



PRACTITIONERS' VIEW ON CHALLENGES OF INSURTECH ADOPTION IN PAKISTAN: A QUALITATIVE CONTENT ANALYSIS

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ABSTRACT

Pakistan is an agrarian economy with a booming Islamic financial system, but unlike other developing economies, it has a low share of insurance penetration. Literature has explored multiple dimensions of challenges along with their solutions within the insurance sector. This study proposes that it is the sluggish adoption of InsurTech that led to low insurance penetration. Hence this study is designed to identify different InsurTech adoption-related challenges in the Pakistan insurance industry. Past studies have explored the supply-side merits of InsurTech but overlooked the issues faced by the insurance industry in demanding and absorbing the available new technology. Many youth-led firms are offering the latest technologies for the industrial revolution in Pakistan. This links towards higher technology acceptability among the masses in the future and a possibility to transform the other lagging industries such as banking and insurance. Content analysis is applied to the previously recorded interviews of experts from the insurance industry to derive the themes validated using an independent rater using the interclass correlation coefficient. This study has identified the major InsurTech adoption issues faced by Pakistan's insurance sector practitioners. Academia and regulatory authorities can play a role in generating the industrial revolution output in this sector. The findings of the study are instrumental in developing a regulatory policy to foster InsurTech adoption and increase insurance penetration, which previous studies overlooked in the case of Pakistan.

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1. INTRODUCTION

Asia will arise as the main center of the technology-driven revolution. Around the world, the middle class is anticipated to rise by 180% between 2010 and 2040 (PricewaterhouseCoopers, 2016). Pakistan is located in Southern Asia (Geology, 2018). Pakistan's insurance markets are set to benefit from the country's increasing population and the emergence of a growing middle class. Pakistan's insurance industry is still relatively small, as insurance penetration is 0.7%. It ranks the third-lowest in Asia (Peak, 2020). The Insurance Association of Pakistan reported the total premium to GDP (Gross Domestic Product) is 0.03%. *Takaful* contribution to GDP is 0.006%, and the premium to GDP is 0.22% (IAP, 2019). Overall insurance penetration of Pakistan is less than 1%, which is very low by international standards (the US insurance penetration is about 30%, and regions such as India and Bangladesh have an insurance penetration of around 5-6%) (Global Village, 2020).

Several tech and financial services giants have indicated that InsurTech is the future of the insurance sector. About 79% of people preferred insurance companies with dynamic digital capabilities (Accenture, 2018). McKinsey (2019) quoted that it can help reduce insurance operating costs by 30%. KPMG (2019) highlights the trends in InsurTech for the coming years, with \$6 billion invested in 2018.

The enormous populace, growing internet and smartphone diffusion and relaxed regulatory environment makes a good case for InsurTech in Pakistan. Insurance, especially Micro-insurance penetration, can flourish by using insurance technology as this market is still lagging in Pakistan because of its availability challenge for conventional financial service providers (Recorder, 2018). InsurTech is a set of novel financial technologies that permits insurers to expand their product ranges and create alternative sales channels for targeting existing and potential clients. For example, micro-insurance targets poor health and crop insurance marketing mobile phone technology (Myanmar Financial Services, 2019).

Challenges to IT adoption, however, exist in Pakistan, including inconsistent IT policy, a negative and non-cooperative

attitude by administrative machinery, weak implementation, lack of IT knowledge on the bureaucratic side, lack of legal infrastructure, and lack of good quality IT professionals (Kundi, Shah, and Nawaz, 2008). This shows the overall adoption challenges of IT adoption, but this study explores InsurTech relating adoption challenges in the context of the Pakistan Insurance industry, which should be resolved. Otherwise, the insurance market will be captured by foreign FinTech companies (MicroEnsure, BIMA), which are still few in Pakistan, and other Pakistani FinTech companies (such as Karlocompare and Mawazna), which can directly compete in the future by providing insurance from upstream and downstream in the insurance value chain business model. At that time, the survival of the existing insurance business would be difficult unless they adopt InsurTech.

According to PwC Global FinTech, a quarter or more insurance enterprises will lose market share due to high competition with FinTech companies in the next five years (PricewaterhouseCoopers, 2020). InsurTech is one of the branches of Fintech, which has the potential to seize opportunities to resolve challenges faced by the current insurance sector system. According to PWC's survey, 74% of insurers perceived a threat from Fintech disruption. 68% of insurers took positively to FinTech for tackling challenges or opportunities with a collaboration strategy (PricewaterhouseCoopers, 2016).

This study fills the gap by exploring the challenges and solutions in the adoption level of InsurTech as perceived by the experts in the Pakistan insurance industry. It will also help enhance the insurance penetration level, which is presently less than one percent, by targeting more unserved and existing market segments with innovative technologies.

After the introduction in section 1, this study provides the literature review of past studies related to InsurTech issues in section 2. The discussion of the qualitative methodology of the study is provided in section 3. The results and discussions are tendered in section 4, leading to the conclusion of the study in section 5.

2. LITERATURE REVIEW

Insurance companies are not adopting innovation for the following reasons: mindset, experience in the current traditional system, fear of failure of the innovative system, difficulty in changing culture, requirement of a diverse set of skills, and difficulty in changing work

processes (Polyblank, 2018). In technologically underdeveloped countries, telematics may propagate in admiration due to devices and applications, but the cost is not feasible to set up black boxes in cars. Moreover, the lack of regulation over data usage and private data security also hinders the broader diffusion of such devices (Soloshchuk and Kartashov, 2018). Insurance companies are focusing on InsurTech adoption while neglecting the InsurTech culture. Innovation should be a part of the company's culture. There are also many implementations related issues of innovation such as resource capacity, lack of specialization and infrastructure, and weak inter-departmental communication (Anagnostopoulos, 2018).

InsurTech is encountering the following challenges in Pakistan: lack of knowledge relating to insurance market functioning, lack of consumer rights protection, and incapability to appeal to administrators for collaboration (Svetlana, 2016). The main challenge is to educate the lower middle-income demographics on the value of disbursing for assurance (Waqar, 2019).

Senior executives can sponsor innovation efforts. They can give support and authority to employees for bringing innovation, creating a diverse team, and celebrating employees' success in bringing innovative and open culture (Polyblank, 2018). Training and symposiums will illuminate the benefits of cooperating and engaging with InsurTech startups (Belli, 2018). Insurance companies can collaborate with InsurTech using three strategies: buy, partner, and invest. In buying strategy, an insurer can buy the services of InsurTech. For instance, Friendsurance or PolicyGenius provides a digital distribution channel to the insurer. Cognotekt is an artificial intelligence company that provides insurer software that automatically processes claims. In partnership strategy, an insurer, with the collaboration of InsurTech, offers new products or businesses based on revenue sharing or co-branding. In investment strategy, insurers invest in startups through merging and acquisition strategies (Zimnoch, 2018).

A Pakistan based FinTech company, Mawazna offers FinTech services to clients in comparing insurance products and reviewing the premiums online (Waqar, 2019). Japan Communications Corporation, which provides wireless data communication services through in-house software solutions, has amalgamated with Pakistan's Saffran Group, a multinational technology development corporation. Both plan to fund financial technology projects in Pakistan through the FinTech platform. Another FinTech company, SadaPay provides a

digital wallet facility in Pakistan, where 87% of over 200 million customers are unbanked. In 2020, UAE's FinTech Rise amalgamated with Pakistan's HomeShopping.pk, an e-commerce company, to offer "Buy Now, Pay Later" services to foreign Pakistanis (Omar, 2020).

A study by Cappiello (2020) highlighted that InsurTech is part of the fourth industrial revolution, redefining the workspace but the insurance sector is the slowest to adopt this digital technology. Sosa and Montes (2022) highlighted that the disruption induced by InsurTech would lead to new insurance products and services innovation. The authors highlighted that the insurance sector needs to adapt to this new norm to remain competitive in the insurance industry.

A study by Saeed and Arshed (2022) highlighted the challenges and solutions faced by the insurance sector of India in adopting InsurTech. According to the study, industry and government should align their resources to ease technology adoption by the industry (Suryavanshi, 2022). The government needs to improve the insurance sector efficiency as it contributes to economic growth, especially in low insurance penetration economies (Njegomir and Demko-Rihter, 2023).

3. METHODOLOGY

This study intends to gather information from the practitioner's side. To assess the viewpoint of Insurance industry experts, an existing interview is accessed using online platforms such as YouTube and Google. The qualitative data of five videos are related to InsurTech adoption challenges as per Pakistan's insurance/takaful and associated technology provider industry experts in Table 1 as a sample. This study used qualitative content analysis to generate the themes based on InsurTech adoption challenges and its solutions in the Pakistan Insurance industry. Using the content analysis test or analysis (codes), the available data may be visual, verbal, or written form and generate themes and then the themes are tested (Lakshmi and Corbett, 2020, Faghiri et al., 2019). This method explores and gauges the topic, proves the new dimensions, and extends the knowledge regarding the topic for better understanding. It uses summarizing the topic, identifying the research gap, and concluding the results better, for example, identifying what issues are discussed most and what are discussed less.

TABLE 1
Reference of Selected Video

No.	Video Reference	Expert Name	Video Topic
1	CxO Global TV. (2021a). InsurTech Summit-2021. Session with Mohammad Ali Ahmed. (https://www.youtube.com/watch?v=L7531RI4kEc)	Deputy Managing Director at EFU Life Assurance	InsurTech Summit-2021. Session with Mohammad Ali Ahmed
2	CxO Global TV. (2021b). InsurTech Summit-2021. SECP Draft Registration Regime for Digital only Insurer. (https://www.youtube.com/watch?v=qox-djn3Inw)	Director Insurance Division Securities and Exchange Commission of Pakistan (SECP)	InsurTech Summit-2021. SECP Draft Registration Regime for Digital only Insurer
3	Techshek Pakistan. (2021). S2 Episode 10: Waada. (https://www.youtube.com/watch?v=93HpMIXdEkQ)	CEO, Waada InsurTech Pakistan	S2 Episode 10: Waada
4	CxO Global TV. (2021). InsurTech Summit-2021 Universal Health Insurance in Pakistan. (https://www.youtube.com/watch?v=FryFGvDLhpU)	Executive Director Strategy and Planning, Salaam Takaful	InsurTech Summit-2021 Universal Health Insurance in Pakistan
5	TPL Life. (2021). Innovation and Insurance in Pakistan Faisal Abbasi CEO TPL Life. (https://www.youtube.com/watch?v=7C4DDHIgnik)	CEO of TPL Life Assurance	Innovation & Insurance in Pakistan Faisal Abbasi CEO TPL Life

Source: Authors Self Construction

4. RESULTS

The selected videos in Table 1 fulfilled this study's criteria and were assessed to identify the themes discussing challenges and solutions for InsurTech adoption. The authors viewed the videos and extracted the

English transcript from YouTube. Themes were identified in the videos and mentioned in Table 2. These themes are major types of issues according to the insurance and InsurTech experts' opinions regarding the issues they face in the insurance/takaful sector. The author defines the themes to form their relevance with the issue being discussed in the study. The statements are provided from the English video transcript against each theme which the author considers an example. Each statement is provided with a video citation. This study uses thematic analysis in which the thematic codes provided in Table 2 are evaluated for repetition frequency in each video. In this process, the sub-themes/modifiers are identified, which explain the detail in which each theme is discussed.

Data were recorded for each video for each minute, forming quantified data of thematic incidence. Table 3 summarizes the frequencies of the themes and their sub-themes for the five videos mentioned in Table 1. This process helps extract the incidence of each issue (theme) identified by this study from the discussions/interviews of insurance/takaful industry experts in Pakistan. First, the most quoted issue based on the frequency of its code is the shortage of InsurTech experts in implementing InsurTech-based solutions in the Pakistan insurance sector. Now, video no. 5 (refer Table 1) encompasses all themes, of which the most prominent one is human resources as the most discussed issue faced by insurance organizations. In this video no. 5, titled "InsurTech Summit-2021 | SECP Draft Registration Regime for Digital only Insurer, Waseem Khan - Director of Insurance Division (SECP)" discussed his vision regarding the Pakistan environment for InsurTech adoption in the insurance industry (CxO Global TV, 2021).

TABLE 2
List of All Expected Themes, Definitions, and Examples

Themes	Definition	Example
Partnerships between startups and broader insurance	Insurer-startup partnerships enables insurers to adapt to and facilitate an InsurTech way	Partnerships are there. Technology partners should be taken in private insurance with health experience. This hospital environment on all areas they are experienced. They should involve them digital health platforms (CxO Global, 2021a)
Lack human capital development	Shortage of skilled technical staff	We lack human capital so there is no human capital development program here in Bangladesh (Insurance Alertness Broadcast, 2022).
Sandbox regulatory setup	A framework set up by a regulator that allows FinTech startups and other innovators to conduct live experiments in a controlled environment under a regulator's supervision.	Sandbox in first part we accepted the two applications regarding insurance sector and now in April 2021 SECP announced the second quarter in the second part we have also accepted one application regarding the insurance sector now after this experiment experimental phase of sandbox we are moving toward the for licensing of digital only insurers and this framework was known June 2021 (CxO Global, 2021b).
Pilot Project	Small scale project before full scale launch	Ssp may give approval for full-scale launch based on performance pilot operations. Ssp may levy condition for conduct of pilot operations such as limit on number of transection number net of customer
New licensing approaches to the InsurTech	Authorizing and licensing approaches to financial innovation	Insurance sector now after this experiment phase of sandbox we are moving toward the licensing of digital only insurers and this framework was known June 2021 (CxO Global, 2021b).
Data Theft	Information security is at risk due to cybercrime.	Data theft become a common phenomenon as any manipulation of critical information or data could affect the credibility of the system.
Digital financial Illiteracy	Lack of ability and skills to create, evaluate, learn, and find information on online media and digital platforms through the usage of technology.	Insurance provides that element of protection not just of your own life but also of your assets. Unfortunately, what is happening is because of the element of illiteracy or lack of knowledge (KTN News Kenya, 2021b).
Low Awareness	Lowest level of awareness	Lack of awareness even amongst the people who are educated. they may not really be aware of aware of the insurance products that are (KTN News Kenya, 2021a)
New licensing approaches to the InsurTech	Authorizing and licensing approaches to financial innovation	Insurance sector now after this experiment phase of sandbox we are moving toward the licensing of digital only insurers and this framework was known June 2021 (CxO Global TV, 2021).
Awareness programs	Community-wide initiatives to increase audience knowledge and share information	Education is key to actually bring up the awareness of what blockchain is all about (Feological, 2019).
Consultation with stakeholders for draft laws	Given sufficient time to formulate and submit their views	Government and the stakeholders as us have to really work together you know in ensuring that 5g becomes successful in Bangladesh (CxO Global TV, 2021).

TABLE 2 (continued)

Themes	Definition	Example
Unclear regulatory policy	Existing insurance laws and regulations does not accommodate or are unclear about emerging technologies like Usage based insurance based on telematics	Technology comes in first and then regulations follow later so they don't have the frameworks. There is also issue of knowledge and expertise among the legislators in terms of regulations (KTN News Kenya, 2021b).
Consumer willingness	Top insurance industry management do not show a willingness to adopt novel technology.	Support system come from the enterprise top management
Resist to Change	There is uncertainty about the impact of change or technology disruption on job security in insurance industry.	The less the team members know about the change and its impact on them the more fearful they will become (Crash Course MBA, 2020).
Slow Migration/ switching cost	A risk of a vendor lock-in makes it slow to migration from one to other one	Lock-in is a situation in which a company becomes constrained to a single cloud vendor technically the company can leave the cloud service but the cost of switching to the other cloud provider is so high that they get stuck with the original service provider vendor lock-in can be a huge concern in cloud computing (Ace Cloud Hosting, 2020)
Ownership of data	Act of having legal rights and complete control over a single piece or set of data elements	Ownership is suddenly changed, the locations of the data centers also change now compliance as per the IT rules 2011 cloud computing service (Prashant Mali, 2012).
Privacy issue	Disclosure of personal information of insured in case of digital health insurance or vehicle or property insurance	Digital technology has further led to a general lack of privacy and confidentially still it is a problem in blockchain (Inspiring Bangladesh, 2021).
Trust Deficit	Lack of confidence in the technology (IoT, blockchain, cloud computing, bigdata analytics) and processes to create a secure digital world	I would not trust upon that much more, but these issues are very my prime most importance when you look at Indian legal scenario (Prashant Mali, 2012).
Poor physical infrastructure	Includes hardware (mainly physical servers), software, networks, data centres, facilities, and related equipment, which is used to develop, test, operate, monitor, manage, and support ICT services.	We need kind of a data infrastructure and the computational infrastructure if we want to do these use cases sometimes you need huge amounts of data that you need to collect to be able to have meaningful models that solve the problem (MoroccoAI, 2022).
Collaborate with telecommunication companies	Cooperation needed with telecom operators provides Communication required with a phone or the Internet, through airwaves or cables, through wires or wirelessly.	Various players the various sectors the various insurance players our banking partners our telecommunication partners our service providers to actually reach this milestone of the next 10 million customers (CxO Global TV, 2021).

Source: Authors Self Construction

The overall minute-by-minute data of each video's thematic frequencies is then prepared for validation. One video is selected, constituting at least 20% of the total minutes in the five videos and forwarded to the independent rater with all the details of themes, definitions and examples (from Table 2). The selected independent rater uses the data in Table 2 to understand the meanings of the themes identified by the authors and prepares thematic frequency from the provided video. Theme validity is ensured if the thematic frequency generated by the independent rater is similar to the author's. The interclass correlation (ICC) test was applied to compare the original themes and their frequencies by author with the outcome of the independent rater and provides a quantitative statistic representing the correlation between thematic frequencies. Table 4 only shows those themes found in the video used by the independent rater. Since all ICC values are higher than 0.60 and their test values are significant in Table 4, it can be confirmed that the themes were adequately identified.

TABLE 3
Frequency of Themes in Selected Video (Challenges)

Challenges in adopting InsurTech in Pakistan							
Themes	Sub Themes	V1	V2	V3	V4	V5	Total
Infra-structure	Poor physical infrastructure			1		3	4
Trust	Trust Deficit	2				6	8
Human Resource	Shortage of InsurTech Experts	4	3			8	15
Data Privacy and Security	Privacy issue					7	7
	Cyber Security				2	6	8
Data Ownership	Ownership of data				1	5	6
Inter-operability	Switching cost	1	1	2	1	4	9
Organization cultures	Resistant to Change		1	1	2		4
	Lack of Willingness			2	1		3

TABLE 3 (continued)

Challenges in adopting InsurTech in Pakistan							
Themes	Sub Themes	V1	V2	V3	V4	V5	Total
Regulatory Framework	Lack of proper regulations for InsurTech					5	5
	New licensing approaches to the InsurTech					6	6
Digital Illiteracy	Financial and digital Illiteracy	1					1
	Low Awareness			1	1	2	4

TABLE 4
Frequency of Themes in Selected Video (Solutions)

Solutions to adopting InsurTech in Pakistan							
Themes	Sub Themes	V1	V2	V3	V4	V5	Total
Awareness	Awareness programs	1	1	1	1	6	10
Human Resource Recruitment	Data scientists				1	5	6
Consultation	Direct consultation with relevant stakeholders for draft laws	1	1	3	4	3	12
	Collaboration with telecommunication companies	1			2	5	8
Collaboration Model	Partnerships with technology companies				3	4	7

Source: Authors Self Construction

Literature has pointed out that the low penetration and low customer satisfaction in insurance/takaful in Pakistan is because of low technology intensiveness in this sector. Further, it is also noted

that InsurTech has led to improvements in customer satisfaction in many countries. This study identified video recordings of the insurance sector experts discussing how the insurance/takaful sector can adopt the technology and compete with the new technology companies developing online tools to provide local insurance services (PricewaterhouseCoopers, 2016).

This study has identified significant issues of Insurtech adoption in the case of Pakistan, according to the insurance and Insurtech technology experts. Experts believe that emerging issues include infrastructure, trust, human resources, data security and ownership, interoperability, organization cultures, regulations and digital literacy. The interviews highlighted that the insurance sector needs help from technology providers, government and insurance users to join hands in reforming the insurance sector and address these issues. Insurance and technology experts also pointed out some solutions which could increase Insurtech adoption, leading to enhanced insurance penetration in Pakistan. Hence, according to them, if the sector increases awareness regarding new technologies, recruits new human capital, acquires consultation from the technology experts and collaborates with them, it can help increase the technology intensity in the insurance/takaful sector, leading to higher insurance penetration.

TABLE 5
Inter Class Correlation Test

Theme	ICC	Lower Bound	Upper Bound	Value	Significance
Partnerships between startups and broader insurance	0.778	0.487	0.913	8.000	0.000
Lack of human capital development	0.819	0.569	0.930	10.059	0.000
Sandbox regulatory setup	0.691	0.330	0.876	5.480	0.001
Pilot Project	0.803	0.536	0.924	9.133	0.000
New licensing approaches to the InsurTech	0.652	0.265	0.858	4.750	0.002
Data Theft	0.652	0.265	0.858	4.750	0.002

Source: Authors Self Construction

5. CONCLUSION AND POLICY IMPLICATION

On the eve of the industrial revolution, businesses are redefining their operation space. The major shift is seen in the services industry, which had experienced the description the hardest. Several reasons motivated this study. First is that empirical studies have highlighted that technology utilization has led to increased customer satisfaction (Dickinson, 2015). Second, Pakistan has very low insurance penetration compared to its neighbors (Karandaaz Pakistan and FinSurgents, 2017). Third new technology firms are now competing with the insurance sector in providing technology based insurance solutions (PwC, 2020). Lastly, Pakistan has a majority technology friendly youth population. All these points indicate a need for an accumulated effort to boost InsurTech adoption in Pakistan (Rizvi, Naqvi, & Tanveer, 2018).

This study adopted a qualitative approach to analyze the secondary video data on interviews of insurance/takaful experts of Pakistan who are discussing the issues, challenges, and solutions of InsurTech adoption. The data were assessed for common issues and solutions by using content analysis. Based on the selection criteria, the study sample constitutes five video interviews in Pakistan (Table 1). After analyzing the videos and their transcriptions, the study has uncovered several themes and sub-themes with their proposed definitions. The examples for each theme are backed with a citation from the relevant video. The themes are coded with their incidental frequency in Table 3. To validate the outcomes, this study has provided 20% of the sample data to an independent rater who evaluated the theme frequency for their frequency. ICC results are also found by taking correlation analysis between the author derived and independent reviewer derived themes; generated themes appear to have a high association and validity. This study is helpful for the Pakistan insurance industry to enhance the insurance penetration level, which is below 0.01.

Policymakers can understand the current challenges in adopting InsurTech in Pakistan and find an appropriate policy for the insurance sector. A better functioning and cost-effective insurance sector will contribute to economic growth. Accordingly, policymakers can apply industry experts' suggested solutions to enhance the insurance penetration level in Pakistan, which is significantly below that of other neighboring countries such as India and Bangladesh. This study highlights the untapped market such as micro-takaful or micro-

insurance, pay-as-you-go models and agriculture insurance, which can be targeted and handled efficiently by adopting InsurTech. The insurance industry encounters challenges such as a shortage of InsurTech experts, data scientists, and blockchain experts. Government needs to put effort into many dimensions. They need to ensure provision of advanced IT-related products, improve the poor communication infrastructure, fill the absence of cyber security leading to privacy breach issues, help in reducing resistance to change by staff due to job loss fear, overcome digital illiteracy, and lack of trust in novel technology. All of these efforts will remove the bottlenecks in adopting novel technologies in Pakistan, which has a high uncertainty avoidance culture.

This study suggests solutions to these challenges, which can be overcome by collaborating with new startups with expertise in IT. Relevant parties can also arrange awareness sessions collectively to expand knowledge regarding new products, features of the target market, or solutions to get insurance at their fingertips. The insurance sector and telecommunication sector can form partnerships and provide low-cost digital services to the poor via mobile SMS or call or payment-based services. This study also suggests that policymakers such as the Securities and Exchange Commission of Pakistan (SECP) arrange a sandbox regulatory framework to promote digital insurance or new InsurTech startups by relaxing license issuance or tax-related matters. Pakistan is fortunate to have a growing IT sector. Appropriate integration of the IT and insurance sectors can help Pakistan achieve a competitive advantage in this industry and expand its penetration.

The outcome of this study is limited to the available sample at the time of data collection. Indeed, more issues and solutions evolve over time. Future studies could develop a framework for mapping all technologies in the insurance contract so that insurance businesses can assess what aspect they specialize in for product marketing.

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