealed by the base numbers.

B. New Business Premium

The volume of new business premium reflects the effective efforts of insurance businesses. It's an exhibition of insurance company how well they understand the insurance needs of potential policy takers. The volume indicates a strong foundation for prosperity. It conveys the message of a win-win relationship between policy issuers and policy-holders leading to higher penetration. Hence, the researcher examines premium for new businesses of both private and LIC sector insurance companies.

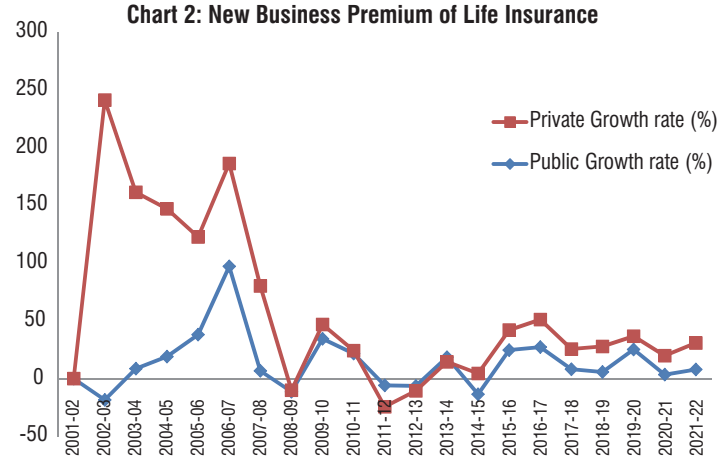
Table-2 shows the new business premium for life insurance in crores (Rs.) and the growth rate for both the private and public sectors over the years from 2001-02 to 2021-22. The entire primia that an insurance firm received from new policies bought by clients during a specific year is referred

Table 2:New Business Premium of Life Insurance (Rs. in crore)

Year	Public	Growth rate (%)	Private	Growth rate (%)
2001-02	19589		269	
2002-03	15977	-18.4392	966	259.6477
2003-04	17348	8.5803	2441	152.7426
2004-05	20653	19.0541	5565	127.9898
2005-06	28516	38.0709	10270	84.5546
2006-07	56224	97.1659	19426	89.1555
2007-08	59997	6.7107	33716	73.5641
2008-09	53179	-11.3631	34152	1.2933
2009-10	71522	34.4925	38372	12.3566
2010-11	87012	21.6583	39369	2.5973
2011-12	81862	-5.9191	32104	-18.4529
2012-13	76612	-6.4132	30750	-4.2175
2013-14	90809	18.5310	29516	-4.0130
2014-15	78508	-13.5460	34822	17.9767
2015-16	97892	24.6905	40874	17.3798
2016-17	124583	27.2658	50619	23.8416
2017-18	134672	8.0982	59482	17.5092
2018-19	142336	5.6909	72667	22.1664
2019-20	178276	25.2501	80986	11.4481
2020-21	184430	3.4520	94270	16.4028
2021-22	198932	7.8631	115936	22.9829
Mean	14.5447		46.3463	
CV	1.7304		1.4695	

Source: Information accessed and compiled from IRDA annual reports.

Chart 2: New Business Premium of Life Insurance



to as a new business premium for life insurance. It does not include renewal premium or extra premium payments made in later years. It includes the first-time premium and one-time premium payments received from policyholders. The highest to lowest growth rates were 97.1659% to -18.4392% and 259.6477% to -18.45295% for LIC and pvt insurance companies, respectively.

The mean value for the public life insurance premium growth rate is 14.5447, while the mean value for the private life insurance premium growth rate is 46.3463. The average growth rate of premium of Pvt life insurance companies is higher as compared to public life insurance companies during the study period. This indicates that public life insurance company failed to mobilize the premium, whereas private life insurance companies are comparatively successful in attracting new policyholders. The Coefficient of Variation (CV) for the public sector is 1.7304 and for the private sector is 1.4695, which indicates that there is less variability in the growth rates for the Pvt sector as compared to the LIC sector.

C. The Total Life Insurance Premium

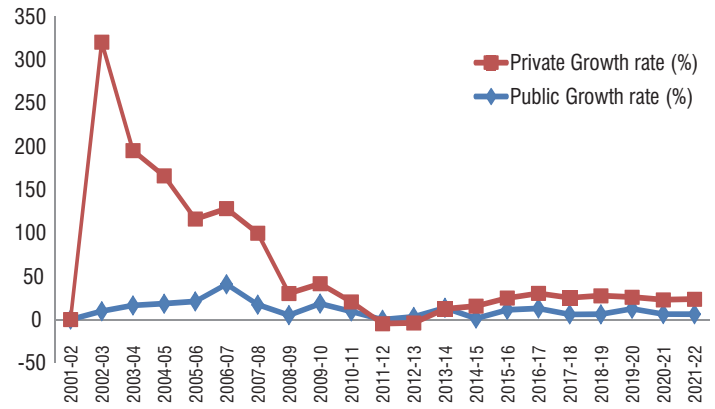
Total life insurance premium is the sum of money that policyholders pay to insurance companies for life insurance coverage during a specific period, typically a year. This includes premium paid for various types of life insurance policies. It is a symbol of the market's desire for life insurance products. The total life insurance premium indicates a strong demand for life insurance products and suggests that consumers are concerned about their financial security. This can indicate a healthy life insurance organization with a healthy mix of private and public sector insurance companies offering competitive products and services to meet the needs of consumers. Hence, the researcher examines the total life insurance premium of both LIC and pvt sector insurance companies.

Table 3: The Total Life Insurance Premium (Rs. In Crore)

Year	Public	Growth rate (%)	Private	Growth rate (%)
2001-02	49822		273	
2002-03	54628	9.6475	1119	310.5889
2003-04	63533	16.3009	3120	178.8349
2004-05	75127	18.2484	7728	147.6504
2005-06	90792	20.8512	15084	95.1928
2006-07	127823	40.7861	28253	87.3101
2007-08	149790	17.1856	51561	82.4989
2008-09	157288	5.0057	64497	25.0885
2009-10	186077	18.3035	79370	23.0591
2010-11	203473	9.3489	88165	11.0814
2011-12	202889	-0.2871	84183	-4.5170
2012-13	208804	2.9150	78399	-6.8707
2013-14	236942	13.4762	77359	-1.3260
2014-15	239668	1.1502	88434	14.3163
2015-16	266444	11.1724	100499	13.6425
2016-17	300481	12.7746	117989	17.4034
2017-18	318223	5.9045	140586	19.1517
2018-19	337505	6.0592	170627	21.3682
2019-20	379390	12.4100	193521	13.4174
2020-21	403287	6.2988	225444	16.4964
2021-22	428025	6.1342	264589	17.3633
Mean	11.6843		54.0875	
CV	0.7817		1.4623	

Source: Information accessed and compiled from IRDA annual reports.

Chart 3: The Total Life Insurance Premium



LIC and Pvt Life Insurance Premium: The table-3 shows that the LIClife insurance premium has raises steadily from Rs. 49,822 crores in 2001-02 to Rs. 4, 28,025 crores in 2021-22. Similarly, private life insurance premium has grown from Rs. 273 crores in 2001-02 to Rs. 2, 64,589 crores in 2021-22. The public life insurance company growth rate premium shows a gradual increase still in 2006–07, followed by a decrease to (–0.287%) in 2011–12, and after that, it starts fluctuating in the collection of premium due to nonpayment by policyholders and other untoward incidents. While the premium of private life insurance companies gradually decreased to a negative value from 2012 to 2014 and then began fluctuating in growth rate due to the low level of income of the majority of the population, which created a delay in paying the insurance premium and sometimes that may cause the lapse of the policy. Hence the data shows that both public and private sectors have experienced fluctuations in growth rates over the years.

The mean value for the public life insurance premium growth rate is 11.6843, while the mean value for the private life insurance premium growth rate is 54.0875. The average growth rate of the total premium for LIC is lower than that of Pvt life insurance. This indicates that private life insurance companies may be growing at a faster rate than public life insurance company in terms of premium income. An additional examination might be necessary to comprehend the factors contributing to the variations in the expansion rates of the LIC and Pvt life insurance industries. The coefficient of variation (CV) for the growth rate of premium in a public life insurance company 0.7817 is lower than the CV for private life insurance companies 1.4623. The lower CV of a public life insurance company indicates that their growth rate of premium is less variable or more stable compared to that of private-sector companies.

D. The Total Life Insurance Claims

An insurance claim refers to a formal demand for reimbursement for losses covered under an insurance policy. Total life insurance claims mean the settlement of claims to policyholders that include death claims, maturity claims, surrender or withdrawal claims, and other claims in the life insurance sector. It represents the amount of money paid out by insurance companies to beneficiaries or policyholders in the event of the policyholder's death or the maturity of the policy. It reflects the effectiveness of insurance companies in fulfilling their obligations to policyholders and their beneficiaries, understanding the insurance needs of their policyholders, and managing their risks. The amount of total life insurance claims can also indicate the level of financial protection provided by the insurance industry to policyholders. Hence, the researcher examines the total life insurance claims of both private and public sector insurance companies.

Table 4:The Total Life Insurance Claims (Rs. in Crore)

Year	Public	Growth rate (%)	Private	Growth rate (%)
2001-02	17476.6		2.88	
2002-03	20530.4	17.4733	33.96	1079.17
2003-04	23930.3	16.5606	81.78	140.813
2004-05	28455.7	18.9106	244.86	199.413
2005-06	33956.8	19.3321	1307.61	434.024
2006-07	53298.4	56.9595	2470.27	88.9149
2007-08	56567.8	6.13409	5212.24	110.999
2008-09	52478.1	-7.2296	5892.15	13.0445
2009-10	79130.7	50.7879	16434.3	178.918
2010-11	111274	40.6206	31232	90.0421
2011-12	117497	5.5925	35635	14.0977
2012-13	134922	14.8302	57571	61.5575
2013-14	158081	17.1647	58994	2.47173
2014-15	144126	-8.8279	67054.5	13.6633
2015-16	141201	-2.0293	60565.1	-9.6779
2016-17	166877	18.1839	69463	14.6916
2017-18	196718	17.8821	81235.6	16.948
2018-19	249285	26.722	80393	-1.0372
2019-20	252761	1.39439	98706	22.7793
2020-21	285122	12.803	113651	15.1409
2021-22	353438	23.9603	148659	30.8031
Mean	17.3612		125.8386	
CV	0.9870		1.9659	

Source: Information accessed and compiled from IRDA annual reports.

Chart 4: The Total Life Insurance Claims

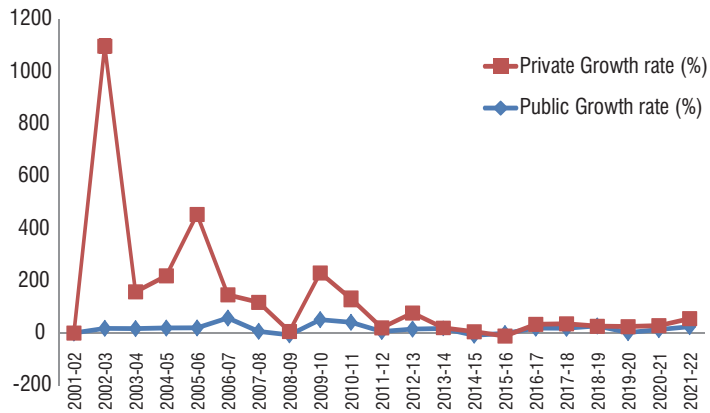


Table-4 shows the total Life Insurance Claims of Private and Public Insurance Companies in India for the study period. The total life insurance claims performance shows positive growth from year to year in terms of Rs in crore in the private and public sectors. The highest to lowest growth rates were 56.95% to -8.82% and 1079.17% to -9.67% for private and public insurance companies respectively. The performance measured by growth rate is volatile for claim settlements due to delays in claim notification, incorrect fact disclosure, and avoiding medical tests, all of which will affect the public insurance company growth rate. While the growth rate of Pvt life insurance companies following privatization is more in claim settlement i.e.2002-03 (1079.1667%) is high due to the introduction of the private sector in India to capture clients, followed by a period there is a fluctuation in claim settlement due to incorrect and timely information.

The growth rate of private sector companies claims mean values of 125.8386 is higher than the growth rate of public sector Company claims mean values of 17.3612. This indicates that private sector companies' settlement of claims is more as compared to LIC sector Company. The CV of the LIC sector growth rate is 0.9870, which indicates the settlement of claims is in good consistent as compared to private life insurance companies is 1.9659.

6. Conclusion

The Indian insurance sector has undergone significant changes since the liberalization of the Indian economy in the 1990s. The government's decision to allow private players to enter the insurance sector has led to increased competition and innovation. As a result, the insurance market has grown significantly in the last few decades, with both life and general insurance playing a crucial role in the economy.

The performance of private and public sector life insurance companies in India has been analyzed in this article. The analysis shows that the private sector has grown significantly in recent years, and is now challenging the dominance of LIC in the life insurance market. However, LIC still accounts for the majority of the new business premium and market share in the life insurance sector.

The analysis also shows that the private sector has been more successful in terms of claim settlement, while LIC has performed better in terms of customer response. This suggests that private sector companies are more focused on providing financial protection to policyholders, while LIC is more focused on attracting new customers.

In conclusion, the Indian insurance sector is a vibrant and growing industry. Both private and public-sector companies are playing a significant role in providing financial protection to the Indian population. However, there is still more work to be done in terms of providing coverage to the entire population. Insurers must continue to innovate and provide customer-focused solutions to meet the changing needs of policyholders. TJ

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Insurance Policy-Strict Liability Principle

National Insurance Company Limited versus the chief electrical officer and others (SC)

Facts of the case:

Memorandum of understanding (MOU) between National Insurance Co. and Chief Electoral Officer (CEO (, Bihar –insurance cover to persons deployed for election related work for Bihar legislative assembly elections in the year 2000. – State government group insurance scheme – premium paying employees appointed for election related activities – Period extended from 24-05-2000, to 23-06-2000 –

Constable, Deval Ravidas, died due to a sunstroke while performing election duty. This was during extended period of policy.

In 2008, wife of deceased sought compensation vide letter dated 21-11-2008 – This was found inadmissible as death was due to heat stroke, and not on account of any external violent activity/accident. –

A Writ petition before High Court of Patna filed – District election officer makes claim on 24-04-2011 to the appellant insurance company – not accepted by Insurers. – " HCdecided that CEO in a supplementary counter affidavit, had already acknowledged the eligibility for payment: "also said that claim was not lodged within time frame and hence liability to pay the amount was on CEO. –

CEO appeal to division bench of HC.

SC CONSIDERED TWO ASPECTS:

1) Consequence of delay in claiming the amount from the insurer

Relevant clause of MOU

(The claim will be intimated to the National Insurance Co. Ltd, immediately on its occurrence at its Regional office, Sone Bhawan, Birchand Patel, Marg, Patna, (Phone 220979, 223103 Fax : 0612–220973). On receipt of the intimation, the local office at the place of occurrence, shall be liasoning with govt. Agencies in getting the desired papers completed in all respect.)

The Honourable Supreme Court has held that the conditions of the MOU required the claim to be made immediately on the occurrence. The CEO did not do so. Hence, it would be negligence in lodging the claim. It also said that if it was not admissible, then there is no reason to forward the claim to the appellant.

2) Whether the insurance policy covered the cause of death of the constable.

Relevant clause 3 of MOU:

("The insurance is intended to provide for payment of compensation in the event of death, only resulting solely and directly from accident caused by external violent and any other visible means")

The judgement states- "now we turn to the specific clause in the MOU, which would govern the insurance policy, providing for payment of compensation in the event of death, only resulting solely and directly from the accident caused by external violent and any other visible means. On a plain reading itself, leave aside the question of strict interpretation of the clauses, it is quite apparent that the admissibility of the claim is in the event of death. The second part of the same sentence begins with Only. Thus, even in the event of a death, it is only in the scenario where the consequence situation arises, I.e.it has to be solely and directly from an accident caused by external violence. Here the death is by sunstroke. There was no semblance of any violence being the cause of death. The last aspect which reads as any other visible means would be an expression to be read in the context of age, generous with the external violent

death and cannot be read in isolation itself."

If in the officiate context, the policy is analysed, the cause arising from a sunstroke cannot, in our view, be included within the parameters of the scope of cover in the insurance policy, defining when such insurance amount would become payable.

Thus, on the second account also we are of the view that the appellant insurance company is not liable.

Protection to the widow:

The court also said "that being the position, we are quite cognizant of the fact that the amount already stands paid by respondent one to respondent to WIFE in pursuance of the judgement of the learned single judge. We do believe that de hors the complexity of any legal issue, Respondent No 2, having enjoyed the benefit for so many years, the stand as taken by Respondent No 1, the liability to pay Respondent No 2, it would not be appropriate to permit Respondent No 1 to recover any amount from Respondent No 2 and that aspect should now stand closed". So, the amount paid to the widow by the ceo stands protected and cannot be recovered from her.

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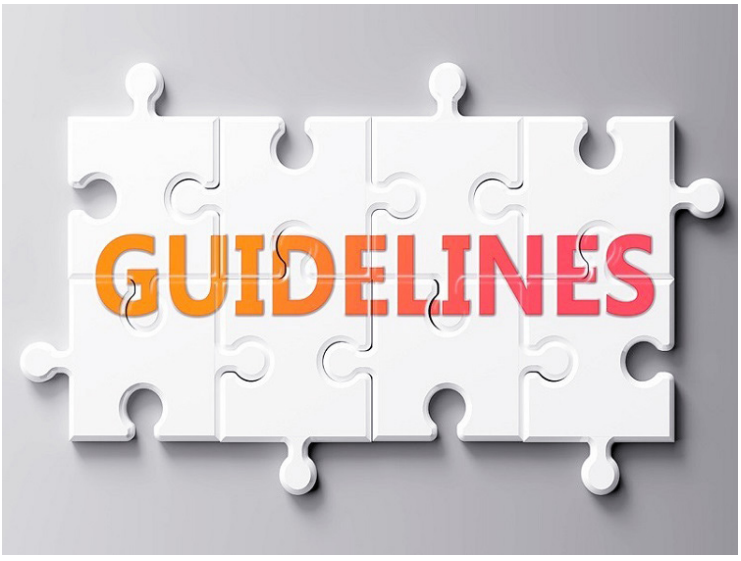

Appendix I

Declaration by Authors

I/we (Full Name of the Author(s)) .... hereby declare that I/we are the author(s) of the paper titles "....." (Title of the paper), which is our original work and not the intellectual property of anyone else. I/we further declare that this paper has been submitted only to the Journal of the Insurance Institute of India and that it has not been previously published nor submitted for publication elsewhere. I/we have duly acknowledged and referenced all the sources used for this paper. I/we further authorize the editors to make necessary changes in this paper to make it suitable for publication.

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