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Designing the Insurance Coverage Model for FinTech Startups: A Novel Approach to the Necessity of Digital Transformation Track of in Insurance

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ABSTRACT

As FinTech startups grow and develop, the nature of risks that need to be managed also changes. The insurance industry as one area of technology application plays a crucial role in supporting and enhancing the security of these companies. The purpose of this research is to identify the influencing factors and discover a paradigm model for insurance coverage of FinTech startups as an innovative product. The research method is qualitatively based on the Grounded Theory Method. The qualitative part includes semi-structured interviews with fourteen experts. The research conclusions show that the causal conditions provide requirements for the core category. Insurance strategies have an impact when context conditions are present. On the other hand, the COVID-19 crisis is known as the intervening condition. Ultimately, the use of strategies also yields consequences.

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1. Introduction

Technology is a crucial priority for our customers, and it has revolutionized how we interact with financial institutions and the industry (Eling & Lehmann, 2017; Nicoletti, 2017; Bühler et al., 2015). Without fast-growing companies based on new technologies and innovations, today's economy could not develop steadily and sustainably (Pukala, 2018). These companies include startups. Startup activities have a great impact on social and economic life (Pukala, 2018). FinTech startups today have grown significantly within the financial service industry (Anagnostopoulos, 2018). The COVID-19 pandemic may also have increased the adoption of FinTech platforms (Xie et al., 2021). It is predicted that by the end of 2025, FinTech startups will boost global manufacturing by $3.7 trillion from 2015 levels, create 95 million new jobs, and reduce the $100 billion annual deficit gap (Manyika et al., 2016; Khosropour et al., 2022).

FinTech is a word that combines Finance and Technology, and this technology has created new services or programs, business models, institutions, processes, or products related to financial markets and financial law (Li et al., 2020; Thakor, 2020). FinTech startups have brought innovative financial services to the public due to the deeper integration of Internet technology and the financial industry (Xie et al., 2021). Also, FinTech startups can generate huge profits through various payment channels due to lower cost, faster speed, more user-friendly, safer, and more accessible activities (Li et al., 2020; Lukonga, 2018). But FinTech startups are one of the higher-risk companies and at a considerable level of risk in each development stage (Pukala, 2018). These risks include cyber threats, data theft, fraud, and money laundering (Lukonga, 2018). So these startups need special financial security until become scalable and adopt a form of a business model.

Insurance is one of these tools. Insurance companies are considered one of the most promising areas of technology application, and their efficiency, cost, and added value make them one of the best ways to finance operational risks in volatile external business conditions and changing market conditions (Stoeckli et al., 2018; Pukala, 2018). As mentioned, Information Technology (IT) has changed risk parameters, but at the same time it can provide more accurate risk assessments and data for insurance companies e.g., Insurer leverage technologies such as big data, analytics, AI, and IoT to meet changing consumer demands. Also, they can use blockchain smart contracts, AI, and cybersecurity to protect consumer identities and enable new risk coverage (Stoeckli et al., 2018; Yan et al., 2018).

On the other hand, the risk of insurance coverage for FinTech startups is very different from other types of operational risk (Zeller and Scherer, 2021). And also we should be emphasized that risk management is the process by which an organization solves relevant risk-related problems in an organized manner (Pukala, 2021; Sitek, 2009). So the insurance industry can be paving the way for new markets of technology like InsurTech startups that offer customer-centric products and well-designed user interfaces (Hoffmann, 2020). Technological advances have enabled the insurance industry to leverage data analytics, sensors, and wearable, and mobile phone data to deliver customized risk solutions in ways not possible just a few years ago. So, as mentioned, new developments, particularly in the FinTech space, mean that more research is needed to identify new potential models (Yu & Yen, 2018). But to date, many potentials remain untapped, such as the growing importance of digital transformation in the insurance industry (Stoeckli et al., 2018; Eling & Lehmann, 2017).

As such, it remains unclear which factors can influence the new innovative product in insurance (Insurance coverage for FinTech startups). Hence, there is a need for studies that address insurance coverage for FinTech startups, In other words, building a comprehensive and integrated framework that looks from experts' perspectives. Grounded Theory is an appropriate methodology to explain behavior, thus creating a process of social interaction and creating a theory (Strauss and Corbin, 1994). Thus, to fill the gaps in this research, this article discovers a paradigm model, identifies the factors that influence insurance coverage of FinTech startups from the experts' perspective, suggests strategies to insurance managers, and discusses the consequences. To achieve this goal, we have formulated the following Research Questions (RQs).

RQ1: What is the paradigm model for FinTech startups insurance coverage?
RQ2: What are the factors and dimensions of FinTech startups insurance coverage?

The remainder of the paper is organized as follows. In Section 2, we comprehensively review the related literature on FinTech startups, main categories, new risks, and the role of the insurance industry, InsurTech Startups, and the application of innovative technologies in the InsurTechs, the research background, and research gap analysis are in Section 3. Section 4 describes the research methodology. Lastly, this section validates the data. After that, in section 5, the research findings are carried out in three steps: open coding, axial coding, and selective coding. A paradigm model was then designed based on the Grounded Theory assumptions. Finally, the current article concludes with the discussion, conclusion, implications, limitations and future studies and appendices.

2. Literature Review

2.1 FinTech Startups

In this dynamic digital age, businesses are staying competitive by leveraging the convergence of technologies and trends offered by the Fourth Industrial Revolution (4IR). Industry 4.0 refers to current trends toward digitization, data exchange, communication, and automation (Medoh, 2022; Chen et al., 2017). In this dynamic virtual age, startups are a key factor in the growth of any country's economy as they foster competition, drive innovation and create jobs (Teberga et al., 2018). FinTech startups have created new services or programs, business models, institutions, processes, or products related to financial markets and financial law (Li et al., 2020; Thakor, 2020; Keong, 2020). FinTech is a word that combines Finance and Technology (Keong, 2020).

According to Ian Martin's category, all FinTech companies fall into seven main categories: **Lending:** Consumers can apply for credit online and receive instant approval (Lee & Shin, 2018; Lukonga, 2018); **Payments:** FinTech companies enable consumers to send money quickly and cheaply. Technologies like blockchain allow these companies to process payments cheaper than banks (Ibid); **International Money Transfers:** Financial technology companies in this category offer faster and cheaper international money transfers (Ibid); **Personal Finance:** FinTech companies offer retirement planning and investment advice via their apps today (Ibid); **Equity Financing:** Investors can also benefit from virtual fundraising since everything can be done online (Ibid); **Consumer Banking:** Traditional banks charge high fees, making these types of companies an option for consumers. Additionally, these companies can reach underbanked consumers. Consumers who cannot or do not want to accept credit cards can obtain prepaid cards from FinTech companies (Ibid); **Insurance:** Insurance technology (InsurTech) is a branch of financial technology (FinTech) focused on insurance and associated with innovative business models and a range of new technologies that have the potential to transform the insurance industry (Braun and Schreiber, 2017).

2.2 FinTech Startups, New Risks and the role of Insurance Industry

The new era also brings new risks (Pisoni, 2020). FinTech startups are notorious for high risk and failure rates. (Teberga et al., 2018; Giardino et al., 2014). This is shown by continuously changing and expanding cyber threats and the increasing frequency and magnitude of the financial impact of cyber incidents (Zeller and Scherer, 2021). These companies are constantly being challenged by increasing hacker activity, data protection, data breaches, and risk management. Numerous peer-reviewed publications discuss the importance and practices of FinTech startups, but currently, there is no indication that cyber threats and attacks will decrease (Medoh, 2022; Chen et al., 2017). Cyber risk is one of the top concerns of business leaders today. In accordance with its description was mention, FinTech Startups will face potential losses from electronic data theft, but, these types of startups want to protect themselves, their reputations, and their customer's data and records from cyber risks (Pisoni, 2020).

One of the risk management strategies is risk transfer by insurance contracts (Zeller and Scherer, 2021). As a result, these categories of startups are increasingly turning to the insurance industry to manage better their needs for insurance products and provide liability from cyber threats and data breaches. But these new risks will enable insurers to offer new products and services (Pisoni, 2020). As we know, insuring risk in any economy is a complex and multifaceted endeavor (Grima et al., 2020). So, in an era of digital transformation and facing the impact of cutting-edge technology, insurers must change their strategies to achieve customer-centric process transformation and adopt innovative technology-driven insurance systems to maintain a competitive advantage (Wang, 2021).

So, to solve the challenges associated with technological disruption, insurers are turning to a wave of startups called **InsurTechs** (Pisoni, 2020).

2.3 InsurTech Startups: Tracking digital transformation in the insurance industry

A subset of FinTechs is InsurTech "Insurance + Technology", defined as a set of innovative technologies using IT and insurance services (Pauch and Bera, 2022). In fact, the term FinTech refers to specialized technology used in the financial industry, while InsurTech is specialized technology used in the insurance industry. InsurTech is the driving force behind the transformation and modernization of the modern insurance industry. InsurTech plays a central role in both foreground businesses such as product research and development, marketing and services, and traditional product pricing, and background businesses such as risk management and customer after-sales management (Ibid). InsurTechs are emerging as a digital native company. These digital startups enable insurers to improve and expand their digital capabilities. They help transform established ways of function such as interacting with customers and customizing. InsurTechs aims to create value for customers, insurers, or both (Pisoni, 2020).

The digitization of the insurance industry is already well advanced, well beyond the shift from analog to digital information processing (Stoeckli et al., 2018). Eling and Lehmann (2017) describe digitization as "the integration of the analog and digital worlds with new technologies that improve customer interactions, data availability, and business processes." Digital transformation is also being driven by InsurTechs that have emerged in the last decade (Riikkinen et al., 2018).

On the other hand, the proliferation of mobile and connected devices has dramatically increased the availability of customer data. The vast amount of data available has opened up new opportunities for insurers to take advantage of innovative technology. Insurance managers need to understand new technologies that help companies develop innovative products, derive valuable insights from new data sources, streamline business processes, and improve customer service (Eling et al., 2021). Also, insurers with a particular focus on trends in new growth areas are looking to become more efficient and customer-oriented. In fact, insurers are exploring the possibility of becoming more efficient by increasing speed and reducing costs while increasing business resilience (Grima et al., 2020).

New cutting-edge technologies such as big data, blockchain, and artificial intelligence will gradually change the ecosystem of the insurance industry, permeate the business processes and various scenarios of insurance, and make the value of the insurance chain logical from scratch (Wang, 2021).

2.4 Application of Innovative Technologies in the InsurTechs

The role of FinTech and InsurTech is growing (Zarifis and Cheng, 2022). New developments and changes in society and the economy are impacting insurance demand, and given the socioeconomic changes they relate to in many ways, the insurance industry needs to innovate (Lanfranchi & Grassi, 2021). Technological Innovation in the insurance services sector based on information technology combines elements of finance, insurance, and technology. These are key elements in building a competitive advantage and help create new business models that are better suited to customer needs and expectations (Pauch and Bera, 2022).

Academic literature highlights how recent technological innovations in the insurance sector lead to increased efficiencies. In recent years, InsurTech innovations, powered by technologies such as Artificial Intelligence, Internet of Things (IoT), Blockchain, and additional technologies such as Big Data, Machine Learning (ML), and Cloud Computing have pushed the role of technology in the insurance industry beyond its previous value proposition (Zarifis and Cheng, 2022).

Artificial intelligence has a wide range of impacts along the insurance value chain, from underwriting and claims management over distribution and customer service to asset management, also artificial intelligence can make the personalization of insurance policies more efficient (Lanfranchi & Grassi, 2021). AI and automation capabilities also enable more scalable and effective processes. In the insurance industry, sensors and Internet of Things (IoT) devices allow consumers to compensate for recent losses without having to make the claim them all (Zarifis and Cheng, 2022).

Blockchain technology has the potential to be widely used in various insurance categories, making the exchange of information between various parties faster and smoother, automating processes, reliably preventing fraud, creating audit trails, reducing insurers' overheads, and improving

profitability (Zarifis and Cheng, 2022). Blockchain by increasing speed, reducing costs, and eliminating middlemen could lead to a more efficient approach. Online interfaces and virtual claims adjusters can help settle and pay post-accident claims more efficiently concurrently reducing the likelihood of fraud (Lanfranchi & Grassi, 2021). Blockchain technology ensures transparency and ultimately system-wide consensus on the validity of the entire transaction history. In particular, the application of Smart Contracts (generally transactional protocols that automatically perform actions according to the terms and conditions of the contract) is a valuable competitive advantage for insurers by enabling time and cost-saving automation of administrative tasks. Smart contracts give customers new opportunities to create innovative products. This is how blockchain-based insurance products make payments, as the circumstances of the payments are already defined in a tamper-proof code. Payments are automatically triggered based on trusted external data sources provided by Oracle (Hoffmann, 2020).

Big data have changed the way insurers process the massive amounts of data they receive. Advances in technology have significantly increased the amount of data processed, and this data can be structured, semi-structured, or unstructured. Initially, and still today, many insurance companies use actuarial formulas for underwriting. Big data technology helps to analyze data and extract important information from it. This can lead to better decision-making and strategic business development compared to the traditional data processing techniques mentioned above (Rawat et al., 2021).

The use of machine learning (ML) has grown significantly in the insurance industry despite initial industry resistance. ML is used in claim analysis and processing to validate claims and identify and automate outlier claims and fraud where possible. Using ML algorithms in this process helps companies understand their beneficiaries' claim filing and claim acceptance patterns, which can be used to optimize the flow throughout the policy registration process (Rawat et al., 2021; Doupe et al., 2019; Kakhki et al., 2020).

Cloud-based computing services have become a great option for optimizing various processes in the insurance industry. Supporting custom insurance software development services makes it much easier to increase productivity, improve customer experience, increase business ROI, and provide easy access to all your business data. The most common use cases like: Platform hosting; data storage and backup; API Integration; Marketing Campaigns; Enterprise Resource Planning (ERP); Customer Relationship Management (CRM) and Claims Management (Pauch and Bera, 2022).

3. Research Background

Based on the findings of Medoh and Telukdarie (2022) A well-designed cybersecurity architecture results in a more flexible and agile collaboration (employees, customers, partners) sufficient to protect and implement cybersecurity initiatives. Zeller and Scherer (2021) presented an actuarial approach to modeling cyber risk that is consistent with the characteristics of the underlying risk factors from an economic and information-technological viewpoint. For this purpose, the existing literature on technical, statistical, economic, actuarial, and legal aspects of cyber risk was analyzed in detail to identify relevant risk factors and plausible distributional assumptions within an actuarial framework.

Research from Zarifis and Cheng (2022) shows the model trust in FinTech and trust in InsurTech. They used the Multigroup Structural Equation Modelling to evaluate if the model is equally valid for FinTech and InsurTech. The model presented here suggests that trust in both FinTech and InsurTech depends on (1) Individuals' psychological disposition to trust, (2) Sociological factors influencing trust, (3) Trust in either the financial organization or the insurer, and (4) Trust in AI and related technologies. Multigroup analysis results show that the model is equally valid for FinTechs and InsurTechs. Pauch and Bera (2022) concluded: digitization remains the key to the development of insurance and various levels of its creating value (product, risk, distribution, or the settlement process). On the other hand, the greatest source of value creation through the digitization of insurance lies in the ability to develop new and more customer-oriented products and solutions to reduce costs. The emergence of Covid-19 created new challenges for the insurance market, enabling it to accelerate the implemented digital innovations. Covid-19 contributed to insurers having to significantly streamline, improve and digitize their insurance claims management operations.

The research aim of Lanfranchi & Grassi (2021) is to contribute to the literature on insurance innovation by recognizing the crucial importance of the impulses derived from technology and market

demands that translate into innovation within the industry. Furthermore, by studying the extreme case of the COVID-19 pandemic, they have analyzed the complex interactions between the two and the kind of innovation initiatives that companies could undertake in the future. It has become an absolute necessity for insurance companies to have a detailed claims analysis system. Claims analysis is performed by insurance companies to distinguish fraudulent claims from genuine claims. Apart from that, claims analytics can also be used to better understand customer demographics and further implement the results during the underwriting and approval/denial stages of policy registration. In a study by Rawat et al. (2021), they used exploratory data analysis (EDA) and feature selection techniques to identify meaningful and important factors for claim-making and acceptance in a learning context. They also applied machine learning algorithms to the dataset and evaluated performance metrics.

In research from Eling et al. (2021), two possible developments were identified with respect to the insurability of risks. The first is that the application of artificial intelligence by insurance companies might allow for a more accurate prediction of loss probabilities, thus reducing one of the industry's most inherent problems, namely asymmetric information. The second development is that artificial intelligence might change the risk landscape significantly by transforming some risks from low severity/high frequency to high severity/low frequency. According to Wang's (2021b) research, the role of InsurTechs and its impact on the insurance industry shows that the InsurTechs have brought good news to insurers' revenue development. Insurers see new technologies as points of development, but the InsurTechs impact profitability and investment funds in many ways, and these impact channels are not independent, they interact. Yang and Zhou (2021) believe that insurance innovation services based on cloud computing insurance data can improve customer satisfaction, increase the number of policyholders, reduce the number of complaints, and make insurance service innovation more successful. According to the study by Marano (2021), the digital technology environment may present different challenges than the 'traditional' environment in which insurance has evolved.

Arkanuddin et al. (2021) have proposed two solutions in their research. One is to develop a comprehensive concept of ecosystem-based risk management, and the other is to establish financial regulation in the FinTech space. The results of the Xie et al. (2021) study show that perceived value, perceived risk, and societal impact are highly correlated with individuals' intentions to embrace FinTech. Additionally, in the research of Bahrami et al. (2021), the findings of this paper can be applied by policymakers to design and implement policies for big data startups, one of the leading developers and adopters of this cutting-edge technology. Based on the model obtained in Varshosaz and Shoshtari's (2021) study, economic factors and employment, innovation in the economy, and changes in consumer behavior are causal conditions, the development of technological digital as the context conditions and the formation of the banking market based on financial technology were extracted as a core category. By the findings of Gheidar and ShamiZanjani's (2021) research, organizations will enable to improve their DEX at work and rethink employee relationships to survive in today's competitive business environment.

Pisoni (2020) presented the steps taken by a small insurance company took to respond to the wave of digital transformation. The technology-based organizational transformation required flexibility and responsiveness to organizational change. Organizations can embrace digital innovation through internal innovation, acquisition of startups, partnerships with startups and accelerators, enriching their portfolio with new insurance products to address various digital risks or investments in startups, and embracing digital innovation through investments in new technologies. Hoffmann's (2020) research presents a new approach to using experiential or project-based, learning to bridge the gap between attitudes in entrepreneurship theory and practice. To remain profitable in the future, insurers are looking for new revenue streams and ways to be more cost-effective and gain a competitive advantage in the following areas: price, quality, speed, innovation, and barriers to entry. In its current state, automating contracts have the potential to increase efficiency across the insurance industry. The range of blockchain-based insurance products not only holds great marketing potential for insurers but also creates new barriers to entry. This is because creating such an insurance product requires new knowledge, the right personnel, financial resources, and technical architecture.

Grima et al. (2020) analyzed the key factors that will influence the potential adoption of blockchain technology in the insurance industry in the coming years. To this end, they applied the STEEP analytical framework to systematically assess social, technological, environmental, economic, and

political/legal determinants. These determinants are likely to influence the industry's appetite for blockchain technology and the significant changes that will result. Cappiello (2020) points out that digital transformation is forcing fundamental changes in corporate culture, products, processes, customer relationships, and relationships with the industry's various competitors.

Middler et al. (2020) after doing research, came to conclusions: Recent innovations in China's digital finance sector have shown that small and growing companies could seriously impact the industrial sector's multi-billion dollar insurance market with the advent of big data technology and blockchain. Brophy (2019), examine the operational and regulatory positions on the use of blockchain in the insurance industry in his research. Tsyganov and Bryzgalov (2018) conclude that the development of the insurance market is highly dependent on the introduction of new technologies in the digital economy that affects insurance technology but does not change its economic nature. Yu and Yen (2018) propose a framework based on three factors related to availability, affordability, and reliability. Two approaches have also been proposed for the development. One is an evolutionary way of overhauling specific areas of the current insurance model, and the other is an innovative way of overhauling the insurance model and restructuring the risk protection arrangements.

In the following, we discuss two issues of **knowledge gaps** in this research.

3.1 Gap in subject knowledge

Although a number of mentioned researches, which are done so far look at the: Use of innovational technologies and new service offerings in InsurTech and FinTech startups, The importance of innovational technologies in InsurTech and FinTech startups, Technology Acceptance Factors, Trust in Technology Use, etc. Innovational technologies can be seen as an exciting new factor with great potential to improve the insurance industry, but it is not the answer to everything. None of the mentioned research specifically focuses on what factors play a key role if you want to offer a new product to the insurance industry product (insurance coverage for FinTech startups). Understanding the influence factors in relation to the insurability of FinTech startups, strategies and consequences are needed. As such, there have been few attempts to understand the importance and necessity of insurance coverage for FinTech startups. Thus we focus on the key factors that will enable or hinder the widespread adoption and use of new innovative products within the insurance sector. This study fills this gap in the literature and provides direct insight into insurance coverage for FinTech startups. The paradigm model is significant because it demonstrates a comprehensive and integrated framework that looks at it from experts' perspectives.

3.2 Gap in methodological knowledge

Based on the evaluations in the research background, the methods of these researches have been used primarily quantitative methods. For this reason, our research is needed because we want to bring out the knowledge that has not been used until now with different methods and ways of thinking. Therefore, we decided to dig a little deeper into the topic using the qualitative method. Therefore, we decided to discover influence factors by the Grounded Theory Method analysis. Grounded theory is an inductive, or more precisely, an abductive method aimed at generating theories from empirical data collected in the field. Often viewed as both a process and an outcome of social research, grounded theory is considered the most widely used modern qualitative research method. (Babchuk & Boswell, 2023; Guetterman et al., 2019; Bryant and Charmaz, 2007a; Babchuk, 1997).

4. Research Methodology

4.1 Grounded Theory Method (GTM)

This research is an exploratory qualitative study based on the grounded theory method (GTM). Grounded theory is considered the most popular modern qualitative research method. Grounded theory has grown exponentially in use across disciplines, settings, and problem areas over the last 50 years and continues to hold great potential for the future of educational and social research. The **Systematic-GTM** plan for research methodology literature owes a deal of intellectual credit to the genius of Strauss and Corbin, and to those who continue the tradition of grounded theory (Babchuk & Boswell, 2023). **Strauss and Corbin**—put more emphasis on theory verification rather than theory generation and they employed **open, axial, and selective coding** procedures (Charmaz, 2014; Kelle, 2019;

Strauss and Corbin, 1990). The grounded theory coding process is at the heart of methodological operations: coding is moving from codes **to concepts, categories, to theory**.

4.2 Theoretical Sampling

One core feature of grounded theory that helps distinguish it from other qualitative approaches is the process of theoretical sampling guiding the strategic selection of sites, individuals, and events to further the development of theoretical categories and concepts to enrich theory building. This procedure involves the selection of a range of participants, groups, sites, or activities that differ on selected dimensions that are germane to the research question (e.g., age, location, past experience), and it enables the researcher to develop a more complete picture and elucidate the boundaries of the studied phenomenon (Babchuk & Boswell, 2023).

The statistical population of this research includes insurance industry CEOs and Co-managers/ IT/ Business Transformation, and Co-founders of FinTech and InsurTech startups, Assistants to CEO at ICT, R&D and Planning, and Assistant Professors of insurance and management that were mastery over the research subject in Iran, and the researcher also choose InsurTech startups because this is a subcategory of FinTech startups, and the CEOs and Co-managers of these startups have a deep understanding of the research topic. The sampling method has been purposive and theoretical. The means of purposive is, through which informants were selected among the people who were aware of the new concepts from previous interviews. In the based on theoretical means, interviews were continued until researchers reached theoretical saturation.

4.3 Interviewees Criteria

Several criteria were considered for the cases. These criteria include firstly: at least 5 years of relevant professional experience, secondly: ongoing activity in the fields of insurance, Management, and IT, and thirdly: MA/M.Sc. Degree or more. Additionally, the researchers have many years of experience in the insurance industry and education.

4.4 Data Gathering Procedure

Grounded theory has historically relied most heavily on interviews, as it is the most common data collection strategy (Creswell and Guetterman, 2019; Guetterman, 2015), and that provides the rationale for the fact that interviews provide the best control over the data generated over the course of a study. A semi-structured interview protocol usually consists of opening, middle, and closing or closing questions (Charmaz, 2014). Due to the lack of sufficient applied knowledge and the theoretical gaps, this research provided a semi-structured interview approach.

Interviews were conducted step-by-step with each interviewee. **In Part 1,** interview began with general questions about the occupation, age, educational background, and years of service.

4.4.1 Interviewees Demographic Characteristics

A total of 14 people were interviewed. Demographic characteristics such as gender, age, educational background, occupation and years of service of the respondents are as follows: One female, 13 males. Five participants by the age group (35-45 years old); six participants by the age group (45-55 years old), three participants by the age group (55-65 years old). In terms of educational level, five participants have a Ph.D., and nine participants have a Master's degree. Participants' fields of study included IT (n=3), Industrial (n=3), Management (n=3), Business Management (n=2), Industrial Management (n=1), Economic Sciences/Financial (n=1) and Accounting (n=1). Regarding work experience, six of the participants had (10 to 20 years of work experience) and eight of the participants had (20 to 30 years of work experience).

In the continuing the data gathering process, we started with questions drawn from the theoretical literature (Guideline questionnaire for questions is shown in Table 1.), and then we presented to some professors who have deep knowledge of the topic of this article. They corrected, completed, and eliminated the ambiguity of the questionnaires to maximize the efficiency of the questions. In this approach, conversations were modified and extended with repeated reviews as new concepts were gained during a more in-depth analysis and review of the participant recruitment process.

Table 1. Guideline Questionnaire for Questions

No.	Concept	Definition
1	Functional domains of FinTech startups	The most well-known categories and ecosystems of FinTech startups (Eling & Lehmann, 2017).
2	FinTech Regulation	It provides different regulatory requirements for different types of financial services (Lee & Shin, 2018).
3	FinTech Risk Perception	Consumer perceptions of FinTech related vulnerabilities and potential adverse effects (Tang et al, 2020).
4	FinTech Challenges	Customer management, investment management, risk management, security and privacy, regulatory and technology integration (Lee & Shin, 2018).
5	Peer-to-peer Insurance	Peer-to-peer insurance is a risk-sharing network, where a group of people pool their premiums to insure themselves from risk (Brophy, 2019).
6	Cyber Insurance	A contract to mitigate the financial risk of an online business. The InsurTech market can have significant development opportunities in this segment (Rafay, 2019).
7	Pandemic Risk	The FinTech lending industry has grown and developed due to the COVID-19 pandemic (Arkanuddin et al., 2021).
8	Risks of Technology	Digitization creates new machines and devices that influence the frequency and severity of claims (Eling & Lehmann, 2017).
9	Radical Innovation	This concept changes the frame, and that means is: you do what you did not do before (Brophy, 2019).
10	Personalization	This concept is intended for FinTech users to provide their own services. Or adopted with their individual needs (Gimple et al., 2017).

Then the main interview questions started. It should be mentioned that the researcher had previously talked to experts about the research topic generally, so they were prepared for associating questions with knowledgeable research topic in interviews. **In Part 2,** the interview began with some main questions, and continued by related questions. There were asked a total of 14 questions. These questions are:

1. What do you think are the challenges between insurance systems and FinTech startups, and vice versa?
2. In your opinion, how can we manage the arising challenges of new relationships in FinTech Startups so that they don't lead to significant losses and stagnation in the development of these businesses?
3. To what extent do you consider the current state of the country's insurance industry with innovation processes and digital transformation?
4. To what extent do you think the legal mechanisms play a role in preventing innovation goals from being achieved in the insurance industry?
5. How do you think regulators, policymakers, and platforms can help build the right insurance and business relationships so that FinTech Startups don't lose their rights?
6. How do you know the technical status of the insurance industry?
7. What kind of infrastructure do you envision as an acceptable digital transformation process for the insurance industry in the country?
8. What kind of insurance coverage do you think FinTech startups need?
9. Given the emergence of FinTech startups and the success of people from them, especially in the context of the Covid-19 crisis and the infrastructure of the insurance industry in terms of cybersecurity and information quality, do you think the insurance industry can accept a new type of insurance?
10. From your point of view, how transformational technologies such as blockchain as solutions to the global innovation ecosystem can create solutions in this business sector?
11. What do you think are the risks for the insurance industry to enter this business sector in regard to current infrastructure and existing data centers?
12. What level of information technology knowledge do you think is needed in the insurance industry and insurance society? Which groups should make their knowledge more important?
13. What is the role of specialized media in connecting members of the ecosystem?
14. In your view, what role has research on the human factor of FinTech platforms played in determining their behavioral patterns?

Interviews were conducted, recorded digitally to ensure the accuracy of the information, and interviews were conducted for 45-65 minutes for 6 months. Due to the pandemic, interviews were often conducted via Skype and some of them being face-to-face interviews.

4.5 Data Content Analysis

All of these interviews were conducted by MAXQDA software (2020 version) to properly track all embedded memos and content analysis. Particular attention was paid to the extraction of the first interview and the key concepts that arise from the various characteristics of the insurance industry and FinTech startups. Then, the documented interviews were immediately transcribed into the codes and concepts extracted for maximum similarity.

4.6 Validity and Reliability

By creating new methods and concepts of assessment in the field of qualitative research, we can replace them with validation tools and methods of quantitative research (Abbaszadeh, 2012; Golafshani, 2003). Two qualitative and quantitative methods can be considered for this purpose. Therefore, we use the CVR method. CV ratio (CVR) is a numeric value that indicates the instrument's degree of validity, determined by CV experts' assessments (Lawshe, 1975). For this purpose, we asked 14 experts to comment on the importance and necessity of each question in the questionnaire. We also explained how to use the survey tool and solicited their opinions on the questions according to Table A1 (Appendices Section).

After gathering opinions to assess the content validity ratio index, we calculated this for each question. The formula for content validity ratio is CVR= (Ne - N/2)/ (N/2), in which Ne is the number of panelists indicating "essential" and N is the total number of panelists. The numeric value of the content validity ratio is determined by Lawshe Table. In this survey, 14 experts provided comments. According to the Table A2 (Appendices Section), the acceptable value of CVR for 12 experts is 56% and 49% for 15 experts, but we accepted 78% to increase the accuracy of the value. Validity values for all 14 questions were 0.78 greater than those in the Lawshe table.

5. Research Findings

In this research method, the coding and classification process was performed based on three stages: open coding, axial coding, and selective coding.

5.1 Step 1: Open Coding

Open coding refers to the first phase of coding procedures where the analyst assigns codes/descriptors to text passages (Babchuk & Boswell, 2023). Charmaz (2014) uses the term initial coding for this first phase of analysis and advocates using gerunds and line-by-line coding of text passages. See Table A3 in the Appendices Section for more examples to support this argument and relevant excerpts from informants.

5.2 Step 2: Axial Coding

Axial coding denotes Strauss and Corbin's (1990, 1998) second phase or type of coding where the researcher views a category as an axis and delineates relationships around it using a coding paradigm (Babchuk & Boswell, 2023).

5.3 Step 3: Selective Coding

Selective coding is the process of choosing a central or core category and then systematically relating it to other categories (Babchuk & Boswell, 2023; Strauss and Corbin, 1990, 1998). These other categories (category clusters) are Causal Conditions, Context Conditions, Intervening Conditions, Strategies, and Consequences. **Causal Conditions:** This category cluster refers to the conditions that affect the core category or phenomenon (Corbin & Strauss, 2015). **Context Conditions:** Specific conditions are affecting strategies (Ibid). **Core Category or Phenomenon:** The mental form of the phenomenon underlying the process (Ibid). **Intervening Conditions:** General context conditions influencing strategies (Ibid). **Strategies:** A specific action or interaction arising from a core category or phenomenon (Ibid). **Consequences:** Result of using strategies (Ibid). To present the theory, the

theorist uses a visual coding paradigm, a set of hypotheses, or a narrative form. (Creswell, 2005; Danaeifard, 2007). Ultimately, a total of 410 codes, 41 concepts, and 20 categories related to the research topic were identified, and a paradigm model based on the resulting grounded theory strategy was identified.

Table 2. Open Coding

Related Concepts	Number of Open Codes
♦The need to change insights and attitudes in managers toward the advent of transformational technologies and cyber-attacks ♦The impact of the COVID-19 crisis and its push for changes in management beliefs	20
♦Deficiency of attracting venture capitalists and institutional support ♦The need to build an extensive network of service providers in the insurance industry	18
♦Lack of strategic view on developing digital business models ♦The need to build digital transformation in the insurance business model	21
♦The COVID-19 crisis and its push on the need for digital experience management for customers ♦Lack of cognition, understanding of customer behavior, and expectations	14
♦Lack of strategic look at digital innovation ♦Need to establish the governing of innovation in the organization	25
♦IT professional project management ♦Need to Core Insurance's open API architecture	19
♦Need to develop and redesign digital work systems ♦The necessity to build a hybrid work environment in the post-pandemic era	15
♦Attract and retain talent ♦Strengthening employee skills and competencies	23
♦Fostering a digital culture ♦Upgrading digital transformation literacy in the insurance industry	13
♦The crucial role of media in the digital transformation of the insurance industry ♦InurTech Media Development	22
♦Cyberspace protection plan ♦Internet outage	12
♦Need for digital-centric redesign ♦Impact of legislation and related considerations on the path of the digital transformation ♦Amendments to improve regulations	40
♦Digital technologies and the COVID-19 Crisis ♦Digital readiness and the COVID-19 Crisis	14
♦The necessity of discussion and cooperation between the government with managers and technologists of the insurance industry ♦Cooperation between central insurance, supervisory body, and syndicates with insurance industry managers and technologists	29
♦Digital Technology Strategy Program ♦Digital Transformation Executive Program	14
♦Use of transformational technologies in processes ♦Strategic considerations for the digital development of business processes	20
♦A strategic approach to data ♦Developing management dashboards and functional	25
♦Commercial Contents Insurance for FinTech Startups ♦Calculated Insurance Policy for Computers, Electronics, and Data Centers	13
♦Personalization of Insurance Policies ♦Transformational Technologies: Blockchain, Artificial Intelligence, Web3, Metaverse, etc.	23
♦Technology Risks ♦Risks of Using Technology in the Insurance Industry	30

Table 3. Selective Coding

Category Cluster	Categories	Related Concepts
Causal Conditions	The Traditional Outlook of Insurance Managers in the Digital Age	♦The need to change insights and attitudes in managers toward the advent of transformational technologies and cyber-attacks ♦The impact of the COVID-19 crisis and its push for changes in management beliefs
	Ignoring the Digital Economy in the Insurance Industry	♦Deficiency of attracting venture capitalists and institutional support ♦The need to build an extensive network of service providers in the insurance industry
	Lack of Taking Account for Ecosystem Transformation in the Insurance Industry	♦Lack of strategic view on developing digital business models ♦The need to build digital transformation in the insurance business model
	Attention Deficit to Digital Insurance Experience among Customers	♦The COVID-19 crisis and its push on the need for digital experience management for customers ♦Lack of cognition, understanding of customer behavior, and expectations
	Inadequate Consideration of Digital Innovation in Insurance	♦Lack of strategic look at digital innovation ♦Need to establish the governing of innovation in the organization
	The Necessity to Change the Technology Infrastructure	♦IT professional project management ♦Need to Core Insurance's open API architecture
	DE Digitalization among the Insurance Industry Employees	♦Need to develop and redesign digital work systems ♦The necessity to build a hybrid work environment in the post-pandemic era
Context Conditions	Attract Talent and Improve Digital Skills	♦Attract and retain talent ♦Strengthening employee skills and competencies
	Digital Culture	♦Fostering a digital culture ♦Upgrading digital transformation literacy in the insurance industry
	Research and Media	♦The crucial role of media in the digital transformation of the insurance industry ♦InurTech Media Development
	Political Decisions	♦Cyberspace protection plan ♦Internet outage
Core Category or Phenomenon	The Need for Codification and Regulation of Digital Transformation in the Insurance Industry	♦Need for Digital-centric redesign ♦Impact of legislation and related considerations on the path of the digital transformation ♦Amendments to improve regulations
Intervening Conditions	COVID-19 Crisis	♦Digital technologies and the COVID-19 Crisis ♦Digital readiness and the COVID-19 Crisis
Strategies	Government Interaction with Insurance Industry Managers and Technologists	♦The necessity of discussion and cooperation between the government with managers and technologists of the insurance industry ♦Cooperation between central insurance, supervisory body, and syndicates with insurance industry managers and technologists
	Strategy Formulation for Smart Insurance	♦Digital Technology Strategy Program ♦Digital Transformation Executive Program
	Changing Processes for Smart Insurance	♦Use of transformational technologies in processes ♦Strategic considerations for the digital development of business processes
	Platform and Data-Driven	♦A strategic approach to data ♦Developing management dashboards and functional
Consequences	Arranging the Insurance Products for Smart Insurance	♦Commercial Contents Insurance for FinTech Startups ♦Calculated Insurance Policy for Computers, Electronics, and Data Centers
	Use of Transformational Technologies in the Insurance Industry	♦Personalization of Insurance Policies ♦Transformational Technologies: Blockchain, Artificial Intelligence, Web3, Metaverse, etc.
	Smart Risk Management	♦Technology Risks ♦Risks of Using Technology in the Insurance Industry

5.4 Paradigm Model of Research

That in the end, the researchers are represented the studied phenomenon by developing a substantive or formal theory, explanation, or model to explain (Babchuk & Boswell, 2023; Babchuk et al., 2017).

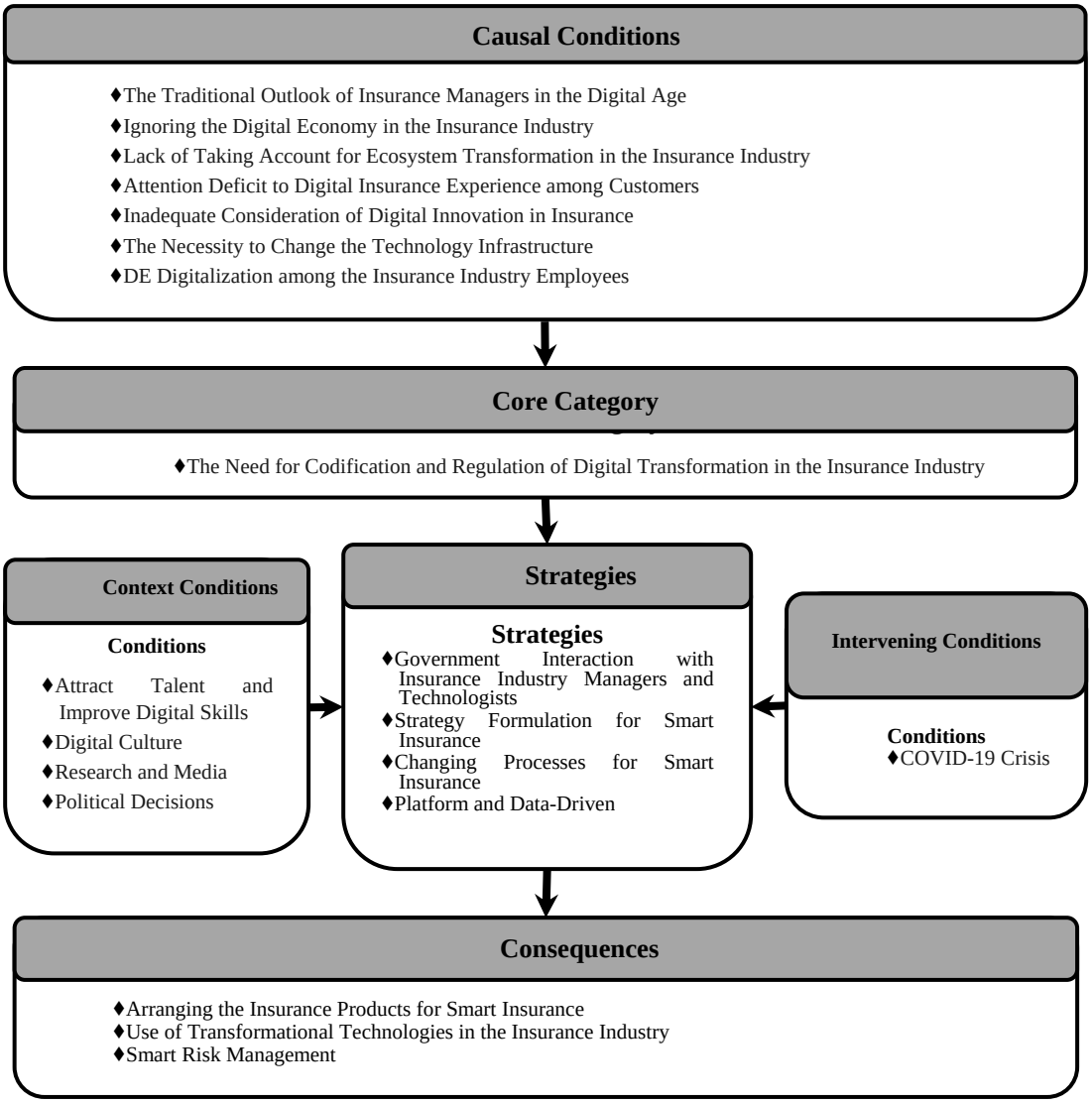

Figure 1. Insurance Coverage Model for FinTech Startups (Resource: Research Findings, 2022)

6. Discussion

One of the most important prerequisites for the effectiveness of the Grounded theory method is the ability to compare the emerging theory to the research literature and explore the extent of their differences and similarities with the existing research background (Ferasatkhah, 2016). Comparisons with existing experiences increase the degree of internal validity, generalizability, and theorizing (Danaeifard et al., 2004).

With the emergence of FinTech startups, especially InsurTechs and increasing cyber-attacks we are looking a significant shift in manager system beliefs, skills, and environment. On the other hand, the impact of the Covid-19 crisis on the atmosphere of the system has led to rapid changes in managers' attitudes. The results of this study are consistent with Pauch and Bera (2022); Lanfranchi & Grassi (2021); Wang (2021b) and Hoffmann (2020).

The advent of digital transformation and the use of IT in the insurance industry creates value in key economic processes and interactions between organizations, people, and society. In the digital economy, geographic boundaries will remove and ecosystem thinking replaced, so all financial and non-financial industries and even competitors are working together for profit. Research results are

consistent with the results of Zeller and Scherer (2021); Grima et al. (2020) and Varshosaz and Shoshtari (2021).

The digital transformation in the current insurance landscape will led to several opportunities such as creating smart InsurTech startups, creating new revenue streams, increasing customer interactions, and achieving sustainable profitability, by gathering data, increasing efficiency, and increasing agility. The research findings are in line with Wang's (2021b); Pisoni's (2020) and Hoffmann's (2020).

Digital technology and innovation have changed customer preferences in the insurance industry, and they seek to customize of insurance contracts, so customers expect insurance managers to move toward digital transformation as. Meanwhile, the COVID-19 pandemic has had a major impact on customer preferences and has ramped up the provision of long-distance services. The results of this study are consistent with Medoh and Telukdarie, (2022); Zarifis and Cheng (2022); Lanfranchi & Grassi (2021); Wang (2021b); Yang and Zhou, (2021); Hoffmann (2020) and Cappiello (2020) findings.

Digital innovation will be the use of digital technology to solve business problems, increase efficiency and generate revenue streams. Research results are consistent with the results of Wang (2021b); Yang and Zhou (2021); Pisoni (2020); Hoffmann (2020); and Middler et al. (2020).

Changes in the technological infrastructure of the insurance industry require attention. This topic may take some time, but with the right infrastructure in place, in a short period of time, it can be seen as a giant leap forward for the insurance business. The research findings are in line with Hoffmann (2020); Grima et al. (2020) and Yu and Yen (2018).

The development and redesign of digital work systems within organizations for employee personal development and the transition to hybrid work environments in the post-pandemic period are key topics of digital transformation in the insurance industry and prevention of DE digitalization among employees. The research findings are in line with Medoh and Telukdarie (2022); Hoffmann (2020); and Gheidar and ShamiZanjani (2021).

Regulators must take a stand on digital transformation insofar as regulation is intended to remedy it. Uncertainty and clarification of laws and considerations surrounding FinTech start-ups and innovative technology may discourage insurers from adopting technology, even if activists in the insurance industry want to get on a growth trajectory, some rules keep them from doing so. The results of this study are consistent with Arkanuddin et al. (2021); Bahrami et al. (2021) and Grima et al. (2020).

One of the framework conditions for taking a step towards digital transformation is having the right and competent team in this area. Corporate governance bodies must also be knowledgeable, skilled, and accredited in the field of information technology. The research findings are in line with Medoh and Telukdarie (2022); Hoffmann (2020); and Gheidar and ShamiZanjani (2021).

Digital transformation must change the way people think, and the ability to innovate depends on the resistance of this organizational culture. Digital culture has examples beyond technology and online sales. The research findings are in line with Cappiello (2020) and Grima et al. (2020).

Research and media can play an important role in the insurance industry. Among the activities in the research field, we can mention the cooperation of Central Insurance in the field of startups with insurance research institutes, research cooperation in creating innovations, and their role in better understanding of new technologies. The research findings are in line with Zarifis and Cheng (2022) and Grima et al. (2020).

Policies are playing a key role in the field of digital transformation, causing concerns among startups, such as cyberspace protection plans and internet outages. The research findings are in line with Grima et al. (2020).

As a revolution of sorts, Covid-19 has changed customer behavior. The Covid-19 pandemic and new communication demands have made digital technology a major topic for insurers. Also, the COVID-19 pandemic has posed an unprecedented challenge for economies and companies. Without strategies, the managers face the risk of widening bankruptcy. The research findings are in line with Arkanuddin et al. (2021); Pauch and Bera (2022) and Lanfranchi & Grassi (2021).

How governments interact with insurance industry managers and technologists before enacting laws and regulations on the digital transformation of the insurance industry creates different conditions for core category to emerge. The results of this study are consistent with Grima et al. (2020).

An organization's response to changing market conditions and opportunities created by digital technologies in the insurance industry creates different conditions when formulating strategies. Developing rules and regulations for the digital transformation of the insurance industry, prior to formulating strategy, can therefore lead to the consolidation of old and new platforms and systems. The research findings are in line with Zeller and Scherer (2021); Pisoni (2020) and Hoffmann (2020).

Digital technologies have these capabilities that help organizations improve their program methods (processes) and reduce costs. Based on this approach, several cases such as process elimination, simplification, and automation are carried out. Research results are consistent with the results of Zeller and Scherer (2021); Eling et al. (2021); Wang (2021b); Hoffmann (2020) and Cappiello (2020).

If the data do not reach the insurance industry in a timely manner, this information will be invalid and of no real benefit to the insurance industry, significantly increasing risk. Therefore, the development of a powerful data management platform is required. It includes features such as security, flexibility, and integration between data from various internal and external sources to help new-age organizations get out of the speculative space while also providing the insight they need for decisions. The research findings are in line with Eling et al. (2021); and Brophy (2019).

Strategies developed for smart insurance can be used to design products that respond appropriately to changing market conditions. Also, IT activists should consider and identify the main types of FinTech startup insurance. The results of this study are consistent with Pauch and Bera (2022); Cappiello (2020); Pisoni (2020) and Hoffmann (2020).

Generation of critical data to identify customer priorities, enable suppliers to offer personalized solutions, make better insurance policy and pricing decisions, and handle claims, risk assessments, and data analytics. Therefore, the use of technologies such as artificial intelligence, machine learning, blockchain, smart contracts, the Internet of Things, etc. is critical. In the future, Web 3 and Metaverse technologies will help transform the way insurers collect data and underwrite policies. Research results are consistent with the results of Rawat et al. (2021); Eling et al. (2021); Hoffmann (2020); Brophy (2019) and Yu and Yen (2018).

Smart risk management is one of the most important outcomes of your strategy. Risks in the technology space fall into two categories: technology risks (that is, systems based on technology where mistakes can spread quickly) and the risks of using technology in the insurance industry. Regulators must provide the necessary infrastructure, automatically monitor all transactions and processes, and shift risk management to RegTechs. The research findings are in line with Zeller and Scherer (2021); Arkanuddin et al. (2021); Xie et al. (2021); Pisoni (2020); Hoffmann (2020) and Yu and Yen (2018).

7. Conclusion

The purpose of this research was to investigate the influencing factors and discover a paradigm model for insurance coverage of FinTech startups. To this end, we used the Grounded Theory Method (GTM) to express the theory and provide a model that would reveal the process of the influenced factors for the new innovative product in insurance (insurance coverage for FinTech Startups). The theory of model in this research allows the insurance industry to focus on the factors and dimensions that shape insurance coverage for FinTech startups.

However, the Central Insurance and Insurance industry CEOs and Co-founders of FinTech and InsurTech startups should strive to understand all the factors and compensate for the weaknesses of the less controllable factors by enhancing the more controllable factors.

The theory of the insurance coverage model for FinTech startups states that: A core category (The Need for Codification and Regulation of Digital Transformation in the Insurance Industry), states that the insurance coverage for FinTech startups is a function of causal conditions (The Traditional Outlook of Insurance Managers in the Digital Age, Ignoring the Digital Economy in the Insurance Industry, Lack of Taking Account for Ecosystem Transformation in the Insurance Industry, Attention Deficit to Digital Insurance Experience among Customers, Inadequate Consideration of Digital Innovation in Insurance, The Necessity to Change the Technology Infrastructure and DE Digitalization among the Insurance Industry Employees), context conditions (Attract talent and improve digital skills, Digital culture, Research and media, and Political decisions), and intervening conditions (COVID-19 crisis). These factors create the conditions for strategies (Government

interaction with insurance industry managers and technologists, Strategy formulation for smart insurance, Changing processes for smart insurance, and Platform and data-driven) with consequences (Arranging the insurance products for smart insurance, the Use of transformational technologies in the insurance industry, and Smart risk management).

The **innovative** contribution of the current study is that few researchers in existing research have used the Grounded Theory Method (GTM) paradigm model in a way that you can see all the category clusters in one place. From this point of view, the model presented for the insurance coverage of the FinTech startup sector appears to be very comprehensive. An attempt was made to use the knowledge of subject-matter experts who had sufficient information about the details of the subject (Insurance industry and FinTech startups.) in presenting the research model. These experiences funded the coding possibilities and were presented in this research that formed the final theory. This study is also unique from a methodological point of view, and the use of a qualitative grounded theory approach can be seen as a new tool in insurance research for FinTech startups. Another important contribution of this research in the insurance field is that it focuses on the security approach of FinTech startups through insurance, guiding for continuing the process of digital transformation in the insurance industry and providing innovative products.

The FinTech industry is growing rapidly, with a growing number of operators of new technologies to improve customer experience, increase competition, and drive business strategies. Nonetheless, along with the expansion of this industry's development and application, risks will also increase, especially in security. Therefore, it will be important to manage these new risks and remove obstacles to the development of the FinTech industry as a new, technologically advanced industry that could significantly change the financial equation due to the emergence of technological tools. This process will double the attractiveness of the industry for investors and activists, and improve the resilience of this group of companies against economic stimulus, other threats, and cyber-attacks.

The concept of insurance coverage for FinTech startups or in other words “Smart Insurance Coverage” has a multitude of different value propositions. First, innovative technologies such as smart contracts enable the automation of certain insurance policies. Both policy issuance and claims processing are performed automatically without the need for human intervention. This reduces the administrative burden on insurance companies. Second, insurers will benefit from the convenience of submitting claims much more quickly than in the normal insurance environment and not having to receive monetary claims. Third, the use of transformational technologies such as blockchain technology offers high transaction security and data that have great audit ability and are immutable. Fourth, Fraud risk is a long-standing problem facing the insurance industry. However, smart contract-based insurance is impossible to abuse with false claims. Fifth, Insurers can take advantage of innovative technology without the heavy investment compared to in-house solutions. This opens up an opportunity for small and large insurers to benefit from innovative technology with a small investment to gain an edge in a highly saturated insurance market. This goes with the low risk of technology projects, which from our perspective has great marketing potential for insurers. Ultimately, “Smart Insurance Coverage” is also creating new products for insurers, and adapting smart contract insurance to customer needs. Therefore, organizations should employ technology and business intelligence experts to optimize their relationship with technology in that context.

This is also true from the perspective of the importance of research to the research community: New technologies must evolve towards continuously updated business models. Digital transformation is fundamentally changing how the insurance industry creates value through multiple ways of interacting with customers, new risks, new products, new business processes, new market shares, and new revenues. In addition, due to the path of the digital transformation in the insurance industry and the increasing attractiveness of customers' digital journeys, the number of digital marketplaces will increase followed by an increase in risks, and startup entrepreneurs will seek approval for recommended insurance products as packages of products or services.

8. Implications of the Research

The results of this research can bring the following theoretical and practical implications:

8.1 Theoretical Implications

Regarding theoretical implications, a model was presented in this study that includes identifying the factors affecting the insurance coverage for FinTech startups in Iran. Accordingly, this research provides up-to-date insights into insurance coverage for FinTech startups. The paradigm model of the present research, predicts strategies and consequences for motivating and persuading insurers to insure. The model can also be used to plan procedures to secure and close the gap between the insurance industry and FinTech startups and to support the digital transformation track of the insurance industry. In line with the consequences presented, the Insurance coverage model for FinTech startups (Figure 1) can be interpreted as follows:

Factors and challenges identified (Causal Conditions) related to the lack of insurance coverage for FinTech startups include: "The Traditional Outlook of Insurance Managers in the Digital Age", "Ignoring the Digital Economy in the Insurance Industry", "Lack of Taking Account for Ecosystem Transformation in the Insurance Industry", "Attention Deficit to Digital Insurance Experience among Customers", "Inadequate Consideration of Digital Innovation in Insurance", "The Necessity to Change the Technology Infrastructure" and "DE Digitalization among the Insurance Industry Employees" create "the necessary conditions for codifying and regulating digital transformation in the insurance industry" as a (Core Category). When the following (Context Conditions) exist: "Attract talent and improve digital skills", "Digital culture", "Research and media", and "Political decisions", and on the other hand, the "COVID-19 crisis" as an (Intervening Condition), these categories are having an impact on strategies. These (Strategies) include "Government interaction with insurance industry managers and technologists", "Strategy formulation for smart insurance", "Changing processes for smart insurance", and "Platform and data-driven". These categories (strategies) create (Consequences) such as: "Arranging the insurance products for smart insurance", "The use of transformational technologies in the insurance industry", and "Smart risk management". Accordingly, we need to mention the following:

The FinTech industry is considered to be an ambitious, strategic, and growing industry around the world and as well as in Iran. Services provided by FinTech startups reduce costs and extend the value chain, but this part of the industry faces many risks, including issues that relate to organizational risk, lack of security, etc., Also, given the continued economic uncertainty, especially given the economic sanctions and their impact on business processes, and the need to sustain the survival and growth of FinTech startups in a highly competitive global marketplace. New risks, therefore, require new and innovative insurance products, which must be managed.

A recent study shows that suitable insurance coverage for FinTech startup businesses is one of the prerequisites for this type of business to succeed in the market and also it will contribute to the growth of the digital economy. Therefore, we need to provide the necessary platforms for innovation and the presence of the insurance industry in these markets.

The current research will also help raise awareness among insurance industry managers and InsurTechs about new and innovative insurance product launches. We also discussed the significant role of InsurTechs and insurance coverage for FinTech startups; another contribution of this study, therefore, is to develop a deeper understanding of InsurTech as a subset of FinTech and a more vital link to the business and information technology literature.

8.2 Practical Implications

The lack of modern technology and the sub-optimal use of world-renowned technologies in Iran is one of the major factors hindering the development and growth of the insurance industry. The issue requires a transformation, and this transformation goes beyond merely adding an application to the insurance industry, it entails transforming the entire ecosystem by looking at the issues differently. So, In terms of practical implications, the research findings serve three groups.

The First group is Insurance Industry Managers. The insurance industry needs managers who change their attitudes, behaviors, and decisions, to realize the impact of innovative technologies on the insurance business, the changes involved, and their benefits, and to contribute to both the adoption and widespread implementation of new technologies. Through this research, insurance managers will learn to identify causal conditions for launching innovative insurance products, increasing the propensity to start insurance coverage for FinTech startups, and leading to the success of the insurance industry.

Managers who are seeking presence strategies in the digital ecosystem need to focus on multiple areas. First, identify and prioritize the teams that need strategies to play and win. A manager assembles a team of digital transformation advocates and enthusiasts from different levels of the insurance organization to address the digital transformation without creating a large, long-term strategic plan or hierarchical view. Second, insurance managers should identify the key skills that act as differentiator factors in the ecosystem and assess whether their organization has sufficient strength in these areas. Third, with the help of the team, managers can plan actions based on the situation and needs of the organization and carry out these actions in the form of "short-term digital transformation programs" within the organization. Fourth, at the end of each program, evaluate performance against success metrics and adjust processes based on feedback and lessons learned. So, training, hiring appropriate technical personnel, and a strong understanding of the numerous ways in which innovative technologies can be implemented within an organization and across various functions are key factors.

Finally, be aware that applying these strategies requires strong performance across multiple dimensions, including culture, technology, and customer engagement. These programs enable you to think and act to improve the culture and digital skills of your organization's employees. The culture helps to build knowledge, skills, and innovative techniques. The takeaway here is that digital transformation is not only a technological change but also a change in organizational culture and mindset.

The Second group is InsurTech Managers. One of the Different types of business models by InsurTechs is the sale of preconfigured blockchain-based insurance solutions to insurance companies. This activity is provided by the completion of the architecture and making it available through multiple cloud service providers. Blockchain technology is enabled without disrupting the customers' current IT systems. In addition, these startups provide a pre-built user interface that can be implemented on an insurance company's website to create a front end for end customers purchasing insurance products. Also, these activities are accompanied by certain advisory services that managers of these InsurTechs can provide to insurance companies.

The Third group is Regulators and Policymakers. According to the strategies provided by the paradigm model in this research, government interaction with insurance industry managers and technologists is critical. Discussions and statements by legislative bodies and policymakers with insurance industry executives and technologists before and after legislation and adherence to them; reviewing proposals and requirements such as; providing financial assistance; revising the regulatory framework; lack of focus on the return of investment in the short-term; stability and lack of many managerial changes; budgeting for the transformational technologies; review sectors such as the regulatory entity in regulating regulations; the regulatory entity in central insurance, etc.,

The role of government, financial institutions, industry representatives, and professional bodies for investments in innovative technologies such as blockchain and introducing supporting programs is essential because they can facilitate such investments by offering grants as platforms for collaboration across organizations and with public-sector organizations or private-sector organizations. The insurance industry needs to establish a well-established regulatory sandbox approach to enable FinTech and InsurTech startups to enter the market and allow such startups to expand their business models to meet regulatory requirements.

9. Research Limitations and Future Studies

This research has several limitations. Firstly, the limitation of this study is that the surveyed community was selected from experts in the insurance industry, FinTech, and InsurTech startups in Iran, so it should be cautiously extended to other industries and developing countries. The research was also conducted during the COVID-19 pandemic. Therefore, researchers have been faced with time and space limitations when conducting interviews, and some interviews were conducted virtually. This may have affected participants' overall moods, emotions, and attitudes, which in turn may have affected the quality of their responses or the body language of participants and the interpretation of their responses by researchers.

This research also argues that more dedicated research on InsurTechs is needed in business, IT, and finance. Future research can further clarify how risk is calculated, and how digital transformation is reshaping business models. Consequently, to overcome the limitations of qualitative approaches, we

recommend future research will focus on the quantitative method to overcome this limitation to examine the conceptual model proposed in this study. Secondly, another limitation comes from the qualitative nature of the research. Due to the small sample sizes in these studies, caution should be exercised in generalizing results across communities. So, to increase the generalizability of our results, we recommend that future investigators evaluate the model obtained in this research in quantitative studies using larger samples. In addition, it is proposed to compare the effectiveness of the factors identified in this research across different domains. The Researchers can also analyze and review the insurance industry regulatory situation in leading countries and provide lessons for Iran's InsurTech industry, also they can conduct separate practical research for each type of FinTech startup, from a regulatory perspective, and provide policies for InsurTech startups and facilitate the insurance coverage.

Appendices

Table A1. Grading Questions by the Lawshe Method

Question Title	Rating the Questions by Expert		
	Essential	Useful but not Essential	Not Necessary
Question 1			
Question 2			
Question 3			
Question …			

Table A2. Determination of Acceptable Minimum CVR based on the Number of Experts Submitting Comments

Number of Experts	Minimum Acceptable CVR Method
5	0/99
6	0/99
7	0/99
8	0/78
9	0/75
10	0/62
11	0/59
12	0/56
15	0/49

Table A3. Exploring the Affecting Factors

	Categories	Informants Experts
Causal Conditions	The Traditional Outlook of Insurance Managers in the Digital Age	"…in my opinion, the first and most important infrastructure for moving towards digital transformation is the view of business executives and industry decision-makers to move in this direction…" "…I believe that the executives from board members, CEOs, and corporate boards have concluded that their company's digital transformation and product and business model transformation are needed…" "…I know there was a sudden shift in the belief among managers that services don't need to be physically delivered and signed…"
	Ignoring the Digital Economy in the Insurance Industry	"…I think due to the existence of FinTech startups; we have entered the field of economic technology, but in this context, competitive advantages are changing, and the speed, magnitude, scope of transparency, and democratization of data are especially important…" "…I notice that digital transformation requires huge amounts of capital. Therefore, venture capital funds and those willing to make these investments should enter this space…" "…I know the insurance industry around the world is investing in the startup space and getting answers… The problem is that it has been invested very little in startups in my country, and it seems that more risk-taking in the insurance industry is needed…"
	Lack of Taking Account for Ecosystem Transformation in the Insurance Industry	"…as I see it while the use of new technology offers many advantages, it also comes with its own set of challenges, and we have to admit that some existing ecosystem components may not be able to continue their current business models…"
	Attention Deficit to Digital Insurance Experience among Customers	"…from my standpoint, one of these factors was the COVID-19 crisis, which has significantly changed customer preferences and placed more emphasis on offline service offerings…"
	Inadequate Consideration of Digital Innovation in Insurance	"…in my view, the most important issue is the penetration of insurance among the people that we need innovation, and the entry of startups can cover it, providing mutual benefits and investment security…"
	The Necessity to Change the Technology Infrastructure	"…I know the most important thing that happened here was the birth of this kind of attitude, which could go a long way in understanding the need for technology infrastructure and innovation methods in Iranian insurance…" "…in my estimation due to the special circumstances of the insurance industry infrastructure, it is a highly regulated industry that requires a great deal of sensitivity, precision, and skill, unlike banks and others…"
	DE Digitalization among the Insurance Industry Employees	"…in my opinion, organizations must find ways to leverage the technical knowledge and experience of experienced employees…" "…as I see it, employees who want to work across disciplines and digital platforms expect the freedom to interact with customers from anywhere through channels like mobile and social media…"
Context Conditions	Attract Talent and Improve Digital Skills	"…A friend of mine who works for ….. in Canada told me that the company has over 100 data analysts. However, there are no or very few data analysts and insurance companies in Iran…" "…The issue of human resources is very important. I think we need experts in this field. Individuals who have the necessary information technology expertise and are willing to work full-time in the insurance industry…" "…according to my way of thinking the young, smart, risk-taking forces working on new ideas at InsurTech startups are equipped with the latest knowledge of information technology, and if they work with insurance industry experts to create innovation and technology trends in the insurance industry, we can lead the digital transformation faster in the insurance industry…"
	Digital Culture	"…some companies want to change culture with ads on walls, billboards, and posters, without realizing that creating culture is a difficult part of digital transformation. I think this problem, which requires changes in people's thought patterns, behaviors, and beliefs, will not be solved overnight…"

	Research and Media	"…transformation requires a curious look and seeing problems from the perspective of others. I believe the media can help here. The media helps us look at issues from different angles and make connections between them…"
	Political Decisions	"…but internet outages due to political issues are one of the inevitable problems, and I think for this risk, the Regulatory Organization and Radio Communications should think fundamentally…"
Core Category or Phenomenon	The Need for Codification and Regulation of Digital Transformation in the Insurance Industry	"…in my opinion, gradually, when technology comes, first legislators will realize that the problem that used to occur, now does not occur with this technology, and the laws will change… It can be said that there is expediency and that the law is made according to that expediency. The law may be amended to reflect new expediencies, whether or not those expediencies still exist…" "…I believe that by removing onerous rules and simplifying working conditions for FinTech startups, the atmosphere in the insurance industry will become conducive to innovative teams working, but traditional methods are still rooted in this industry…" "…I think another factor may lie in the legal field. Regulations that exist in the insurance industry have not been designed, developed, or approved for the form and structure of digital delivery of insurance service processes…"
Intervening Conditions	COVID-19 Crisis	"…For example, COVID-19 was an environmental event that I think pushed the insurance industry forward a few years. It also led to the skills necessary to conduct meetings, for damage, and issue insurance policies, all these events that happened in the environment and had influenced the higher layers…"
Strategies	Government Interaction with Insurance Industry Managers and Technologists	"…If we want to change anything, we have to speak, we have to look at the problem from a different perspective. And looking at problems from different angles can help bring about change…"
	Strategy Formulation for Smart Insurance	"…Without having a hierarchical view, let's form a team of believers and enthusiasts of digital transformations from different layers of the organization who are concerned about digital transformations. With their help, we planned our actions based on the conditions and requirements of the organization, and these actions are implemented in the form of "short-term digital transformation sprints" in the organization…"
	Changing Processes for Smart Insurance	"…I believe that the digital transformation in the insurance industry means all processes that take place in this industry. The digital transformation may vary from industry to industry, but in the case of insurance, the transformation from traditional processes to digital processes can be considered digital transformation. Processes include marketing, insuring, claims processing, accounting, and all common processes that occur in various parts of the insurance industry…"
	Platform and Data-Driven	"…Central Insurance has one main location and plans to build a large data center for use by the entire insurance industry. This is a big project and takes time. However, the insurance industry and many insurers lack adequate infrastructure, so I think the central insurance policy is that companies with weaker facilities can use central insurance data centers…" "…in my view, the InsurTechs must focus on aggregating large amounts of data and applying alternative data to processes such as loss management and risk acceptance…" "…Insurers are underinvesting in the infrastructure and conditions for data storage and service delivery. No need to build your data center. We recommend getting a colocation service. Of course, I must say that these types of services did not have an acceptable level of maturity in this country…"
Consequences	Arranging the Insurance Products for Smart Insurance	"…I believe that digitization and automation will impact all business processes (such as automated contract processing) and decision-making processes, including risk assessment and the digitization of existing products, leading to new product offerings for FinTech startups. Like cyber risk insurance…" "…I know in the meantime, processing the information generated by insurance companies and layers of existing information using scientific methods is so important that new products with startup characteristics are regularly created from this data…"
	Use of Transformational Technologies in the Insurance Industry	"…We use technology to assist us in our journey to digital transformation. Like Blockchain, Big Data, Artificial Intelligence, and many other things…" "…in my estimation with the ever-increasing development of new technologies, recent innovations in Virtual Reality, Augmented Reality, Gamification, and the Metaverse are becoming increasingly complex and potentially influential in this world…" "…as I see it, the Internet of Things generates critical data that identify customer preferences and helps suppliers provide personalized solutions…"
	Smart Risk Management	"…As for the shift to innovation, I think information technology risks are more acute, allowing insurers to operate in innovative areas…" "…from my standpoint, the insurance industry ecosystem is huge, and the players are correspondingly diverse. Each of these actors bears some risk. Like core insurance brokers, regulators, and FinTech Startups…" "…I believe that the insurance companies have a big opportunity. Of course, customers can improve the quality of their risk assessments if they can use the data generated by the Internet of Things…"

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