

ADOPTION AND BENEFITS OF INSURTECH, CUSTOMER SATISFACTION, CUSTOMER RETENTION IN MOTOR INSURANCE: THE LITERATURES STUDY

Dr. Prafulla Kumar Padhi

Assistant Professor, Pune Institute Of Business Management, Pune

prafulla.padhi@pibm.in

Prof. Shwetab Singh

Assistant Professor, Pune Institute Of Business Management, Pune

Prof. Pranabjyot Das

Assistant Professor, Pune Institute Of Business Management, Pune

Dr. Manoj Gadre

Associate Professor, Pune Institute Of Business Management, Pune

manoj.gadre@pibm.in

Prof. Palak Sharma

Assistant Professor, Pune Institute Of Business Management, Pune

Abstracts:

The adoption of Insurtech is beneficial for both the customers and insurance companies. The technology adoption in modern insurance service model provides quick domain services to the customer and helps in quick claim assessment and settlement. The example of two-wheeler and car insurance model is studied with the help of literatures. Although Insurtech provides best services to both parties, still there is no guarantee of customer retention. The future scope of study deals with the impact of Insurtech on the customer satisfaction and retention and customer churn.

Keywords: Insurtech, Benefits, Customer Satisfaction, Customer Retention, New Acquisition

1. Introduction:

The digital transformation by adoption of cloud computing, digital application and artificial intelligence in insurance services has become an important role in insurance business (Eckert et al., 2022). The digital platform simplifies the sales and marketing process along with increases corporate efficiency towards the customer satisfaction. The adoption of blockchain technology in insurance industry serves the datamining of insurance processes to find out the potential opportunities in insurance business (Shetty et al., 2022). In the study of Moroccan insurance industry by (Halima & Yassine, 2022), the Insurtech has fulfilled the expectation of customer during the pandemic COVID19. According to (Booth et al., 2022), the Insurance industry plays a vital role in human geography, climate change, risk and technological limitations. However, (Rubio-Misas, 2022) has found that the bancassurance is more cost

effective than that of the traditional and alternative channel of insurance distribution system. In context of customer satisfaction and organizational performance, the psychological empowerment is essential to do internal branding (Soleimani et al., 2022). In search of facts, (Leiria et al., 2021) have recognized certain major issues of Portugal insurance companies, where the companies are facing the issues of mistrust, higher premium, policy cancellation and payment related issues. Mostly, all these issues are related to Motor insurance industries in Portugal. According to the study of (Chen et al., 2021), the blockchain technology and smart contract technology is used to solve such type of problems in insurance contract, by providing solution through online underwriting. (Talonen et al., 2021) has said that the proposers are unwillingness to adopt the interactive insurance services. So that the adoption of technology has become an integral part in insurance business. (Volosovych et al., 2021) have also agreed upon the adoption of Insurtech as the technological infrastructure in the form of Chatbots, telematics, Internet of Things (IoT), machine learning, artificial intelligence (AI) and predictive analysis in insurance industry. (Cukier, 2021) has specified that the logic-based AI system provides yield-based results in comparison to the classical method of insurance business. Financial technology (Fintech) provides more customer satisfaction and safety to the customer in a justified way (Suriaty & Abdul, 2021). Perhaps, the insurance industries have used the technology in order to reduce the impact of COVID 19 on insurance industry (Srabon & Saxena, 2021). AI has helped the managers not only to engage the customers, but also to follow the policy perspectives (Huang & Rust, 2021). The Global context of “Insurtech” adoption in insurance industry is shown by (Manta, 2021). The combination AI and IoT helps to detect the fraud, abuse, risk factors, and underwriting issues in insurance business (Ambade, 2021).

2. Literature Review

2.1. Technology Adoption in Insurance Companies

(Speece, 2004) had studied the determinants of customer satisfaction in Thailand’s life insurance industry. The basic determinants as quality, cost, product variety, customer service and sales interaction are integrated in technology, also in sales force automation (SFA) for customer satisfaction. (Haslina et al., 2010) has specifically denoted the adoption of the Artificial Intelligence (AI), Internet of Things (IoT) to communicate a cluster of consumer data to provide updated information for customer satisfaction. AI has latent impact on the business processing of an insurer by speed service, service optimization and risk management. (Haslina et al., 2010) have shown the adoption of the change, “traditional complex coding of data” to “neural network supporting framework”. (Ravi, 2012) had tried to use the E-CRM to solve the gap between the word of mouth and past experience by mediating the personal needs. (McKinsey & Company, 2016) elevating the insurance customer experience, 42 percent of the insurance customers do not fully trust on the Insurer. Insurance companies are using artificial intelligence (AI) technology to address the challenge, to satisfy and retain their customers. (Gatteschi et al., 2018) have studied the block chain adoption in Insurance process, found more weakness and threat in comparison to strength and opportunities in the serving process. But findings of (Yuvaraj & Rajendiran, 2020) alerts that the technology is used to provide technical answer of life Insurance policies, whereas the personalized conversation, touch and verbal assurance are missing in order to solve the problems of the insurer. Here the relationship

between the technology and customer satisfaction in insurance company is very weak and neglected, but the user-friendly technology is positively correlated with the customer satisfaction. Due to the trend of customer dissatisfaction (42%, year 2020), (McKinsey & Company, 2016) has suggested to the Insurer to adopt AI, Digital Service Assistant, Chatbots to provide service of fast customer services, renewals, onboarding, shopping for insurance, claim settlement, billing, payments, policy closure to the customers. (Chen et al., 2021) have defined the use of Blockchain technology in Insurance services to avail Insurance service purchase, customer identification, patient treatment, preparation of Electronic Medical Record, automatic claim settlement and also bank payment. (Kulkov, 2021) has studied the application of artificial intelligence (AI) in health care sector to create the value creation in Diagnostics and Therapy, collaboration with customers and market participants. The stratified random sampling is adopted by (Rizwan et al., 2021) to identify the customers' buying intention towards the purchase products (conventional insurance), the products may be vehicle insurance. The personal values are stimulated by social robots in business which address the affective and cognitive behavior of customers (Čaić et al., 2019), but also damages the social cognitive dimensions. (Acciarini et al., 2021) have considered the digitalization and sustainability in automotive business model, whereas the vehicle insurance is a part of complete product delivery in automobile industry. So that the "digitalization and sustainability" is inherent in vehicle insurance industry for the benefits of organization, customers and society. (Ohiani, 2021) has shown the "Pros and Cons" of digitalization of Nigerian banking services. The fingertips services have given quick benefits to the beneficiaries, but in the same time, the digital crime is increased at Nigeria, which has affected the brand loyalty of Insurance company (Soleimani et al., 2022).

2.2. Technology-Insurtech in Insurance Services

In the Italian study of insurance and services, (Pisoni, 2021) has studied the consumer behavior of people, at the time of searching their needed services digitally, where the non-respondent digital response forces the digital visitors to search the next one to avail the service. In defense of the cyber risk, the insurance companies are now developing new products with cyber security profiled services. (Eckert et al., 2022) have shown the basic issues of digital application adoption in Insurance services. Data availability, data security, data protection issues and protection issues are the alarming issues in customer services in an insurance company. (RC21314.Pdf, 1998) has shown the way of using the data mining technology in risks and pricing determination to evaluate the claim settlement of Automobile Insurance. In such North American study in year 1998, the technology comprises around 250 data fields about the demography, agency, policy, policy holders, including the coverage type of collision, bodily injury and property damage in one platform for mining of data. Even the IoT is used for discount on Dental Insurance Premium and Health Insurance Policy Premium (Spender et al., 2019), earlier it was not there. IoT enabled devices are used in Health Insurance services to serve the aged or sick one. (Idris et al., 2013), Since 2013, the Nigerian Insurance Industry is using IT for customer services. But the people had believed that IT will not have positive effect on service delivery. In Russian scenario, (Dmitriev & Novikov, 2018), the technology is used in insurance services to reduce risk impact. (Accounting et al., 2013) denoted that the Nigerian companies had used the ICT in insurance service and got profitability through enhanced service

quality and service efficiency. Block chain technology is used to improve the insurance services efficiency, efficiency and transparency (Tarr, 2018). The Wearable and Big Data Analytics technology are used as behavioral-based insurance to ensure the negative consequences of digital health. (Tanninen, 2020) has shown the aggregate of the insurance market by “Insurtech”. (Entele & Vincent Emodi, 2016) have studied the Ethiopia Insurance Market, based on 500 the low-income households by using the contingent valuation method (CVM). The authors had studied the willingness to pay (WTP) for the health insurance. As said by (Sakurai, 2006), the technology is the cost burden to patients, in Japan. The digital technology helps the insurance company not to do only risk selection but also provides information about the location, time but also the insurance products of insurance companies to customers (Eckert et al., 2022), ultimately save the time of both parties. The technology provides new market to insurance company and also provide cyber insurance facility with problem solution to the customers (Pisoni, 2021). The Insurtech ecosystem is changing the inefficiencies of traditional model of insurance process (Volosovych et al., 2021). Earlier, (Idris et al., 2013) had found that the most of customers hardly use online services in their engagement with the Nigerian insurance companies. But in the recent trend, the Blockchain technology is effectively open up the informational channel in between the insurance and healthcare industry to mediate the informational services (Chen et al., 2021). Key Performance Indicators (KPI) is used to evaluate the performance of financial and non-financial organizations (Muradova et al., 2021). The organization should understand the planned behavior and purchase intention to aware the customer about the products (Rizwan et al., 2021). (Acciarini et al., 2021) have agreed upon the role of digitalization in sustainable business model to have competitive advantage in business and also in society at a large. Although the technology innovation is adopted in many cases, but reversal in some cases. For example; the technology innovation is used in the Nigerian banking and insurance sector in order to maximize customer retention. But it is found that the customers fear of e- Banking fraud and Cybercrime in Nigerian banking system (Ohiani, 2021). In recent year, the artificial intelligence (AI) changes significantly the Global healthcare facilities starting from diagnostics, therapy and drug delivery in European states (Kulkov, 2021). (Tanninen, 2020) has studied the “behavior-based insurance” such as life insurance and health insurance. (Chakrabarti & Sanyal, 2020) have studied the impact of artificial intelligence (AI) on every aspect of human life, where he found that the South Asian countries are grabbing the opportunities of AI in regulations and other activities. (Yuvaraj & Rajendiran, 2020) have studied the customer satisfaction level pertaining to service quality dimension in life insurance sector. They have used Likert’s five point scale to measure the satisfaction level of customers in public and private sector insurance companies in India. (Aitken et al., 2020) had keen attention about the building the relationship between the trust and corporate practice by AI from the psychological dimension to practical dimension. (Franck, 2020) had studied the use of chatbots in frontline service and shown the successful usefulness of chatbots in service industry, where the chatbots provide real-time service to customer easily and quickly by solving the domain problems. (Owens, 2020) has shown the recent trend of adoption of “Insurtech” in Global insurance business, where the body of research shows the adoption of the Big Data Analytics and algorithms in motor insurance. Although the Big Data Analytics and algorithms reduces the human biases and errors, and algorithms have also some limitations

as per the regulations' matters. (Cevolini & Esposito, 2020) have mentioned that the customers do not like the variation of risk-pooling information at the time of the insurance purchase and the risk spreading information updating by the insurer later on. It makes feeling of non-personalization at any point of policy duration.

Presently the insurers have adopted the technology based business model in Europe (Spender et al., 2019). There, the obstacles are found in adoption of block chain technology in Insurance industries but the intervention of the third party results to ultimate solution as per regulatory standard and product contracts (Tarr, 2018). The block chain helps the customer and insurance companies in order to detect the risk factors (Entele & Vincent Emodi, 2016). The adoption of intellectual technology in European insurance industry helped the insurance companies to identify the risk factors and store them in risk inventory for further mechanism (Dmitriev & Novikov, 2018). They found the performance efficiency and profitability due to adoption of ITC in Nigerian insurance sector (Accounting et al., 2013). Since a long, the use of AI is engaged in medical treatment and also in health insurance services (Sakurai, 2006) at Japan, as a most cost effective healthcare system. In 1960s, the technology and insurance had very less combination, (Gloster et al., 1964). Later on, ITC integrated in insurance had provided the transparency, high productivity, brand image, and promotion to increase the sales (Odoyo & Nyangosi, 2011), where the human to human interface is eliminated and human to machine interface is adopted.

2.3. Benefits of Insurtech

(Pant, 2020) has stated the use of FinTech (Blockchain, Cryptocurrency, AI, Data Analytics, Machine learning, Big-data, Robotics, and Cloud) in Indian banking system. The technology provides improved services for the customer satisfaction. The Digital insurance, Digital invoicing, Crowd-funding, Crowd investing and Robotics investment advisory services are rendered to customers as per the regulatory norms of the Central Bank of India. Recently, the new term has developed in insurance industry as digital insurance is called "Insurtech". The technology helps in decision making process of organization (Łyskawa et al., 2019). The research of (Tian et al., 2019) has one interesting point that the technology has strong correlation with market discipline and Governance. The emergence of wearable technology and the internet of things (IoT) helps in customer engagement, marketing and underwriting in insurance sector (Spender et al., 2019). The technology also detects risk of disaster, manages the risk and allows the policy holders to transfer the risk to the insurer (Pagano et al., 2019). The AI in Insurtech overcomes the ongoing problems for better customer satisfaction by responding to dissatisfied customers (Sharma, 2019). The Chatbot Technology is used for the understanding of the ambivalent perceptions, attitudes, and beliefs of the main social actors (i.e., practitioners and potential users) towards the customer interface in Germany in order to insurance value chain, reduce costs and generate customer loyalty and trust (Cardona et al., 2019). The Chatbot contributes to improve the efficiency of insurer and insured one (Barrett et al., 2015; Ross et al., 2016). Similarly, the low code is used in insurance services for personalizing the awareness interactions at scale, to support rapid transformation, improvement of the customer and employee journey (Dunie et al., 2019). The report of (*3 Insurtech Micro - Trends to Watch*, 2019) denotes that the big data, smart watches and fitness trackers, artificial intelligence (AI) and predictive algorithms are boosted to yield user-specific insurance

products. The Internet of Things (IoT) streams data such as vehicle information, unlocking unprecedented customer insight that is leveraged to better assess of behavior and risk. Applying granular stratification and cohorting to this wealth of digital data, insurers are able to ultra-customize insurance products to individuals according to their risk profiles. (Tarr, 2018) has specified that the blockchain technology is used in insurance services in order to improve the service quality, lower the cost of transaction, in order to improve the data quality and transparency, fraud detection, risk prevention and smart solution. (Balasubramanian et al., 2018) had said “Welcome to the future of insurance, as seen through the eyes of Scott, a customer in the year 2030. The technology will immediately respond to accident-based auto damage as well as the calculate the adjustment to his monthly premium”. Technologies such as blockchain, cloud computing, mobile technologies, big data analytics and social media therefore have perhaps more potential in this industry and area of business than any other (Glosten & Rauterberg, 2018). IT companies such as Google, Apple, Amazon and PayPal whilst facing pressure from investors to reduce costs, increase agility and improve customer retention, which is the second part of the study (Paprzycka, 2018). Companies across industries are seeking to embrace digital technologies to support new business models, improve efficiency, and gain a competitive advantage along with for tracking their daily action plan (Chester et al., 2018). The Insurtech technology mediates insurance transactions between consumers and insurance companies (Andrews, 2018) by helping customer’s buying, underwriting and in force management experience by replacing traditional constructs of insurance with technology driven systems. Whereas the use big data and big data analytics that are independent of the “old-school” approaches and causes the change in modern era (Andrews, 2018). (Cappiello, 2018) has denoted that the Insurtech helps in the development and the distribution of insurance services by exploring the customer relationship by digitalization of services offered as like the technology helps a lot in domain services (Rachman, 2018). The distributed ledger technology or blockchain technology has made possible the security and privacy, governance, scalability and standardization of the services in insurance industry (Tarr, 2018).

2.4. Customer Satisfaction in Insurance Companies

Customer satisfaction has direct influence on the customer’s buying intention, leads to revenue growth and decrease in operating cost. (CapGemini & The European Financial Management and Marketing Association, 2007) has addressed to satisfy and retain the customer by the process of customer satisfaction. The report of (CapGemini & The European Financial Management and Marketing Association, 2007) states that the customer satisfaction does not guarantee the customer loyalty. The given evidence shows that 40 percent of the non-life insurance customer switches the insurance provider due to dissatisfaction. The customer satisfaction depend on the factors as equipment modernity, staff’s behavior, service to complaints, staff’s information and skill, security of the product, organizational relationship and understanding the customer need in each step of the service render (Vazifehdust & Farokhian, 2011). In this trend, the E-Commerce and Internet are used in insurance companies for customer satisfaction (Oghojafor et al., 2011). (Coviello & Di Trapani, 2012) have studied the customer satisfaction of the Insurance Companies in India, wherein the customer satisfaction is the buying and exploiting process of sales and service performance. A study about the Malaysian automobile Insurance industry closely speaks about the service quality

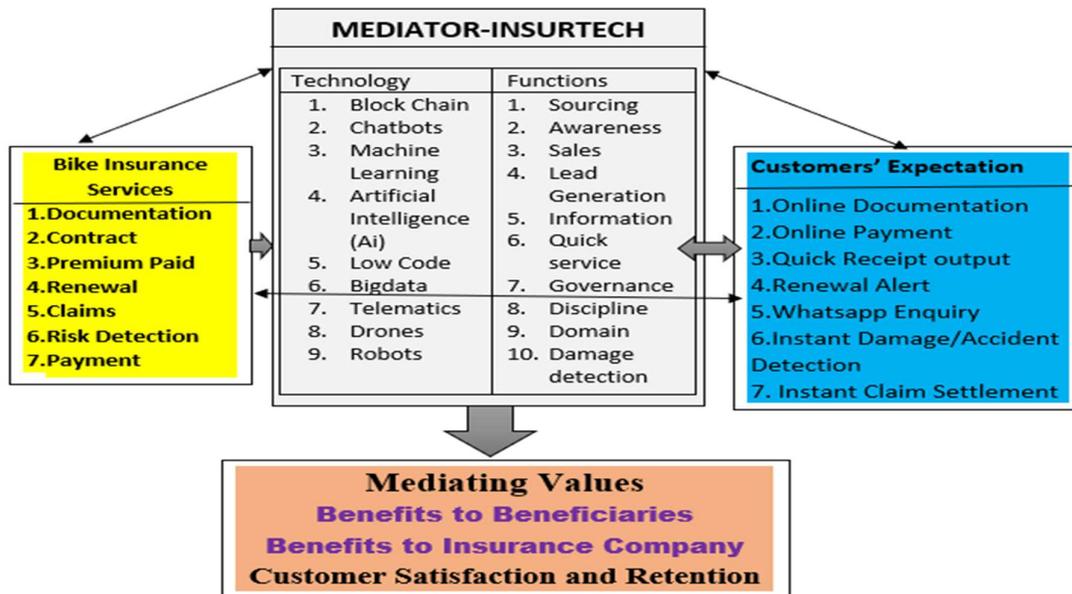
serves customer satisfaction by relating the assurance, empathy, reliability, tangibility and responsiveness with the customer satisfaction (Arokiasamy & Tat, 2014). The authors found the strong relationship between the assurance, empathy, reliability, tangibility and responsiveness and customer satisfaction (CB). The benefits of customer satisfaction has direct effect on the brand preference, then after on the brand switching cost (Wong, 2014). The timely service, quick service, company reputation , additional facilities, loyalty of employees, customer convenience, departmental efficiency (M. Kaur & Kaur, 2014) are the key factors of customer satisfaction in an Insurance company.

2.5. Insurtech and Customer satisfaction

(Idris et al., 2013), in case of absence of customer awareness of availability of IT platform, the customers cannot take advantage of the main services. Blockchain technology has solved the problem linked to the contractual dimension in insurance industry (Pagano et al., 2019). According to (Entele & Vincent Emodi, 2016), the technology influences the willingness to pay for health insurance services in Ethiopia. (Vazifehdust & Farokhian, 2011) had identified the quality service and economic succession of industry which has competitive advantage relationship with the customer satisfaction. According to (Coviello & Di Trapani, 2012), the modern insurance company has measured the success of customer satisfaction through the factors such as relationship of trust, image, service quality, performance, convenience of access and price. (CapGemini & The European Financial Management and Marketing Association, 2007) has denoted that the customer satisfaction does not define the customer loyalty. The use of internet shows the more self-sufficient of customers, price-sensitive and less customer loyalty. (Arokiasamy & Tat, 2014) had denoted that the assurance has moderate relationship with customer satisfaction, but the tangibility, reliability, responsiveness of the services has strong relationship with customer satisfaction. According to (Wong, 2014), the customer satisfaction is coaxes to customer satisfaction leads to brand preference, hence results to switching cost. Technology integration to salesperson, leads to quicker access to information, which helps the sales person to provide best services to customer (Speece, 2004). (Shekhar & Gill, 2021) has identified the use of AI as purpose to do deep learning, shifting from the neural network, Machine Learning for customer satisfaction and retention. Customer satisfaction gives loyalty to the customer slowly, but continuously (Catlin et al., 2016). (McKinsey & Company, 2016) AI influence the heart and mind of the customer to elevate the customer experience in Insurance industry, leads to customer satisfaction. Technology matters a less, the private and public sector insurance company, the people believe on Government insurance company because of faith and satisfaction (Ravi, 2012). According to (Lyskawa et al., 2019), the investment in hi-tech technology in insurance company may lead to costly affair and a matter of decision making. IT is essential for insurance business but managerial capabilities are required to utilize the technology (Aduloju, 2014). Block chain has changed the traditional thought and model of insurance business into block chain business process to address several dimension of business and services (Chen et al., 2021). According to the study of (Gatteschi et al., 2018), the major threat of block chain adoption in insurance is that the people still believe the importance of the personal touch in case of any service adoption. (Dmitriev & Novikov, 2018) have mentioned about the use of technology in managerial decision support system to

handle the risks pertaining to prevention, compensation, elimination. In this Russian study, the insurance companies are tried to pay actual compensation without any fraud from each side.(Shekhar & Gill, 2021) has denoted that the blockchain is used to change the operational strategy aligned with the regulatory environment(Tarr, 2018). The Qualitative and quantitative research is applied to test the customer satisfaction in health insurance sector, where pilot study along with structured questionnaire is used to test the same (G. Kaur & Kushwah, 2015).(Rubio-Misas, 2022)has studied various channels of distribution of Spanish insurance company to address the efficiency in result and cost. The insurance distribution channel is divided in to (1) Traditional Channel- Agency, (2) bancassurance, (3) brokers, (4) another alternative channels. Bancassurance is found cost effective in comparison to traditional one. From the literature review, the technology and their benefits are found and shown in Figure 1. From the observational study, the same technological functions are aligned in Bike insurance services, where the maximum population is found and common to Indian context. For example, the basic insurance services in bike insurance are such as 1. Documentation, 2. Contract, 3. Premium Paid, 4. Renewal, 5. Claims, 6. Risk Detection, 7. Payment to insured. All these services are well followed and managed by the technology in Insurtech such as 1. (Block Chain-Sourcing of customer), 2. (Chatbots- Customer Awareness), 3. (Machine Learning- Sales Lead generation), 4. (AI- Lead Generation, Information sharing, Quick Service encounter), 5. (Low code and Big Data- Information sharing and Quick services), 6. (Bigdata- Governance), 7. (Telematics-Discipline), 8. (Drones- Domain Knowledge of Claim Settlement), 9. Drones and Robots- Damage Detection and Claim Assessment). In recent trend, the customers’ expectation arises as (1) Online Documentation, (2) Online Payment, (3) Quick Receipt output, (4) Renewal Alert, (5) Whatsapp Enquiry, (6) Instant damage detection, and (7) Instant claim settlement from the insurance company. The traditional service model cannot satisfy the same whereas the adoption of Insurtechmediates between the basic insurance services and customers’ perceived expectation.

Figure 1: Insurtech Mediating Model: Bike Insurance Services

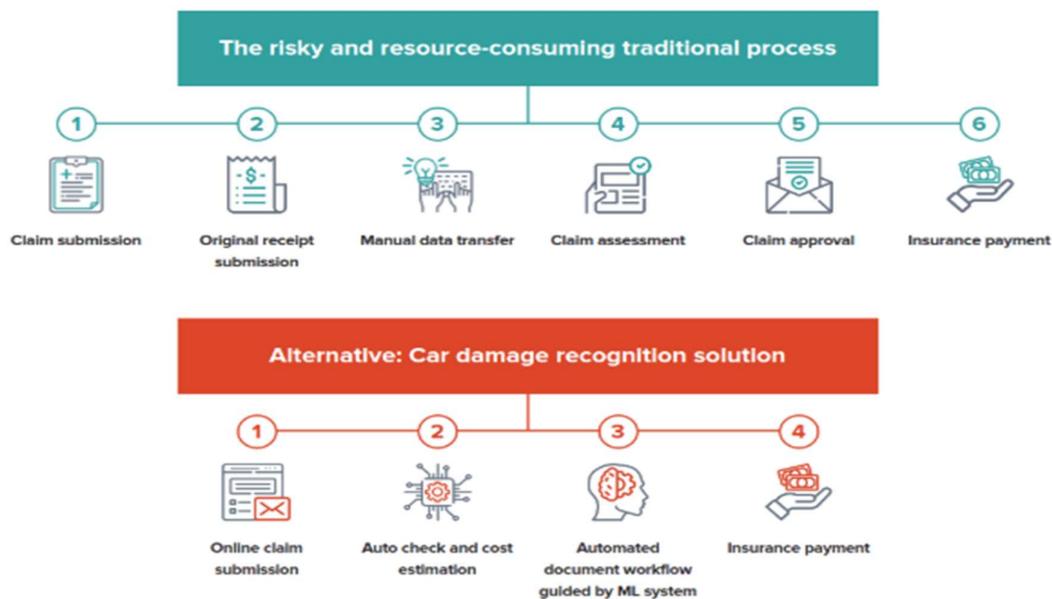


Source: Dr. P.K.Padhi

To justify the adoption of Insurtech in traditional insurance service model, an example is studied.

The example of car insurance claim settlement model is taken from (Shekhar & Gill, 2021) and shown in the Figure 2. The traditional process of claim settlement insurance services follows the steps in claim settlement, such as (1) Claim submission, (2) Original receipt submission, (3) Manual data transfer, (4) Claim assessment, (5) Claim approval, and (6) Insurance payment. Alternatively, the AI based car insurance claim settlement states the steps such as online (1) Claim submission, (2) Auto-check and cost estimation, (3) Automated document workflow guided by ML system, and (4) Insurance payment. The traditional versus AI based claim settlement of car insurance is shown in Figure 2. Even though, the Insurtech leads to the customer satisfaction, but the report of (CapGemini & The European Financial Management and Marketing Association, 2007) had stated that the customer satisfaction does not guarantee the customer loyalty. The consumer has some kind of fear of adoption of technology in insurance services as said by (Ohiani, 2021) the “Pros and Cons” of digitalization of Nigerian banking services. Because, the diversity in service delivery makes it difficult to ensure the service, customer understanding and information content design (Lim et al., 2018).Furthermore, the research gap is shown in the main research.

Figure 2 Traditional Vs AI Based Claim Process: Car Insurance Services



Source:(Shekhar & Gill, 2021)

The study of Figure 1 and Figure 2 assure that the Insurtech is beneficial for the customers. On the other hand, the insurance company have benefited in terms of fraud detection, actual damage detection by drones and AI, fair assessment of claim amount. At least, the Insurtech protects the insurance companies from financial losses, causes due to (1) payment towards fraud claim, (2) loss due to over assessment of claim amount, and (3) paid more claim amount to the less contingencies or damages or hazards.

2.6. Research Gap

Gap 1:(Komulainen & Saraniemi, 2019) had not added senior citizen group of people (age group

between 60 to 80), who really need of quick access of service.

Gap 2: The report of (CapGemini & The European Financial Management and Marketing Association, 2007) had stated that the customer satisfaction does not guarantee the customer loyalty. The given evidence shows that 40 percent of the non- life insurance customer switches the insurance provider due to dissatisfaction.

Gap 3:(Ohiani, 2021) has shown the “Pros and Cons” of digitalization of Nigerian banking services. The fingertips services have given quick benefits to the beneficiaries, but in the same time,the digital crime is increased at Nigeria, which may affect the brand loyalty of Insurance company (Soleimani et al., 2022), a case of Iran study.

Gap 4:Due to the trend of customer dissatisfaction (42%, year 2020), (McKinsey & Company, 2016) has suggested to the Insurer to adopt AI, Digital Service Assistant, Chatbots to provide service of fast customer services, renewals, onboarding, shopping for insurance, claim settlement, billing, payments, policy closure to the customers.

Gap 5: (Lim et al., 2018) had said that the diversity in service delivery makes it difficult to ensure

the service, customer understanding and information content design.

2.7. Research Questions

From the literature review, certain valid questions arise such as

(1) According to (Pisoni, 2021)

Q1. Does the adoption of Insurtech enhances the existing product offering?

Q2. Is the solution to customer’s compliant fulfilling the regulatory requirements?

Q3. Is the Insurtech identifying the customer wants and needs?

Q4. Is the idea commercially viable?

Q5. Does it bring potential commercial benefits for the company and is it feasible to implement?

(2) According to (Spender et al., 2019)

Q1. How might future innovations affect insurers?

Q2. Will we see evolution or revolution due to the quantified self?

(3) According to (Pagano et al., 2019)

Q1. What is a smart insurance contract?

Q2. What are the experiences of implementing the blockchain technology in the insurance sector?

Q3. What would be the difference of a standard smart insurance contract?

Q4. Is there a regulatory framework capable of "accepting" smart multi-period insurance contracts?

Q5. Is it possible to find any contractual declination to implement a multi -period smart contract?

Q6. What structure could a smart multi-period contract have against natural hazard risk mitigation?

Q7. What other aspects could it involve (e.g., Bayesian-quantitative and engineering profiles)?

3. Result and Discussion

The basic insurance services are such as 1. Documentation, 2. Insurance Contract, 3. Premium Paid, 4. Claim Settlement, 5. Risk Detection, 6. Payment Receivable arises in any insurance company. The computer oriented offline and online services are acting on such services and serving to the customers. There are many limitations in this system, starting from delay in service delivery to fraud. In all cases, the customers along with the insurer are suffered a lot. The Insurtech model in Figure 1 shows that the basic insurance services are now done by adopting the technology as Insurtech. Now the block chain and AI provides quick services and high customer satisfaction in the industry. The technology in Insurtech fulfills the gaps in traditional model of insurance services. Still there is a dilemma in the society for adopting the Insurtech, due to lack of human touch, felt by the people. In the second hand, the customer satisfaction does not guarantee the retention of customers in the same company.

4. Suggestions and Conclusion

This is suggested to the insurance companies that the insurance companies should develop the customer retention model. The cost effectiveness of insurance services should be intact even after the adoption of Insurtech in traditional service model. The online fraud detection and elimination strategy are to be made more stringent to avoid the fraud, errors, omission and compensation of errors while serving the Insurtech based insurance policies.

5. Future Scope of Research

The future scope of study is found from the literatures and theories, such as (1) Impact of Insurtech on customer retention, (2) The influence of Insurtech and customer satisfaction on the new customer acquisition and (3) The mediation of Insurtech among the customer satisfaction, customer retention leads and new customer activation. (4) The factors affecting the influence of Insurtech on the customer satisfaction, customer retention and customer churn.

References:

- 3 *insurtech micro - trends to watch*. (2019). 2015(Figure 1), 2017–2020.
- Acciarini, C., Borelli, F., Capo, F., Cappa, F., & Sarrocco, C. (2021). Can digitalization favour the emergence of innovative and sustainable business models? A qualitative exploration in the automotive sector. *Journal of Strategy and Management*. <https://doi.org/10.1108/JSMA-02-2021-0033>
- Accounting, O. F.-J. of, Management, B. and, & 2013, undefined. (2013). Information and communication technology (ict) and insurance companies profitability in Nigeria. *178.128.26.140*, 20(2), 1–13. <http://178.128.26.140/index.php/jabminternational/article/view/170>
- Aduloju, S. A. (2014). Information technology managerial capabilities and customer service performance among insurance firms in Nigeria. *SAGE Open*, 4(4). <https://doi.org/10.1177/2158244014561198>
- Aitken, M., Toreini, E., Carmichael, P., Coopamootoo, K., Elliott, K., & van Moorsel, A. (2020). Establishing a social licence for Financial Technology: Reflections on the role of the private sector in pursuing ethical data practices. *Big Data and Society*, 7(1).

- <https://doi.org/10.1177/2053951720908892>
- Ambade, N. M. (2021). Technology in Health Insurance in India. *International Journal of Engineering Research in Computer Science and Engineering*, 8(3), 25–31.
- Andrews, D. L. (2018). InsurTech: The Next Disruptor to the Insurance Industry. *Predictive Analytics & Futurism News*, 1(18), 21–25.
- Arokiasamy, A. R. A., & Tat, H. H. (2014). Assessing the relationship between service quality and customer satisfaction in the Malaysian automotive insurance industry. *Middle - East Journal of Scientific Research*, 20(9), 1023–1030. <https://doi.org/10.5829/idosi.mejsr.2014.20.09.12029>
- Balasubramanian, R., McElhaney, D., & Libarikian, A. (2018). Insurance 2030 – The impact of AI on the future of insurance. *Digital McKinsey & Company*, May, 1–12. <https://www.mckinsey.com/industries/financial-services/our-insights/insurance-2030-the-impact-of-ai-on-the-future-of-insurance>
- Booth, K., Lucas, C., & French, S. (2022). *Climate, Society and Elemental Insurance Capacities and Limitations*. Routledge.
- Čaić, M., Mahr, D., & Oderkerken-Schröder, G. (2019). Value of social robots in services: social cognition perspective. *Journal of Services Marketing*, 33(4), 463–478. <https://doi.org/10.1108/JSM-02-2018-0080>
- CapGemini, & The European Financial Management and Marketing Association. (2007). *World insurance report: Customer satisfaction is no guarantee of loyalty*. 1–7.
- Cappiello, A. (2018). Technology and the insurance industry: Re-configuring the competitive landscape. *Technology and the Insurance Industry: Re-Configuring the Competitive Landscape*, 137, 1–119. <https://doi.org/10.1007/978-3-319-74712-5>
- Cardona, D. R., Schönborn, S., Werth, O., & Breitner, M. H. (2019). A mixed methods analysis of the adoption and diffusion of chatbot technology in the German insurance sector. *25th Americas Conference on Information Systems, AMCIS 2019*, May.
- Catlin, T., Duncan, E., Fanderl, H., Gammeri, S., Lehmann, S., Lorenz, J.-T., & Schaumburg, P. (2016). *The Growth Engine: Superior Customer Experience in Insurance*. 1–17. <http://www.mckinsey.com/industries/financial-services/our-insights/the-growth-engine-superior-customer-experience-in-insurance>
- Cevolini, A., & Esposito, E. (2020). From pool to profile: Social consequences of algorithmic prediction in insurance. *Big Data and Society*, 7(2). <https://doi.org/10.1177/2053951720939228>
- Chakrabarti, R., & Sanyal, K. (2020). Towards a ‘Responsible AI’: Can India Take the Lead? *South Asia Economic Journal*, 21(1), 158–177. <https://doi.org/10.1177/1391561420908728>
- Chen, C. L., Deng, Y. Y., Tsaur, W. J., Li, C. T., Lee, C. C., & Wu, C. M. (2021). A traceable online insurance claims system based on blockchain and smart contract technology. *Sustainability (Switzerland)*, 13(16), 1–37. <https://doi.org/10.3390/su13169386>
- Chester, A., Ham, S., Johansson, S., & Olesen, P. B. (2018). INSURANCE PRACTICE. Insurtec. *The Lancet*, October.
- Coviello, A., & Di Trapani, G. (2012). The Customer Satisfaction in the Insurance Industry. *SSRN Electronic Journal*, October 2017. <https://doi.org/10.2139/ssrn.2144684>
- Cukier, K. (2021). Commentary: How AI Shapes Consumer Experiences and Expectations.

- Journal of Marketing*, 85(1), 152–155. <https://doi.org/10.1177/0022242920972932>
- Dmitriev, O. N., & Novikov, S. V. (2018). Development of risk insurance area for Russian high-technology enterprises. *European Research Studies Journal*, 21(4), 386–399. <https://doi.org/10.35808/ersj/1129>
- Dunie, A. R., Miers, D., Wong, J., Kerremans, M., Iijima, K., & Vincent, P. (2019). *Licensed for Distribution Magic Quadrant for Intelligent Business Process Management Suites*. 1–55. <https://www.gartner.com/doc/reprints?id=1-66AAPG8&ct=190131&st=sb>
- Eckert, C., Neunsinger, C., & Osterrieder, K. (2022). Managing customer satisfaction: digital applications for insurance companies. In *Geneva Papers on Risk and Insurance: Issues and Practice* (Issue 0123456789). Palgrave Macmillan UK. <https://doi.org/10.1057/s41288-021-00257-z>
- Entele, B. R., & Vincent Emodi, N. (2016). Health Insurance Technology in Ethiopia: Willingness to Pay and Its Implication for Health Care Financing. *American Journal of Public Health Research*, 4(3), 98–106. <https://doi.org/10.12691/ajphr-4-3-4>
- Franck, M. (2020). *Developing a Use Case for a Chatbot in Frontline Service*.
- Gatteschi, V., Lamberti, F., Demartini, C., Pranteda, C., & Santamaría, V. (2018). Blockchain and smart contracts for insurance: Is the technology mature enough? *Future Internet*, 10(2), 8–13. <https://doi.org/10.3390/fi10020020>
- Glosten, L., & Rauterberg, G. (2018). 4. High Frequency Trading. In *The New Stock Market*. <https://doi.org/10.7312/fox-18196-006>
- Gloster, J. E., Wherry, R. H., & Newman, M. (1964). Insurance and Risk. In *The Journal of Finance* (Vol. 19, Issue 4, p. 736). <https://doi.org/10.2307/2977145>
- Halima, E. H., & Yassine, T. (2022). Insurtech & Blockchain: Implementation of Technology in Insurance Operations and its Environmental Impact. *IOP Conference Series: Earth and Environmental Science*, 975(1). <https://doi.org/10.1088/1755-1315/975/1/012010>
- Haslina, H. B., Intan Maizura, A. R., & Aidanazima, A. (2010). *International Journal of Business and Management*. 5(3), 2.
- Huang, M. H., & Rust, R. T. (2021). Engaged to a Robot? The Role of AI in Service. *Journal of Service Research*, 24(1), 30–41. <https://doi.org/10.1177/1094670520902266>
- Idris, A. A., Olumoko, T. A., & Ajemunigbohun, S. S. (2013). The Role of Information Technology in Customers' Service Delivery and Firm Performance: Evidence from Nigeria's Insurance Industry. *International Journal of Marketing Studies*, 5(4). <https://doi.org/10.5539/ijms.v5n4p59>
- Kaur, G., & Kushwah, S. V. (2015). Customer satisfaction in health insurance sector. *JIMS8M: The Journal of Indian Management & Strategy*, 20(1), 43. <https://doi.org/10.5958/0973-9343.2015.00006.x>
- Kaur, M., & Kaur, D. (2014). Customer Satisfaction Towards Life Insurance in Punjab. *IUP Journal of Management Research*, 13(4), 27–53. <http://proxy.lib.ohio-state.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=99384991&site=ehost-live>
- Komulainen, H., & Saraniemi, S. (2019). Customer centricity in mobile banking: a customer experience perspective. *International Journal of Bank Marketing*, 37(5), 1082–1102. <https://doi.org/10.1108/IJBM-11-2017-0245>

- Kulkov, I. (2021). Next-generation business models for artificial intelligence start-ups in the healthcare industry. *International Journal of Entrepreneurial Behaviour and Research*. <https://doi.org/10.1108/IJEBR-04-2021-0304>
- Leiria, M., Rebelo, E., & deMatos, N. (2021). Measuring the effectiveness of intermediary loyalty programmes in the motor insurance industry: loyal versus non-loyal customers. *European Journal of Management and Business Economics*. <https://doi.org/10.1108/EJMBE-05-2020-0103>
- Lim, C., Kim, M. J., Kim, K. H., Kim, K. J., & Maglio, P. P. (2018). Using data to advance service: managerial issues and theoretical implications from action research. *Journal of Service Theory and Practice*, 28(1), 99–128. <https://doi.org/10.1108/JSTP-08-2016-0141>
- Łyskawa, K., Kędra, A., Klapkiv, L., & Klapkiv, J. (2019). *Digitalization in insurance companies*. May. <https://doi.org/10.3846/cibmee.2019.086>
- Manta, O. (2021). Financial instruments InsurTech on the financial market in the current global context. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3801096>
- McKinsey & Company. (2016). Elevating the Customer Experience. *McKinsey Quarterly*, 3, 58–69. http://www.mckinsey.com/~media/mckinsey/business_functions/operations/our_insights/mckinsey_quarterly_2016_number_3_overview_and_full_issue/q3_2016_mckquarterly_full_issue.ashx
- Muradova, H. R., Yagubov, S., Aliyev, S., & Mikic, M. (2021). the Role of Clustering in Increasing Competitiveness . *70th International Scientific Conference on Economic and Social Development*, 25–26.
- Odoyo, F. S., & Nyangosi, R. (2011). E-Insurance : An Empirical Study of Perceived Benefits. *International Journal of Business and Social Science*, 2(21), 166–172.
- Oghojafor, B. E. A., Aduloju, S. A., & Olowokudejo, F. F. (2011). Information technology and customer relationship management (CRM) in some selected insurance firms in Nigeria. *Journal of Economics and International Finance*, 3(7), 452–461. <http://www.academicjournals.org/JEIF>
- Ohiani, A. S. (2021). Technology innovation in the Nigerian banking system: prospects and challenges. *Rajagiri Management Journal*, 15(1), 2–15. <https://doi.org/10.1108/ramj-05-2020-0018>
- Owens, E. (2020). *Big Data Analytics , Disclosure and Ethical Underwriting : A Balancing Act within the Motor Insurance Sector* Big Data Analytics , Disclosure and Ethical Underwriting : A Balancing Act within the Motor Insurance Sector Emer Owens Bachelor of Arts in Intern. August.
- Pagano, A. J., Romagnoli, F., & Vannucci, E. (2019). Implementation of Blockchain Technology in Insurance Contracts against Natural Hazards: A Methodological Multi-Disciplinary Approach. *Environmental and Climate Technologies*, 23(3), 211–229. <https://doi.org/10.2478/rtuect-2019-0091>
- Pant, S. K. (2020). Fintech: Emerging Trends. *Telecom Business Review: SIDTM Journal*, 13(1), 47–52. <http://publishingindia.com/tbr/>
- Paprzycka, E. (2018). *Discursiveness of intimacy - sociological conceptualizations and perspectives of analyses , s . 133-167 EDUCATION University of Presov PRO COMMUNIO* (Issue September).
- Pisoni, G. (2021). Going digital: case study of an Italian insurance company. *Journal of*

- Business Strategy*, 42(2), 106–115. <https://doi.org/10.1108/JBS-11-2019-0225>
- Rachman, T. (2018). 濟無 No Title No Title No Title. *Angewandte Chemie International Edition*, 6(11), 951–952., 10–27.
- Ravi, V. (2012). *E-Crm and Customer Satisfaction in*. 2(2).
RC21314.pdf (p. 9). (1998).
- Rizwan, S., Al-Malkawi, H. A., Gadar, K., Sentosa, I., & Abdullah, N. (2021). Impact of brand equity on purchase intentions: empirical evidence from the health takāful industry of the United Arab Emirates. *ISRA International Journal of Islamic Finance*, 13(3), 349–365. <https://doi.org/10.1108/IJIF-07-2019-0105>
- Rubio-Misas, M. (2022). Bancassurance and the coexistence of multiple insurance distribution channels. *International Journal of Bank Marketing*, 40(4), 724–745. <https://doi.org/10.1108/IJBM-04-2021-0129>
- Sakurai, H. (2006). Advanced medical technology and health insurance in Japan. *Japan Medical Association Journal*, 49(1), 41–43.
- Sharma, S. (2019). Artificial Intelligence in Insurance Sector. *Journal of the Insurance Institute of India*, 6(4), 59–61. <https://doi.org/10.5281/zenodo.5714619>
- Shekhar, U., & Gill, S. (2021). Use of Artificial Intelligence for Customer Retention & Satisfaction in the Insurance Industry. *GlobalLogic*, 10.
- Shetty, A., Shetty, A. D., Pai, R. Y., Rao, R. R., Bhandary, R., Shetty, J., Nayak, S., Keerthi Dinesh, T., & Dsouza, K. J. (2022). Block Chain Application in Insurance Services: A Systematic Review of the Evidence. *SAGE Open*, 12(1). <https://doi.org/10.1177/21582440221079877>
- Soleimani, M., Dana, L. P., Salamzadeh, A., Bouzari, P., & Ebrahimi, P. (2022). The effect of internal branding on organisational financial performance and brand loyalty: mediating role of psychological empowerment. *Journal of Asian Business and Economic Studies*. <https://doi.org/10.1108/jabes-08-2021-0122>
- Speece, M. (2004). *Determinants of Customer Satisfaction : A Model of Technology Integration in Thailand ' s Insurance Industry Determinants of Customer Satisfaction : A Model of Technology Integration in Thailand ' s Insurance Industry Ms . Ravipa Larpsiri Department of Ma. August 2014.*
- Spender, A., Bullen, C., Altmann-Richer, L., Cripps, J., Duffy, R., Falkous, C., Farrell, M., Horn, T., Wigzell, J., & Yeap, W. (2019). Wearables and the internet of things: considerations for the life and health insurance industry. *British Actuarial Journal*, 24(2019), 1–31. <https://doi.org/10.1017/s1357321719000072>
- Srabon, S., & Saxena, C. (2021). *Reducing the Covid-19 impact on the insurance industry by using technologies Reducing the Covid-19 impact on the insurance industry by using technologies. September.*
- Suriaty, M., & Abdul, B. (2021). *Study on customer satisfaction , adoption , perception , behaviour , and Security on financial technology (fintech) services.* 146–160.
- Talonen, A., Mähönen, J., Koskinen, L., & Kuoppakangas, P. (2021). Analysis of consumers' negative perceptions of health tracking in insurance – a value sacrifice approach. *Journal of Information, Communication and Ethics in Society*, 19(4), 463–479. <https://doi.org/10.1108/JICES-05-2020-0061>

- Tanninen, M. (2020). Contested technology: Social scientific perspectives of behaviour-based insurance. *Big Data and Society*, 7(2). <https://doi.org/10.1177/2053951720942536>
- Tarr, J. A. (2018). Distributed ledger technology , blockchain and insurance : Opportunities , risks and challenges. *Insurance Law Journal*, 29(3), 254–268. www.mckinsey.com/industries/financial-services/our-insights/blockchain-in-insurance-opportunity-or-
- Tian, G., Zhao, Y., & Gong, R. (2019). Market-oriented interest rate, deposit insurance system and bank runs. *China Political Economy*, 2(1), 53–72. <https://doi.org/10.1108/cpe-04-2019-0004>
- Vazifehdust, H., & Farokhian, S. (2011). Factors influencing customer satisfaction with the success factors identified in the insurance industry. *African Journal of Business Management*, 7(21), 2026–2032. <https://doi.org/10.5897/AJBM11.2051>
- Volosovych, S., Zelenitsa, I., Kondratenko, D., Szymla, W., & Mamchur, R. (2021). Transformation of insurance technologies in the context of a pandemic. *Insurance Markets and Companies*, 12(1), 1–13. [https://doi.org/10.21511/INS.12\(1\).2021.01](https://doi.org/10.21511/INS.12(1).2021.01)
- Wong, R. (2014). Examine the Effects of Customer Satisfaction on Customer Loyalty: An Empirical Study in the Healthcare Insurance Industry in Hong Kong. *British Journal of Economics, Management & Trade*, 4(3), 372–399. <https://doi.org/10.9734/bjemt/2014/6318>
- Yuvaraj, M., & Rajendiran, G. (2020). A relationship between service quality and customer satisfaction in life insurance sector. *EasyChair*, 2078.