InsurTech Accelerator: A Model Bridging the Gap between China Insurers and Technology Startups

By

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(Master of Business Administration)

Thesis submitted for the fulfilment of the requirements for the degree of

Doctor of Business Administration

VICTORIA UNIVERSITY, AUSTRALIA

Institute for Sustainable Industries and Liveable Cities

September 2024

Abstract

Incubators and accelerators have prevailed in the European Union (EU) and the United States (US) in the context of new business models and innovation. Successful financial technology (Fintech) and insurance technology (InsurTech) startups often speed up their growth with the assistance of incubators and accelerators. By contrast, China's business incubators and accelerators are relatively immature and present a challenging need to encourage InsurTech startups in China and align them with the insurance sector. This research aimed to identify the research question 'How can InsurTech accelerator bridge the gap between China insurers and technology startups?' Four sub-questions were proposed: (1) Does the startup company have the motivation to obtain assistance on creating business model? (2) What factors will motivate startup to consider adopting an accelerator? (3) Can the acceleration process change the internal capabilities and external support to build the organisational business model? (4) How does business model relate to innovation performance after acceleration? A framework for InsurTech startups' success was developed, comprising four variables and five hypotheses. The conceptual model represented how InsurTech startups engage with an accelerator. The proposed relationships were then assessed using a mixed methods approach of explanatory sequential design. The quantitative study comprised a sample of 519 insurance industry practitioners surveyed using questionnaires. Quantitative data were analysed using structural equation modelling. The qualitative study comprised interviews with 28 participants, including a chief executive officer, co-founder, and senior and mid-level managers of startups and accelerators. Industry interviewees were senior China insurance company executives, and the qualitative findings confirmed their shared positive attitudes toward adopting accelerators. Findings also suggested that interaction with the InsurTech accelerators improved the insurance organisation's business model and boosted higher innovation performance. Moreover, the accelerators potentially enabled the integration of the efforts of InsurTech and insurer stakeholders. The study contributes to the development and future design of InsurTech accelerators in China and sets the stage for further research.

Doctor of Business Administration Declaration

I, Lan Zang, declare that the DBA thesis entitled ‘InsurTech Accelerator: A Model Bridging the Gap between China Insurers and Technology Startups’ is no more than 65,000 words in length, including quotes and exclusive tables, figures, appendices, bibliography, references, and footnotes. This thesis contains no material has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

“I have conducted my research in alignment with the Australian Code for the Responsible Conduct of Research and Victoria University’s Higher Degree by Research Policy and Procedures.”

Signature: __[redacted]_____ Date:___24/09/2024__

Ethics Declaration

"All research procedures reported in the thesis were approved by the Human Research Ethics Committee and HRE21-054."

Signature: ___[redacted]____ Date:____24/09/2024___

Acknowledgments

Embarking on this doctoral journey at Victoria University has been a profoundly transformative experience. The depth and breadth of this research have the potential to significantly impact the field of InsurTech. I could not have reached this milestone without the support, guidance, and encouragement of many people.

First and foremost, I would like to express my deepest gratitude to my principal supervisor, Associate Professor Catherine Lou, for her unwavering support, invaluable guidance, and mentorship. Her expertise and insights have been instrumental in shaping this research. I am also profoundly grateful to my associate supervisor, Professor Elisabeth Wilson-Evered, for her guidance in the early years of the invaluable insights, patience, and encouragement throughout this process. To the faculty and staff of Victoria University, thank you for fostering an environment of academic excellence and countless opportunities for growth and learning. Also, thanks very much for the advices of Dr. Thu-Huong Nguyen on thesis structure and methodologies.

Thanks to my friends for the endless support, shared experiences, and countless warm words that kept me going. The friendship has been a source of strength and inspiration. Especially Robert Rush and Valerie Mobley had provided a lot of support on editing. I would also like to thanks Qingxuan Meng and Jichao Zhang for their support of the methods procedure advice on the data analysis section.

To my family, thank you for your persistent belief in me, your sacrifices, and your unconditional love. All the research milestones can only be achieved with your effort and assistance.

This journey has never been our own; the credit for all the achievements belongs to everyone who has helped and supported this study.

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Chapter 1. Introduction

1.1 Introduction

Incubators and accelerators are a prevailing innovation in the EU (Boons & Lüdeke-Freund, 2013) and the United States (Gumusluoğlu & Ilsev, 2009) in the business world. Successful financial technology (Fintech) and insurance technology (InsurTech) startups seek to speed up their growth with the assistance of these entities. By contrast, China's business incubators and accelerators are relatively immature. For example, little has been done to encourage China InsurTech startups and align them with existing insurance companies. This research aims to determine the most salient success factors for accelerator uptake in China in the insurance space. It has developed a conceptual model that theoretically describes the process of an InsurTech startup when engaging with an accelerator and has adopted a mixed methods design to assess its success. A preliminary literature review has suggested a theoretical framework for this investigation, which comprises four variables and five hypotheses tested in the quantitative study. In addition, China insurance company executives were surveyed using an evidence-based qualitative approach. The study evaluated startups by improvement in the organisation's business model and any change in its performance following interaction with the InsurTech accelerators. The potential impact of this research on the future design of InsurTech accelerators in China and the opportunities it could offer for similar structures in the EU and US cannot be overstated.

1.2 Research Background and Rationale

Although developed over the past 30 years, China's insurance market is still in its infancy compared to more mature markets in Western countries. With traditional revenue flows becoming more transparent, it is becoming clear that profit margins are shrinking. In response, global giants in mature markets often resort to significant layoffs to preserve profitability. Due to the upward trajectory of China’s insurance market, such layoffs have not yet materialised there. However, rising cost pressures cannot be ignored. Financial stress could jeopardise the viability of small and medium-sized insurance enterprises. These companies urgently need to adapt to increasing economic pressures. The smaller size gives them the agility to incorporate digital innovations.

1.3 Definition of Terms

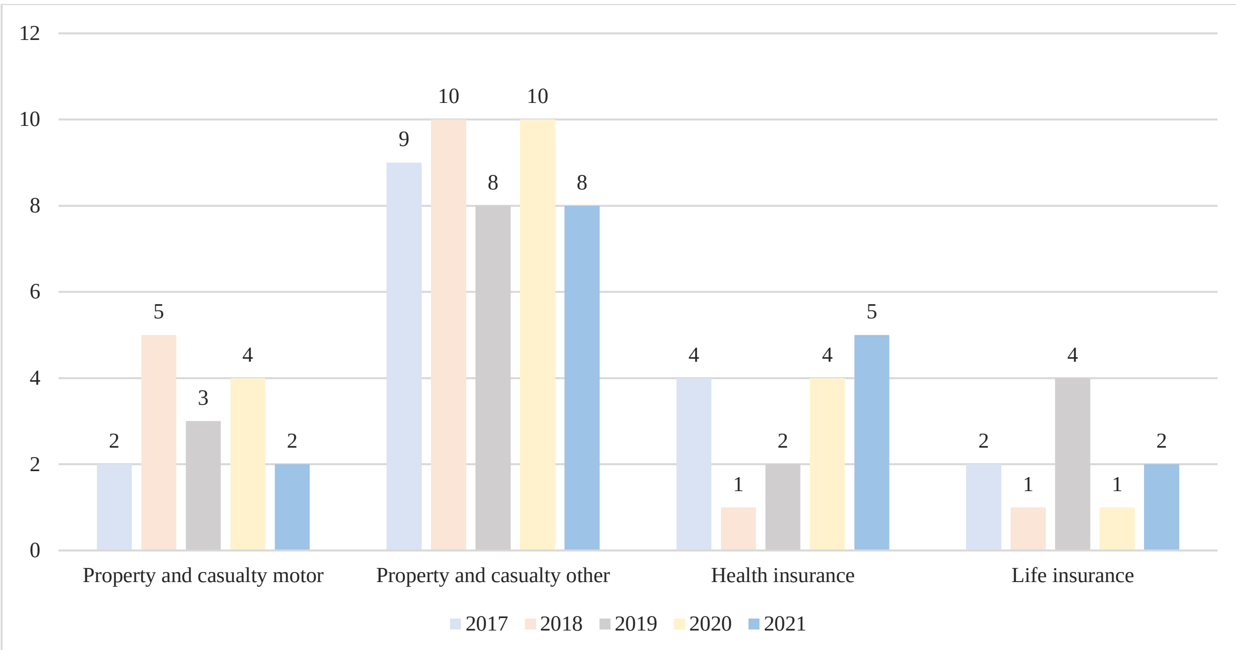
1.3.1 InsurTech and Fintech

Fintech represents a technology-driven solution for the financial sector (Blank & Dorf, 2012). It heralds a new generation of finance and technological innovation that has the potential to revolutionise the insurance industry (Gomber et al., 2017). Insurtech is a specific branch of Fintech that focuses on the insurance industry (Stoeckli et al., 2018). InsurTech is also a new, technology-driven enterprise operating at the intersection of insurance and technology (Alt & Ehrenberg, 2016). These entities offer traditional insurance services at reduced costs and introduce innovative products and solutions powered by state-of-the-art technologies (Stoeckli et al., 2018). With its emphasis on innovation, InsurTech represents the take-up of IT innovation in the insurance industry to address insurance-related challenges.

InsurTech has been applied across three primary insurance domains in China: property and casualty, health insurance, and life insurance. InsurTech primarily focuses on mitigating pure risks, encompassing property, health, and liability insurance. The use of InsurTech spans the distribution and calculation of premiums across the insurance value chain (Njegomir & Demko-Rihter, 2023). Figure 1 illustrates target categories for InsurTech ventures in 2017-2021 indicating a breakdown of the distribution of InsurTech by type and alignment along the value chain, middle level in property and casualty motor, high level in property and casualty other, middle level in health insurance, and low level in life insurance(Gupta et al., 2021).

Figure 1

The Share of InsurTech (Gupta et al., 2021)



**Share of innovation: From low to high= 0~10 score*

Note. McKinsey Global Insurance Pools Insurtech Database, July 2021, p. 4.

The development of InsurTech reflects three premises: First, technology and insurance are supported. Second, technology enhances insurance efficiency in operations, claims, customer service, and risk control. Third, technology can help construct an insurance ecosystem where industry and ecosystem integration create a quasi-chemical reaction: a key product drives industry innovation, empowering industry development and transforming the entire industry and the upstream and downstream value chain.

1.3.2 Startups and Interactions with Insurers in China

A startup is an organisation based on a profitable, scalable, and sustainable business model (Blank & Dorf, 2012). Among emerging startups, InsurTech startups are recognised as fast-growing investment targets (Lee & Shin, 2017). US and EU startups prosper when engaged with incubators and accelerators (Hoffman & Radojevich-Kelley, 2012). In 2019, there were 376 InsurTech startups in the US (Mike & Russ, 2019), while China had 72 Fintech startups (Sheng et al., 2016).

China's insurance market has great potential for InsurTech startups. During 2022-2023, China's insurance technology companies obtained USD 156.9 million financing (Braun & Schreiber, 2017). In the past, China's insurance companies have encountered particular challenges when selecting providers. Pressman (2003) states that insurers experience lower returns on IT projects, even though insurers invest more in these than most financial services or banking industries.

China's insurance technology sector began to gain traction in 2017 and has progressed through several distinct stages. The initial stage, exemplified by platforms like Huize.com, focused on internet sales and utilised platforms like the Little Red Book APP for marketing. This was followed by the exploratory stage, exemplified by companies like Waterdrop Insurance. The industry is still developing, although the technology is relatively mature, including, for example, SaaS services. Over the next five to ten years, further growth has significant potential. China is currently the world's second-largest insurance market, and by 2030, it is expected to surpass the US and become the largest (Xu, 2022). However, the per capita premium paid in China is only around 3,000 RMB, significantly lower than the 50,000+ RMB equivalent paid in the US. This indicates excellent growth potential, and it is projected that as of the end of 2024 Q1, the total assets of the insurance companies amounted to 32.9 trillion RMB, up by 1.4 trillion RMB or 10.4% from the beginning of the year. Among those, assets of property and casualty insurance companies registered 2.9 trillion RMB, up by 4.4%; assets of personal insurance companies reached 28.6 trillion RMB, up by 4.4%; assets of reinsurance companies recorded 775.1 billion RMB, up by 3.8%; assets of insurance asset management companies were 120.9 billion RMB, up by 14.9% (*Supervisory Statistics of the Banking and Insurance Sectors*, 2024).

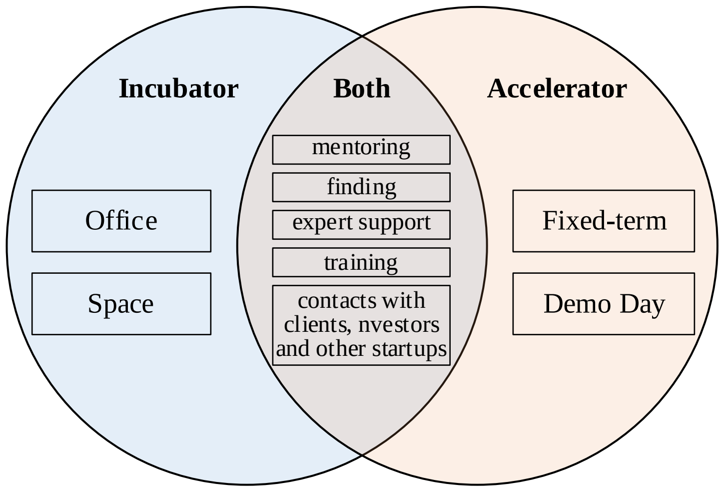
1.3.3 Incubator and Accelerator

The terms of incubator and accelerator have been defined as venture programs providing essential services and physical infrastructure resources essential for the sustainable growth of startup (Woolley & MacGregor, 2022).

An incubator initially supplied startups with business premises, meeting venues, office furniture, equipment, and even kitchens (Serwatka, 2018). Since 2011, a new generation of the incubator has emerged: the accelerator (Bound & Miller, 2011). Hoffman and Radojevich-Kelley (2012) described accelerators as platforms enabling startups to launch their technologies, ideas, or products into the marketplace. Figure 2 compares the shared features of accelerators and incubators.

Figure 2

Incubator and Accelerator Characteristics



The ‘demo day’ is a unique characteristic of accelerators (Serwatka, 2018). This public presentation event is where startups can pitch their business to potential investors and partners (Kohler, 2016). Accelerators typically include programs for approximately three months, with specific ‘admission’ and ‘graduation’ dates (Cohen & Hochberg, 2014). More importantly, accelerators provide comprehensive services such as mentoring, training, and social opportunities for startups and, if seen as a promising investment, financing (Pauwels et al., 2016). In this study, the term accelerator is used for incubators and accelerators.

1.3.4 Organisational Business Model

Amit and Zott (2001) defined the organisational business model (OBM) as a mechanism creating value, infrastructure, workflow, and content. For example, the InsurTech value creation focused on organisational infrastructure and procurement management (Stabell & Fjeldstad, 1998). The OBM (or how the organisation is set up internally) is critical in the sustainable development of insurance startups (Stabell & Fjeldstad, 1998; Stoeckli et al., 2018). First, the OBM should focus on the fundamental concept of corporate value creation (Amit & Zott, 2001).

Second, organisational strategy will likely strengthen as businesses interact with critical external support elements (Porter, 1989). The early-stage InsurTech startup tends to fail when the OBM is ignored by insurance startup founders (Giardino et al., 2014). Startups might already be able to develop their OBM. Indeed, their development model informs the business model configuration for insurance startups (Bosch et al., 2013). This study aims to test whether it is realistic for startups to develop novel OBMs for the Chinese InsurTech market.

1.3.5 Innovation Performance

Innovation combines the invention and exploitation process (Roberts, 2007). The exploitation included all stages of research and development, use cases, and business conversions of creative outcomes (Roberts, 2007). Innovation has been critical in surviving globalisation and a competitive environment (Madhoushi et al., 2011). Innovation performance is considered an intermediate between the business process and corporate performance and might trigger the updated workflow and the next round of achievement (Alegre et al., 2006). The performance may reflect various innovations, including product, service, process, technology, and business model (Dewangan & Godse, 2014).

1.4 Research Objectives

This research aims to determine if accelerators can bridge the gap between InsurTech startups and China's insurance providers by identifying the specific factors that companies consider when contemplating the adoption of accelerators. This research thus aims to inform China's insurers about the value of accelerators and offer insights into effectively promoting and investing in their adoption. The study provides empirical evidence illustrating how accelerators can help insurance firms bolster their longevity and growth prospects.

1.5 Research Questions

Though InsurTech and accelerators have both been given attention by scholars, there has yet to be much focus on the potential effect of one on the other, especially for China's unique and changing case. One study proposed a framework to evaluate the innovation of InsurTech from management, technology and customer perspectives (Kakabadse et al., 2020); however, the application of accelerators to InsurTech and how the business model relates to innovation has not been discussed. Conclusions drawn from existing studies cannot be readily extrapolated to the dynamic landscape of emerging markets, particularly one as distinctive as China, characterised by unique business models and financial trends (Kim & Jung, 2010; Lange, 2018; Moritz et al., 2022). Kupp et al. (2017)'s study discussed the five successful factors of accelerators. However, it did not include the additional context of business model and innovation performance this study aims to analyse.

Investigating the existing literature suggests several pivotal questions that could provide invaluable insights for the study of InsurTech startups, accelerator adoptions, and insurance providers in a China context: What insights can be derived from startups' use of accelerators overseas? What are the significant gaps in understanding of business needs between InsurTech startups and China's insurers? What are the main barriers and enablers for the successful growth of InsurTech startups in China? How do accelerators speed up the establishment of InsurTech startups?

Answering these questions would help validate the early development of international accelerators and extend their use to the Chinese business environment. Answers could also identify critical problems across InsurTech startups, accelerators, and insurers.

The primary research question emanating from the literature discussed in subsequent sections of this study is:

How can InsurTech Accelerator bridge the gap between China Insurers and Technology Startups?

The research of new generation accelerators in emerging economies like China would require a nuanced understanding of China's cultural and business context (Mahmood et al., 2015). Since previous studies of China InsurTech have not explored its particular factors in-depth, this study also posed the following sub-questions:

- Sub-research question 1: Does the startup company have the motivation to obtain assistance on creating business model?
- Sub-research question 2: What factors will motivate startup to consider adopting an accelerator?
- Sub-research question 3: Can the acceleration process change the internal capabilities and external support to build the organisational business model?
- Sub-research question 4: How does business model relate to innovation performance after acceleration?

1.6 Conceptual Framework

After conducting a thorough and systematic literature review, a robust conceptual model was designed. This model encompasses four essential variables and their intricate relationships, supported by five closely associated hypotheses. Within the dynamic landscape of China's InsurTech domain, the interplay between startup motivation, accelerator adoption, business model evolution, and innovation performance form a complex network of interactions. Tracing this intricate web of connections sheds light on the dynamics that influence the trajectory of InsurTech ventures.

A conceptual framework is a guiding compass for systematically unravelling the intricate threads interconnecting these elements. It provides valuable insights into the mechanisms that drive the growth and innovation of InsurTech within China’s unique context. This model achieves a deeper understanding of the factors and processes in the InsurTech ecosystem, offering valuable insights for researchers and practitioners alike.

1.7 Methodology

Mixed methods were adopted in this study to investigate the core research questions (Creswell & Creswell, 2014). The primary research focus revolved around evaluating accelerators’ efficacy in bridging the gap between China’s insurance sector and technology-driven startups, thus establishing the critical success factors for InsurTech accelerators. The research is structured in two distinct phases. In the first quantitative phase, surveys were conducted to scrutinise and corroborate factors related to startup motivation, accelerator adoption, business model dynamics, and innovation performance. The second phase involves the qualitative interview, a robust tool for exploring the insurance landscape within China’s dynamic cultural context. The interview provides a deep understanding of the complex factors. This study comprehensively explains its topic by combining quantitative surveys and qualitative interviews. This mixed methods approach leverages the strengths of both methods, enabling a thorough examination and in-depth understanding of the research topic. This approach maximises the capacity of the research to analyse the complex dynamics of the InsurTech landscape in China.

1.8 Contribution to Knowledge

Drawing on the systematic approach outlined by Creswell and Creswell (2014), a rationale for employing mixed methodologies was established to address these research questions. Employing a sequential design, the research progresses from a quantitative study to a qualitative investigation, where in-depth insights gained from the qualitative phase discuss the results examined in the quantitative phase (Creswell & Creswell, 2014). Initially, a quantitative method was adopted to empirically explore the correlations among these factors and assess which ones influenced outcomes. A qualitative approach was used to discuss the constructs, such as startup motivation, accelerator adoption, business model, and innovation performance.

Serwatka (2018) noted that limited research has been conducted on whether accelerators can contribute to insurance technology operating in companies in China. That study provides a framework for modelling the potential influence of accelerators in China's insurance industry. The study assessed whether accelerator adoption positively impacted the business model and innovation performance of certain InsurTech startups. The study also evaluated startups' motivations to adopt accelerators.

InsurTech accelerator research has few empirical findings, allowing for applying various theoretical approaches to evaluate their capacity to improve business performance. Foundational theories such as enterprise ecosystem theory (Lange, 2018) can conceptualise business startups' use of accelerators. However, these theories might be outdated, and their hypotheses and constructs might be ill-suited to the current context of big data (Visser, 2016).

This research evaluates and builds upon theories previously applied in studies of InsurTech in China. The theories are adapted or expanded with additional constructs, variables, and factors specific to the present study context. The practical objective of the study is to offer guidance for establishing the first InsurTech accelerator in China. The conceptual model developed and tested in this study can help ascertain the ideal attributes of an accelerator explicitly designed to support China's insurers and technology startups.

1.9 Statement of Significance

The primary objective of this research on InsurTech accelerators is to support the business progress of InsurTech startups by leveraging practical insights about the value of accelerators, mainly through evaluating the activities conducted during demo days. This will enable startups to apply that knowledge in both domestic and international digital insurance markets, drawing upon evidence gained by testing some theoretical and conceptual models. This study seeks to establish productive ways of connecting the activities and objectives of InsurTech startups with those of insurers. Formulating an initial set of questions to probe how accelerators might make a difference for each party of startups and InsurTech businesses can be a starting point for the research investigation to follow.

- What? Provide a formula and framework of the critical parameters to consider when building a successful InsurTech accelerator, including internal and external support for startups, such as project financing, talent recruitment, training, technology qualification, etc.
- When? Consider mentoring startups on the sequence of steps needed for implementing the accelerator. For example, seek legal advice early in planning for the accelerator.
- Who? Identify the stakeholders who are crucial elements in the success journey of InsurTech startups. For example, develop a checklist to identify the critical human resources that need to be employed.

- How? Explicate the accelerator model's guidelines for success. Parameters should include developing milestones for raising funds for project development, liaising with Venture Capital (VC) funds, and structuring meetings with significant insurers and partners (Kanbach & Stubner, 2016).

This study has sought to build on the contributions of three earlier works. First, it pioneered the creation of a novel conceptual framework to evaluate the significance of accelerators in InsurTech, based on the work of Kanbach and Stubner (2016). Second, it highlights the positive outcomes associated with accelerated startups, specifically the enhancements in their business models and innovation performance, as observed in the research (Bruce et al., 2018). Third, this study has delineated the contextual factors within China, both intrinsic and extrinsic to the insurance environment, that play a pivotal role in shaping startups' success.

1.10 Conclusion

This study will comprehensively explore the intricate dynamics of the interplay between InsurTech accelerators, China insurance entities, and InsurTech startups. It aims to bridge obstacles and propel transforming innovation within China's evolving insurance landscape. Chapter 2 presents a literature review of 168 studies that have informed vital factors for the research. Chapter 3 constructs the conceptual framework for the accelerator model using a mixed-methods research paradigm. Chapter 4 describes the mixed methods approach and explanatory sequential design. In Chapter 5, quantitative study, the data is collected from questionnaires. Then, exploratory factor analysis (EFA) and structural equation modelling (SEM) are used to validate these factors and present the results of the hypothesis. Chapter 6 presents a qualitative study exploring InsurTech startups' motivation, accelerator adoption, business models, and innovation performance factors through interviews with executives and industry practitioners. In chapter 7, the findings of this study are presented and discussed. Chapter 8 concludes with insights into the study’s contributions, limitations and future research possibilities.

Chapter 2. Literature Review

Research on incubators and accelerators (Woolley & MacGregor, 2022) has been investigated in the EU (Ziakis et al., 2022) and the US to promote business innovation (Gumusluoğlu & Ilsev, 2009).

This chapter examines the existing knowledge base of business incubators and accelerators in the literature and identifies the gaps between China's InsurTech startups and Insurers' qualified business models. A systematic literature review method (Xiao & North, 2018) encompassed searching, selecting, assessing, analysing, and synthesising relevant literature because it provided insights for accelerators in a global context and theoretical perspective. This chapter further located the studies from 1988-2022 and reviewed more literature during the survey. Subsequently, articles with primary data were used to identify appropriate models of accelerator adoption in startups. The latter part of this chapter summarises the literature on business models and introduces the effect of accelerators. Furthermore, reviewing research methods and designs provided details and justifications for the mixed-method approach.

2.1 Procedures

A systematic approach, as delineated by Jones and Gatrell (2014), guided the literature review for this dissertation. This comprehensive methodology consists of several key steps that allow for a thorough and unbiased analysis of existing scholarly work.

Locating literature: The initial stage involved comprehensive searching across relevant databases and sources to identify potential studies for inclusion. The choice of databases and sources adhered to the research topic, ensuring the retrieval of pertinent literature.

Selection and evaluation of studies: Once potential studies were identified, they were meticulously evaluated against predefined criteria. These criteria ensured the relevance, quality, and reliability of the studies included, thereby reducing bias and enhancing the review's validity.

Analysis of content: The selected studies were systematically analysed. This analysis included a detailed examination of the studies' research methodologies, findings, and conclusions. It also involved noting patterns, themes, and gaps in the current literature.

Research synthesis: Finally, the results of the individual studies were synthesised. These could be a narrative description or a meta-analysis that statistically combines the results of several studies. This synthesis allowed for a more comprehensive review of the existing body of literature.

The adoption of this systematic review process ensured a robust and transparent approach. It provided a structured and replicable framework, minimising bias to increase the reliability of the findings. It ensured a comprehensive understanding of the existing research, established the context of the present study and identified gaps.

2.1.1 Locating Studies

A comprehensive strategy was employed to retrieve relevant accelerator studies, including database searches, citation analyses, and manual searches. The initial search delved into the Scopus database, using the keyword 'business accelerator' as the search term. This yielded 766 records related to business studies. The study proceeded to select and code those articles to obtain a preliminary understanding of the scope and content of accelerator studies.

The next phase aimed to retrieve broader studies exploring the impact of business accelerators on startup business models and innovation. This involved interrogating the Emerald database to retrieve relevant articles. Combining keywords to unearth additional relevant literature was deployed across Scopus and Emerald. These keywords included 'business incubator’, ‘business acceleration’, ‘business incubation’, ‘accelerator and incubator’, ‘corporate incubator’, ‘startup incubator’, ‘startup incubator’, and ‘startup incubator’.

The choice of Scopus and Emerald databases as primary literature sources was grounded in their expansive repository of academic articles. Scopus boasts over 1.8 billion citations and abstracts from more than 7000 publishers, whereas Emerald indexes over 300 scholarly and professional journals, including those that closely cover management and marketing research.

Following this general search, more precise search terms were selected to yield manageable results of the highest relevance. As an additional measure, manual searches on Google Scholar were performed to gather more articles, supplemented by a citation analysis of articles obtained during the first phase. This approach ensured a comprehensive exploration of the relevant literature in the field of accelerator studies.

2.1.2 Selection of Studies

The selection of studies was grounded in two critical criteria: a quality assessment and relevance to this research question. Initially, quality assessment was conducted using a method derived from extant literature (Bound & Miller, 2011). This assessment evaluated the quality of the journals from which the articles originated.

After searching the business accelerator terms above, 766 articles were found in the initial stage. Scimago journal ranking (www.scimagojr.com) was used to evaluate the quality of the journals, following the methodology suggested by Bound and Miller (2011). Only articles from journals ranked in Q1/Q2 of the Scimago ranking were included. Applying this filter, only 276 were qualified in the Q1/Q2 journal ranking assessment.

The articles considered for review appear in the following journals: The Journal of Applied Business Research, Electronic Markets, Qualitative Sociology, Journal of Technology Transfer, International Journal of Entrepreneurship and Innovation Management, IEEE Transactions on Engineering Management, Small Business Economics, Technovation, Journal of Management Information Systems, Journal of Cleaner Production, Information and Management, Journal of Business Research, Journal of Management Studies, Administrative Science Quarterly, Strategic Management Journal, International Journal of Small Business.

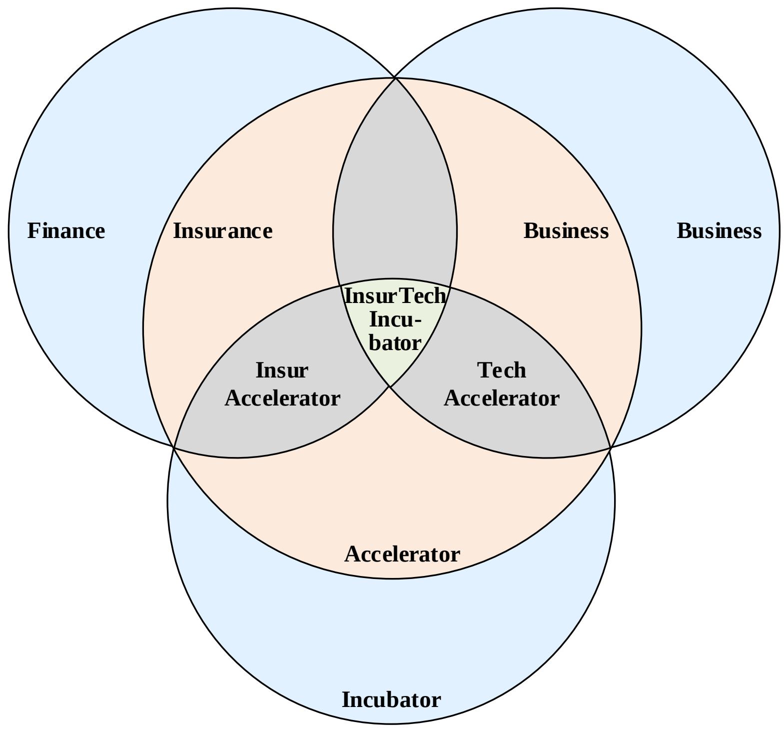
Following quality assessment, the final stage of study selection involved evaluating the relevance of the collected articles to this research question, specifically the impact of accelerators on InsurTech startups in China’s insurance industry. This further assessment commenced with a review of the abstracts of the remaining articles. A careful reading of their total content was necessary for articles whose relevance could not be ascertained solely from reading their abstracts.

Of the 276 articles that met the quality criteria, 98 were excluded due to their lack of central focus on accelerators. After this initial selection process, a corpus of 168 articles was targeted for the final stage of the accelerator/incubator literature review. These articles formed the basis for a detailed exploration of the effect of accelerators on InsurTech startups within the China insurance industry. Five main perspectives were identified: incubator, accelerator, technology, Fintech, and InsurTech, as illustrated in Figure 3.

The review incrementally identified those studies that covered each of these domains, specifically those exploring InsurTech accelerators. Subsequent sections discuss the findings of the reviews.

Figure 3

Relevant Domains of Research Enquiry to Inform the Study (Author developed, 2019)



2.1.3 Analysis

A template was developed to serve as a tool for conducting the literature review systematically. It guided the examination of each source by outlining the specific aspects to be evaluated (Table 1).

Table 1

Literature Review Template

Bibliographic info: Authors, Years, Title, Journal Title, Journal Classification	Key Findings: Antecedents, Outcomes, Mediation, Moderation, others	Theory: Theory of ethical leadership, Framework of analysis, additional theories

Context: Cultural, Industrial, Others Other research notes: Main references cited, other notes	Methods: Quantitative/Qualitative/Mixed methods, Single/ Multi-sources, Cross-sectional/ Longitudinal Measures	Sample: No. of sample, Type of participants (executives, supervisors, followers)

2.1.4 Synthesis

This set of studies on business accelerators provided an initial wealth of information. A narrative synthesis was then developed to explore relationships among accelerator, business model and innovation.

Based on the retrieved bibliographic information, it is clear that the number of incubator/accelerator studies is growing. Business accelerator studies are currently being published in 93 journals, with the main topic areas covering business accelerators, startups, business models, and innovation subjects, as depicted in Table 2.

Table 2

Literature of Four Constructs (168 Articles Across 93 Journals)

Q	Startup motivation (22 journals, 32 articles)	Accelerators (50 Journals, 108 articles)	Business models (10 Journals, 15 articles)	Innovation (11 journals, 24 articles)
Q1	Accounting and Business Research (1) International Journal of Entrepreneurial Behaviour and Research (4) Journal of Intellectual Capital (2) Journal of Small Business Strategy (1) Strategic Management Journal (1) Gender, Work and Organisation (1) Journal of Management Development (1) Journal of Open Innovation: Technology, Market, and Complexity (1) Journal of Small Business and Enterprise Development (2) Reference Services Review (1) Regional Studies (1) Small Business Economics (4)	Business Horizons (2) European Planning Studies (4) Geoforum (1) IEEE Transactions on Professional Communication (1) Journal of Business Venturing (2) Journal of Management(1) Organisation Science (2) Research in the Sociology of Organisations (1) Convergence (1) Entrepreneurship and Regional Development (3) European Management Review (1) Geography Compass(1) Harvard Business Review (2) International Entrepreneurship and Management Journal (4) International Small Business Journal (1) Journal of Business and Industrial Marketing (1)Journal of Business and Technical Communication (1) Journal of Business Research(5)Journal of Cleaner Production (1)Journal of Competitiveness (1) Journal of Technology Transfer (14) Journal of Urban Planning and Development (1) Technovation (18) Urban Studies (1) Entrepreneurship: Theory and Practice (2)	Benchmarking (2) European Economic Review (1) Oxford Review of Economic Policy (1) Research Policy (2) Review of Managerial Science (2)	American Journal of Agricultural Economics (1) California Management Review (1) Computer (1) Entrepreneurship and Sustainability Issues (1) IEEE Transactions on Engineering Management (7) International Journal of Innovation and Learning (1) Technological Forecasting and Social Change (6)

Q	Startup motivation (22 journals, 32 articles)	Accelerators (50 Journals, 108 articles)	Business models (10 Journals, 15 articles)	Innovation (11 journals, 24 articles)
Q2	Cybernetics and Systems Analysis (1) Chinese Management Studies (1) Cross-Cultural and Strategic Management (1) Economics and Sociology (1) Economics of Transition (1) Frontiers in Education (1) Journal of Business Economics (1) Journal of Small Business and Enterprise Development (2) Research Technology Management (2) South Asian Journal of Business Studies (1)	Cambridge Journal of Economics (1) Economic Modelling(1) Economic Systems (1) Economics Letters (1) Engineering Economics (1) Entrepreneurial Business and Economics Review (1) European Journal of Innovation Management (2) European Journal of Management and Business Economics(1) Finance Research Letters (1) International Journal of Business Excellence (1) International Journal of Innovation Management (2) E a M: Ekonomie a Management (1) Economic Development Quarterly (2) Entrepreneurship Research Journal (3) European Journal of International Management (1) Global Business Review (1) International Journal of Entrepreneurship and Innovation Management (5) International Journal of Organisational Analysis (1) International Journal of Technology Management (3) Journal of Science and Technology Policy Management (1) Research in the Sociology of Organisations (1) Service Industries Journal(1) Urban Forum (1) International Journal of Innovation Science (1) Investigaciones Regionales (1)	Eastern European Journal of Enterprise Technologies (1) International Journal of Entrepreneurship and Innovation (1) Journal of Business Strategy (2) Technology Analysis and Strategic Management (2) Thunderbird International Business Review (1)	Equilibrium. Quarterly Journal of Economics and Economic Policy (1) Technology in Society (1) Zeitschrift fur Wirtschaftsgeographie (2) Science and Public Policy (2)

Based on information about the demographics in the studies, most data were collected from Anglo, Confucian Asian and Germanic European clusters, as shown in Table 3 below:

Table 3

Cultural Clusters of Participants of the Studies

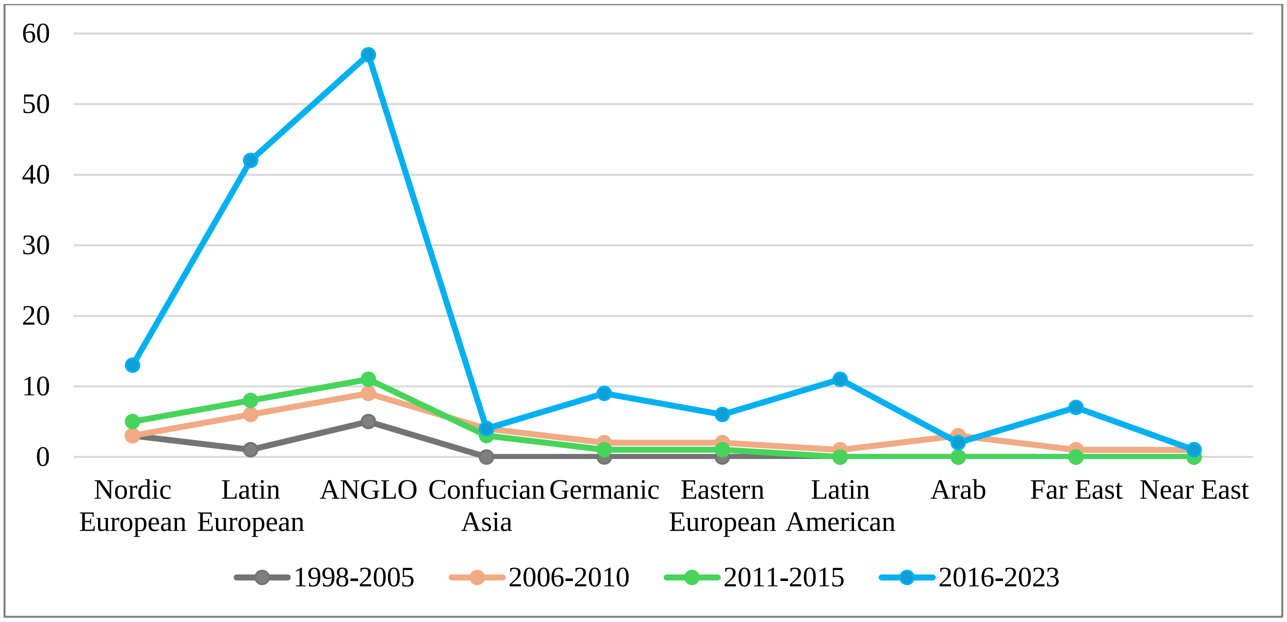
ANGLO (82)	Latin Europe (51)	Eastern Europe (24)	Nordic (29)
Australia (4), Canada (4), UK (25), Ireland (2), New Zealand (1), USA (46)	France (8), Israel (3), Italy (15), Portugal (5), Spain (16), Switzerland (1), Belgium (3)	Albania (1), Georgia (1), Hungary (1), Kazakhstan (1), Poland (2), Russia (1), Slovenia (1), Estonia (1), Czech Rep. (2), Cyprus (1), Bulgaria (1), Belarus (1), Romania (1), Ukraine (1), Slovakia (1), Latvia (1), Macedonia (1), Bosnia (1), Lithuania (1), Croatia (1), Moldova (1), Armenia (1)	Denmark (3), Netherlands (7), Finland (5), Sweden (7), Iceland (1), Norway (6)
Latin America (23)	**Far East (16)**	**Germanic (13)**	**Confucian Asia (13)**
Argentina (1), Bolivia (1), Brazil (5), Columbia (1), Costa Rica (1), Ecuador (1), EI Salvador (1), Guatemala (1), Mexico (1), Venezuela (1), Peru (1), Chile (4), Uruguay (1), Dominican Rep. (1), Puerto Rico (1), Panam (1)	India (4), Indonesia (1), Malaysia (1), Philippines (1), Thailand (2), Azerbaijan (1), Bangladesh (1), Ethiopia (1), Jamaica (1), Zimbabwe (1), Iran (1), Pakistan (1)	Austria (2), Germany (9), Switzerland (2)	China Mainland (5), Hongkong (1), Japan (1), Singapore (1), South Korea (2), Taiwan (2), Nepal (1)
Middle East (10)	**Africa (5)**	**Near East (3)**	
Egypt (1), Kuwait (1), Morocco (1), Qatar (1), UAE (2), Orman (1), Saudi Arabia (1), Bahrain (1), Jordan (1)	South Africa (1), Namibia (1), Nigeria (1), Zambia (1), Ghana (1)	Greece (2), Turkey (1)	

*Article with primary data: 168 records (including 50 multi-country studies)

Although a growing number of articles came from the Confucian Asian cultural cluster, the studies were mainly derived from Anglo, Latin America, and EU-related clusters such as Latin Europe, Nordic, and Eastern European clusters, as shown in Figure 4.

Figure 4

Cultural Clusters of Participants of the Studies Over Time (1998-2023)



* total > number of articles indicates multiple locations of some studies

A detailed examination of the bibliographic information reveals a noticeable gap in research within the Confucian Asian cultural cluster. This deficiency indicates a potential exploration area, particularly given that cluster's unique cultural context.

2.2 InsurTech Literature

2.2.1 Context of InsurTech

InsurTech was born out of the development of Fintech. Fintech has been one of the most important digital innovations, boosting the growth of financial markets (Cortis et al., 2019).

InsurTech has been defined in various ways. Although Insurtech was a new type of financial technology, some authors regarded InsurTech as a competitor for traditional insurance companies (Gómez & Pineda, 2023). However, other scholars and most scholarly investigations have established that the interaction between InsurTech startups and established insurance firms is characterised by synergy rather than competition (Cappiello, 2020). Besides the traditional description as a fusion of insurance and technology (Alt & Ehrenberg, 2016), InsurTech captures any technological innovations that generate value within the insurance industry through the provision of targeted data-centric and customer-focused solutions within a digital setting (Gómez & Pineda, 2023). Relevant articles on InsurTech were searched for with the following keywords: ‘InsurTech’ or ‘insurance technology’, ‘insurance technologies’, ‘technology insurance’, ‘technologies insurance’, or ‘internet insurance’, or ‘insurance big data’ or ‘insurances big data’ (Shamsuddin et al., 2023).

2.2.2 Categorisation of InsurTech

InsurTech research has also highlighted its function from different perspectives: some authors have highlighted innovations in both products and services, such as establishing digital services, leveraging data for risk assessment and underwriting, utilising data for claims handling, and enhancing insurance offerings with fraud prevention and recovery services (Stoeckli et al., 2018). Other authors have highlighted innovations in the insurance business model (Lee & Shin, 2017).

Drawing insights from the literature, it is clear that InsurTech can be categorised into nine distinct forms. Table 4 presents these classifications, principal technologies, and corresponding abbreviations. This comprehensive categorisation enables the varying responses of research participants to be better understood. It also informs us of the technology factors to consider when building the InsurTech accelerators.

Table 4

InsurTech Categories (Braun & Schreiber, 2017)

Category	Brief technology description
Comparison Portals	Providing online comparisons between different insurance products and providers.
Digital Brokers	Offering insurance brokerage services through online platforms or mobile applications.
Insurance Cross Sellers	Offering insurance as an additional service to complement existing products or services by online platforms or mobile applications.
Peer-to-Peer Insurance	A peer-to-peer business model is leveraging social networks to connect private parties for mutual insurance coverage.
On-Demand Insurance	Providing flexible and easily accessible insurance coverage for selected periods.
Digital Insurers	Providing fully digital insurance products exclusively available through online platforms or mobile applications.
Big Data Analytics & Insurance Software	It delivers cyber solutions that enable insurers to manage and leverage internal and external data more effectively.
Internet of Things	Collecting and transmitting data via connected smart devices.
Blockchain & Smart Contracts	Offering decentralised and encrypted distributed database systems for transactions.

2.3 Accelerator Literature

2.3.1 Antecedents of the Accelerator

Smilor (1987) looked at the business incubator from an enterprise ecosystem perspective and split the business incubator and accelerator (BIA) lifecycle into three phases: startup entry, incubation process, and incubated exit. First, the startup entry phase involves a two-way selection process between the accelerators and the startups (Hackett & Dilts, 2004b). The criteria for startup selection were frequently discussed in the BIA literature as critical success factors for the business incubator (Tötterman & Sten, 2005). By contrast, this study focused on the motivation of InsurTech startups to adopt the accelerator. Second, the incubation process has usually been evaluated in the extant insurance literature according to the attributes of the incubator (Dempwolf et al., 2014). For example, one study found that marketing and sales performance can be enhanced using an accelerator to introduce startups to potential clients and media resources (Aaboen, 2009). The latter study focused on how the accelerator's support aided the insurance startup's internal capabilities in China. Third, accelerator outcome research can be categorised into 'soft outcomes' and 'hard outcomes' (Voisey et al., 2006). Complex outcomes include accelerator success rates, startup sustainability, graduation timing, capital funding, commercialisation, and financial performance (Hackett & Dilts, 2004b). Soft outcomes include knowledge transfer and innovation, product and services, and market reputation (Lange, 2018), focusing on innovation performance and business model as relevant external and internal startup effectiveness indicators.

Accelerator research has also been conducted in different national and cultural contexts. Examples include the US, where the first accelerator, Y-Combinator, has been a role model in assisting technology startups to expand and grow by employing best fundraising practices and providing acquisition opportunities (Dempwolf et al., 2014). Accelerators from the UK lead the trend of focusing on financial support, hosting at large corporations and incubating technology firms (Gozman et al., 2018). This research aims to fill a gap in China-oriented InsurTech accelerator research and will thus focus on motivational aspects for the insurance, business model, and innovation performance.

To understand the link between motivation and innovation for InsurTech startups, Hackett and Dilts (2004b) version of Business Incubation Theory (BIT), Barney (2001) version of the resource-based view (RBV) and Chesbrough (2003) version of Open Innovation Model (OIM) were integrated into the following discussion (Hackett & Dilts, 2004a). These theories underpin the conceptual framework of this study. Theoretically, this research is based on the premise that the startup's motivation towards accelerator entry is linked to its innovation performance, which is mediated or enabled by both internal capability and external support.

Research on the nexus between startup enterprises and accelerators generally falls into two distinct yet complementary areas:

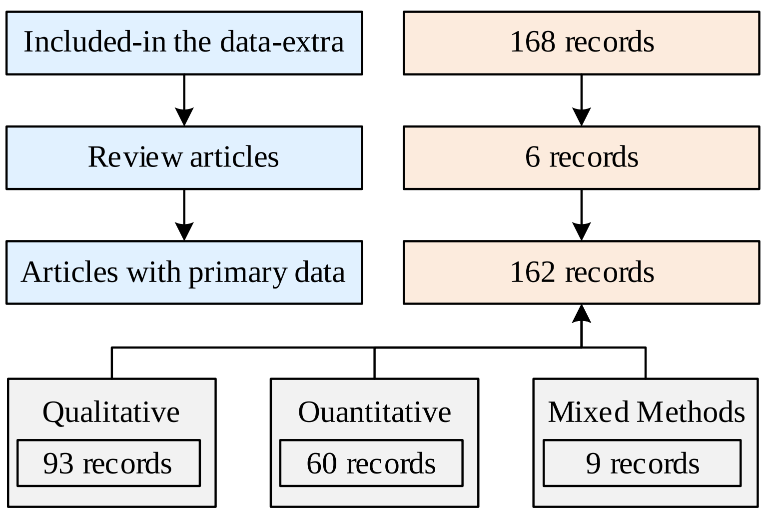
- The first set of studies perceives a business accelerator as a unique organisational entity (Roundy et al., 2017). From this perspective, accelerators act as enablers that foster technological advancements (Mian et al., 2016), facilitate fundraising efforts (Assenova, 2020), and create conduits for resource exchange (Kuratko et al., 2021). This approach is deeply rooted in the resource-based View (Barney, 2001), which positions the accelerator as a pivotal hub that attracts resources to the nurtured startups.
- In contrast, the second group treats the accelerator as an intervention within a startup's business lifecycle. This perspective characterises accelerators as business incubation intermediaries (Hausberg & Korreck, 2020) and innovation intermediaries (Gliedt et al., 2018). It goes beyond viewing accelerators as mere resource providers to examine the mechanisms and behavioural dimensions that influence the accelerator–startup dynamics.
- Also, there is a differentiation in whether the accelerator's influence is perceived from an internal or external perspective (Hausberg & Korreck, 2020). Studying private independent and corporate for-profit accelerators (Hackett & Dilts, 2004b; Su et al.,

2009), some literature notes that modern accelerators seem to focus on high-tech sectors, including Fintech (Bone et al., 2017; Gundlach, 2017; Serwatka, 2018; Stoeckli et al., 2018).

On the research methods used in the selected studies, the quantitative approach was the dominant method of evaluating business accelerators. The scale developed by Su et al. (2009) was the primary measure used to measure the level of accelerator adoption in the InsurTech startups, as illustrated below in Figure 5.

Figure 5

Research Methods of Accelerator Literature Categorisations in Selected Articles (1988–2022)



2.3.2 Existing InsurTech Accelerators

Scholars have examined the relationship between established insurance players and emerging InsurTech startups, pinpointing key success factors. These factors include innovative business models, robust capital support, competitive technological edge, deep industry and client insights, and practical value creation (Braun & Schreiber, 2017). Furthermore, Rubin and Aas

(2022) identified six pivotal elements in the design of InsurTech accelerators: (1) meticulous selection criteria for accelerated InsurTech startups, (2) thorough evaluation of mentors, (3) tailored provision of accelerator services for InsurTech startups, (4) strategic alignment of InsurTech startups' solutions with challenges faced by incumbent insurers, (5) the provision of venture support for InsurTech startups post-accelerator adoption, and (6) the establishment of sustainable technology advantages through robust data liquidity and sourcing (Rubin & Aas, 2022).

The literature base records a diverse array of factors contributing to the success of accelerators. Regarding the investment value of accelerator use, the importance of startup selection and venture support has been stressed. Conversely, the availability of mentoring has been viewed as less critical (Zarei et al., 2022). The effective management of both cooperation and competition dynamics among startups emerges as a pivotal determinant of accelerator success (Moritz et al., 2022). It has been noted that critical factors fostering incubator success encompass technology transfer, appropriate infrastructure, cohesive teamwork, and robust organisational culture (Masutha & Rogerson, 2015).

2.3.3 Theoretical Accelerator Studies

This literature review revealed that two primary theoretical frameworks have been employed in studies to evaluate the impact of accelerators: The resource-based View (Barney, 2001) and the Open Innovation Theory (Chesbrough, 2003).

Resource-based View (RBV) posits that sustainable competitive advantage derives from valuable, rare, inimitable, and non-substitutable resources and capabilities. In the context of accelerators, this theory could explain how the distinctive resources provided by the accelerator, such as mentorship, funding, and networking opportunities, contribute to the startups' competitive advantage.

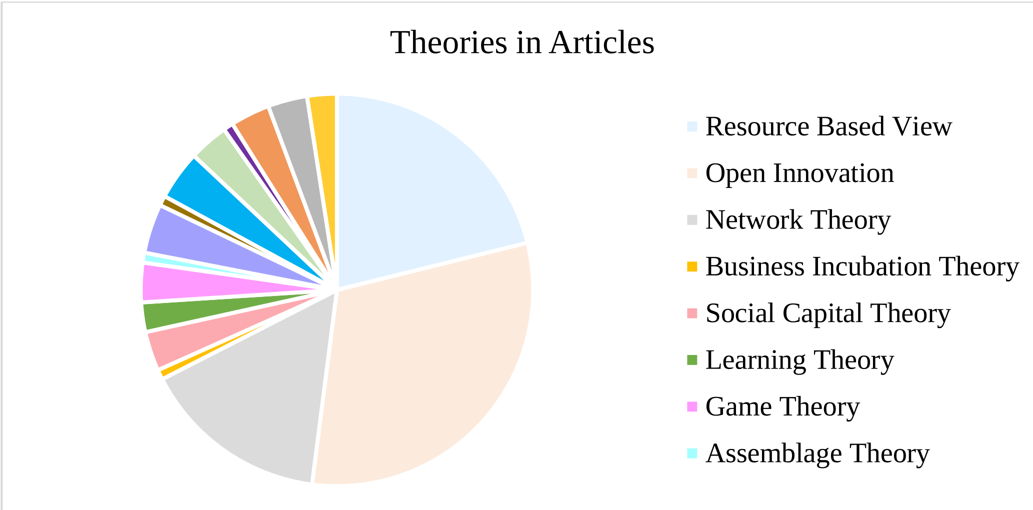
On the other hand, in Open Innovation Theory (OIT), Chesbrough (2003) suggests that companies can and should use both internal and external ideas and paths to market as they seek to advance their technology. Within accelerator studies, this theory might highlight how startups can leverage external resources and networks (made accessible via accelerators) to innovate and grow.

Several other theories were applied to provide foundational knowledge across the selected articles. These included Assemblage Theory (DeLanda, 2016), Network Theory, Social Capital Theory, Learning Theory, Game Theory, and Business Incubation Theory (Hackett & Dilts, 2004b). For instance, Assemblage Theory could interpret the complex and diverse interactions between startups, accelerators, and the broader ecosystem. On the other hand, Network and Social Capital Theory could highlight the value of connections and relationships formed within the accelerator environment.

It illustrates these theoretical frameworks and their usage across the selected articles (Figure 6). The employment of these theories opens up a diverse range of perspectives from which to examine the effect of accelerators on startups.

Figure 6

Theories Referred to in the Selected Articles



This literature review also extrapolates the principal findings of the selected articles, especially as they pertain to the central theme of this thesis: the adoption of accelerators. To provide a broader view, the review encompasses the antecedents of business adoption of accelerators, including the motivational factors for firms to engage with accelerator programs.

Simultaneously, the reviewed literature considers the consequences of embracing accelerators. This entails analysing the benefits and potential drawbacks that startups may encounter due to their involvement with accelerator programs, including accelerated growth, rapid innovation, or resource allocation challenges.

Finally, this review evaluates mediating and moderating influences on accelerators' impact. This involves understanding the variables that might amplify or reduce the effects of adopting them on startups, especially in motivation to adopt and innovation performance.

Thus, this literature review maps the current academic landscape concerning accelerators and explores the intricacies of accelerator adoption from multiple angles. It provides a thorough foundation upon which this thesis builds, illuminating the complex dynamics that shape the interactions between accelerators and startups.

2.3.4 Accelerators in a Global Context

A recent study by Braun and Schreiber (2017) has nominated the global top nine InsurTech accelerators. The latest data expands that figure to 18. Appendix 1 states the operational models for the Top 18 InsurTech accelerators, whether independent operators or aligned with a large company.

The participation of top global InsurTech accelerators, such as Silicon Valley Insurance Accelerator, Global Insurance Accelerator, Fintech Innovation Lab, Plug and Play Tech Centre, and others, could significantly shape the landscape of InsurTech and accelerator research in China. Their effects could be multivariate, as described below:

- First, they would bring international best practices, expertise, and innovation models to inspire and guide the development of China's InsurTech business ecosystem.
- Second, some potential collaborations between China accelerators and these global accelerators were illustrated, which might facilitate knowledge transfer. Insights gained from existing business strategies and approaches could inspire new accelerators that can adapt to local contexts.
- Lastly, establishing accelerators' involvement could only enhance the credibility and visibility of China's InsurTech accelerator research, attracting attention, investment, and talent from various international stakeholders.

2.4 Business Model Literature

2.4.1 Antecedents of the Organisational Business Model

Recent advancements in entrepreneurship and organisation theory have highlighted the critical significance of design in the entrepreneurial process (Chesbrough, 2003). While noteworthy progress has been achieved in elucidating the role of design, a comprehensive grasp of the factors underpinning business model design and the emergence of design themes still needs to be discovered. Empirical evidence has confirmed the impact of design themes on firm performance; however, there is an evident lack of a fully developed and integrated model that effectively connects business model design with performance.

Early contributions to the literature on business models have primarily gravitated towards examining catalysts that facilitate the creation of innovative business models. These catalysts encompass a wide array of factors, such as the adoption of emerging technologies and technological changes (Chesbrough & Rosenbloom, 2002), the evolution of customer preferences (Teece, 2010), and the acquisition of new capabilities (Seelos & Mair, 2007). These factors undeniably play a pivotal role in influencing contemporary business model design; however, they do not provide a comprehensive basis for all business model configurations.

Research has explored various triggers for instigating change within business models, including external threats and opportunities, competitive dynamics, technological advancements, regulatory changes, and profound knowledge of customer attributes (Frankenberger et al., 2013; Sanchez & Ricart, 2010). Moreover, scholars have underscored the critical role played by individual business model designers: for instance, their cognitive abilities, beliefs (Aspara et al., 2010), creativity (Svejenova et al., 2010), and persistence (Sosna et al., 2010) in shaping contemporary business model design.

Several studies have addressed specific antecedents that influence business model design. These antecedents span a broad spectrum of influences. For example, Bittini et al. (2022), has recognized the innovation value of insurtech business model via providing new products and service. Such insurtech provided creative platform enabling the digital transformation and fulfilling the business strategies of traditional financial institutions (Schiffer & Stockhinger, 2021). While these influences have been recognised, they were often explored in isolation, leaving the intricate connections between these factors and potential design outcomes, such as design themes, inadequately explored or, at times, entirely overlooked.

For example, Pati et al. (2018) suggested that many constraints on business model design may negatively influence the startups from both internal and external factors. Understanding the nuanced interplay between emerging design themes and innovation is fundamental in guiding business leaders and designers towards desired outcomes.

As businesses grapple with challenges and opportunities, a meticulous examination of the interplay between business model design and performance is increasingly important. Integrating academic research with practical insights is a way to nurture sustainable growth and success in the fiercely competitive global market. Scholars have addressed the need to bridge the gap between theory and real-world applicability, particularly in business model design (Frankenberger et al., 2013; Sanchez & Ricart, 2010).

Research in entrepreneurship and organisation theory also stresses the pivotal role of business model design in the entrepreneurial space (Pati et al., 2018). While progress has been made in ascertaining the salient factors of good business model design, there remains a need for a more comprehensive approach that looks at interactions between individual characteristics, antecedents, and design themes, which shape business model choices and firm performance.

Scholars in this field have contributed to developing a holistic business model design and performance that businesses worldwide can benefit from (Chesbrough & Rosenbloom, 2002).

Business model design has been classified according to four fundamental themes: novelty, lock-in, complementarities, and efficiency (Amit & Zott, 2001). These themes are a bedrock of tested principles that shape business model design, encompassing proven values and tools that allow for stakeholders' dynamic interactions and constraints imposed by the external environment (Boland & Collopy, 2004).

The first antecedent that significantly influences business model design is the underlying goal or goals aimed at creating and capturing value. And innovation has been a significant value that business model design provided (Ousghir & Daoud, 2022). The second critical antecedent is the influence of existing templates from incumbents and other sources. This could be beneficial to both student startup founders in the context of university accelerator (Mele et al., 2022) or alliance, partnerships or learning experience at business accelerators (Cuvero et al., 2022) .The third antecedent revolves around the concept of collaboration. This aspect emphasises the importance of cooperation with industrial partners during the design process and the resulting business model, and such partnerships can connect the entrepreneurial ecosystems and the lifecycle of accelerators (Nicholls-Nixon et al., 2021). The final antecedent concerns environmental constraints that significantly influence business model design choices. The smart choice of business model design and strategies would also impact on the Fintech and Insurtech company's sustainability (Bittini et al., 2022).

2.4.2 Effect of Accelerators on Business Model Design

In the ever-changing business landscape, startups face the challenge of finding their footing and achieving sustainable growth. Success in this dynamic environment requires more than a fresh idea; support, mentorship, resources, and an enabling ecosystem that nurtures innovation are also needed. This is where business accelerators can play a pivotal role. Business accelerators play a significant role in fostering innovation and adaptability among startups.

- **They cultivate a culture of experimentation**: Accelerators create an atmosphere encouraging startups to experiment and take calculated risks. According to Fehder and Hochberg (2014), accelerators can significantly impact innovation in early-stage startups by providing mentorship, resources, and space for trial and error.
- **They facilitate access to state-of-the-art technologies.** Accelerators help startups access cutting-edge technologies by fostering collaboration with industry leaders and research institutions. As Hallen et al. (2020) elaborate, this access often leads to the development of disruptive and innovative business models.
- **They leverage expertise through mentorship.** Mentorship is a well-documented benefit of accelerators. Accelerators bring together experienced industry professionals, academic experts, successful entrepreneurs, and investors, creating a dynamic, agile business ecosystem (Pauwels et al., 2016).
- **They embrace a 'lean startup philosophy'.** Accelerator programs can accommodate a lean startup methodology, advocating rapid prototyping, iterative development, and customer-centric design. As Blank (2021) points out, this approach makes startups more adaptable to market changes and more efficient in resource use.

- **They foster a global perspective:** Certain accelerators can foster international collaboration and expansion, thus exposing startups early to a worldwide market. Isenberg (2010) highlights how this international focus empowers startups to explore diverse markets and integrate global best practices.

Business accelerators have faced criticism and challenges despite their evident positive impact on innovation and adaptability. Smith (2021) argues that their rapid adoption might risk compromising quality and encourage a convergence towards common trends, potentially diluting the uniqueness of the business model.

Startups might instead rely on themselves to create dynamic business models. Indeed, it was a startup model that informed the business model configuration for InsurTech (Bosch et al., 2013). One study has tested whether independent business model generation is realistic in the China InsurTech market. The study found critical drivers influencing companies' accelerator entry decisions included fundraising processes, startup founders' experiences with accelerators, selection criteria, connections with partners, and the content of particular services or products (Isabelle, 2013). Another study found that fundraising was the most critical issue for InsurTech startups (Mahmood et al., 2015). The InsurTech startup's drive to accelerate its business success will affect its accelerator entry decision (Kohler, 2016). In addition, connecting with an external entity might govern the incentive to adopt an accelerator (Chesbrough, 2003) and which one to select.

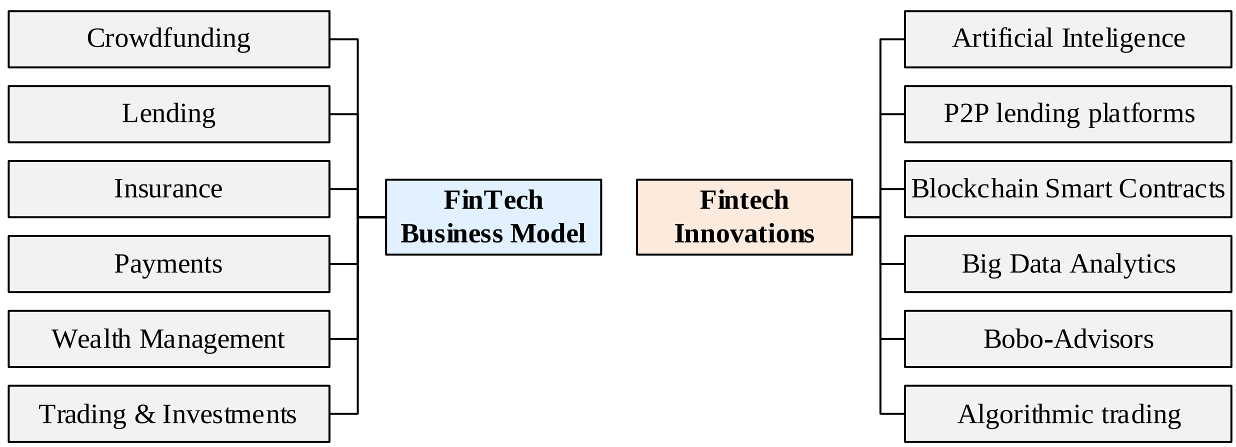
InsurTech startups' adoption of accelerators can be evaluated from the twin perspectives of internal capabilities and external support (Lange, 2018). This evaluation process reflects the underlying theories of RBV (Resource-Based View) and OIM (Open Innovation Model) (Chesbrough, 2003). Accelerators play a crucial role in this evaluation, as they can significantly change the startups' underlying logic workflow and business model due to the combination and interaction of different internal and external factors (Su et al., 2009). On the one hand, internal capabilities may create a strategic competitive advantage of resources such as operation and research and development (R&D) (Wernerfelt, 1984). Su et al. (2009) confirm that adopting an accelerator increases R&D capability and consequently improves the agility of the business model. On the other hand, external impact elements include investment, consulting, mentoring, and events such as the demo day (Barney, 1991). External funding is not only a source of financial capital to support operations but can also be an effective driver of business model design (Amit & Zott, 2001).

The European Commission has elaborated a plan for a more competitive and innovative financial sector (Nguyen, 2016). This plan integrates solutions like digital identification, mobile applications, cloud computing, big data analytics, artificial intelligence, blockchain, and distributed ledger technologies. It is significant as it sets the stage for inserting Fintech-based business models. These models must follow the same rules as traditional financial models to protect consumers and service providers. Fintech has undoubtedly provided more flexibility and versatility in the economic domain, which used to be more centralised and static. Fintech has been competitive with traditional financial services, offering customer-centric services using modern technology. It will not replace the conventional economic model but will complement it with advanced technologies (Nguyen, 2016).

Fintech-based business models, with their multiple innovations and embedded technologies (Leong & Sung, 2018), as illustrated in Figure 7, have the potential to transform the financial services landscape. These innovations have enabled the automation of existing financial services or the creation of new products, revolutionising the economic domain. While the expansion of Fintech introduces new risks, it also promises a future of enhanced efficiency and customer-centric services.

Figure 7

Fintech Business Models and Corresponding Innovations (Leal et al., 2022)



2.5 Literature Review of Research Methods

2.5.1 Quantitative Research Framework

Quantitative methodology has substantially enriched accelerator research by providing a more comprehensive databank of feedback regarding the research constructs. For example, out of 168 accelerator studies, 41 effectively used questionnaires to collate diverse perspectives; these studies also contributed significantly to the research by offering a guideline for this research. For example, a quantitative approach was adeptly utilised in a recent survey to measure the performance of a group of accelerated startups (Canovas-Saiz et al., 2021).

Quantitative methods have also been extensively harnessed to gather insights into the essential resources required within specific insurance companies to initiate and expedite digital transformation (Milanović et al., 2023). A study that has notably informed the present study explores using questionnaires to assess the value of accelerators from the standpoint of startups (Lange, 2018).

Quantitative methodologies have often been used to evaluate business models, encompassing value, service offerings, and competitive advantages. Innovation, a pivotal concept, has been extensively addressed in the literature, covering topics from digitising financial and insurance businesses to augmenting internal resources and expanding external networks (Fernández et al., 2015). Another recent study used questionnaires to collect opinions on the value of digitisation and how insurance companies reacted to the global InsurTech trend (Braun & Schreiber, 2017).

2.5.2 Qualitative Research Framework

Given the complex nature of the accelerator phenomenon, this research's primary method of choice was structured open interviews, following the example of 59 out of 168 previous studies. This choice has also been informed by the extant research by other scholars. For instance, qualitative methodology and the interview approach explored strategies for accommodating external accelerator partnerships. Using the interview method, another study considered the accelerator as a bridge between startups and corporations. It discussed design aspects, such as proposition, process, people, and presence (Kohler, 2016).

In addition, given the global context of business practices today, qualitative approaches are extensively employed in international settings. An investigation into accelerators within the Indian landscape used qualitative methods to highlight their significance for corporations (Shankar & Shepherd, 2019). Qualitative analysis can shed light on customer-sponsored accelerators' dynamics, identify accelerators' success factors, examine internal and external resource perspectives, and motivate startup innovation, as evidenced by another study conducted in Germany (Kupp et al., 2017).

2.5.3 Mixed Methods Research Framework

Based on insights from these previous studies and a comprehensive comparison of both methodologies, the mixed methods approach emerged as the most suitable choice for this research. Previous research used mixed methods effectively in several contexts (Hallen et al., 2020). Quantitative surveys and qualitative interviews can be combined to reinforce each other, enhancing understanding of how accelerators impact startups during their initial developmental stages. The mixed methods approach combines the benefits of both the qualitative approach (in-depth knowledge of the incubator and accelerators) and the quantitative approach, which enables targeted and confidential information across a broader range of stakeholders (Hallen et al., 2020). Success factors can be measured using the quantitative approach. However, the weight and highlights of each factor were better explained and evaluated by the qualitative perspective within a mixed methods approach (Kim & Jung, 2010). The strengths and limitations of previous qualitative and quantitative studies are summarised in Table 5.

Table 5

Research Methods in the Literature

Construct	Key factors	Author	Country	Research methods	Findings
Startup Motivation ------› Organisational business model	Motivation	(Edelman et al., 2010)	United States	Mixed methods	Startup motivation, including financial success, innovation, business expansion
	Business Model	(Stoeckli et al., 2018)	Switzerland	Interview Questionnaire	Business model plays a critical role in sustainable development
	Innovation	(Amit & Zott, 2001)	United States	Quantitative Grounded theory development approach	The business model focused more on providing the fundamental concept of corporate value creation.
Startups Motivation ------› Accelerator adoption	Fundraising	(Mahmood et al., 2015)	China Malaysia Canada	Quantitative Secondary data	Startups’ fundraising progress
	Interaction	(Isabelle, 2013)	Canada	Mixed methods interview	The interaction between startup founders and accelerators
	Connections	(Chesbrough, 2003)	United States	Grounded theory development approach	The connections with functional partners
Startups Motivation ------› Accelerator adoption	Internal R & D	(Wernerfelt, 1984)	United States	Qualitative	The adoption of an accelerator will create a strategic competitive advantage of resources. e.g., operation and R&D
	External funds	(Lange, 2018)	United States	Quantitative	InsurTech startups survive in an ecosystem of social, political, economic, and cultural factors.
		(Barney, 2001)	United States	Theory development	Investment, consulting, mentoring, and events such as the demo day

Construct	Key factors	Author	Country	Research methods	Findings
Mediation	Positively Significant Improvement	(Alon & Godinho, 2017)	Portugal	Interview questionnaire	The accelerator is a mediator, facilitating connections between the startups and external stakeholders.
	Mediate Improvement reduce	(Braun & Schreiber, 2017)	Switzerland	Questionnaire	Insurance and InsurTech Research with incubator and accelerator
Organisational business model ------› Innovation performance	New Revenue Models	(Chesbrough, 2003)	United States	Grounded theory development approach	Mentored organisational strategy can influence the innovation performance of insurance Startups.
	New Customer Relationships	(Boons & Lüdeke-Freund, 2013)	Netherlands Germany	Statistical methods	Business model internal factors impact technology commercialisation competence
	New business model Design	(Stoeckli et al., 2018)	Switzerland	Interview Questionnaire	Business model design plays a critical role in sustainable development

In one study centred around novel regional accelerators, the mixed methods approach was adopted to investigate the incubator’s requirements, and its qualitative data was subsequently complemented with a quantitative survey (Apa et al., 2017). Given the complexity of studying emerging InsurTech accelerators in China, the present study will similarly adopt a mixed methods strategy (Table 6).

Table 6

Strengths and Weaknesses of Mixed Methods

	Strength	Weakness
Quantitative	The quantitative approach provides insight and knowledge of accelerator outcomes (Mahmood et al., 2015).	Given the absence of published theory and research evidence, accelerator research requires more than a quantitative approach to reveal nuanced factors.
	The quantitative approach objectively evaluates and investigates startups (Colombo & Delmastro, 2002).	A quantitative approach may be less practical when understanding the drivers of organisational innovation in nascent businesses (Creswell & Creswell, 2014).
Qualitative	Qualitative approaches offer a deep understanding of insurance companies and technology startups’ unique experiences.	Qualitative research is less valuable in identifying the factors affecting post-accelerator outcomes.
	This approach is beneficial in a geography-oriented context, in this case, understanding the experiences of China technology startups.	Qualitative methods would be less helpful in providing convincing evidence supporting success factors, especially in evaluating ventures and startup valuations (Isabelle, 2013).
Mixed methods	A mixed methods approach provides comprehensive insights into identifying the gaps between business incubators and startups (Alon & Godinho, 2017).	A mixed methods approach would take comparably fewer opportunities to further take advantage of the

	Strength	Weakness
	The Mixed Methods approach enables a deeper understanding of startup success factors with support from incubators and accelerators (Reis et al., 2021). A mixed methods approach enriches the validation of critical successful factors in business incubator services for startups (Lai & Lin, 2015).	complex quantitate analysis(Hallen et al., 2020)）

Therefore, each methodology must be revised to comprehensively answer this InsurTech study's research questions; mixed methods should be selected.

2.6 Key Factors of the Conceptual Framework

The literature review identified four fundamental factors that influence the dynamics of InsurTech startups in the context of accelerator adoption and, from these, formulated a conceptual framework:

- First, motivational factors, including financial success, innovation, and business expansion (Edelman et al., 2010).
- Second, the strength of the organisational business model (Stoeckli et al., 2018) focuses on corporate value creation (Amit & Zott, 2001).
- Third, a robust decision-making process, which includes areas like fundraising (Mahmood et al., 2015), interaction with accelerator founders (Isabelle, 2013), and connections with functional partners (Chesbrough, 2003).
- Fourth, dynamic connections between accelerator adoption and internal support influence business model efficiency (Wernerfelt, 1984).

Lange (2018) notes the impact of external funds on business model design, where accelerator adoption mediates the relationship between business model improvement and startup motivation.

2.7 Limitations of the Existing Literature

Although the innovation and transformation capabilities of InsurTech startups have been explored in internal and external contexts (Stoeckli et al., 2018), there still needs to be more in the existing literature that the present study will address. First, there is a shortage of research explicitly examining InsurTech accelerators within the context of China. This includes the comprehensive design of accelerators from inception, exploring the motivating factors for startups to engage with accelerators, and quantifying the value derived from InsurTech accelerators. Additionally, while success factors such as business models, innovation, and venture support have been extensively discussed, their validation within the unique context of China still needs to be explored. Lastly, limited attention has been given to the precise motivations of InsurTech startups seeking entry into accelerators. These gaps identified through the literature review and the primary researcher’s industry experience led to the research questions of this study.

2.8 Conclusion

This literature review has provided a comprehensive study of research within the realm of accelerators, business models, and InsurTech startups and how they can act as catalysts for innovation. The literature mainly involves a conceptual framework informing four variables interwoven by five interrelated hypotheses. The inquiry explores the complex interrelationships among startups’ motivations, the adoption of accelerators, the evolution of business models, and the trajectory of innovation performance, thereby deepening the understanding of the gaps between startups and insurers and identifying potential resolutions and revolutions. The literature encompasses a mix of quantitative surveys and qualitative interviews, blending to provide a rich synergy of insights from seasoned industry professionals. This underlines the instrumental role of accelerators in enhancing business models and fostering innovation for nascent entrepreneurial ventures.

Chapter 3. Theory, Conceptual Framework and Models

3.1 Context of Theories

3.1.1 Theoretical Basis of the Proposed Study

In selecting the theories to underpin this research, an analysis was first undertaken to comprehend how adopting an accelerator orchestrates the interconnections between initial motivations and improvements in a startup's business model. Business Incubation Theory (BIT) was applied to study the interplay between a startup's initial motivation and its subsequent need for guidance in shaping firms' business models. Correspondingly, the interactions between startups' personnel and their embrace of accelerators were studied using RBV theory. This theory enabled the study of the impact of accelerator adoption, especially its positive influence on technology and the environmental context. The efficiency of the business model was explored by utilising the Open Innovation Model Theory (OIM). This included examining the ramifications of more effective management practices, showing how these positively correlate with higher levels of innovation performance.

Business Incubation Theory (BIT). BIT has emerged from the fundamental options theory (Hackett & Dilts, 2004b), which explains the reasoning behind startup selection, mentoring, and the garnering of external resource support within the business accelerator context. BIT assumes that startups pursue short-term profits, fundraising opportunities, and strategic development (Barbero et al., 2012). It offers a structure for representing accelerator performance. However, few studies have previously applied that theory to the evolution of business models and innovation.

For 15 years, BIT has been integral to BIA research and recognised as one of the most influential theories in the discipline. For instance, Rubin et al. (2015) formulated a highly cited incubator framework rooted in BIT, elucidating the positive correlation between business incubation performance and pre-incubation or incubation inputs (Voisey et al., 2006). These inputs range from business mentoring and support to resource and incubated selection.

Selecting a suitable incubator is a critical determinant of incubation success (Pauwels et al., 2016). Moreover, efficient resource utilisation has been linked with improved outcomes post-accelerator adoption (Hackett & Dilts, 2004b). Lastly, the incubator's growth is positively associated with an accelerator's mentoring activities and support. BIT can assist this study by defining the relationship between incubation outcomes and factors in the incubation process (Hackett & Dilts, 2004b).

While various accelerator-related business theories exist, such as stakeholders' view (Mian, 1996), new venture creation theory (Plosila & Allen, 1985), and BIT has two distinctive aspects. First, it encapsulates the entire acceleration process, not just portions. Second, it underlines two critical positive relationships: pre-acceleration activities and accelerated startup performance, and the other between accelerator activities and their subsequent startup performance. The application of BIT thus provides a valuable way to comprehend the accelerator uptake process.

Resource-Based View Theory (RBV). RBV is a strategic management framework developed to analyse firms from the perspective of their resources. It proposes that a resource, either tangible or intangible, can offer a competitive advantage (Wernerfelt, 1984). Tangible resources may include sales channels, mentors, and venture capitalists. Technology and knowledge transfer are then classified as intangible resources (Anderson & Gerbing, 1988). These resources can provide competitive advantages, especially if they are not easily replicable without significant cost (Aaboen, 2009).

Over time, the RBV has been interpreted and adapted in various ways. For instance, Barney (2001) integrated the structure conduct and performance (SCP) model into the RBV framework, connecting industry impact, corporate internal capabilities, and sustainable organisational advantages. This integration is particularly relevant to our study as it helps us understand how startups can gain a unique learning experience through accelerators' mentoring and resource support. The interpretation of Lavie (2006) underscored the interconnections among corporations, which is crucial in the context of our study. Peteraf (1993) emphasised the importance of resource selection in the RBV framework, a key aspect in understanding the acceleration process of InsurTech startups. In this study, Barney (2001) version of RBV is selected for its suitability to meet these research objectives. The SCP model also effectively communicates the underlying logic of this study since it links the impact of accelerator adoption to innovation performance.

Open Innovation Model Theory (OIM). As defined by Chesbrough (2003), OIM posits that startups can harness innovative ideas and knowledge about organisational business models from internal and external resources. OIM theory has been extensively applied in startup literature. For instance, Brunswicker and Vanhaverbeke (2014) interpreted OIM as focusing on strategies for sourcing external knowledge and managing internal innovation. While other innovation theories like innovation decision theory and diffusion of innovation (DOI) can be employed in accelerator research (Rogers, 1985), OIM stands out for its equilibrium between internal and external innovation sources and provides a foundation for understanding innovation performance (Tola & Contini, 2015). Thus, OIM is a helpful framework for answering the research questions of this study. The advantages and disadvantages of applying these theories were summarised (Table 7).

Table 7

Advantages and Disadvantages of Three Theories

Comparison	BIT	RBV	OIM
Differences	• Covers the complete picture of the accelerator rather than a single part. • Positive relationship between startup motivation and accelerator adoption.	• Used SCP to link internal and external factors with a sustainable advantage (Barney, 2001). • SCP informing the underlying logic about accelerator to innovation performance.	• Emphasises the critical roles of business models, Internal support such as R&D, and external resources such as venture capital in innovation (Chesbrough, 2003).
Similarity	• Two meaningful positive relationships between pre-accelerator, accelerator activities, and startup performance. • Underlying condition: Startups are seeking shorter profit fundraising opportunities.	• Importance of the resource selection (Peteraf, 1993). • Focused on the partnership among corporations (Lavie, 2006).	• Innovation theories such as innovation decision theory and DOI can also be applied in accelerator research (Rogers, 1985).
Advantage	• Understand the accelerator process.	• Strategic resources motivate startups.	• OIM links internal and external resources with business models and innovation performance (Tola & Contini, 2015).
Disadvantage	• Little research on business models and innovation.	• Not covered in resource selection.	• OIM has not discussed startups and the context of China.
Components	• Stage 1: Startup selection is emphasised. • Stage 2: Accelerator activities, such as resourcing, mentoring and consulting. • Stage 3: The outcome of business performance is organisational behaviour.	• Observing firms from their resource perspective, resources can be defined as tangible and intangible advantages (Wernerfelt, 1984). • Tangible resource • Intangible resource	• Focused on internal management of the innovation and external knowledge sourcing strategies.
Literature	• (Bergek & Norrman, 2008; Ford et al., 2010; Isabelle, 2013) • (Aaboen, 2009; Dempwolf et al., 2014; Kohler, 2016) • (Hackett & Dilts, 2004a)	• Sales channel, mentor, and venture capitalists. • Technology, knowledge transfer (Lumpkin & Ireland, 1988).	• (Brunswicker & Vanhaverbeke, 2014).

3.1.2 Appling Theories in this Research

In summary, integrating BIT, RBV, and OIM articulates an understanding of how the motivation to enter an accelerator, particularly in China's insurance industry, can lead to adopting accelerators. This adoption will enhance startups' internal capabilities, provide external support, and foster the development of business models and innovation performance (Table 8).

Table 8

The Theoretical Basis of this Research

Comparison	Extant literature		This research		
	Existing	Gaps	Theory		Background
Startup entry	Selection criteria (Bøllingtoft & Ulhøi, 2005)	The Motivation of InsurTech Startups	BIT	Business Incubation Theory (Hackett & Dilts, 2004a)	• One of the most successful theories in business incubators and accelerators for 15 years. • Rubin et al. (2015) built up the most cited incubator framework based on BIT.
Accelerator process	Internal/ external factors (Dempwolf et al., 2014)	Internal capabilities and external support of accelerator in China context.	RBV	Resource-based View (Barney, 2001)	• Compelling theory in business research ranging from pre-incubation and incubation to post-incubation (McAdam & McAdam, 2008). • Emphasising the importance of resources to startups, describing how the strategic resources would lead to competitive advantages.
Accelerator outcome	Soft & hard outcome (Voisey et al., 2006)	Business model & innovation performance in China context	OIM	Open Innovation Model (Chesbrough, 2003)	• Shifting from the theory of Closed Innovation (Tang et al., 2014). • Suggesting internal/external technology innovations and business channels (Chesbrough, 2003). • Existing fintech literature has adopted OIM as the framework for startup innovation.

BIT underpins the study in terms of three components of the accelerator life cycle (Hackett & Dilts, 2004b). In the initial phase, BIT emphasises startup selection. For example, Ford et al. (2010) discovered that venture capitalists' references play a pivotal role in formalising the relationship between accelerators and startups. The projects and business models of startups were also key factors in the evaluation process (Bergek & Norrman, 2008). Such selection criteria could shape startups' motivations to adopt accelerators (Isabelle, 2013). In the second phase, accelerator-driven activities such as resource allocation, mentoring, and consulting positively influence accelerator performance (Hackett & Dilts, 2004b). Previous studies offer pertinent insights into the value of accelerator resources. For instance, an accelerator can boost a startup's marketing and sales performance by introducing clients and providing media resources (Aaboen, 2009). Mentorship and monitoring services can reduce the risk of business failure (Kohler, 2016), while consulting and networking activities, such as the 'demo day', help startups to thrive (Dempwolf et al., 2014). In the final phase, BIT focuses on the outcomes of accelerators. Hackett and Dilts (2004b) research highlight the importance of business performance outcomes, critical indicators of innovation success and organisational behaviour.

RBV enriches this study by shedding light on the strategic resources that can motivate startups before entering into a partnership with an accelerator. Moreover, despite using stakeholder theory as a mechanism in accelerator process research (Mian et al., 2016), RBV equips this study with insights into the critical external support mechanisms during the InsurTech accelerator process.

OIM shifted from the earlier theory of Closed Innovation (Lee et al., 2010), emphasising the importance of internal and external technology innovations and business models in corporate development and governance (Chesbrough, 2003). Previous Fintech literature has adopted OIM as a framework for startup innovation. For example, building on the core tenets of OIM, Holm and Andersson (2018) constructed a Fintech business ecosystem that includes innovation-driven information systems and accelerators. OIM was applied in this study to justify the relationship between business models and innovation performance. InsurTech innovation activities were also powered by open value creation networks encompassing internal and external ideas (Stoeckli et al., 2018). Consequently, OIM informs this study by proposing that accelerated internal capabilities and external assistance can drive a business innovation performance.

3.2 Conceptual framework for InsurTech startup acceleration

Analysis of the literature resulted in a conceptual model of the acceleration phenomenon. This study examined the relationships of four constructs: startup motivation, accelerator adoption, business model evolution, and innovation performance. All these elements form the basis for understanding how InsurTech startups navigate the accelerator process. Drawing on the BIT, RBV and OIM, this framework theorises that startup motivation drives the decision to adopt an accelerator, which, in turn, transforms the organisational business model, leading to enhanced innovation performance.

These proposed linkages provide a coherent trajectory within the accelerator ecosystem to illustrate how startups might be motivated to adopt and engage with accelerators. Accelerators, functioning as nurturing incubators, can supply ongoing enhancements to the foundational business model. The result of this iterative refinement extends beyond the model itself, influencing the broader concept of innovation performance. These relationships are highly interdependent, creating a dynamic where each element influences and is influenced by the others. The empirical investigation of these connections' sheds light on this interplay, providing practical insights into the mechanisms driving startup success and innovation.

Table 9

Critical Factors of the Conceptual Framework

No.	Construct	Key factors	Main Literature
1	Startups' motivation ------› Organisational business model	Motivation	Startup motivation includes financial success, innovation, and business expansion (Edelman et al., 2010).
		Business Model	The business model is critical to sustainable development (Stoeckli et al., 2018).
		Innovation	The business model focused more on providing the fundamental concept of corporate value creation (Amit & Zott, 2001).
2	Startups Motivation ------› Accelerator adoption	Fundraising	Startups' fundraising progress (Mahmood et al., 2015).
		Interaction	The interaction between startup founders and accelerators (Isabelle, 2013).
		Connections	The connections with functional partners (Chesbrough, 2003).
3	Startups Motivation ------› Accelerator adoption	Internal Support	Adopting an accelerator will create a strategic competitive advantage of resources, e.g., operation and internal R&D (Wernerfelt, 1984).
		External Resource	InsurTech startups survive in an ecosystem of social, political, economic, and cultural factors (Lange, 2018): e.g., investment, consulting, mentoring, and events such as the demo day (Barney, 2001).
4	Mediator	Positively Significantly Improvement Mediate Improvement reduces	The accelerator is a mediator, facilitating connections between the startups it nurtures and various external stakeholders (Alon & Godinho, 2017). Insurance and InsurTech Research with incubator and accelerator (Braun & Schreiber, 2017).
5	Organisational business model ------› Innovation performance	New revenue models	Mentored organisational strategy can influence the innovation performance of insurance startups (Chesbrough, 2003).
		New customer relationships	Technology commercialisation competence is impacted by internal factors in the business mode (Boons & Lüdeke-Freund, 2013).
		New business model Design	Business model design is critical in sustainable development (Stoeckli et al., 2018).

The fundamental element of the InsurTech acceleration model centres around the InsurTech startups themselves. Their organisational business models evolve due to the acceleration process, allowing more excellent innovation performance. InsurTech startups, serving as potential candidates for acceleration, concentrate their efforts on technologies and applications.

1. In the sub-research question 1 ‘Does the startup company have the motivation to obtain assistance on creating business model?’ It has two items:

- The scale for startup motivation includes the following factors: entrepreneurial orientation, recognition, innovation, and financial success (Edelman et al., 2010).
- The scale for assessing business model strength includes the following factors: new revenue models, new customer relationships, and new business model design (Wang et al., 2020).

2. In the sub-research question 2 ‘What factors will motivate startup to consider adopting an accelerator?’ It has two items:

- The scale for startup motivation includes these factors: entrepreneurial orientation, recognition, innovation, and financial success (Edelman et al., 2010).
- The scale for accelerator adoption consists of these factors: new technology/ equipment, new capability, new processes, new offerings, new partnerships, new venture performance, and tangible financial resources (Chen, 2009; Su et al., 2009; Wang et al., 2020).

3. In the sub-research question 3 ‘Can the acceleration process change the internal capabilities and external support to build the organisational business model?’ It has two items:

- The scale for accelerator adoption includes these seven factors: new technology/ equipment, new capability, new processes, new offerings, new partnerships, new venture performance, and tangible financial resources (Chen, 2009; Su et al., 2009; Wang et al., 2020).
- The scale for assessing the business model includes these factors: new technology/equipment, new capability, new processes, new offerings, new partnerships, new venture performance, and tangible financial resources (Clauss, 2017; Su et al., 2009).

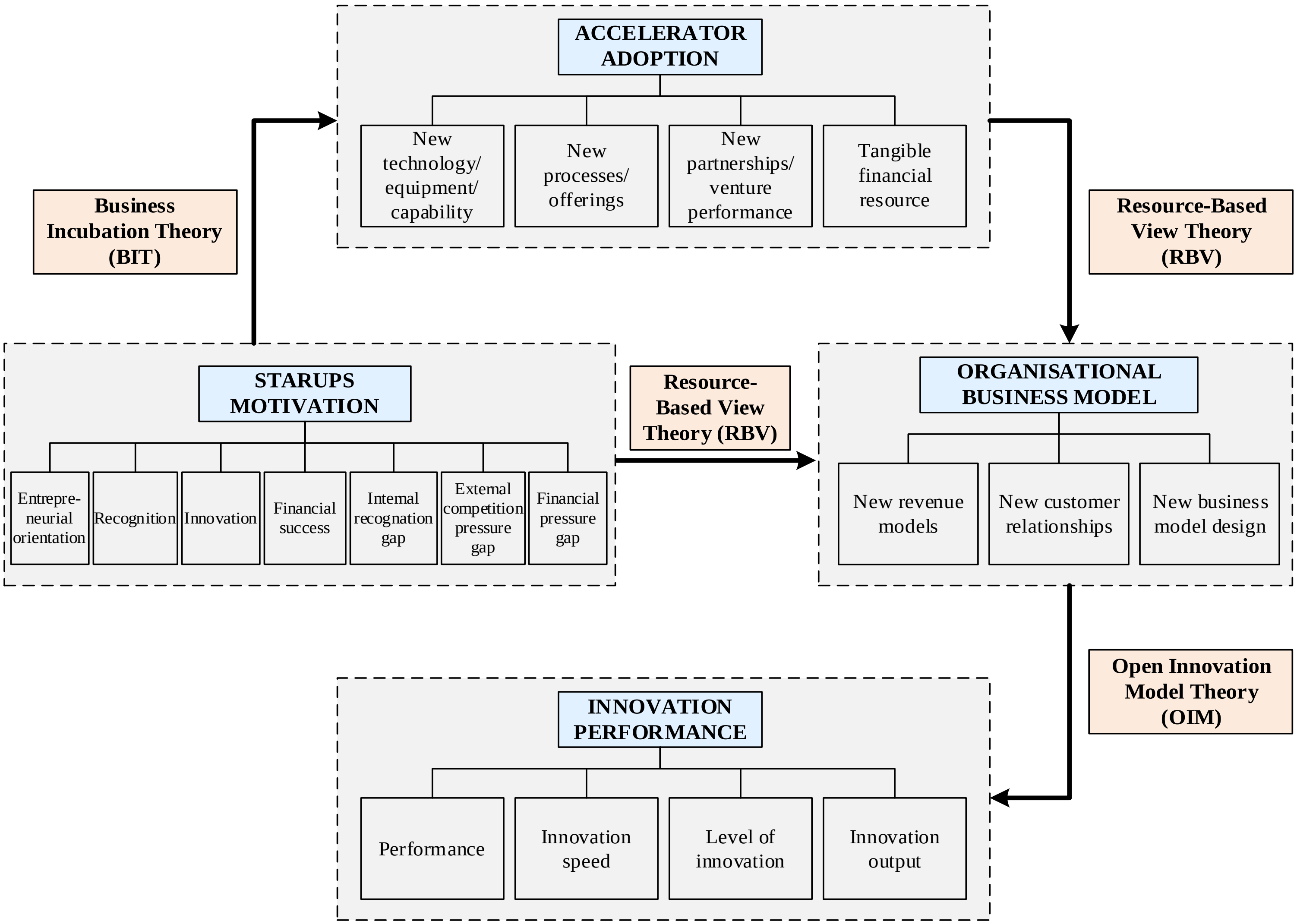
4. In the sub-research question 4 'How does business model relate to innovation performance after acceleration?' It has two items:

- The scale for the business model includes the following factors: new technology/equipment, new capability, new processes, new offerings, new partnerships, new venture performance, and tangible financial resources (Clauss, 2017; Su et al., 2009).
- The scale for enhancing innovation performance includes these factors: performance, innovation speed, level of innovation, and innovation output (De Jong & Den Hartog, 2010; Dulaimi et al., 2005; Pati et al., 2018).

The conceptual framework of this study is shown in Figure 8:

Figure 8

The Conceptual Framework of this Study



3.3 Models for InsurTech Use of Startup Accelerators

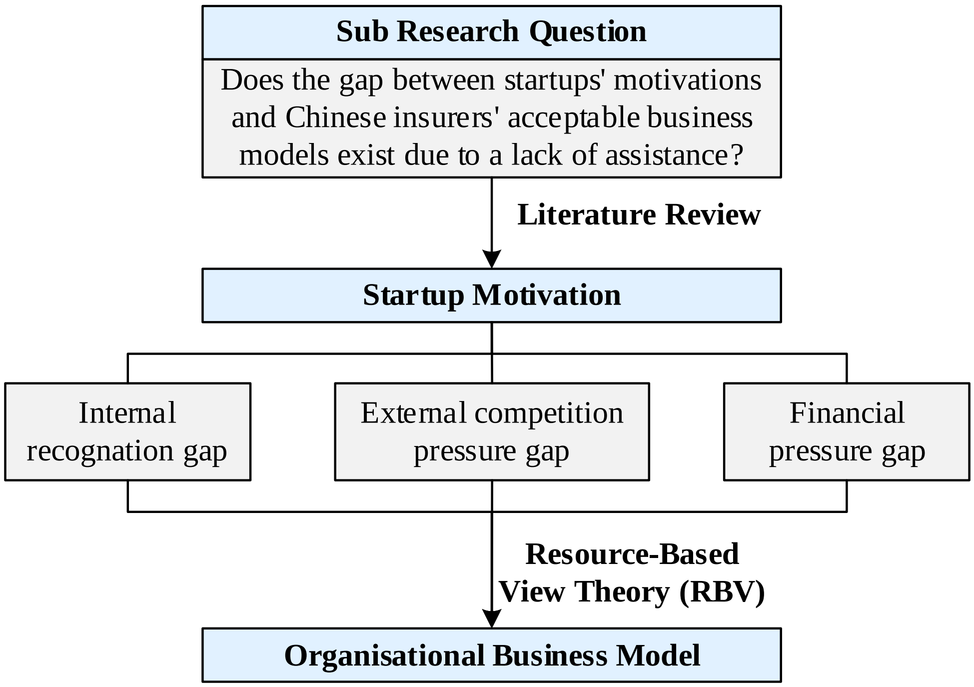
3.3.1 Relationship between Startup Motivation and Organisational Business Model

Amit and Zott (2001) defined the business model as a mechanism creating value, infrastructure, workflow, and content. For example, one example of an InsurTech value creation focused on organisation infrastructure and procurement management (Stabell & Fjeldstad, 1998). The business model, or how the organisation is set up internally, plays a critical role during the development of an InsurTech startup in two ways (Stoeckli et al., 2018): first, the business model must focus on fundamental corporate value creation (Amit & Zott, 2001); second, the business model will likely be enhanced as the startup interacts with sources of external support (Porter, 1989).

InsurTech startup founders are often motivated by financial success, innovation and business expansion (Edelman et al., 2010). Early-stage InsurTech startups fail if their founders do not pay sufficient attention to the business model (Giardino et al., 2014). Startups might create business models independently. Indeed, a generic development model can create a business model configuration suitable for InsurTech startups (Bosch et al., 2013). This study tested whether a generic business model might be reliable in the China InsurTech market. Internal recognition, external competition, and financial pressure further measured the startups' motivations. This study can investigate whether creating a better business model supports a startup enterprise. The following relationship is proposed in Figure 9:

Figure 9

Relationship of Startups Motivation to Organisational Business Model (Sub-research question 1)

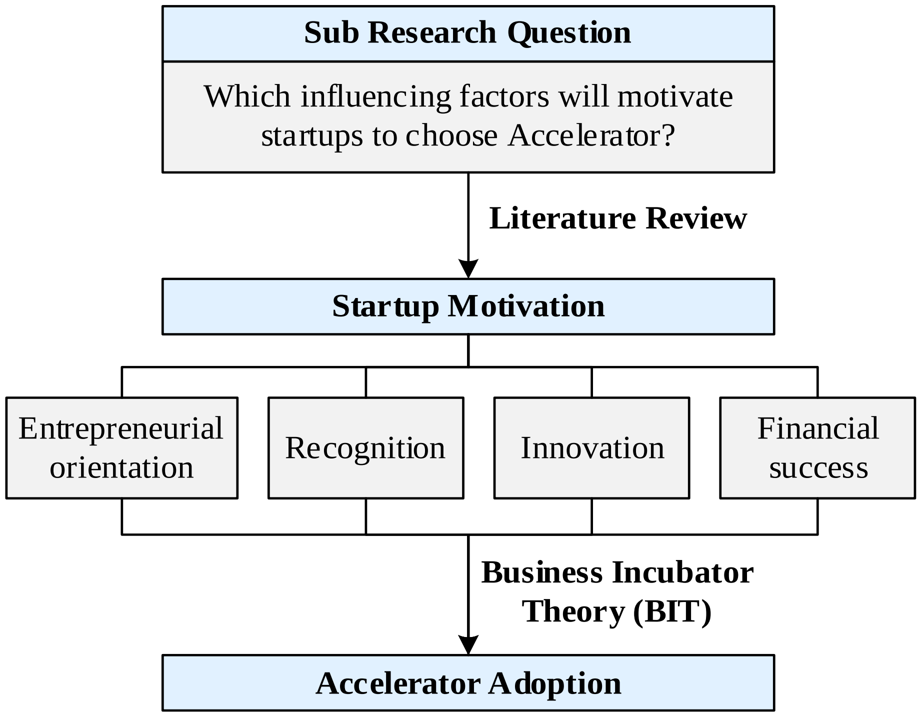


3.3.2 Relationship between Startup Motivation and Accelerator Adoption

The key drivers influencing companies' decision to adopt accelerators include funding level, interactions between startup founders and accelerators, selection criteria, connections with functional partners, and content of services or products (Isabelle, 2013). From the external perspective, funding is the most critical issue for InsurTech startups (Mahmood et al., 2015). The accelerator adoption decision is also governed by whether the startup personnel have the drive to incorporate this new technology into their business (Kohler, 2016). In addition, having access to external funding channels can be a strong incentive to adopt accelerators (Chesbrough, 2003). This study tests whether a positive relationship exists between startup motivation and accelerator adoption. The following relationship is shown in Figure 10:

Figure 10

Relationship of Startups' Motivation to Accelerator Adoption (Sub-research question 2)

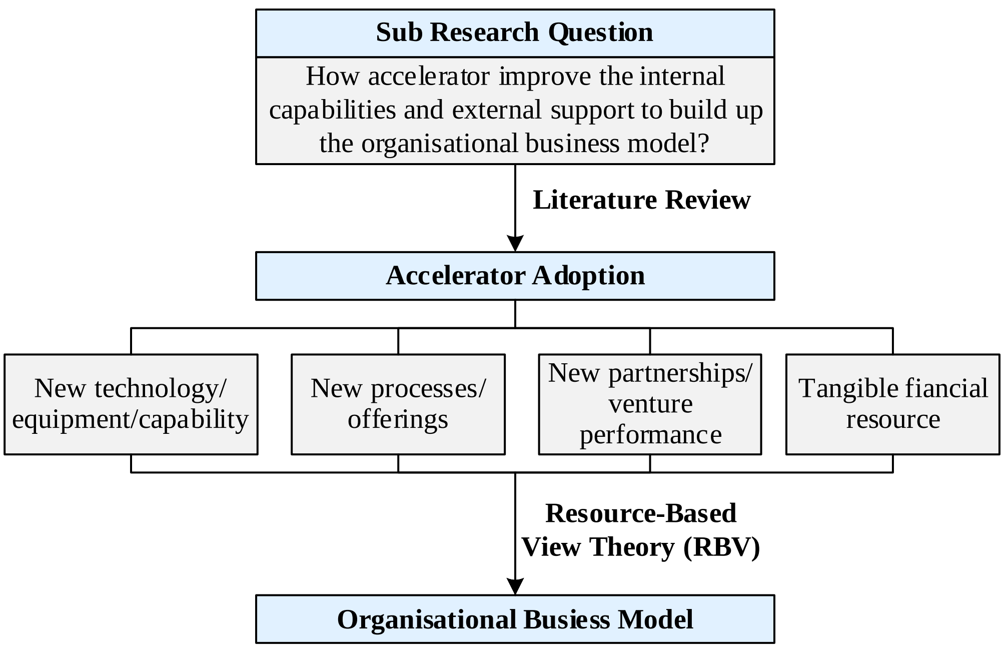


3.3.3 Relationship between Accelerator Adoption and Organisational Business Model

The accelerator adoption of InsurTech startups can be evaluated from two perspectives: internal capabilities and level of external support (Lange, 2018). Such duality also reflects the underlying theories of RBV and OIM (Chesbrough, 2003). The startup's underlying system, workflow and business model will be significantly changed by acceleration adoption due to the interaction of various internal and external factors (Su et al., 2009). On the one hand, internal capabilities may create a strategic competitive advantage of resources such as operations and internal R&D (Wernerfelt, 1984). Su's work (Su et al., 2009) found that adopting an accelerator will increase internal support, such as new technology R&D, and consequently will improve the efficiency of the business model. On the other hand, external forces include investment, mentoring and open cooperatively planned events such as the demo day (Barney, 1991). External funding supplies financial capital to support operations and can effectively drive business model design (Amit & Zott, 2001). InsurTech startups operate in changing social, political, economic, and cultural environments (Lange, 2018). This study will evaluate whether adopting an accelerator will positively influence startups from internal and external perspectives. The relationship is illustrated in Figure 10.

Figure 11

Relationship of Accelerator Adoption to Organisational Business Model (Sub-research question 3)

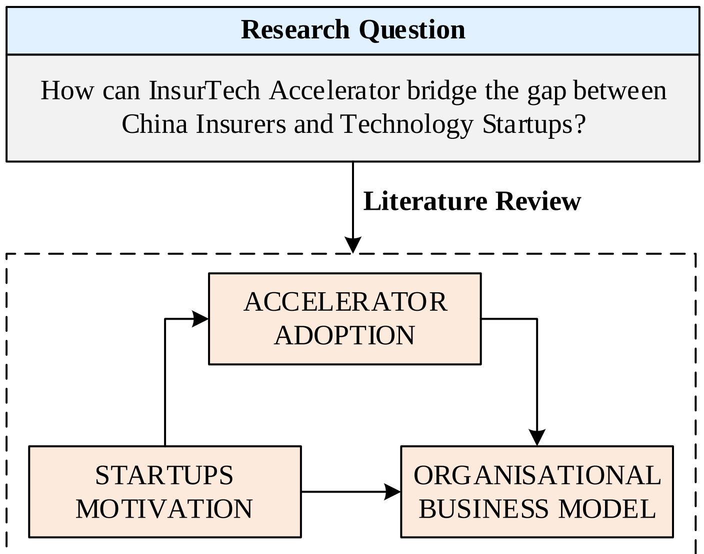


3.3.4 Mediation Tests

The study will follow recommended methods for evaluating the accelerator's mediating role (Rubin et al., 2015) between motivation and business model improvement. To validate the mediation, the startup's accelerator adoption must be positively and significantly related to business model improvement. The analysis then tests if accelerator adoption mediates the relationship such that business model improvement is no longer significant or the significance is reduced. The findings can then determine the relative value of accelerator adoption. This study will, therefore, test whether accelerator adoption mediates the relationship between startup motivation and business model improvement. The following relationship is shown in Figure 12.

Figure 12

Underlying Mediating Relationships of Accelerator Adoption

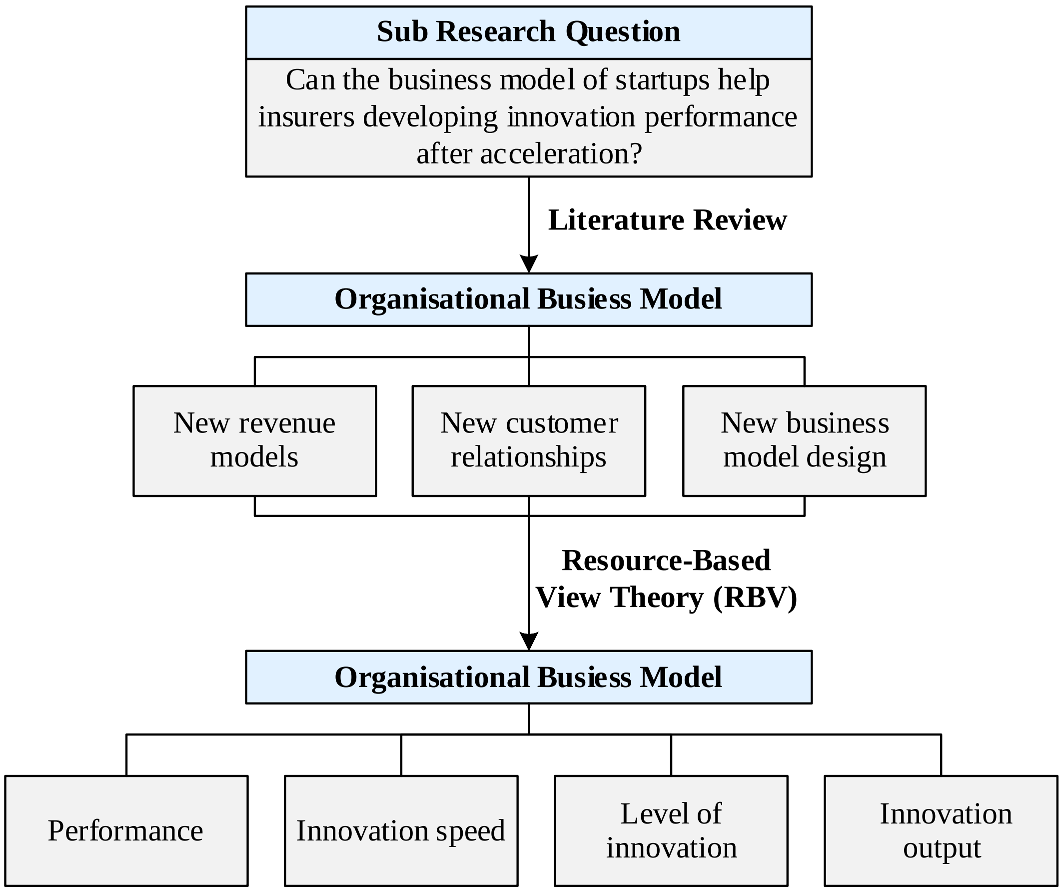


3.3.5 Relationship between Business Model and Innovation Performance

Based on RBV and OMI theories, the accelerated organisational business model should influence InsurTech startups' innovation performance (Chesbrough, 2003). Four internal business model factors were identified as likely to impact innovation outcomes, including value proposition, supply chain, customer relationships, and the financial model (Boons & Lüdeke-Freund, 2013). Moreover, given venture capital support, the organisational business model has demonstrated how well the technology supports commercial needs (Chen, 2009). However, no study has yet evaluated whether the InsurTech startups' organisational business model could enhance innovation performance after the introduction of accelerator. This study will fill this gap and test the relationships in the context of China's business environment. The relationship is shown in Figure 13.

Figure 13

Relationship of Organisational Business Model to Innovation Performance (Sub-research question 4)



3.4 Conclusion

This chapter has provided a comprehensive discussion on interrelationships across the theories, conceptual framework and models. After the advantages, disadvantages and gaps of BIT, RBV and OIM were reviewed, it concluded that BIT should be used to evaluate the startup entry; RBV demonstrated the importance of resource driven value creation due to the acceleration process. Moreover, the further acceleration outcome and innovation were supported by OIM. Key factors and the relationships with models have been identified and mapped with subordinary research questions.

Chapter 4. Research Methodology

This chapter describes the methodology and methods adopted to address the research questions. The research questions explore the effectiveness of accelerators in supporting insurers and technology startups in China and identify particular success factors. The study used a mixed methods design, detailed here following an explanation of the overarching research paradigm.

4.1 Research Paradigm

The research paradigm combines four elements: ontology, epistemology, methodology, and methods (Scotland, 2012). Ontology is the study of being and the nature of reality (Michael, 1998). Scotland (2012) states that researchers should hold a position on how they perceive reality, which governs their research approach. Epistemology concerns the researcher’s worldview, which informs their research paradigm and how they situate the research problem in the existing literature (Michael, 1998). The research paradigm guides the researcher to focus on creating, collecting and communicating knowledge (Cohen et al., 2002) and demonstrates the relationship between the researcher and that knowledge. Methodology is the fundamental plan of action that drives the selection of specific methods and applications (Michael, 1998). Therefore, methodology articulates why, what, from where, when and how data were collected and analysed (Guba & Lincoln, 1994). The methods were the techniques and approaches used to collect, collate, understand and interpret the data (Michael, 1998).

Studies of incubator/ accelerator startups in the insurance space were typically driven by four methodological perspectives: post-positivism, constructivism, transformation, and pragmatism. Their epistemology, theories, methodologies and methods were linked (Creswell & Creswell, 2014). A summary of research epistemologies and associated methods adopted in the study of incubator/ accelerator, startup, and innovation performance is presented in Table 10.

Table 10

Research Paradigms in the Study of Startups and Accelerators

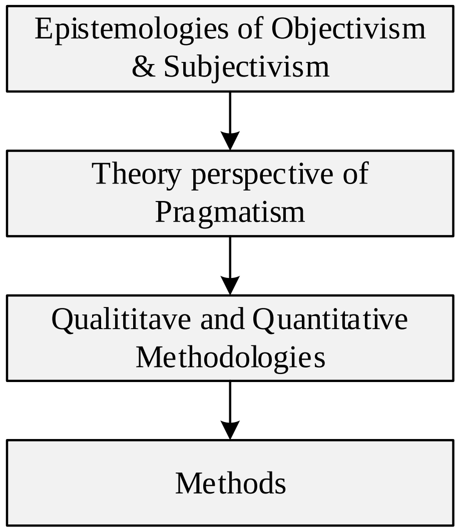
Epistemology	Proposition	Examples of relevant research papers		Methodologies
		Authors (Year)	Key research questions	
Post-positivism	They diverge from the traditional propositions of the definite nature of knowledge (Phillips & Burbules, 2000), representing the conventional form of research with scientific methods (Creswell & Creswell, 2014). The post-positivist researcher observes reality independently from reality itself (Creswell & Creswell, 2014).	(Edelman et al., 2010)	What are the differences between black and white entrepreneurs' motivations to start and grow a new venture?	Quantitative
		(Mahmood et al., 2015)	What is the business incubator performance in China?	Quantitative
		(Dempwolf et al., 2014)	Are there different forms of accelerators, and if so, how do they differ? Do accelerators have the potential to accelerate economic growth? How can the performance and impact of accelerators be measured?	Quantitative
Constructivism/ Transformative	The study seeks to understand the world, cultural context, and background where subjects live and work. Researchers create subjective interpretations of their experiences (Creswell & Creswell, 2014).	Isabelle (2013)	What are the key factors affecting a technology entrepreneur's choice of incubator or accelerator?	Qualitative
		(Mian et al., 2016)	How does incubator and information technology adoption impact the small business?	Qualitative
		(Salido et al., 2013)	What is the critical accelerator demands of startups within the ten top economies?	Qualitative
Pragmatism	It accepts that there can be single or multiple realities open to empirical inquiry; the researchers have the flexibility of choices. (Creswell & Creswell, 2014). It refuses to get involved in truth and reality (Kaushik & Walsh, 2019).	(Harrison et al., 2019)	How do accelerators influence participant learning and development? What does learn agility theory add, if anything, to the understanding of participant learning and development in accelerators?	Mixed-methods

The chosen epistemology, theoretical perspectives, methodologies, and methods related to the current studies are illustrated in Figure 14. Epistemology reflects both objectivism and subjectivism (Creswell & Creswell, 2014). In this worldview, truth is valid only temporarily: what does not change is change itself. Everything changes continuously in time, position, number, knowledge, cultural context, and technology. Adapting to change is, consequently, significant to this study. Therefore, from an epistemological viewpoint, Creswell and Creswell (2014) do the research from a pragmatist's perspective. Pragmatism emphasises research designs that prioritise practical approaches, focusing on 'what works best' to address the research questions. This allows pragmatic researchers to adopt innovative and flexible methods to resolve research problems effectively. Such a perspective inspired this study's chosen methodology of mixed methods and informed the research process from conception to interpretation and integration by adopting the following perspectives:

- Problem-focused: How to link China insurers and technology startups.
- Practice-oriented: studying the accelerator as a phenomenon and as a process.
- Integrating accelerator into the business model and measuring business outcome improvement.
- Startups, organisational business models, accelerator processes, and innovation performance are the key concepts that inform the research design.

Figure 14

Linking Epistemology to the Method of this Study



4.2 Mixed Methods Approach

Traditionally, qualitative and quantitative research as they belong to different approaches (Layder, 1988). The primary distinction is the approach each takes towards data. Quantitative researchers typically identify and define variables and variable categories in a theoretical framework, even before data collection begins. These variables were then interconnected to form hypotheses, which were subsequently tested using the collected data. On the other hand, qualitative researchers start by defining broad concepts that evolve in meaning as the research progresses. In quantitative research, variables serve as tools for analysis, whereas in qualitative research, they may be considered the results. Qualitative researchers typically adopt a broad perspective, seeking out patterns of relationships among a seemingly unrelated set of concepts. In contrast, quantitative researchers focus on specific variables that they test according to narrower propositions that are theoretically related. For instance, in cases where the research problem is well-established, and the enquiries are directed towards participants' numerical responses, a quantitative approach likely utilises a survey to collect and collate data. By contrast, in qualitative research, interviews and observations were typical approaches. Similarly, questionnaires and structured interview approaches can effectively contribute data that helps explore theoretical and conceptual relationships (Layder, 1988).

4.2.1 Quantitative Methods

There are both strengths and weaknesses in quantitative methods in terms of the proposed study. First, the quantitative approach can objectively evaluate and investigate startups (Colombo & Delmastro, 2002). For instance, the motivations of startups have been identified and weighted using a questionnaire tool (Edelman et al., 2010). Second, the quantitative approach can provide insights into accelerator outcomes (Mahmood et al., 2015). On the other hand, given the absence of published studies to provide evidence, more than the quantitative approach may be required to reveal nuanced factors in accelerator research. It is relevant that only 37% of top journal articles on technology incubators used quantitative methods (Mian et al., 2016). Since accelerators inherently involve dynamic processes, qualitative approaches were appropriate.

One of the primary benefits of using survey techniques is the capacity to make generalisations about a whole population by making inferences from data collected from a small sample. The cost and time needed to conduct a sample survey were much lower than those required for surveying the entire population. Surveys can be structured in a way that allows for the actual data collection to be completed within a relatively short timeframe (Rea & Parker, 2014).

Furthermore, organised sample surveys produce uniform data that can be easily quantified, computerised, and analysed statistically. The rapid progression of computer technology and the evolution of sophisticated analytical and statistical software programs have further improved this characteristic.

The quantitative approach may be less valuable when understanding the complex nonlinear drivers of innovation in nascent businesses. It also may not provide room for information about stakeholders' lived experiences (Creswell & Creswell, 2014).

4.2.2 Qualitative Methods

Qualitative methodology uniquely offers insights into insurance companies' unique experiences in the accelerator process. The opinions, perspectives, and lived experiences can only be understood through open-ended conversations (Salido et al., 2013). This approach is precious in specific geographical contexts, such as studying accelerator take-up in Chinese technology startups. However, qualitative research is not ideal for identifying the factors affecting post-accelerator outcomes. Isabelle (2013) indicated that quantitative methods would help provide more convincing evidence supporting success factors, especially in evaluating multiple startups.

4.2.3 Mixed Methods

Mixed methods research is a methodology that integrates qualitative and quantitative methods and approaches and allows different types of data to be integrated into one study (Johnson et al., 2007). This methodology emerged from previous historical ideas of the multi-method and multi-trait approach (Campbell & Fiske, 1959). Although those early designs only included quantitative data collection, mixed methods researchers extended the concept to include quantitative and qualitative data (Johnson et al., 2007). Mixed methods research has the advantage of using multiple approaches to answer research questions (Johnson et al., 2007). Mixed methods studies enable researchers to (1) create and examine complex themes in the same research project, (2) establish inferences by merging the relative strengths of each methodology, and (3) help explain conflicting results or findings (Levasseur et al., 2022).

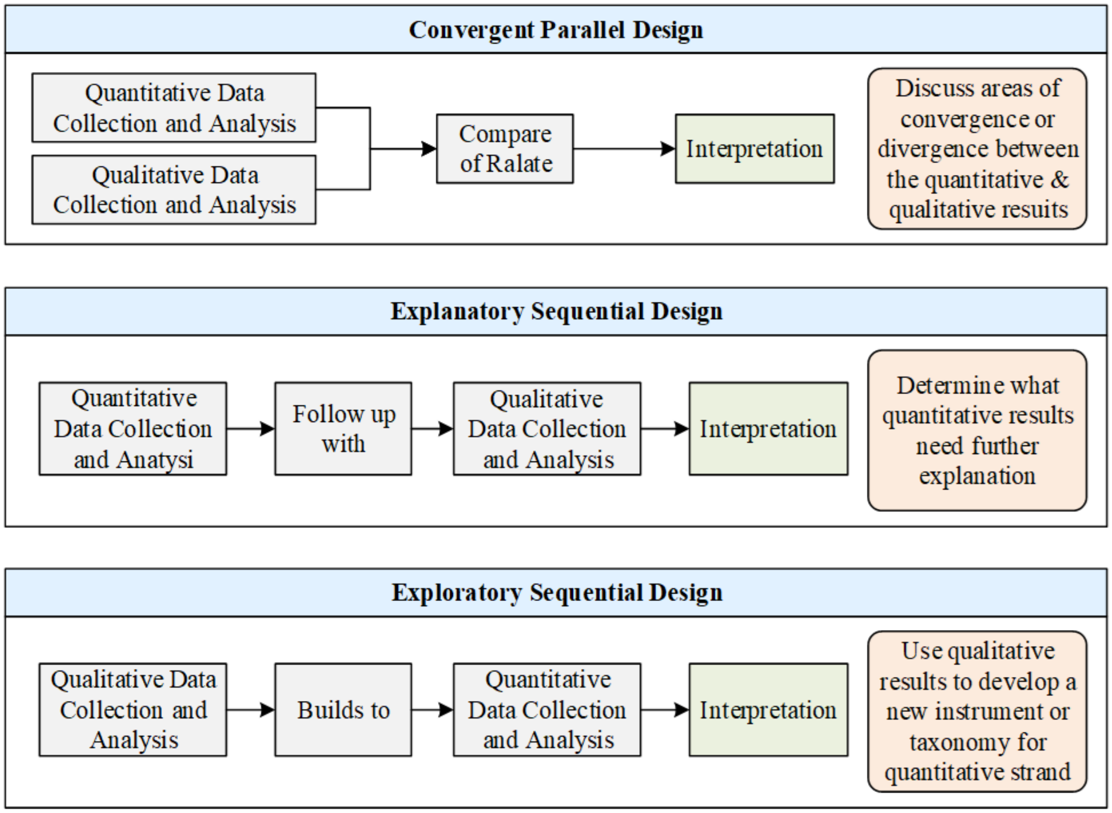
Three basic mixed methods research designs exist: Convergent Parallel Mixed Methods Design, Explicatory Sequential Mixed Methods Design, and Exploratory Sequential Mixed Methods Design (Figure 15).

There were also three advanced designs: intervention, social justice, and multistage evaluation (Creswell & Creswell, 2014).

- **Convergent design** collects quantitative and qualitative data simultaneously and checks the validity of the results of both methods. The advantage is that the best features of both approaches can be combined (Creswell & Creswell, 2014).
- **Explanatory sequential design** can explain and discuss quantitative results with qualitative data.
- **Exploratory sequential design** uses qualitative data to determine variables and measurements that inform quantitative data collections (Creswell & Creswell, 2014).

Figure 15

Mixed Methods Research Designs (Creswell & Creswell, 2014)

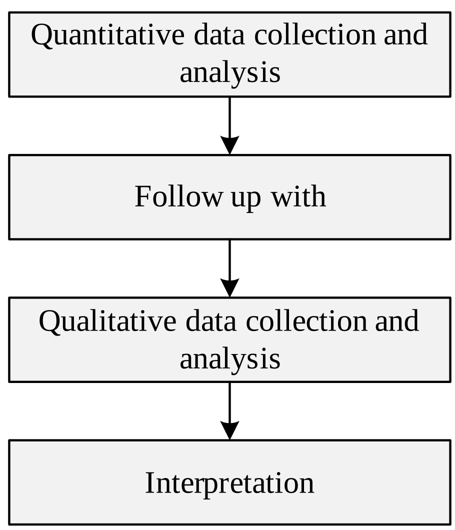


4.3 Explanatory Sequential Design

Mixed method designs using quantitative and qualitative methods to assess program outcomes were standard in evaluation research. An explanatory sequential design, as outlined by Plano Clark (2017) and colleagues, involves initially gathering quantitative data, followed by qualitative data, to elucidate further or clarify the quantitative findings (Figure 16). This order of events is justified because quantitative data can offer a broad overview of the research issue. Then, analysis, following qualitative data collection, can enhance or expound upon this initial overview.

Figure 16

Explanatory Sequential Design (Subedi, 2016)



This study was conducted in two phases using a mixed-methods research design. First a quantitative methodology is suitable when the research needs to define factors that empirically influence outcomes, such as collating startup data before and after the accelerator. Second, since a complete understanding of InsurTech accelerators or InsurTech startups is not yet established, a qualitative methodology, with human participants providing personal narratives, would be essential because evaluating the local use of accelerators is critical for analysing the contemporary accelerator phenomenon in China (Creswell & Creswell, 2014). Theories of business incubation, RBV, and open innovation were often examined by quantitative method (Aaboen, 2009; Boons & Lüdeke-Freund, 2013; Mian et al., 2016). The explanatory sequential method approach was deemed suitable to answer the research questions of this study.

4.3.1 Rationale for the Adopted Study Design

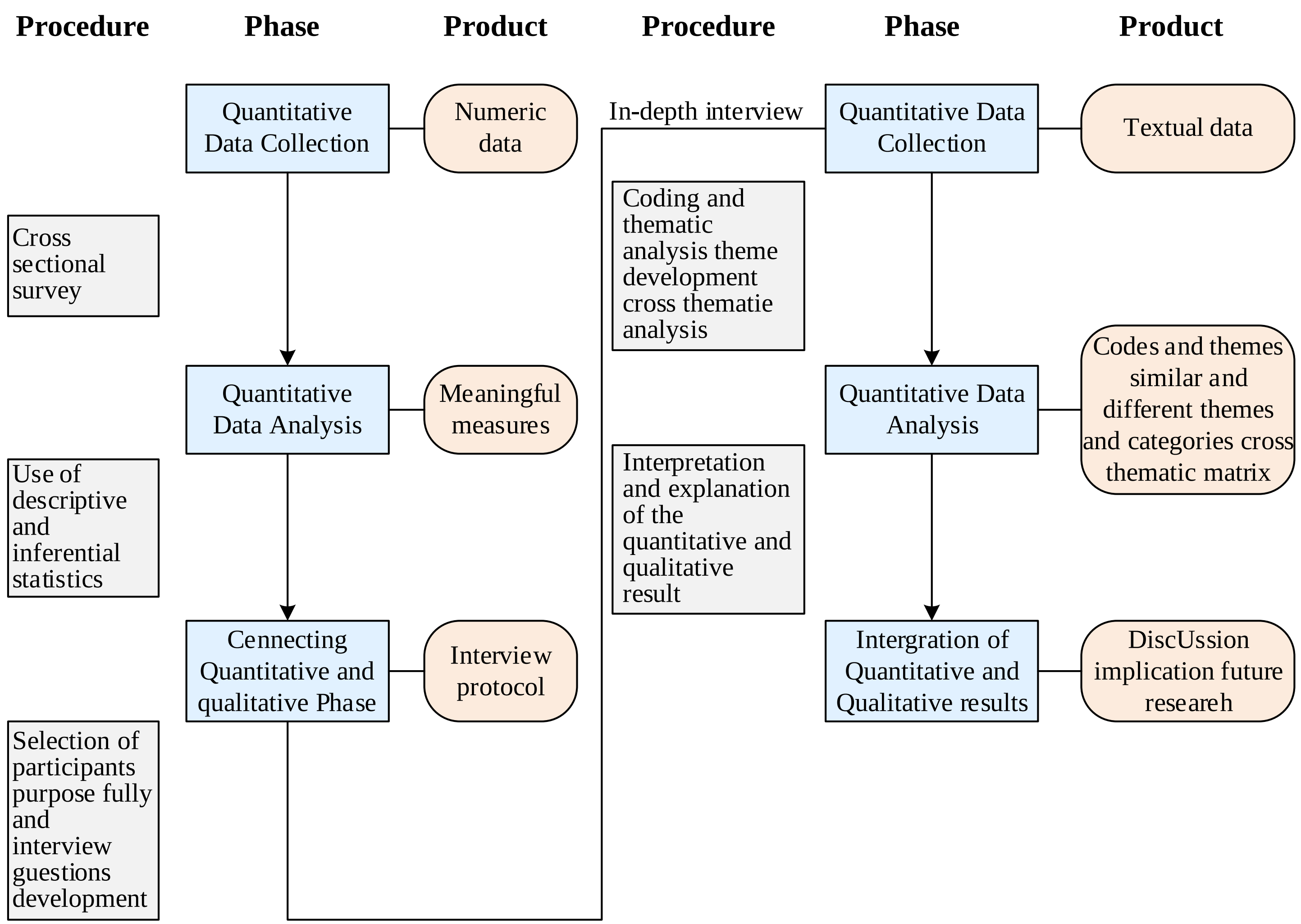
Applying the research design principles from Creswell's work (Creswell & Creswell, 2014), a rationale was developed that both methodologies should be used to answer the research questions of the current study. First, a quantitative methodology is suitable when the research needs to define factors that empirically influence outcomes, such as collating startup data before and after the accelerator. Second, since a complete understanding of InsurTech accelerators or InsurTech startups is not yet established, a qualitative methodology, with human participants providing personal narratives, would also be essential because evaluating the local use of accelerators is critical for analysing the contemporary accelerator phenomenon in China. Therefore, each methodology is inadequate to comprehensively answer the research questions, leading to mixed methods for this study.

The intervention design usually uses quantitative data as primary research, while secondary qualitative research addresses additional questions within the data (Creswell & Creswell, 2014). For example, social justice study design can accommodate specific target populations, while multistage evaluation can be used to judge a project's impact. Such advanced designs were more often implemented in large-scale studies. Studies of accelerators have usually been undertaken using basic designs and mixed methods.

The explanatory sequential design was used in one study of accelerators (Harrison et al., 2019) and in another study of venture capital (Levasseur et al., 2022) (Figure 17). A sequential mixed methods design can also be used when a quantitative survey moves to a qualitative study, with the quantitative survey informing factors to be discussed in the qualitative research (Creswell & Creswell, 2014). Furthermore, quantitative studies are widely used to evaluate the measurable factors in existing accelerator and startup research, such as business model, accelerator adoption, and innovation performance. For example, Del Sarto et al. (2022) have used quantitative method to assess innovation performance of startups under the accelerator adoption process. Meanwhile, qualitative studies further strengthen the insights of conceptual framework constructs. Corvello et al. (2023)'s work has provided great in-depth knowledge on 'why' and 'how' accelerators created value for startups. Therefore, explanatory sequential design was selected in this research to measure the interrelationships of each identified constructs first and then provide in-depth discussions.

Figure 17

The Procedure to Enhance the Realism of the Holistic Process (Levasseur et al., 2022)



4.3.2 Data Collection

Scholars have generally interpreted this term, applying it to multiple investigative methods and collecting diverse types of data (Bryman et al., 1988). Data type could vary depending on the research question, the kind of inquiry, and the level of the research program (Morse, 2016).

Six factors of this research were evaluated via the recommended method to select the appropriate mixed methods design (Creswell & Creswell, 2014), as shown in Table 11. According to those criteria, this research design is convergent.

Table 11

Factors Influencing the Selection of Mixed Methods Design

Factors critical to justify the selection	Expected outcomes	Integration approach	Timing of data collection	The weighting of each database	Compatibility to field	The size of the research team
Features of this study	Merge of two databases.	The data collection is separate and independent. Integrating two databases and comparing the results	Simultaneous beginning with interviews	Equal	Suitable for insurance and accelerator research	Graduate researcher and supervisor

4.3.3 Data Analysis

The analysis stage involves the separate analysis of both quantitative and qualitative databases, with data collected over time (Creswell & Creswell, 2014). With the literature review, the key constructs of the research were identified. This further highlighted internal and external factor evaluation and measured the research constructs using the quantitative approach. A questionnaire was provided to InsurTech startup executives who were practitioners working with operational US/ EU accelerators. The hypothesis was tested and yielded data that complemented each other to fulfil the study's aims. In the next stage, common factors were identified in a qualitative data collection. Finally, the outcomes of these distinct approaches and the findings of both data collection sets present an integrated perspective in answering the research questions.

4.3.4 Interpretation and Validity

Interpretation. The inference stage of treating mixed methods collected data is the most challenging phase of mixed methods study. Integration must occur at three levels: the research design, choice of research methods, and interpretation and reporting of findings (Fetters et al., 2013).

At the research design level, inference addresses the same categorisations as mixed methods design types above. Among the three basic mixed methods designs, the biggest differentiator is whether one methodological design is built on the other or the two methodological phases are merged (Creswell & Creswell, 2014). As this study adopted an explanatory sequential design, quantitative and qualitative data should be implemented simultaneously (Fetters et al., 2013). The data from the quantitative research is interpreted by a discussion of qualitative studies (Guetterman et al., 2015). Quantitative structure involves organising the questions into distinct categories, including quantitative or hypotheses (Creswell & Creswell, 2014).

The integration of mixed methods data at the interpretation and reporting level was conducted with three approaches: (1) integrating through narrative, (2) integrating through data transformation, and (3) integrating through joint displays. This study has selected the joint display approach as it compares and combines the quantitative data and qualitative to illustrate results for both methodologies (Fetters et al., 2013). Also, the joint display provides a comprehensive visualisation of quantitative and qualitative data. Doing so articulates mixed methods inference’s purpose, process, and technique at all three design, analysis, and interpretation levels. Similar approaches using cross-case comparison have been applied in one business accelerator study (Ahmed et al., 2021), one startup study (Kanbach & Stubner, 2016), and a business model innovation study (Cortimiglia et al., 2016); in those studies, the method focuses on the qualitative data.

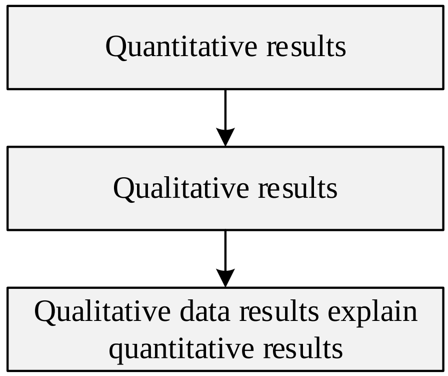
Validity. Specific validity issues may surface in the explanatory sequential mixed methods approach, such as the need for more avenues for further exploration based on the quantitative findings (Creswell & Creswell, 2014). Verifying that the sample size is sufficient for the quantitative aspects of the study is essential. Validity is further explained in the qualitative research.

4.4 The Link between Quantitative Study and Qualitative Study in this Research

With the explanatory sequential process, the connecting integration method is used when quantitative data is connected to qualitative data through sampling. The building method is adopted when the result of one survey informs the data collection approach of the next. Merging occurs when the two databases are integrated for analysis and comparison. The qualitative data results explained the quantitative survey in depth (Figure 18).

Figure 18

Flow of Explanatory Sequential Process



The statistical analysis of the quantitative data validated the variables embedded in the conceptual framework. Additionally, qualitative analysis of the textual data provided up-to-date insights from practitioners in insurance industry. For example, the quantitative survey in this study measured accelerator adoption through new technologies, equipment, and capabilities. The qualitative data offered more profound insights into the scope of these topics. The findings of the qualitative study and its relationship to the questionnaire are shown in Table 12.

Table 12

Findings of Qualitative Study and Relationship to Questionnaire

Interview						Questionnaire	
Construct		Factors		Content		Factors	
1	Startups Motivation	1.1	Development Barriers	1.1.1	Lack of Top-level design and underestimation of the impact of new technology applications	6-1	Entrepreneurial orientation
				1.1.2	Obstacles from regional development, difficulty in changing local personnel's operational habits		
				1.1.3	Lack of long-term mechanisms		
				1.1.4	Inadequate preparedness for risk control		
				1.1.5	Unprepared for risk control		
				1.1.6	Data security		
				1.1.7	Evaluation of the cost-effectiveness of technological investments		
		1.2	Organisation context	1.2.1	Top management High-level cognition	6-2	Recognition
				1.2.2	Internal Organisational structure support and talent (Firm scope Organisation Settings)		
				1.2.3	Internal Organisational structure support and talent		
				1.2.4	Demand-driven technological innovation with continuous updates and iterations		
		1.3	External factors	1.3.1	Industry trends and Government policies	6-3	Innovation
				1.3.2	Competitive pressure, including competitors in the Insurance industry and other business formats		
				1.3.3	Customer feedback, customer experience		
				1.3.4	Industry collaboration and interconnectivity		
		1.4	Business Model Improvement	1.4.1	Rapidly Improving business efficiency (along with leveraging analytics to make faster decisions)	6-4	Financial Success items

		Interview					Questionnaire	
Construct		Factors		Content			Factors	
				1.4.2	Leveraging technology (most innovative solutions)			
				1.4.3	Cost reduction			
2	Accelerator adoption	2.1	Technology context	2.1.1	Perceived compatibility of new technologies applications and connection of internal resources	7-1	New technology & equipment
				2.1.2	Relative advantage	7-2	New capability
				2.1.3	In-depth integration with the company's strategy	7-3	New processes
		2.2	Environment context	2.2.1	External funds	7-4/5/6	New offerings; New partnerships; New Channels
				2.2.2	Equity and structure design	7-7/8	New venture performance; Tangible financial resource
3	Organisational business model	3.1	New Revenue Models	3.1.1	Automating tasks	8-1	New Revenue Models
				3.1.2	Increasing efficiency		
				3.1.3	Optimising resources (Create new profit points by integrating resource precipitation data)		
		3.2	New Custom Relationships	3.2.1	Broaden customer bases; Reach new economic markets	8-2	New Customer Relationships
				3.2.2	Improved communication processes		
				3.2.3	Securing sensitive information		
		3.3	New Business Model Design	3.3.1	Increased employee productivity	8-3	New Business Model Design
				3.3.2	Collaboration and Outsourcing		
4	Innovation performance	4.1	Performance	The higher the innovation rate, the more successful is driving growth through innovation.		8-4	Innovation Rate; Speed
		4.2	Spending	The higher innovation spending, the more invests in innovation and potentially drives future growth.		8-6	Innovation Spending; Output

Chapter 5. The Quantitative Study

This element of the study addresses the research questions regarding the effect of accelerators on startup success that have been covered thus far. Chapter 3 discussed and validated the mixed methods approach used to seek answers to these questions. This chapter presented the results of the quantitative study using a questionnaire and SEM data analysis. The results were obtained through factor analysis, SEM, and hypothesis testing. The findings contribute to knowledge about the role of an InsurTech accelerator in the organisational business model and the innovation performance of startup companies.

Section 5.1 explains the purpose of the quantitative study and describes relationships among variables, measures of the quantitative model, data collection, questionnaire development, and procedures. Section 5.2 describes the population and sample. Section 5.3 explains the instrumentation of this study. Section 5.4 discusses the analysis methods, including factor analysis, confirmatory factor analysis (CFA), scale reliability, validity analysis, and model-fitting indicators. Section 5.5 explains each measurement model's reliability and validity analysis, including measures for company motivation, accelerator adoption, organisational business and innovation performance. It includes the models in the context of the study hypotheses. This section presents the overall model and sub-models and explains how the model will verify the research hypotheses. This section presents the overall model and sub-models and investigates if the model will verify the research hypotheses that accelerators would benefit Chinese InsurTech startups. Factor analysis allows us to see which observations are correlated with each other and group them. Exploring the entire model's results, the coordination between the various structures and the rationality of the categorisations are evaluated. Multi-group analysis is performed to ascertain whether the personal backgrounds of different respondents would significantly impact the model. Section 5.6 summarises the results to verify the hypothesis.

5.1 The Quantitative Study Design

5.1.1 Purpose of the Quantitative Study

The primary purpose of the quantitative study was to test the relationships between accelerators, insurers, and technology startups, compare, and then answer the research questions. Collecting data from all major stakeholders in this project, including the startups, provides a better understanding of their business requirements. It suggests which supports and services could be improved by using accelerators. The survey of insurance company executives includes knowledge about how they must prepare to establish an InsurTech accelerator successfully.

The study followed recommended methods for evaluating the accelerator’s mediating role (Rubin et al., 2015) by establishing main variables such as motivation, business model improvement, and innovation performance. Accelerator adoption must be positively and significantly related to improving the business model to validate the mediation. The analysis then tests whether accelerator adoption mediates the relationship sufficiently that business model improvement is no longer significant or the significance is reduced. As discussed, mediation tests were conducted on all motivation and accelerator adoption variables.

Also, quantitative method provided an efficient and effective approach to demonstrate the value of accelerator. Del Sarto et al. (2020) illustrated the accelerator’s impact on survival rate. And the quantitative method demonstrated the value of accelerator in terms of financial support (Pancrazi et al., 2016). In addition, quantitative-based model was critically used to assess the accelerators’ performance to cultivate startups from internal growth and external resource support (Canovas-Saiz et al., 2021). Therefore, quantitative method has enriched the dimensions to understand the value of accelerator and consequently contributed to the accelerator research.

5.1.2 Hypothesis Development

The literature discussed in Chapter 2 led to a preliminary study hypothesis. Based on the choice of mixed method (explained in Chapter 4).

This model can assess a startup's motivation to modify its organisational business model, the effect of accelerator adoption on its business model, and how the business model can enhance innovation performance.

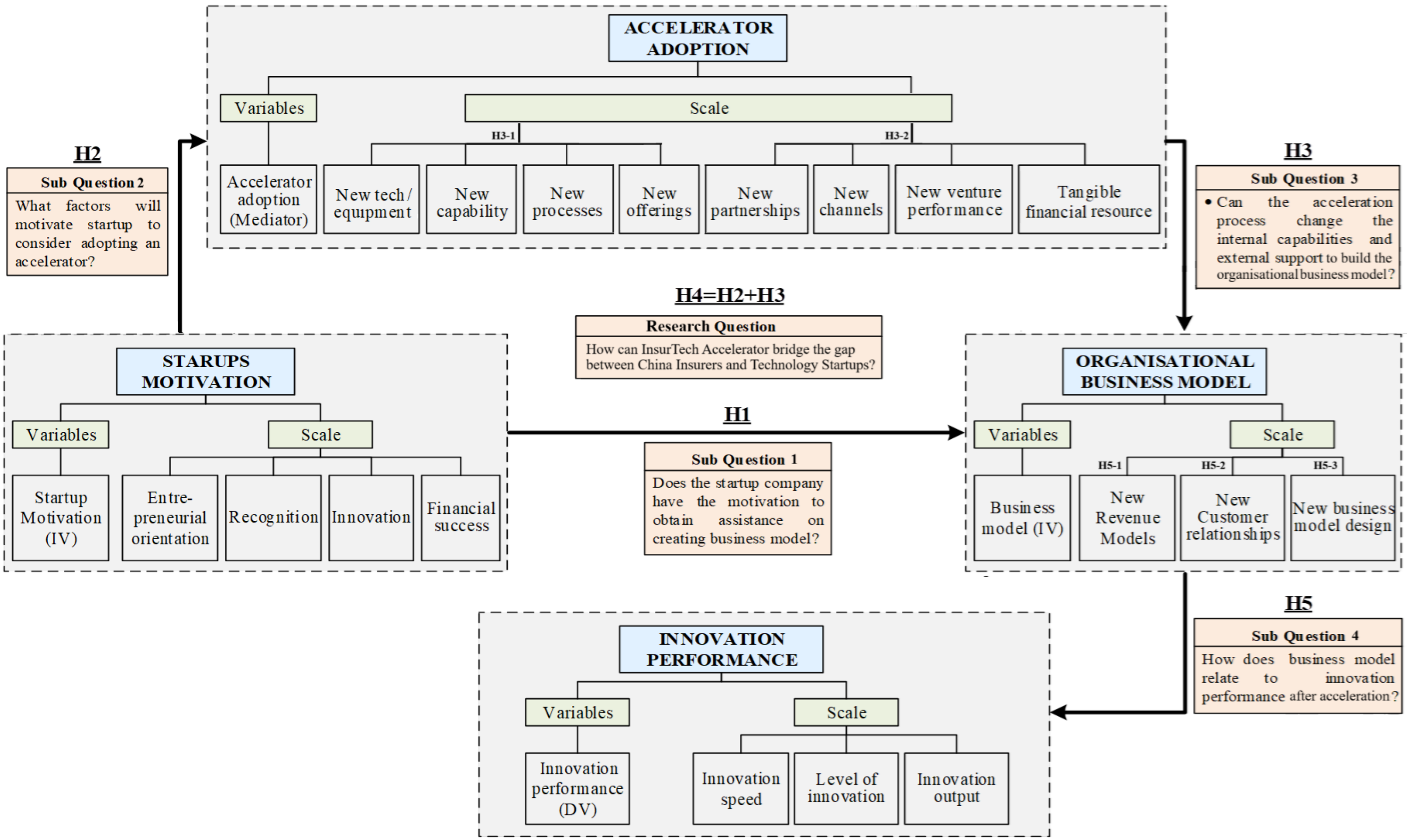
- To explore the relationship between startup motivation and the organisational business model (discussed in 3.3.1), H1 aims to evaluate the business model with the support of startups identified (see literature review at 2.2).
- As discussed in 3.3.2, H2 focuses on the relationship between startup motivation and accelerator adoption and aims to identify critical drivers influencing companies' accelerator entry decisions (see literature review at 2.3).
- To explore the relationship between accelerator adoption and the organisational business model (discussed in 3.3.3), H3 aims to evaluate any business model change after accelerator adoption. H3-1 examines the influence of R&D on the organisational business model and H3-2 examines whether external funding makes a difference (see literature review at 2.4).
- Following discussion of the relationship of accelerator adoption to startup motivation and organisational business (see 3.3.4), H4 tests whether accelerator adoption mediates the relationship such that business model improvement is no longer significant or the significance is reduced.

- Following a discussion of the relationship between the organisational business model and innovation performance (see 3.3.5), H5 evaluates the innovation performance of the organisational business model by including whether new revenue models (H5-1), new customer relationships (H5-2), and new business model design (H5-3) affect innovation performance.

The full model, as illustrated in Figure 19 below, aims to test the hypothesis about the study's conceptual framework.

Figure 19

Relationships among Hypotheses and Research Questions



5.1.3 Data Collection Methods

The research needed to gather longitudinal data over an extended period. Longitudinal data collection is frequently suggested as a way to address these constraints. More precisely, confirmatory factor analysis (CFA) techniques were employed to evaluate the extent of common method variance (CMV) in both cross-sectional and longitudinal datasets by partitioning the variance of each variable into trait, method, and error components (Rindfleisch et al., 2008). In recent times, there has been a growing concern among editors, reviewers, and authors of prominent marketing journals regarding the reliability of survey research conducted with standard method variance (SMV) (i.e., systematic method error due to the use of a single rater or single source) (Rindfleisch et al., 2008). For the alternative CMV test, the Harman single-factor test method was chosen (Fuller et al., 2016).

Survey Distribution. Fowler (2013) categorised various data collection methods, including mail, telephone, the Internet, personal interviews, and group administration. Fink (2012) also supports this classification.

The web-based survey involves individuals being contacted by email and asked to participate in a study designed to be completed and submitted online. It has advantages and disadvantages (Rea & Parker, 2014). The advantages of the web-based survey method were as follows:

- Convenience: This technique represents a convenient and efficient way of reaching potential respondents. They can receive the questionnaire and complete it in the privacy of their home or office.
- Rapid data collection: Information, especially timely information, can be collected and processed within days.

- Cost-effectiveness: This technique is more cost-effective than the traditional mail-out survey because there is no need for postage or paper supplies. It is also more cost-effective than telephone and in-person surveys because it is not labour-intensive.

Participants were told that the study was designed to contribute to the first InsurTech accelerator in China.

Sampling and recruitment. Professional organisations such as the China InsurTech Association, Finance Institution Association, China Youth Association, and the OBOR Finance Association were identified, and flyers were sent to their members. Invitations with ethics-approved email notices were sent out via Qualtrics or emails. Participants were told that the study is designed to contribute to installing the first InsurTech accelerator in China. Informed consent was sought and provided. It was also assured that the confidentiality of sensitive information, such as financial data, would be protected.

The questionnaire was produced in simplified Chinese and English and distributed to all groups in two phases. In Phase 1, ten insurance practitioners who formed a convenience sample in each group tested the questionnaire for quality and relevance. Interview questions were also pretested for comprehension by one-hour Skype or face-to-face interviews in Chinese and English. To increase efficiency, the questionnaire was sent to participants by email and Qualtrics (Sun et al., 2016).

5.2 Population and Sample Strategy

5.2.1 Study Population and Sample Design

Probability theory offers a statistical framework for predicting sampling variability and determining an appropriate sample size that minimises potential sampling errors. When a sample is drawn from a population, it approximates the population parameter, with subsequent samples yielding similar or slightly varied estimates (Rubin & Babbie, 2007).

Various data collection and measurement methods, including surveys, fall within this framework. Surveys are designed to gather information by asking a reasonable number of individual questions, with their responses serving as the data for analysis. Typically, data is collected from a representative sample of the population rather than from every member (Fowler, 2013).

Quantitative data was gathered through questionnaires administered to diverse participants, including startups, China-based insurance companies, and China-focused InsurTech companies, allowing for a nuanced comparison of perspectives. This pragmatic research stance incorporates both manual and professional tools to address the research problem effectively, ensuring a balanced blend of theory and practical insights.

5.2.2 Sampling Procedures and Selection Process

Sample selection methods reflected the best solution from a limited number of choices, with the optimal choice being based on the highest average value. However, this average value must be estimated through statistical sampling (Barnhart & Bechhofer, 1995). These selection methods can guide decision-makers in picking the best option from a small set of alternative actions assessed through simulation (Nelson & Goldsman, 2001) and were commonly integrated into commercial simulation tools. A wide variety of procedures were involved in the selection (Table 13).

One of the most typical approaches to sample selection involves using random sampling to select individuals, a method extensively described in various introductory statistics textbooks (Privitera, 2023).

Table 13

Selecting a Sample for Quantitative Data Collection

Methods	Participants			Measures		Procedures	Analysis
	Group	Position	Quantity/answers	Construct	Scale/Example Items		
Questionnaire (519)	InsurTech startups	Senior manager	Personnel of China and global InsurTech startups about motivation	Startups Motivation	Fundraising demand	•Phase 1: Find 10 participants in each group to test the quality and relevance of the questionnaire by email and WeChat. • Phase 2: Sent to all participants to increase efficiency and clarity. •Individual face-to-face formal interview.	•Quantitative study based on the hypothetic-deductive model, using regression, analysis of variance, and cross-tabulation using the statistical package SPSS. •Language eligibility includes both native English and Chinese (Mandarin) speakers.
	InsurTech accelerators in the US / Europe	Strategy/ Operating	Personnel involved with accelerators about establishing InsurTech accelerator, internal and external factors, finance arrangement	The internal capability of internal R&D	Faster release of new products		
				Business model	Innovation, services, and information		
	Insurers in China	Front, Middle, Back office	Insurers asked about the gap between demand and supply	Innovation performance	Speed of new product release		
	Insurers	Senior Manager	and what is needed for the products of startups	• The culture and national relevance of the study will be enriched by interview questions (Creswell & Creswell, 2014).			

5.2.3 Sample Size and Computation

The expected sample and analysis to test the hypotheses will be regression, which will be conducted following scale integrity tests, factor analysis and correlations (Field & Wilcox, 2017). Furthermore, exploratory factor analysis generally requires a minimum of 100 participants (Ferguson & Cox, 1993). The existing literature recommends that factor analytic studies aim for samples of 500 or more observations whenever possible (MacCallum et al., 1999).

Quantitative survey participants totalled 519, including 268 males (52%) and 251 females (48%), drawn from insurance companies, InsurTech startups and Fintech accelerators. Their age ranges were 20-21(2%), 22-31(6%), 32-47(61%), 48-67(31%). The education level of participants was High School (4%), Diploma (18%), Bachelor's degree (15%), Master's Degree (45%), and Doctoral degree (18%) (Table 42 in Appendix 5).

The study measured the independent variables of internal capabilities, external support, mediation of accelerator adoption, and the dependent variables of business model and innovation performance. Participants selected from startups comprised founders, CEO, CSO, CFO, COO and senior managers. The accelerator participants described themselves as professionals experienced in the Fintech incubation and insurance business. Among all participants, the majority age group was 48 to 67 (60%). Since this study focused on the Chinese insurance market, 40% of participants came from the Chinese insurance industry, 24% came from local and international startups, and 37% were accelerator producers. Language eligibility included native English and Chinese (Mandarin) speakers (Appendix 2). Quantitative analysis, driven by a hypothetical-deductive model, employed statistical techniques like regression, analysis of variance, and cross-tabulation, carried out with SPSS software.

5.3 Survey Instrument

5.3.1 Survey Design and Structure

The measures chosen for the quantitative model, the scales of items, and the reliability of construct measurements are informed by examples from the literature (Table 14). 60 Five-point scale Likert-type scaled questions were designed to evaluate the variables.

For instance, questions regarding fundraising appetite and financial valuation were sourced to measure a startup's motivation to adopt an accelerator (Edelman et al., 2010). Also, each group of participants completed a scale of 80 questions. For example, the questionnaire collected data from all groups of startups, accelerators, and insurance companies, as shown below:

Table 14

Examples of Scales for the Study

Construct	Scale/Example items	Reliability/Validity	Source/Author
Startups motivation	Fundraising demand.	Cronbach value of 0.86	Edelman et al. (2010) emphasised the financial demand as a critical motivation for startups.
The internal capability of internal R&D	Faster release of new products (or services) than competitors.	Cronbach value of 0.83	The extant literature on internal capability and innovation informs the scales, items, and Cronbach value (Su et al., 2009).
Innovation performance	Speed of new product release.	Cronbach value of 0.87	Better innovation performance was created via competitive advantage in product improvement speed (Prajogo & Ahmed, 2006).
Business model	Enables innovations of products, services, and information.	Cronbach value of 0.75	Pati et al. (2018) suggested that business model creativity would increase the startup's performance in emerging markets.

5.3.2 Validity and Reliability of Instrument

Various survey software options are available in the market. For instance, Qualtrics is a professional platform that enables users to create complex surveys, distribute them, and gather feedback. Converting an experimental design into Qualtrics survey questions involves generating a single question for each choice task. Due to the repetitive nature of this task, automation is recommended (Weber, 2021). The ultimate result of the process is a TXT document that encompasses all the selected design tasks and can be imported directly into Qualtrics. When conducting surveys in multiple languages, a significant challenge arises when translating the choice tasks. Due to the complexity of the study and numerous choice tasks, it is essential to utilise Qualtrics for accurate translation. Randomising the sequence in which choice tasks are displayed to participants is recommended to minimise potential participant biases.

5.4 Variables and Analysis Definitions

5.4.1 Factor Analysis (FA)

Factor Analysis (FA) is a statistical model that explains the correlation between explicit variables. It is used to achieve two purposes: to illustrate the correlation between indicators and to simplify the data. According to the assumption, there is a correlation between the variables when there are potential common factors. Through factor analysis, many indicators can be reduced to a few factors, providing a more concise tool for interpreting results.

This study used two types of factor analysis: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA is a statistical approach to identifying the common factors that can explain the covariance among attributes (Watkins, 2018). CFA is a fundamental procedure of SEM (Tabachnick & Fidell, 2013), an analysis approach to examine the relationships between measures and latent variables (Brown & Moore, 2012).

The EFA process, a meticulous five-step procedure, was employed in this study. Each variable item in the questionnaire was subjected to maximum likelihood factor analysis using SPSS version 26.0 software. Before this analysis, the data's suitability for factor analysis was rigorously assessed for reliability and validity, ensuring the robustness of our findings.

5.4.2 Reliability Assessment

A comprehensive reliability test was conducted to ensure the internal coherence of the measurement items. This assessment scrutinised whether the items on the questionnaire accurately measured the intended dimensions and constructs, aiming to minimise measurement errors and pre-empt any potential issues during data analysis.

Cronbach's alpha was used to measure consistency between questionnaire items. Measures range from 0 to 1: values of 0.7 or higher are generally considered to indicate better reliability.

5.4.3 Validity Assessment

To justify whether the questionnaire is suitable for factor analysis, the feasibility test uses two indicators: the KMO value and Bartlett's sphericity test. The KMO value reflects the number of common factors among the items. The larger the KMO value, the more suitable the questionnaire is for EFA. The KMO value is analysed as follows: when the KMO value is less than 0.5, the item is not suitable for factor analysis; when the KMO value is > 0.8, it is appropriate for factor analysis; when the KMO value is > 0.9, it is very suitable for factor analysis (Kaiser, 1974).

5.4.4 Measurement Model of Fit

Absolute indicators include the Chi-square test values, Chi-square to the degree of freedom ratio values (Chi-square/df), root mean square residual value (RMR), good adaptation index value (GFI), adjust good adaptation index value (AGFI), relative measures such as NFI, TLI, IFI, relative non-centrality measures RNI, or BFI, and CFI values. Adjust the index values such as PGFI value, PNFI value, and PNFI2 value. The most used fitting indexes are the Chi-square degree of freedom ratio, GFI, RMSEA, RMR, CFI, and NFI. Specifically, the standard range of Chi-square degrees of freedom ratio adaptation should be greater than 1 and less than 3. The standard range of RMSEA values should ideally be less than 0.05; less than 0.08 is reasonable. The standard range for CFI values should be greater than 0.9. The standard range for NFI values should be greater than 0.9.

5.5 Data Analysis and Interpretation

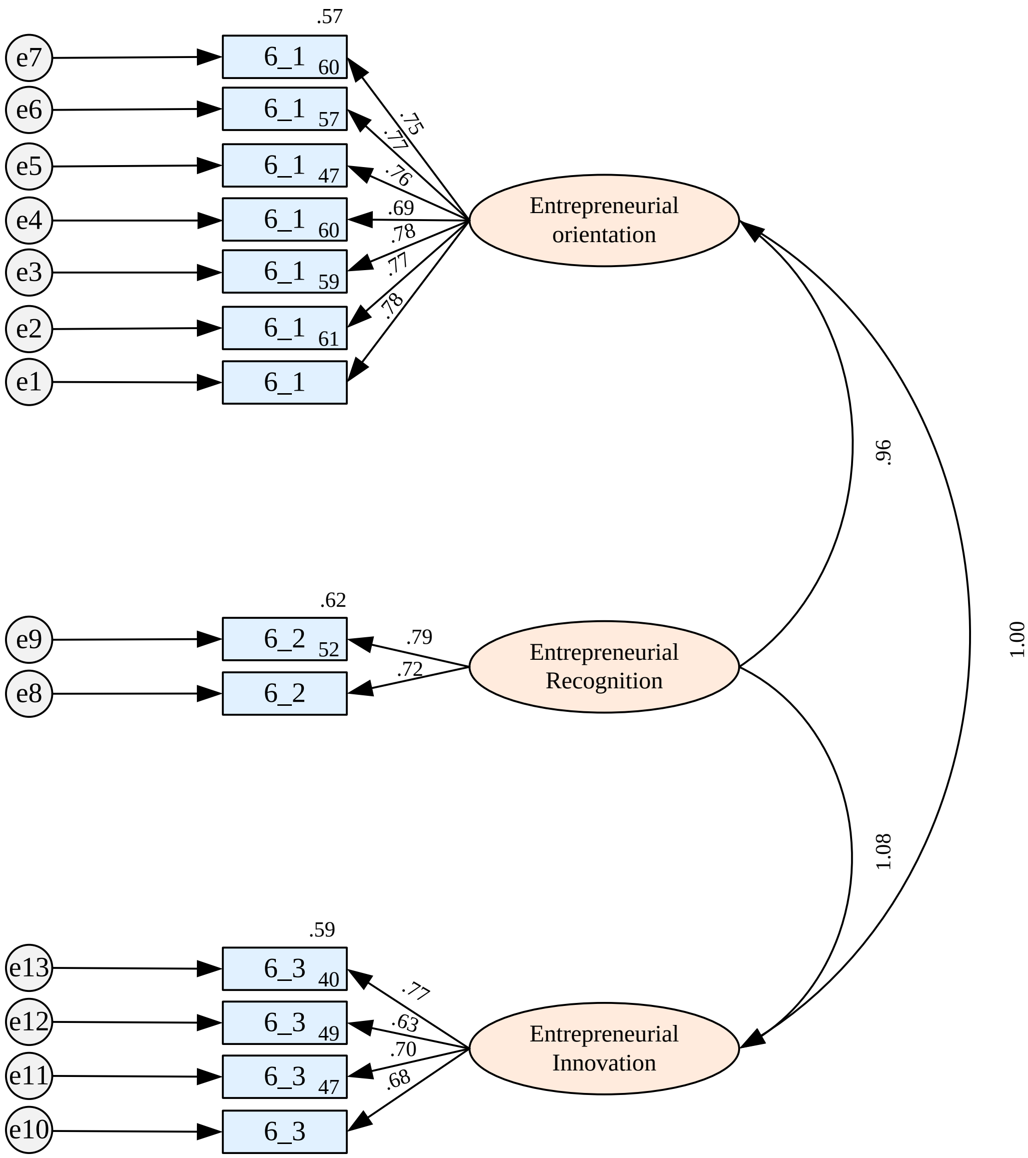
In the quantitative phase of this study, data was collected through questionnaires from accelerators, startups, five major China-based insurance companies, and ten China-focused InsurTech firms. The analysis focused on comparing the perspectives of startups and insurance companies, highlighting critical priorities from their respective constructs. Using a pragmatic approach, manual and professional tools were utilised to address the research problem. Once the sample was collected, the quantitative analysis followed a hypothetical deductive model. Statistical techniques were applied, including structural equation modelling (SEM) and factor analysis. Specifically, 60 Likert-scale items were used to compute the means for each domain, and SEM analysis was performed to explore the relationships and test the overall model fit.

5.5.1 Analysis of the Reliability and Validity of Individual Measurement Models

Measurement model for startup motivation. The measurement model for startup motivation is presented as a distribution construct in Figure 20.

Figure 20

Motivation Distribution Construct



The standardised loading, composite reliability, Cronbach alpha and average variance extracted (AVE) results are presented in Table 15, Table 16 and Table 17. The value of the figure is rounded up by AMOS version 26. The entrepreneurial orientation dimension consists of observed variables 6-1. These observed variables are shown to exhibit convergent validity since the standardised loadings are more significant than the threshold value of 0.5 ($0.687 < \beta < 0.784$) ($p < 0.01$) and show construct validity with the value of Composite reliability (CR) (0.905) being more significant than the value of AVE (0.635). Moreover, they demonstrate discriminant validity since the correlation coefficient is less than the AVE square root value. Furthermore, they are reliable because Cronbach's alpha is 0.904 and CR is 0.905 (Table 17).

The recognition dimension consists of observed variables 6-2. These observed variables are shown to exhibit convergent validity since the standardised loadings are more significant than the threshold value of 0.5 ($0.721 < \beta < 0.79$) ($p < 0.01$), and construct validity has the value of CR (0.728), almost identical with the value of AVE (0.784). Moreover, they demonstrate discriminant validity since the correlation coefficient is less than the AVE square root value. Furthermore, they are reliable because Cronbach's alpha is 0.726 and CR is 0.728 (Table 17).

The innovation dimension consists of observed variables 6-3. These observed variables are shown to exhibit convergent validity since the standardised loadings are more significant than the threshold value of 0.5 ($0.629 < \beta < 0.768$) ($p < 0.01$), and construct validity with the value of CR (0.796) being more significant than the value of AVE (0.617). Moreover, they demonstrate discriminant validity since the correlation coefficient is less than the AVE square root value. Furthermore, they are reliable because Cronbach's alpha is 0.793 and CR is 0.796 (Table 17).

Table 15

Standardised Factor Loading, Squared Multiple Correlation and p-Value: Motivation Distribution Construct

Startups Motivation distribution	Question items	NO.	Item descriptions	Standardised loading **	Squared Multiple Correlation	*P*-value
	6-1	e1	How confident are you that InsurTech startups are good at identifying opportunities?	0.755	0.57	0.001
	6-1	e2	How confident are you that InsurTech startups will always take initiative in every situation (e.g., facing competitors, working with others)?	0.773	0.597	0.001
	6-1	e3	How confident are you that InsurTech startups will take the initiative to respond to the responses of other organisations?	0.758	0.574	0.001
Entrepreneurial orientation factor	6-1	e4	How confident are you that InsurTech startups will encourage employees to assume the expected risk of new ideas?	0.687	0.473	0.001
	6-1	e5	How confident are you that InsurTech startups will emphasise the opportunities for exploration and experimentation?	0.776	0.603	0.001
	6-1	e6	How confident are you that InsurTech startups often try new ideas?	0.766	0.587	0.001
	6-1	e7	How confident are you that InsurTech startups will be creative in operating methods?	0.784	0.614	0.001

Startups Motivation distribution	Question items	NO.	Item descriptions	Standardised loading **	Squared Multiple Correlation	*P*-value
Recognition factor	6-2	e8	How confident are you that the InsurTech startup founders want to be respected by my family and friends?	0.79	0.623	0.001
	6-2	e9	How confident are you that the InsurTech startup founders want to obtain a higher position for themselves?	0.721	0.52	0.001
Innovation factor	6-3	e10	How confident are you that the InsurTech startup founders want to be innovative with cutting-edge technology?	0.768	0.59	0.001
	6-3	e11	How confident are you that the InsurTech startup founders want to create an idea for a product?	0.629	0.396	0.001
	6-3	e12	How confident are you that the InsurTech startup founders want to have the power to influence an organisation?	0.699	0.489	0.001
	6-3	e13	How confident are you that the InsurTech startup founders want to have long-term wealth?	0.683	0.466	0.001

** Statistically significant at $p < 0.01$ (two-tailed).

Pearson’s correlations between dimensions are less than the AVE square root value, which indicates discriminant validity and unidimensionality (Table 16).

Table 16

Correlations and AVE Square Root Value of Measurement Items: Startups Motivation Distribution Construct

Regional validity: Pearson correlation with AVE square root value	Entrepreneurial orientation	Recognition	Innovation
Entrepreneurial orientation	0.796		
Entrepreneurial Recognition	0.783	0.885	
Entrepreneurial Innovation	0.748	0.707	0.785

Note. The diagonal number is the AVE square root value.

Based on the evidence presented above, entrepreneurial orientation, recognition, and innovation are reliable and valid for the motivation distribution construct since Cronbach’s alpha score is more significant than 0.7, CR is greater than 0.7, and AVE is more critical than 0.5 (Table 17).

Table 17

Validity and Reliability Test: Startups Motivation Distribution Construct

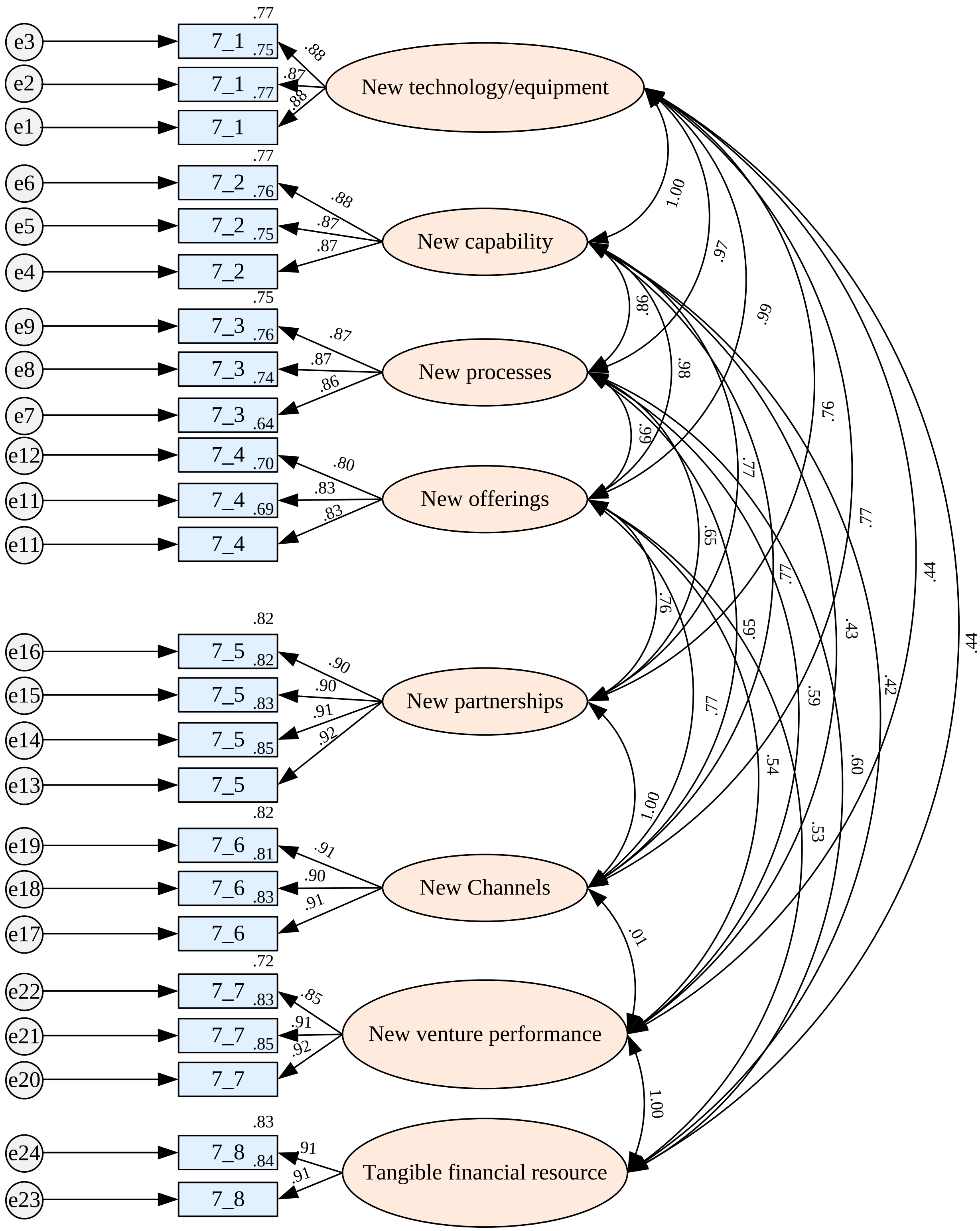
Startups motivation distribution	Cronbach’s alpha	Composite reliability (CR)	Average variance extracted (AVE)
Entrepreneurial orientation	0.904	0.905	0.635
Entrepreneurial Recognition	0.726	0.728	0.784
Entrepreneurial Innovation	0.793	0.796	0.617

The measurement model fits the data well, as the Chi-square = 331.3, degrees of freedom = 62, and *p*-value = 0.000. Other fit measures also indicate the model's goodness of fit to the data (CMIN/DF =5.343, GFI = 0.907, AGFI = 0.863, NFI = 0.923, TLI = 0.920, CFI = 0.936, RMSEA = 0.092). The data analysis results show the motivation construct's reliability and validity; therefore, the results will be reliable and accurate.

Measurement model of accelerator adoption. The measurement model of the accelerator adoption construct is presented in Figure 21.

Figure 21

Standardised Estimates: Accelerator Adoption Distribution Construct



The standardised loading, CR, Cronbach alpha and AVE results are presented in Table 18, Table 19 and Table 20. The figure's value is rounded up by applying AMOS (v. 26). The new technology and equipment dimension consists of observed variables 7-1. For the internal factors (H3-1), the new capability dimension consists of observed variables 7-2. The new processes dimension consists of observed variables 7-3. The new offerings dimension consists of observed variables 7-4 (Table 18).These observed variables are shown to exhibit convergent validity criteria since the standardised loadings are more significant than the threshold value of 0.5 ($0.803 < \beta < 0.879$) ($p < 0.01$), and construct validity with the value of CR being more significant than the value of AVE. Moreover, they demonstrate discriminant validity since the correlation coefficient is less than the AVE square root value. Furthermore, they are reliable because Cronbach's alpha score is more significant than 0.9, and CR is greater than 0.9 (Table 19).

For the external factors (H3-2), the new partnerships dimension consists of observed variables 7-5. The new channel dimension consists of observed variables 7-6. The new venture performance dimension consists of observed variables 7-7. The tangible financial resource dimension consists of observed variables 7-8 (Table 18). All these observed variables are shown to exhibit convergent validity criterion since the standardised loadings are more significant than the threshold value of 0.5 ($0.716 < \beta < 0.848$) ($p < 0.01$), and they show construct validity, with the value of CR being more significant than the value of AVE. Moreover, they also demonstrate discriminant validity since the correlation coefficient is less than the value of the AVE square root. Furthermore, the results are reliable because Cronbach's alpha is greater than 0.9, and CR is more significant than 0.9 (Table 19).

Table 18

Standardised Factor Loading, Squared Multiple Correlation and p-Value: Accelerator Adoption Distribution Construct

Accelerator adoption distribution	Question items	No.	Item descriptions	Standardised Loading **	Squared Multiple Correlation	*P*-value
New technology/equipment factor	7-1	e1	How confident are you that InsurTech firms who adopted accelerators will keep the technical resources of their companies up-to-date?	0.878	0.77	0.001
	7-1	e2	How confident are you that, relative to other InsurTech competitors, InsurTech firms who adopted accelerators will have the technical equipment and be innovative?	0.869	0.755	0.001
	7-1	e3	How confident are you that InsurTech firms who adopted accelerators will regularly utilise new technical opportunities to upgrade their product and service portfolio?	0.879	0.772	0.001
New capability factor	7-2	e4	How confident are you that InsurTech firms who adopted accelerators will receive regular training to develop new competencies?	0.866	0.75	0.001
	7-2	e5	How confident are you that InsurTech firms who adopted accelerators will have up-to-date internal R&D knowledge and capabilities relative to direct competitors?	0.874	0.764	0.001
	7-2	e6	How confident are you that InsurTech firms who adopted accelerators will be assisted in finding which new competencies are needed to adapt to changing market requirements?	0.878	0.77	0.001

Accelerator adoption distribution	Question items	No.	Item descriptions	Standardised Loading **	Squared Multiple Correlation	*P*-value
New processes factor	7-3	e7	How confident are you that InsurTech startups have been able to improve internal processes significantly?	0.861	0.742	0.001
	7-3	e8	InsurTech firms that adopt accelerators will utilise innovative procedures and processes while manufacturing products.	0.874	0.764	0.001
	7-3	e9	How confident are you that InsurTech firms who adopted accelerators have? Processes that are regularly assessed and significantly improved if needed?	0.867	0.751	0.001
New offerings factor	7-4	e10	How confident are you that InsurTech firms who adopted accelerators will address new customer needs?	0.831	0.69	0.001
	7-4	e11	How confident are you that InsurTech firms that adopted accelerators will produce innovative products or services compared to competitors?	0.835	0.697	0.001
	7-4	e12	How confident are you that InsurTech firms who adopted accelerators provide products or services regularly to solve customer needs that competitors did not solve?	0.803	0.644	0.001
New partnerships factor	7-5	e13	How confident are you that accelerators will enable InsurTech firms to find more partnerships?	0.919	0.845	0.001
	7-5	e14	How confident are you that accelerators will enable InsurTech firms to regularly utilise opportunities from integrating new partners into their processes?	0.909	0.826	0.001
	7-5	e15	How confident are you that accelerators will enable InsurTech firms to evaluate the potential benefits of outsourcing regularly?	0.904	0.818	0.001

Accelerator adoption distribution	Question items	No.	Item descriptions	Standardised Loading **	Squared Multiple Correlation	*P*-value
	7-5	e16	How confident are you that accelerators will enable InsurTech firms to find new collaboration partners regularly to help further develop their business model?	0.904	0.817	0.001
New Channels factor	7-6	e17	How confident are you that accelerators will enable InsurTech firms to regularly utilise new distribution channels for their products and services?	0.91	0.828	0.001
	7-6	e18	How confident are you that accelerators will enable InsurTech firms to change their channels, leading to improved efficiency of their channel functions?	0.902	0.814	0.001
	7-6	e19	How confident are you that accelerators will enable InsurTech firms to change their portfolio of distribution channels consistently?	0.907	0.822	0.001
New venture performance	7-7	e20	Will InsurTech firms who graduate from their Accelerator be satisfied with their annual sales?	0.921	0.848	0.001
	7-7	e21	Will InsurTech firms who graduate from their Accelerator be satisfied with their net profits?	0.913	0.834	0.001
	7-7	e22	Will InsurTech firms who graduate from their Accelerator be satisfied with their returns on assets?	0.846	0.716	0.001
Tangible financial resource	7-8	e23	Will InsurTech firms who graduate from their Accelerator own adequate financial assets to operate their business?	0.914	0.836	0.001
	7-8	e24	Will InsurTech firms who graduate from their Accelerator own adequate physical assets to operate their business?	0.91	0.827	0.001

Pearson’s correlations between dimensions are less than the AVE square root value, which indicates discriminant validity and unidimensionality (Table 19).

Table 19

Correlations and AVE Square Root Value of Measurement Items: Accelerator Adoption D istribution Construct

Regional validity: Pearson correlation with AVE square root value	New technology and equipment	New capabil ity	New proces ses	New offerin gs	New partner ships	New Chan nels	New venture performa nce	Tangible financial resource items
New technology and equipment	0.946							
New capability	0.939	0.944						
New processes	0.933	0.937	0.945					
New offerings	0.922	0.915	0.925	0.926				
New partnerships	0.875	0.875	0.875	0.916	0.933			
New Channels	0.872	0.867	0.869	0.895	0.928	0.939		
New venture performance	0.858	0.859	0.862	0.896	0.931	0.923	0.931	
Tangible financial resource items	0.857	0.849	0.868	0.885	0.921	0.918	0.915	0.957

Note. The diagonal number is the AVE square root value.

Based on the evidence presented above (new technology and equipment, new capability, new process, new offerings, new partnerships, new channels, new venture performance), tangible financial resource items are reliable and valid for the accelerator adoption distribution construct since Cronbach’s alpha is more than 0.7, CR is more than 0.7, and AVE is more than 0.5 (Table 20).

The measurement model fits the data well, as the Chi-square = 1892.560, degrees of freedom = 227, and p-value = 0.000. Other fit measures also indicate the model’s goodness of fit to the data (CMIN/DF =8.337, GFI = 0.860, AGFI = 0.816, NFI = 0.900, TLI = 0.891, CFI = 0.911, RMSEA = 0.119). The results of data analysis show the reliability and validity of accelerator adoption, and the data are reliable and accurate.

Table 20

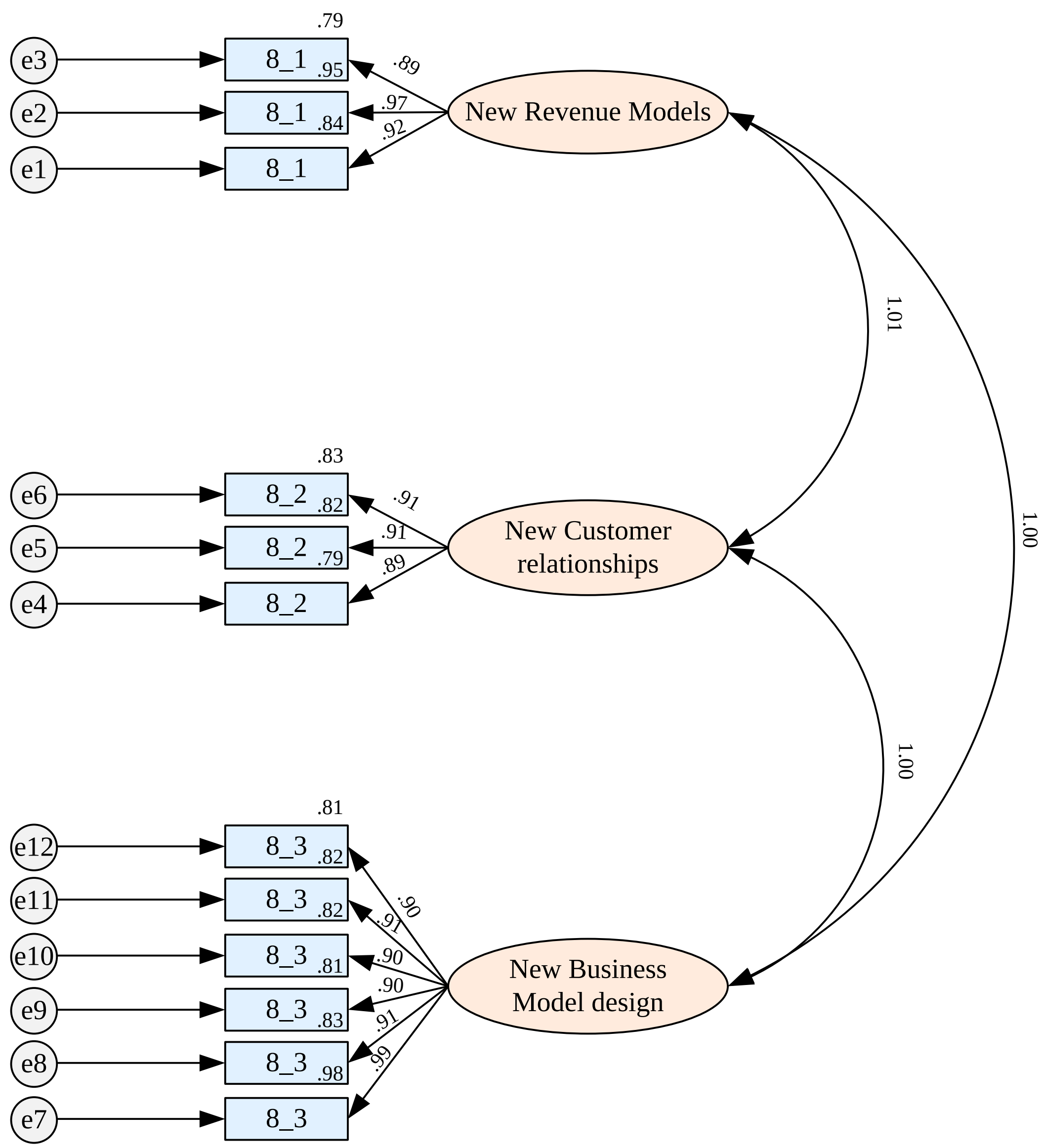
Validity and Reliability Test: Accelerator Adoption Distribution Construct

Startups Motivation distribution	Cronbach's alpha	Composite reliability (CR)	Average variance extracted (AVE)
New technology and equipment	0.941	0.941	0.894
New capability	0.939	0.939	0.891
New processes	0.94	0.94	0.893
New offerings	0.917	0.917	0.858
New partnerships	0.95	0.95	0.87
New Channels	0.933	0.933	0.882
New venture performance	0.923	0.925	0.867
Tangible financial resource items	0.908	0.908	0.916

Measurement model of organisation business model. The final measurement model of the organisation's business model distribution construct is presented in Figure 22.

Figure 22

Standardised Estimates: Organisation Business Model Distribution Construct



Standardised loading, CR, Cronbach alpha and AVE results are presented in Table 21, Table 22 and Table 23. The value of the figure is rounded up by AMOS version 26. The new revenue models dimension consists of observed variables 8-1; the New Customer Relationships dimension consists of observed variables 8-2; the New Business Model Design dimension consists of observed variables 8-3. These observed variables are shown to exhibit convergent validity criteria since the standardised loadings are more significant than the threshold value of 0.5 ($0.89 < \beta < 0.989$) ($p < 0.01$), and construct validity is achieved with the value of CR greater than the value of AVE. Moreover, they demonstrate discriminant validity since the correlation coefficient is less than the AVE square root value. Furthermore, they are reliable because Cronbach's alpha is more significant than 0.9, and CR is greater than 0.9 (Table 23).

Table 21

Standardised Factor Loading, Squared Multiple Correlation and p-Value: Organisation Business Model Distribution Construct

Organisation business model distribution	Question items	No.	Item descriptions	Standardised Loading **	Squared Multiple Correlation	*P*-value
New Revenue Models factor	8-1	e1	How confident are you that InsurTech startups using an accelerator will develop new revenue opportunities (e.g., additional sales, cross-selling)?	0.89	0.792	0.001
	8-1	e2	How confident are you that InsurTech startups using an accelerator will increasingly offer integrated services (e.g., maintenance contracts) to realise long-term financial returns?	0.973	0.946	0.001
	8-1	e3	How confident are you that InsurTech startups using an accelerator will complement or replace one-time transaction revenues with long-term recurring revenue models (e.g., leasing)?	0.917	0.842	0.001
New Customer Relationship factor	8-2	e4	How confident are you that InsurTech startups using an accelerator will increase customer retention with new service offerings?	0.909	0.826	0.001
	8-2	e5	How confident are you that InsurTech startups using an accelerator will emphasise innovative/modern actions to increase customer retention (e.g., CRM)?	0.906	0.821	0.001
	8-2	e6	How confident are you that InsurTech startups using an accelerator will strengthen customer relationships?	0.89	0.793	0.001

Organisation business model distribution	Question items	No.	Item descriptions	Standardised Loading **	Squared Multiple Correlation	*P*-value
New Business Model Design factor	8-3	e7	How confident are you that InsurTech startups using an accelerator will offer new products, services, and information combinations?	0.9	0.811	0.001
	8-3	e8	How confident are you that InsurTech startups who adopt an accelerator will have a business model that will link stakeholders to transactions in novel ways?	0.907	0.822	0.001
	8-3	e9	How confident are you that InsurTech startups who adopt an accelerator will have a business model that will increase the richness (i.e., quality and depth) of some of the links between participants?	0.904	0.816	0.001
	8-3	e10	How confident are you that InsurTech startups who adopt an accelerator will have a business model that will be scalable (i.e., can handle both a few and many transactions)?	0.901	0.812	0.001
	8-3	e11	How confident are you that InsurTech startups adopting an accelerator will have a business model to make the transactions transparent?	0.91	0.828	0.001
	8-3	e12	How confident are you that InsurTech startups adopting an accelerator will have a business model offering high transaction efficiency?	0.989	0.978	0.001

** Statistically significant at $p < 0.01$ (two-tailed)

Pearson's correlations between dimensions are less than the AVE square root value, which indicates discriminant validity and unidimensionality (Table 22).

Table 22

Correlations and AVE Square Root Value of Measurement Items: Organisation Business Model Distribution Construct

Regional validity: Pearson correlation with AVE square root value	New revenue models	New customer relationships	New business model design items
New revenue models	0.951		
New customer relationships	0.923	0.936	
New business model design items	0.924	0.916	0.933

Note. The diagonal number is the AVE square root value.

Based on the evidence presented above, new revenue models, new customer relationships, and new business model design items are all reliable and valid for a business model distribution construct since Cronbach's alpha is more than 0.7, CR is more than 0.7, and AVE is more than 0.5 (Table 23).

The measurement model fits the data well, as the Chi-square = 141.346, degrees freedom = 51, and *p*-value = 0.000. Other fit measures also indicate the goodness of fit of the model to the data (CMIN/DF =2.771, GFI = 0.955, AGFI = 0.932, NFI = 0.986, TLI = 0.988, CFI = 0.991, RMSEA = 0.058). The results of the data analysis show the reliability and validity of the organisational business model, and the data have good reliability and accuracy.

Table 23

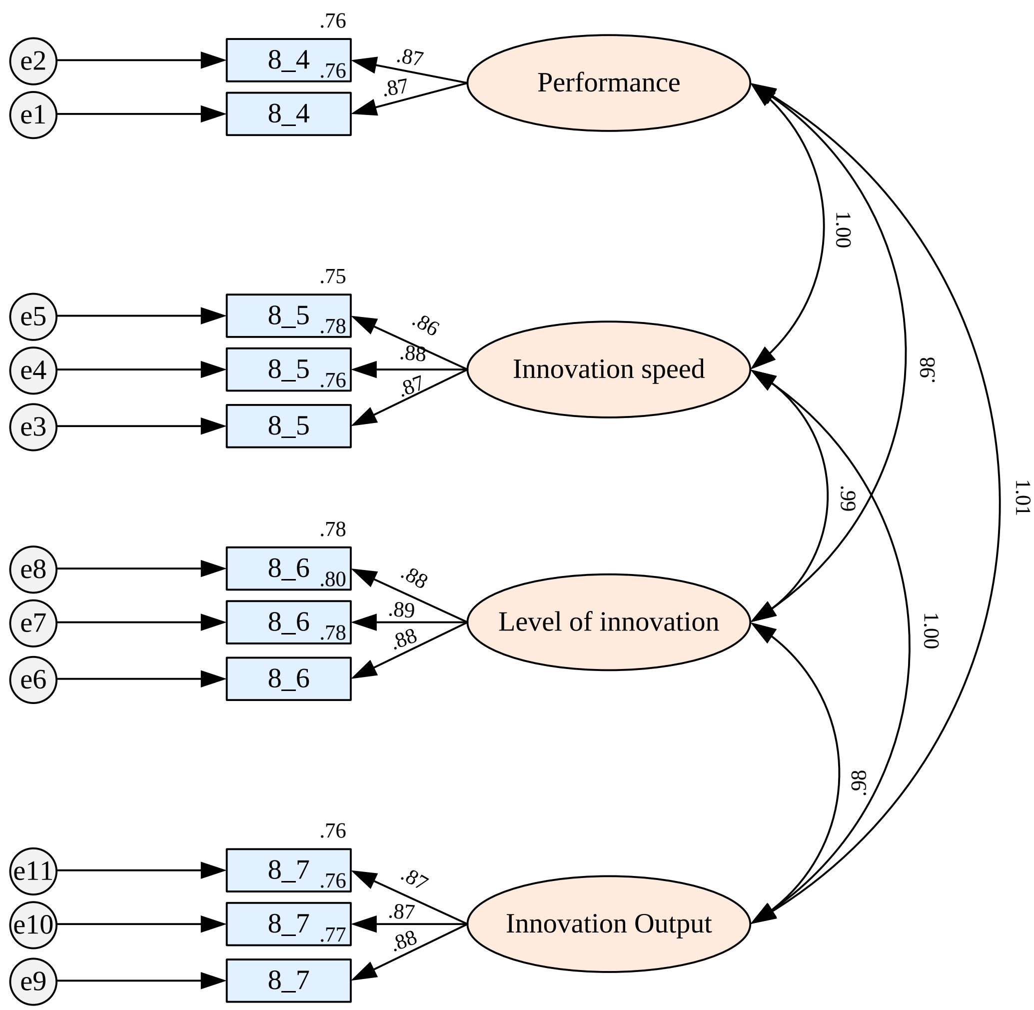
Validity and Reliability Test: Organisational Business Model Distribution Construct

Organisational business model distribution	Cronbach's alpha	Composite reliability (CR)	Average variance extracted (AVE)
New revenue models	0.947	0.949	0.905
New customer relationships	0.929	0.929	0.875
New business model design items	0.97	0.971	0.871

Measurement model of innovation performance. The final measurement model of the innovation performance distribution construct is presented in Figure 24.

Figure 23

Standardised Estimates: Innovation Performance Distribution Construct



The standardised loading, composite reliability, Cronbach alpha and AVE results are presented in Table 26, Table 25 and Table 28. The value of the figure is rounded up by AMOS version 26. The innovation performance dimension consists of observed variables 8-4. The speed of innovation dimension consists of observed variables 8-5. The level of innovation dimension consists of observed variables 8-6. The innovation output dimension consists of observed variables 8-7. These observed variables are shown to exhibit convergent validity criteria since the standardised loadings are more significant than the threshold value of 0.5 (0.865< β < 0.892)

($p < 0.01$), and construct validity is shown with the value of CR greater than the value of AVE. Moreover, they demonstrate discriminant validity since the correlation coefficient is less than the AVE square root value. Lastly, since Cronbach's alpha observed is more significant than 0.9, and composite reliability is greater than 0.9 (Table 28).

Table 24

Standardised Factor Loading, Squared Multiple Correlation and p-Value: Innovation Performance Distribution Construct

Innovation performance distribution	Question items	No.	Item descriptions	Standardised Loading **	Squared Multiple Correlation	*P*-value
Performance factor	8-4	e1	Would the return on investment (ROI) of InsurTech startups participating in an accelerator exceed what investors expected, as stated in the business plan?	0.87	0.756	0.001
	8-4	e2	Would InsurTech startups participating in an accelerator meet all predefined goals and objectives for this new venture (profitability, sales, etc.)?	0.872	0.761	0.001
Speed of Innovation factor	8-5	e3	How confident are you in the innovation speed of InsurTech startups participating in an accelerator? (the time elapsed between initial development and ultimate commercialisation) is it faster than competitors?	0.865	0.748	0.001
	8-5	e4	How confident are you that InsurTech startups adopting an accelerator will have a reputation of being among the first to introduce new products into the market?	0.883	0.779	0.001
	8-5	e5	How confident are you in InsurTech startups' using accelerators development 'on-time performance' is often?	0.873	0.763	0.001

Innovation performance distribution	Question items	No.	Item descriptions	Standardised Loading **	Squared Multiple Correlation	*P*-value
Level of Innovation factor	8-6	e6	Are InsurTech startups coming from accelerators leading in utilising the most adequate equipment and materials?	0.883	0.78	0.001
	8-6	e7	Have InsurTech startups introduced many new construction methods or techniques?	0.892	0.795	0.001
	8-6	e8	Are InsurTech startups coming from accelerators leading in applying new ideas in the planning, organising and managing work on-site?	0.884	0.781	0.001
Innovation Output items factor	8-7	e9	How confident are you that InsurTech startups using accelerators will acquire new groups of customers?	0.874	0.764	0.001
	8-7	e10	How confident are you that InsurTech startups from accelerators actively contribute to developing new products or services?	0.874	0.764	0.001
	8-7	e11	How confident are you that InsurTech startups adopting accelerators will acquire new knowledge?	0.876	0.768	0.001

** Statistically significant at $p < 0.01$ (two-tailed).

Pearson's correlations between dimensions are less than the AVE square root value, which indicates discriminant validity and unidimensionality (Table 25).

Table 25

Correlations and AVE Square Root Value of Measurement Items: Innovation Performance Distribution Construct

Regional validity: Pearson correlation with AVE square root value	Innovation performance	Speed of Innovation	Level of Innovation	Innovation Output items
Innovation performance	0.938			
Speed of Innovation	0.886	0.918		
Level of Innovation	0.874	0.901	0.926	
Innovation Output items	0.889	0.911	0.896	0.918

Note. The diagonal number is the AVE square root value.

Based on the evidence presented above, innovation performance, speed of innovation, and innovation output items are reliable and valid for the innovation performance distribution construct since Cronbach's alpha results are more than 0.7, composite reliability is more than 0.7, and AVE results are more than 0.5 (Table 26).

The model measurement model fits the data well: the Chi-square = 38.847, degrees freedom = 38, and p-value = 0.413. Other fit measures also indicate the goodness of fit of the model to the data (CMIN/DF =1.022, GFI = 0.986, AGFI = 0.976, NFI = 0.994, TLI = 0.997, CFI = 0.990, RMSEA = 0.007). The results of data analysis show the reliability and validity of innovation performance, and the data have good reliability and accuracy.

Table 26

Validity and Reliability Test: Innovation Performance Distribution Construct

Innovation performance distribution	Cronbach's alpha	Composite reliability (CR)	Average variance extracted (AVE)
Innovation performance	0.863	0.863	0.879
Speed of innovation	0.906	0.906	0.842
Level of innovation	0.916	0.916	0.857
Innovation output items	0.907	0.907	0.843

5.5.2 Structural Equation Modelling (SEM) Analysis

This section reports on modelling analysis of the relationships between startups' motivation, accelerator adoption, organisational business model, and innovation performance. Three models were studied to verify the nine hypotheses adopted (Table 27). Each model was assessed based on its path estimates' significant values, the R-squared explanatory power, and the effect size (f-value).

Table 27

Summary of the study's nine hypotheses

Hypothesis	Description
H1	The more assistance startups obtain, the better the business model China insurers create.
H2	A positive relationship exists between startup motivation and accelerator adoption.
H3	Adopting an accelerator will positively influence startups from internal and external perspectives, enhancing their business model.
H3-1	The adoption of accelerators will positively affect the firm's internal R&D and consequently increase the efficiency of the business model.
H3-2	The more external funding is raised during the accelerator phase, the better the business model design will be created.

Hypothesis	Description
H4	Accelerator adoption mediates the relationship between improving the InsurTech startup’s business model and its level of motivation.
H5	The perception of an improved business model will positively correlate with enhanced innovation performance.
H5-1	Perceptions of better revenue models lead to higher innovation performance.
H5-2	Perceptions of better customer relationships enhance innovation performance.
H5-3	Perceptions of better business model design led to higher innovation performance.

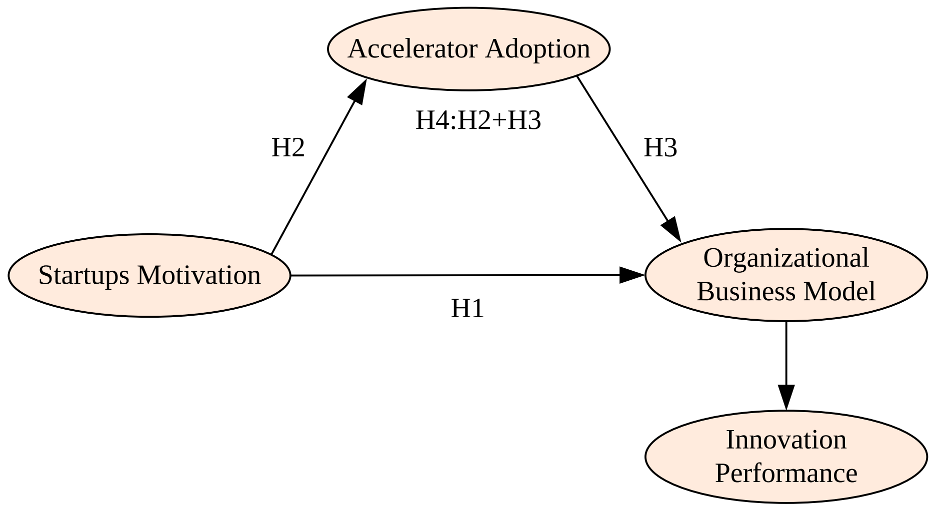
Full-Model: startup motivation, accelerator adoption and organisational business model. The first model can explore four aspects: the impact of startup motivation on the business model, the impact of accelerator adoption on the business model, the impact of startup motivation on accelerator adoption, and the impact of the business model on innovation performance.

The four aspects mentioned above are all latent variables. Figure 24 shows a schematic representation of the model.

Figure 24

Visual Representation: Full-Model-1

The Full-Model-1 can test the hypotheses H1, H2, H3, H4, H5



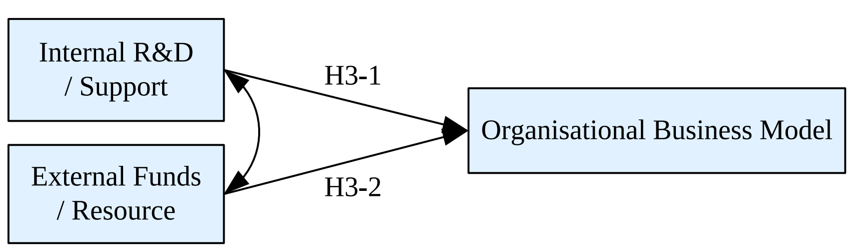
Sub-Model H3: Internal R&D and external funds impact the organisational business model. The second model is Sub-Model H3. Its purpose is to explore the impact of internal R&D and external funding on the organisational business model.

After taking the average value, Internal R&D, external funds, and the business model are all dominant variables. Figure 25 shows a schematic representation of the model.

Figure 25

Visual Representation: Sub-Model-2

The Sub-Model H3 can test the hypotheses H3-1 and H3-2.



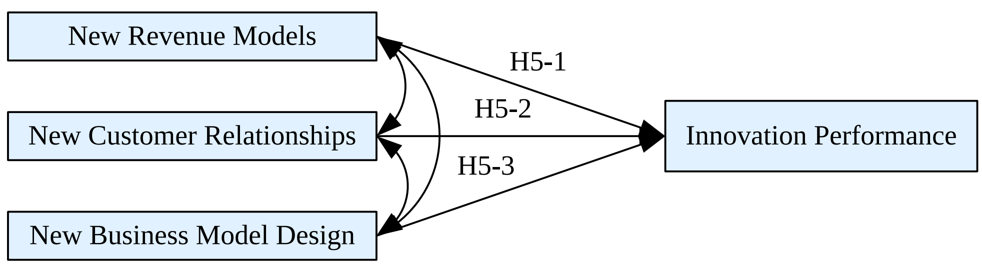
Sub-Model H5: New revenue models, new customer relationships, and new business model designs impact innovation performance. The third model is Sub-Model H5. It explores the impact of new revenue models, new customer relationships, and new business model design on innovation performance.

After taking the average, new revenue models, customer relationships, business model design, and innovation performance are all dominant variables. Figure 26 schematically represents the model.

Figure 26

Visual Representation: Sub-Model-3

The Sub-Model H5 can test the hypotheses H5-1, H5-2, H5-3



5.5.3 Analysis of All Models

Factor analysis of the Full-model. Promax rotation was used to aid factor interpretation. The pattern matrix and structure matrix with all loadings are presented in Table 42

Demographic Information Form of Questionnaire

Information		**Count**
Gender	Male	268
	Female	251
Age	20-21	3
	22-31	36
	32-47	317
	48-67	163

	Over 67	0
Education	High School	23
	Diploma	94
	Bachelor degree	77
	Master degree	232
	Doctoral Degree	93
	Other (Specify)...	0
Occupation	InsurTech startup executives	122
	Insurance professional	207
	Accelerator professional	190
Income	CNY 120,000 & under	28
	CNY 120,001- 300,000	115
	CNY 300,001-500,000	117
	CNY 500,001-1,000,000	128
	CNY1,000,001-1,500,000	116
	Over CNY1,500,000	15

Table 43 (Appendix 5). Table 28 below shows an overview of measures for startup motivation, accelerator adoption, organisational business model, and innovation performance.

Table 28

All measures of the four factors

No.	Factor	Question	Dimension	Measures
1	Startups motivation	6-1	Startup motivation	Entrepreneurial orientation
		6-2		Recognition
		6-3		Innovation
2		7-1		New technology and equipment

No.	Factor	Question	Dimension	Measures
	Accelerator adoption	7-2	Internal R&D / Support	New capability
		7-3		New processes
		7-4		New offerings
		7-5	External funds / Resource	New partnerships
		7-6		New Channels
		7-7		New venture performance
		7-8		Tangible financial resource items
3	Organisational business model	8-1	Organisational business model	New revenue models
		8-2		New customer relationships
		8-3		New business model design items
4	Innovation performance	8-4	Innovation performance	Innovation performance
		8-5		Speed of innovation
		8-6		Level of innovation
		8-7		Innovation output items

Based on this examination of the full scale, presented in Table 29, the KMO value (0.985 > 0.8) demonstrates outstanding data validity.

Moreover, Bartlett's sphericity test attains a significant level ($p = 0.000 < 0.05$), indicating that the data is suitable for factor analysis.

Table 29

KMO and Bartlett's Test

Test		Result
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.985
Bartlett's Test of Sphericity	Approx. Chi-Square	41145.691
	df	1770

Sig.	.000

The correlation coefficient matrix among variables is obtained through the analysis given in Table 30. The strongest correlation was observed between motivation and innovation performance, with a correlation coefficient of 0.758.

Table 30

Factor Correlation Matrix

Factor	Construct			
	Startups motivation	Accelerator adoption	Organisational business model	Innovation performance
Startups motivation	1.000	.557	.486	.758
Accelerator adoption	.557	1.000	.279	.677
Organisational business model	.486	.279	1.000	.489
Innovation performance	.758	.677	.489	1.000

Note. Extraction Method: Maximum Likelihood; Rotation Method: Promax with Kaiser Normalisation.

In conclusion, the questionnaire data demonstrates good reliability and validity with a positive correlation among the variables.

Furthermore, the analysis confirmed that all the conditions for a good measurement model were satisfied. For all constructs, the CR is more significant than 0.7, the AVE is more critical than 0.5, indicating a good convergent validity, and the AVE is more significant than their related maximum shared variance (MSV), indicating an excellent discriminant validity of the constructs. Details of the analysis results are presented in Table 46 (Appendix 5).

In this section, the construct validity of the questionnaire was assessed through confirmatory factor analysis (CFA), calculating AVE values and intervariable correlations. This validates the high quality of the data. For detailed data, please refer to the provided source. The following are commonly used fit indices and criteria for assessing structural equation models (Table 31).

Table 31

The Parameters of the Model

	χ^2	*df*	*p*	χ^2/df	GFI	RMSEA	RMR	CFI	NFI	NNFI
Criteria	-	-	> 0.05	< 3	> 0.9	< 0.10	< 0.05	> 0.9	> 0.9	> 0.9
Value	4090.969	1706	0.000	2.398	0.731	0.052	0.052	0.942	0.905	0.940
Others	TAG	AGFI	IF	PGFI	PNFI	SUMMER	RMSEA 90% CI			
Criteria	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	< 0.1	-			
Value	0.940	0.712	0.942	0.682	0.872	0.038	0.046 ~ 0.054			

Note. Default Model: $\chi^2(1770) = 42952.626$, $p = 1.000$.

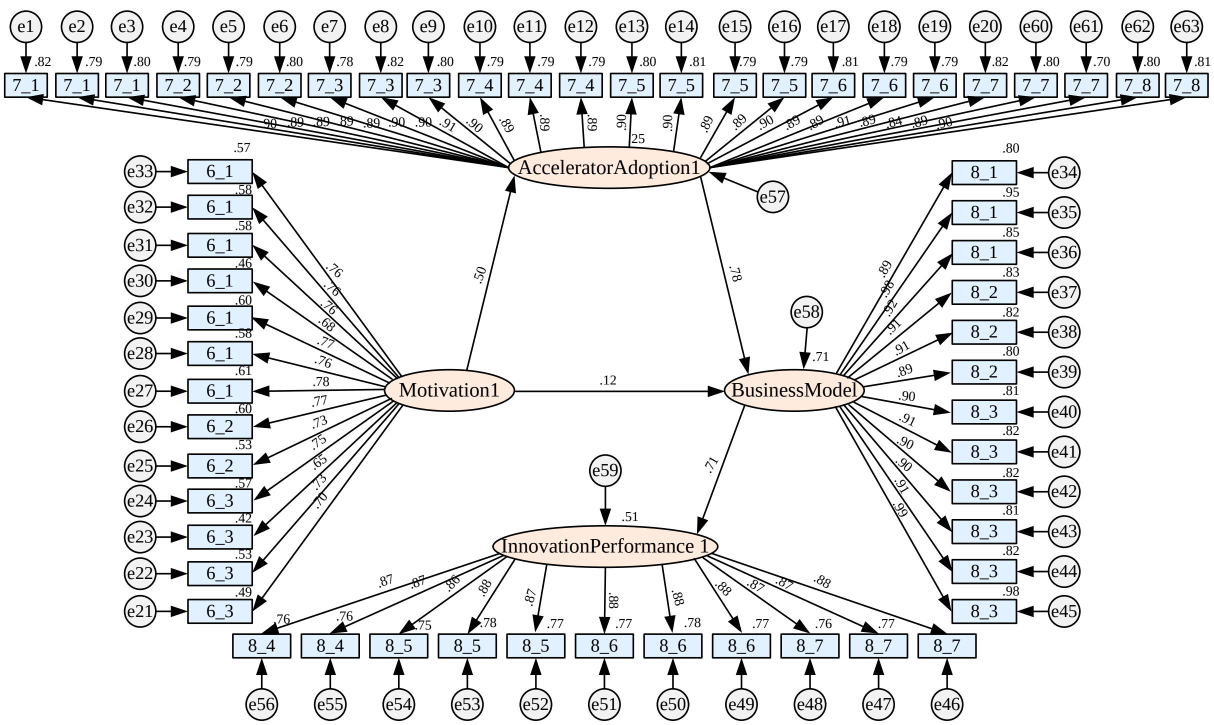
In summary, the above table shows that the model is well fit and unlikely to be an artifact of randomness.

Full-Model: startup motivation, accelerator adoption and organisational business model. Before path modelling, relationships between measurement items and structural models were constructed with CFA, and the SEM was fitted using AMOS 26.0. The estimation methods used were maximum likelihood, estimate means and intercepts. Fit-saturated and independent models need computing. The convergence criteria were the default selections, and the iteration limit was 50. The random seed used was 1. All items with loadings less than 0.4 were eliminated, and all with loadings equal to or over 0.7 were retained. Items with loading factors between 0.4

and 0.7 were individually assessed for their impact on the reliability and validity of the constructs. The final iteration of the measurement model is depicted in Figure 27.

Figure 27

Measurement of the Models: All Reflective Measures



Combining the results of SPSS26.0 and AMOS26.0, the load matrix of the data and the reliability coefficient were obtained. All constructs have Cronbach's alpha > 0.7, which indicates good reliability, and AVE > 0.5, indicating acceptable convergent validity (Hair et al., 2017). The details of the measurement model parameter are displayed in Table 42

Demographic Information Form of Questionnaire

Information		Count
Gender	Male	268
	Female	251
Age	20-21	3

	22-31	36
	32-47	317
	48-67	163
	Over 67	0
Education	High School	23
	Diploma	94
	Bachelor degree	77
	Master degree	232
	Doctoral Degree	93
	Other (Specify)...	0
Occupation	InsurTech startup executives	122
	Insurance professional	207
	Accelerator professional	190
Income	CNY 120,000 & under	28
	CNY 120,001- 300,000	115
	CNY 300,001-500,000	117
	CNY 500,001-1,000,000	128
	CNY1,000,001-1,500,000	116
	Over CNY1,500,000	15

Table 43 (Appendix 5).

The discriminant validity of the constructs was assessed both at the item-based and latent variable-based levels. At the item level, the loading of all items to their respective latent variable and their correlation to any other variables (cross-loadings) were observed. All items had less cross-loading to another construct than their associated latent variables, hence supporting the discriminant validity of each construct. Meanwhile, the Fornell-Larcker criterion, which compares the square root of the AVE values with the latent variable correlations, was observed at the latent variable level. Support for discriminant validity requires a condition in which the square root of each latent variable is more significant than their highest correlation with other latent variables (Hair et al., 2017). As illustrated in Table 34, the square roots of each construct (the highlighted cells in the matrix diagonal) are all greater than their related cross-loadings. The discriminant validity of all constructs is thus acceptable. These results indicate that the four constructs (startup motivation, accelerator adoption, organisational business model and innovation performance) have good discriminant validity.

Further analysis of this result follows: for startup motivation, the square root value of AVE is 0.763, which is more significant than the maximum absolute value of the coefficient between factors of 0.508. This means that the construct of startup motivation has good discriminant validity.

For accelerator adoption, the square root value of AVE is 0.896, which is more significant than the maximum absolute value of the coefficient between factors, which is 0.828. This means that the construct of accelerator adoption has good discriminant validity.

For the organisational business model, the AVE square root value is 0.887, more significant than the maximum absolute value of the coefficient between factors of 0.713. This means that the model's construct has good discriminant validity.

The AVE square root value for innovation performance is 0.926, more significant than the maximum absolute value of the coefficient between factors, 0.828. This means that the construct of innovation performance has good discriminant validity. The table below presents the results for discriminant validity (Table 34).

Table 32

Analysis of Constructs' Discriminant Validity of the Model: All Reflective Measures

Construct	Startup Motivation	Accelerator adoption	Organisational business model	Innovation performance
Startup Motivation	0.763			
Accelerator adoption	0.497	0.896		
Organisational business model	0.289	0.569	0.887	
Innovation performance	0.508	0.828	0.713	0.926

Assessment of the path estimates was conducted using AMOS 26.0. The structural model results are displayed in Table 33. The path estimate of model-1 is significant at *p*-value < 0.001, while the path estimate of startup motivation for accelerator adoption is significant with the exact *p*-value < 0.001. This suggests that motivation significantly impacts accelerator adoption and bolsters the business model. Furthermore, motivation substantially enhances the business model, ultimately leading to a substantial positive influence on innovation performance.

Table 33

Path Estimates: All Reflective Measures

Construct		Construct	Estimate	S.E.	C.R.	*P*	Label
Accelerator adoption	<---	Startup Motivation	1.235	.098	12.640	***	par_1
Organisational business model	<---	Accelerator adoption	.847	.031	27.626	***	par_2
Organisational business model	<---	Startup Motivation	.351	.078	4.502	***	par_3
Innovation performance	<---	Organisational business model	.660	.029	23.107	***	par_4

Further analysis of the model's usefulness based on the coefficient of determination and predictive relevance was also conducted. The R-square values of the latent variables are displayed in Table 34, and the results are discussed below.

- The accelerator adoption construct is influenced by startup motivation at a low-to-medium level with a value of 23.6%. The low-to-medium level suggests that many other factors affect accelerator adoption.
- The organisational business model construct is determined by accelerator adoption at a medium-high level with a value of 68.4%. The medium-high level suggests that accelerator adoption is the main factor affecting the organisational business model.
- The organisational business model determines startup motivation construct at a low-to-medium level, with a value of 24.7%. The low-to-medium level indicates that many other factors affect the organisational business model.
- The innovation performance construct is determined by the organisational business model at a medium-high level, with a value of 50.8%. This suggests that the organisational business model may be a primary factor affecting innovation performance.

Table 34

The R-squared Values of Constructs: All Reflective Measures

Construct			R-Square
Accelerator adoption	<---	Startups motivation	0.236[1]
Organisational business model	<---	Accelerator adoption	0.684
Organisational business model	<---	Startups motivation	0.247
Innovation performance	<---	Organisational business model	0.508

[1] The result of 0.236 implies that Startup Motivation could account for 23.6% of Acceleration Adoption: other factors could be researched in the future.

As can be seen from Table 35, startup motivation => accelerator adoption => organisational business model. The effect ratio is 74.87%. The conclusion partially mediates, indicating the accelerators' significant role in how motivation impacts the business model.

Table 35

Summary of Mediating Effect Size Results

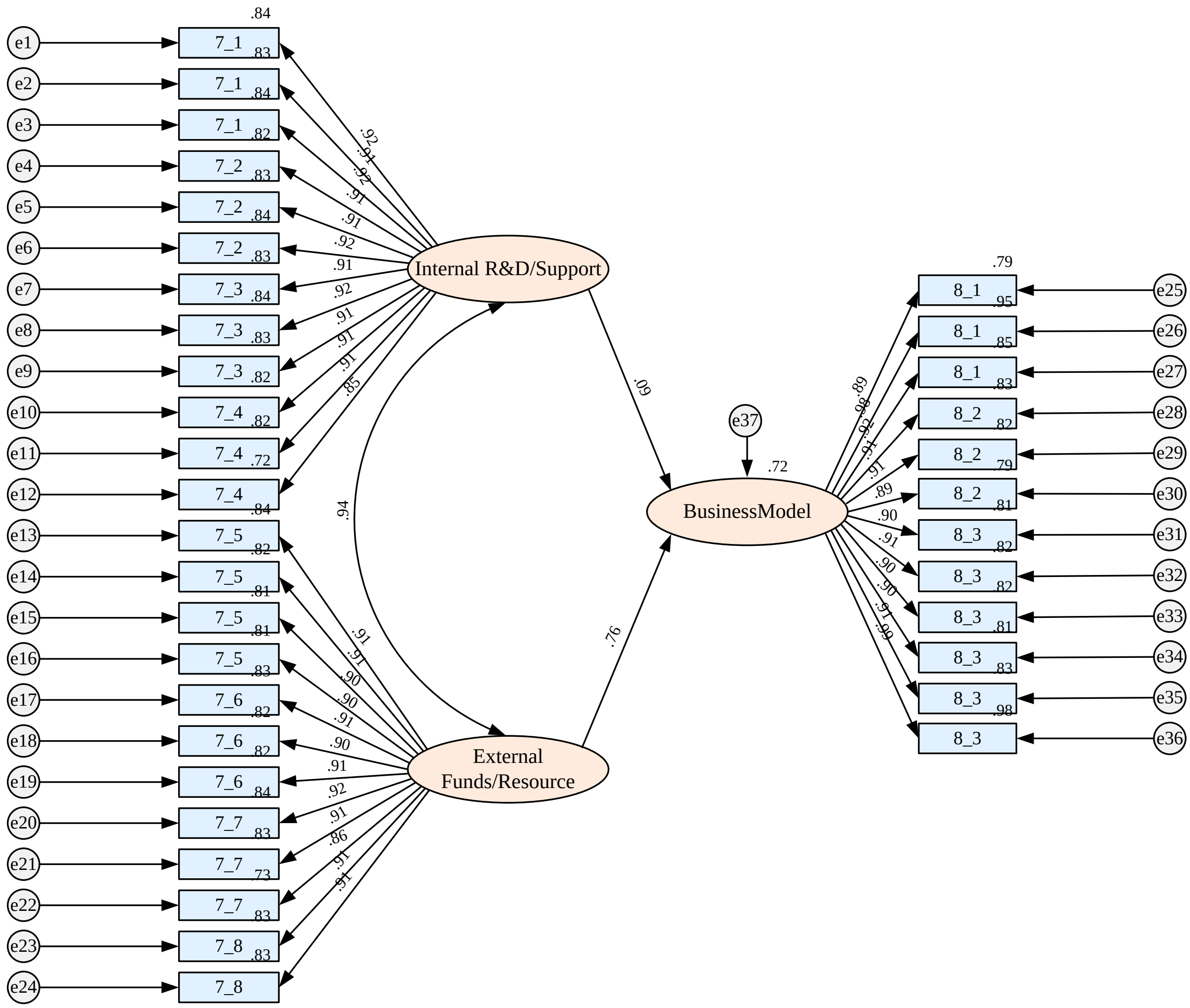
Item	Conclusion	c total effect	a*b mediation effect	c' direct effect	Effect proportion calculation formula	Effect ratio
Startup motivation=> Accelerator adoption=> Organisational business model	partial mediation	1.397	1.046	0.351	a * b / c	74.87%

In conclusion, the variables of startup motivation, accelerator adoption, organisational business model, and innovation performance exhibit strong reliability and validity, ensuring the integrity of the data. Moreover, startup motivation positively influences accelerator adoption and the organisational business model. Accelerator adoption notably impacts the organisational business model positively. Furthermore, the organisational business model significantly contributes to enhancing innovation performance.

Sub-Model H3: Relationship of internal R&D and external funds to the organisational business model. This section presents an alternative organisational business model. Two constructs, internal R&D and external funds, were related to the model. Following similar AMOS procedures explained in the previous section, the measurement model and path estimates were generated, as depicted in Figure 28. The model's R-square is 72%.

Figure 28

Measurement and Path Estimates: Internal Support, External Resources to the Organisational Business Model



The results of a path-significant test are displayed in Table 36. Details of all parameters are shown in Table 46 (Appendix 5).

Table 36

Path Estimates for Organisational Business Model between Internal Support and External Resource

Construct			Estimate	S.E.	C.R.	*P*
Organisational business model	<---	Internal R&D/ Support	.176	.068	2.580	.010
Organisational business model	<---	External funds/ Resource	.745	.070	10.674	***

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Path estimates for the organisational business model between Internal Support and External Resources (Table 36) reveal that:

- When Internal Support impacts the organisational business model, the path coefficient value is 0.176 > 0, and this path showed a significant result of 0.05 ($p = 0.010 < 0.05$). When Internal Support increases by 1, the organisational business model increases by 0.176. The regression weight estimate is 0.176 (with a standard error of about 0. 068). The regression weight estimate is 2.58 (standard error above zero). The probability of getting a critical ratio as large as 2.58 in absolute value is 0.010. In other words, the regression weight for internal support of the organisational business model is significantly different from zero at the 0.01 level (two-tailed). In summary, it indicates that Internal Support has a significant positive impact on the organisational business model.
- Regarding the influence of External Resources on the organisational business model, the path coefficient value is 0.745 > 0, and the path is significant at 0.01 ($p = 0.000 < 0.01$). When External Resources increase by 1, the organisational business model increases by

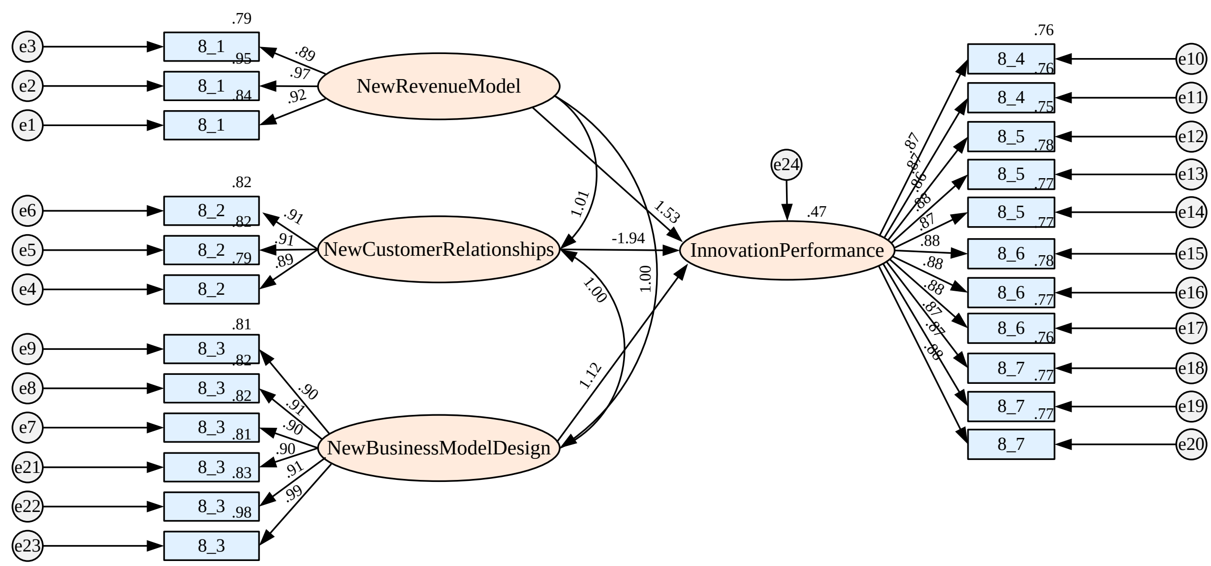
0. 745. The regression weight estimate, 0.745, has a standard error of about 0.070 and 10.674 standard errors above zero. The probability of getting a critical ratio as large as 10.674 in absolute value is less than 0.001. In other words, the regression weight for external funding in the predictions for the organisational business model is significantly different from zero at the 0.001 level (two-tailed). In summary, it indicates that external resources have a significant positive impact on the organisational business model.

In conclusion, the variables Internal Support, External Resources, and Organisational Business Model exhibit strong reliability and validity, indicating reliable data quality. Thus, internal support and external resources significantly influence the organisational business model.

Sub-Model H5: new revenue models, new customer relationships, and new business model design to innovation performance. This section presents another alternative model. In this model, innovation performance is considered a construct consisting of three dimensions: a new revenue model, new customer relationships, and a new business model design. Following similar AMOS procedures in the previous section, the measurement model and path estimates were generated, as depicted in Figure 29.

Figure 29

Measurement and Path Estimates: New Revenue Model, Customer Relationships, Business Model Design to Innovation Performance



The model's R-square is 47%. Table 37 summarises path-significant tests and their related sizes. Table **42**

Demographic Information Form of Questionnaire

Information		**Count**
Gender	Male	268
	Female	251
Age	20-21	3
	22-31	36
	32-47	317
	48-67	163
	Over 67	0
Education	High School	23
	Diploma	94
	Bachelor degree	77

	Master degree	232
	Doctoral Degree	93
	Other (Specify)...	0
Occupation	InsurTech startup executives	122
	Insurance professional	207
	Accelerator professional	190
Income	CNY 120,000 & under	28
	CNY 120,001- 300,000	115
	CNY 300,001-500,000	117
	CNY 500,001-1,000,000	128
	CNY1,000,001-1,500,000	116
	Over CNY1,500,000	15

Table 43 (Appendix 5) presents detailed parameters of the measurement and path estimate assessment.

Table 37

Path Estimates for Innovation Performance Following New Revenue Model, New Customer Relationships, and New Business Model Design

Construct			Estimate	S.E.	C.R.	*P*
Innovation performance	<---	New revenue model	-.027	.112	-.240	.810
Innovation performance	<---	New customer relationships	.120	.104	1.155	.248
Innovation performance	<---	New business model design	.565	.117	4.824	***

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

As can be seen from the above table:

- When the new revenue model construct is linked to innovation performance, the path is insignificant ($p = 0.810 > 0.05$). When the new revenue value increases by 1, innovation performance decreases by 0.027. The regression weight estimate, -0.027, has a standard error of about 0.112, so it is a 0.24 standard error below zero. The probability of getting a critical ratio as large as 0.24 in absolute value is 0.810. In other words, the regression weight for the new revenue model in predicting innovation performance is not significantly different from zero at the 0.05 level (two-tailed). This indicates that a new revenue model does not affect innovation performance.
- When the construct of a new customer relationship is related to innovation performance, this path is insignificant ($p = 0.248 > 0.05$). When new customer relationships increase by 1, innovation performance increases by 0.12. The regression weight estimate,0.120, has a standard error of about 0.104. The regression weight estimate is 1.155 standard errors above zero. The probability of getting a critical ratio as large as 1.155 in absolute value is 0.248. In other words, the regression weight for a new customer relationship in predicting innovation performance is not significantly different from zero at the 0.05 level (two-tailed). This indicates that a new customer relationship does not influence innovation performance.
- When the construct of a new business model impacts innovation performance, the path coefficient value is 0.565, and the path showed a 0.01 level of significance ($p = 0.001 < 0.01$). When the new business model increases by 1, innovation performance increases by 0. 565. The regression weight estimate, 0.565, has a standard error of about 0.117. In other words, the regression weight estimate is 4.824 standard errors above zero. In

summary, this indicates that the new business model exerts a significant positive impact on innovation performance.

In summary, the variables for constructs, namely new revenue models, new customer relationships, and new business model design, demonstrate robust reliability and data quality. A noteworthy finding is that the design of a new business model significantly and positively impacts innovation performance.

5.5.4 Multi-group Analysis on Relationships among Factors

In addition to the main models to test relationships among startups' motivation, accelerator adoption, organisational business model, and innovation performance, a series of multi-group analyses were conducted. The multi-group analyses included evaluating the effect of certain control variables, i.e., gender, age, occupation, and income. The distribution of demographic variables and the normal distribution of each variable can be seen in Figure 38 (Appendix 5).

A series of path estimates for each group was carried out. Subsequently, Multi-Group Analysis was used to evaluate differences across groups. The results are presented in detail in Table **46** (Appendix 5). Table 38 displays a summary of different test results.

Table 38

Summary of Different Test Results for Startup Motivation, Accelerator Adoption, Organisational Business Model, and Innovation Performance

Classification		Summary of different test results			
		Accelerator Adoption ->Organisational Business Model	Organisational Business Model -> Innovation Performance	Startups Motivation ->Accelerator Adoption	Startups Motivation ->Organisational Business Model
	All	0.841	0.646	0.606	0.097
Gender	Difference (Male-Female)	0.016	-0.025	0.091	-0.009
	p-value	0.338	0.687	0.091	0.564
Age	Difference (22-31 - 32-47)	0.016	-0.204	0.096	-0.178
	p-value	0.438	0.971	0.174	0.92
	Difference (22-31 - 48-67)	0.068	-0.188	0.108	-0.281
	p-value	0.216	0.954	0.167	0.986
Education	Difference (Bachelor's degree - Diploma)	-0.053	0.080	-0.029	0.058
	p-value	0.190	0.198	0.713	0.368
	Difference (Bachelor's degree -Doctoral degree)	-0.010	0.049	-0.010	0.037
	p-value	0.807	0.367	0.912	0.529
	Difference (Bachelor's degree - High School)	-0.024	-0.043	-0.197	0.038
	p-value	0.700	0.564	0.062	0.726

Classification		Summary of different test results			
		Accelerator Adoption ->Organisational Business Model	Organisational Business Model -> Innovation Performance	Startups Motivation ->Accelerator Adoption	Startups Motivation ->Organisational Business Model
Occupational	Difference (Bachelor degree - Master degree)	-0.006	-0.005	-0.085	0.016
	p-value	0.899	0.906	0.185	0.778
	Difference (Diploma - Insurance Professional)	0.061	-0.099	0.096	-0.02
	p-value	0.091	0.912	0.136	0.61
	Difference (InsurTech startups Executives - Insurance Professional)	-0.048	-0.011	0.006	0.053
	p-value	0.817	0.567	0.467	0.232
Income	Difference (CNY 120,000 & under - CNY 300,001-500,000)	-0.03	0.072	0.019	0.055
	p-value	0.699	0.139	0.417	0.249
	Difference (CNY 120,001- 300,000 - CNY 300,001-500,000)	0.02	0.079	0.01	-0.003
	p-value	0.331	0.093	0.45	0.518
	Difference (CNY 500,001-1,000,000 - CNY 300,001-500,000)	-0.013	-0.026	0.153	-0.029
	p-value	0.666	0.548	0.008	0.532
	Difference (CNY1,000,000-1,500,000 - CNY 300,001-500,000)	0.034	-0.003	0.208	-0.088
	p-value	0.341	0.937	0.004	0.106
	Difference (over CNY 1,500,000 - CNY 300,001-500,000)	0.024	0.070	0.091	-0.102
	p-value	0.721	0.455	0.570	0.321

The results from each group classification display no significant differences between groups. For example, the startup motivation -> organisational business model for income CNY 120,001-300,000 is substantial, with a p-value<0.01, but for income over CNY1,500,000, results are insignificant, with a p-value of 0.068. A summary of the path estimates significant tests for all participants' classification is displayed in Table 39.

Table 39

Summary of Path Estimates Significant Test: Startups Motivation, Accelerator Adoption, Organisational Business Model, and Innovation Performance

Classification		Path estimates are significantly different from zero			
		Accelerator adoption-> Organisational business model	Organisational business model -> Innovation performance	Startups motivation -> Accelerator adoption	Startups motivation -> Organisational business model
Gender	All	***	***	***	***
	Male(n=268)	***	***	***	***
	Female(n=251)	***	***	***	***
Age	20-21(n=3)	NS	NS	-	-
	22-31(n=36)	***	***	***	***
	32-47(n=317)	***	***	***	***
	48-67(n=163)	***	***	***	***
Occupation	InsurTech startups Executives(n=122)	***	***	***	***
	Insurance Professional(n=207)	***	***	***	***
	Accelerator Professional(n=190)	***	***	***	***
Income	CNY 120,000 & under(n=28)	***	***	***	NS
	CNY 120,001 - 300,000 (n=115)	***	***	***	***
	CNY 300,001 - 500,000 (n=117)	***	***	***	***
	CNY 500,001-1,000,000(n=128)	***	***	***	***
	CNY1,000,001-1,500,000(n=116)	***	***	***	***
	Over CNY1,500,000(n=15)	***	***	NS	NS

Note. NS: Not Significant ***: Significant at $p < 0.01$ "–": The dependent variable is constant and has been deleted.

The study analysis showed that different levels of demographic variables mostly showed the same significant results in the study model, and the difference in coefficients between various levels of demographic variables was not important, indicating that the model was robust and did not differ by gender, age, position, income, etc. However, there are also some particular circumstances, such as when the income was over CNY15,000, and the age band was 20 to 21. The sample size for these conditions was relatively small, so the conclusion must remain insignificant.

Conclusion: Multiple group analysis revealed that distinct individual characteristics do not produce significant score differences across most variables, employing demographic factors for grouping. Despite the relatively low sample size, this still provides evidence that most pathways do not demonstrate apparent discrepancies, indicating a stable and resilient model.

5.6 Results of Hypothesis Testing

AMOS.26.0 analysis and the path analysis results are shown in Table 42.

Table 40

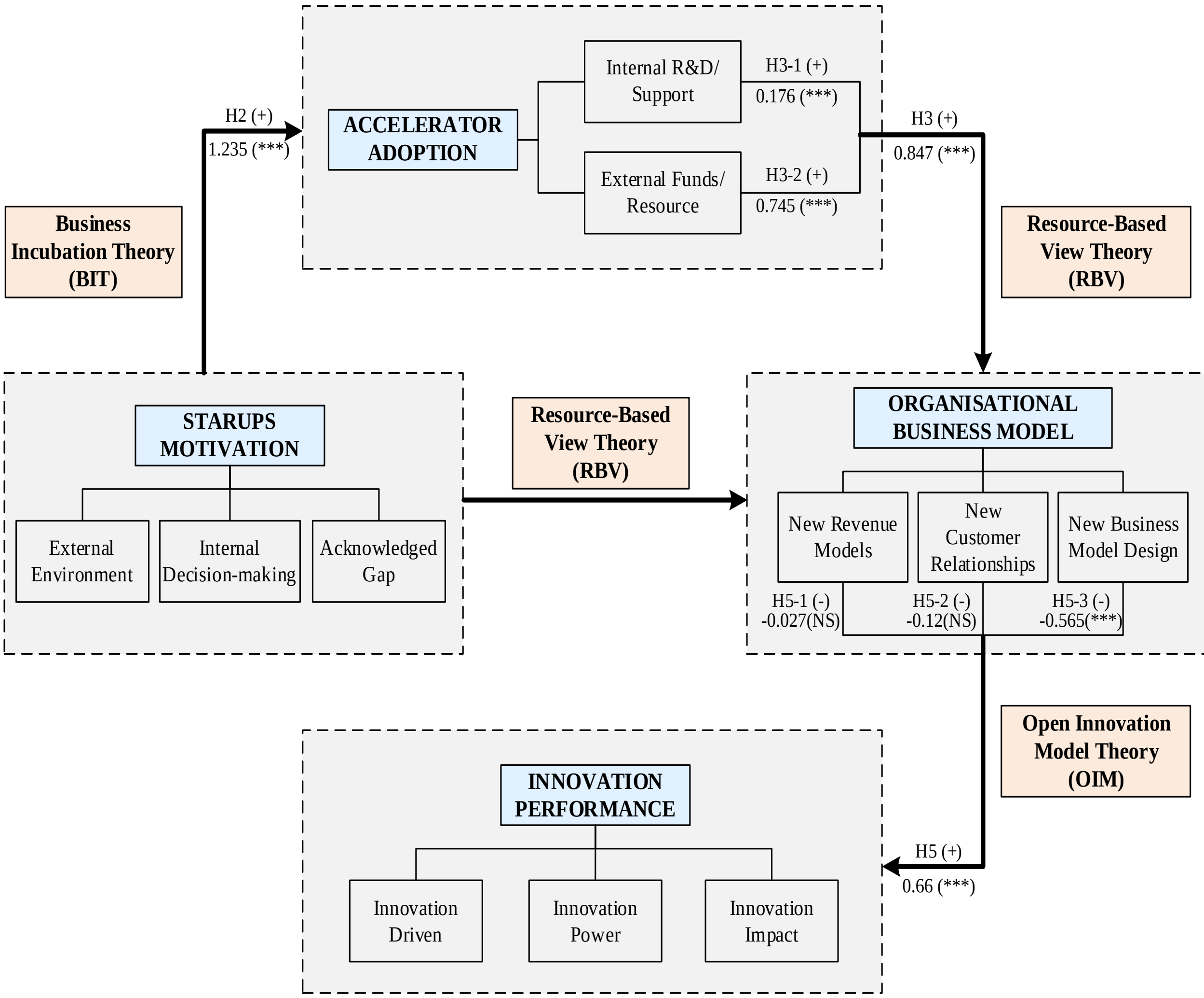
Significance Testing Results of the Structural Model Path Coefficients

	Factor		Estimate	S.E.	C.R.	*P*
Accelerator adoption	<---	Startups motivation	1.235	.098	12.640	***
Organisational business model	<---	Accelerator adoption	.847	.031	27.626	***
Organisational business model	<---	Startups motivation	.351	.078	4.502	***
Innovation performance	<---	Organisational business model	.660	.029	23.107	***
Organisational business model	<---	Internal Support	.176	.068	2.580	.010
Organisational business model	<---	External Resource	.745	.070	10.674	***
Innovation performance	<---	New revenue model	-.027	.112	-.240	.810
Innovation performance	<---	New customer relationships	.120	.104	1.155	.248
Innovation performance	<---	New business model design	.565	.117	4.824	***

Figure 30 links all the research assumptions with the path analysis coefficients.

Figure 30

Research Model and Hypothesis Result



H1: The statistical analysis (path coefficient: 0.351, significant at p-value < 0.01) supports Hypothesis 1. The result indicates that the more assistance startups obtain, the better the acceptable business model Chinese insurers create.

H2: The statistical analysis (path coefficient: 1.235, significant at p-value < 0.01) supports Hypothesis 2. The result indicates that the more influencing factors, the better interaction and connections, and InsurTech startups will likely adopt the accelerator.

H3: The statistical analysis (path coefficient: 0.847, significant at p-value < 0.01) supports Hypothesis 3. The result indicates that adopting an accelerator will positively influence startups from internal and external perspectives, enhancing their business model.

H3-1: The statistical analysis (path coefficient: 0.176, significant at p-value < 0.01) supports Hypothesis 3-1. The result indicates that the adoption of accelerators will have a positive effect on Internal Support and consequently increase the efficiency of the business model.

H3-2: The statistical analysis (path coefficient: 0.745, significant at p-value < 0.01) supports Hypothesis 3-2. The result indicates that the more external resources raised during the acceleration, the better the business model design will be.

H4: The conclusion suggests a partial mediating effect (the total effect is 1.397, the direct impact is 0.351, and the effect ratio is 74.87%), supporting Hypothesis 4. The result indicates that accelerator adoption mediates the relationship between business model improvement and InsurTech startups' level of motivation.

H5: The statistical analysis (path coefficient: 0.66, significant at p-value < 0.01) supports Hypothesis 5. The result indicates that the perception of an improved business model will positively correlate with enhanced innovation performance.

H5-1: The statistical analysis (path coefficient: -0.027, *p*-value > 0.05, no significant) provides no support for Hypothesis 5-1. The result indicates insufficient evidence to support the hypothesis that new revenue models lead to higher innovation performance.

H5-2: The statistical analysis (path coefficient: 0.12, *p*-value > 0.05, not significant) provides no support for Hypothesis 5-2. The result indicates insufficient evidence to support the hypothesis that perceptions of new customer relationships lead to higher innovation performance.

H5-3: The statistical analysis (path coefficient: 0.565, significant at *p*-value < 0.01) supports Hypothesis 5-3. The result indicates that better or new business model design leads to higher innovation performance.

Chapter 6. The Qualitative Study

This chapter begins by outlining the main factors of qualitative research, including data collection, use of software and coding process. The section on InsurTech startup motivation investigates the core motivations driving these startups. By examining internal and external factors, business model improvements, and barriers to development, this section seeks to understand more about the fundamental aspects of InsurTech innovation. The following section considers accelerator adoption as a moderator. It explores how technology R&D and the external funding environment can encourage or impede growth, highlighting the importance of aligning innovation with external factors. The section next reviews the organisational business model as the second moderator, revealing how new revenue models, customer relationships, and business model designs can directly impact the performance and competitiveness of the organisation. Applying measures to innovation performance reveals the extent of innovation and associated spending to quantify the effectiveness of the strategies and barriers identified earlier. Together, these sections build a coherent and layered understanding of the critical dynamics in the InsurTech startup space, progressively leading the reader from the broad context to specific strategies and outcomes.

6.1 The Characteristics of Qualitative Research

Interviews have been widely used in previous accelerator studies (Hackett & Dilts, 2004b). Also, qualitative interviews were proven research methods for studies of different cultures and nations (Creswell & Creswell, 2014). The interview technique allows more insights into the key constructs of the study: InsurTech startup motivation, accelerator adoption, business model, and attitudes to innovation (Guetterman et al., 2015). Interview questions were developed after reading other studies (Appendix 3). For example, the UK national accelerator research report (Bone et al., 2017) informs on rates of accelerator take-up. Next, a way of measuring InsurTech startup motivation was adapted from techniques applied in extant research, such as the work of Bellotti et al. (2015). Following a study by Zhao et al. (2012), the interpretation of enterprise motivation from a Chinese perspective, measurements were adjusted. One parameter adopted was to assess Western business influence phenomena by considering Wu (2008) work on China's corporate strategy.

6.2 Data Collection Procedures

Interview questions will be developed from extant work, such as the UK National Accelerator Research Report (Bone et al., 2017). The interview questions will reflect the study's cultural and national relevance (Creswell & Creswell, 2014). In terms of data collection, first, the specific sites or individuals for the intended research must be determined. Second, the number of sites and participants joining the study should be considered. A last step would be to specify the data to gather.

The participants came from InsurTech startups, insurers, accelerators, and funds. Their position titles include founders, senior managers, and junior managers. They represented startup personnel who could comment on the requirements and support from accelerators and insurers regarding products, accelerators, and funds. Interviews took place with a 60-minute Zoom or face-to-face meeting. Qualitative data analysis was used manually, and computer-assisted data analysis was done using the NVivo data analysis tool.

6.2.1 Participant Selection

A sampling technique of purposeful participant recruitment was used (Creswell & Creswell, 2014). Professional organisations assisted with participant recruitment. The participants' organisations included the China InsurTech Association, Finance Institution

Association, China Youth Association, and OBOR Finance Association. These organisations helped to recruit participants via email. All participants had more than ten years of experience in the insurance industry, including with the operation of accelerators. Participants in the qualitative study were selected to represent a mix of startup founders, business accelerator operatives, and insurance executives who could provide diverse feedback on using accelerators. The total number of interviewees was 28 (Table 41). Field notes were recorded during qualitative observations to document the behaviour and activities of individuals at the research site.

Table 41

Demographics of Interviewees

Interviewee No.	Company Type	Nature of Company	Company size	Job title	Years of experience
001	Incubator under State-Owned Insurer	Private	700	Mid-Level Manager	11
002	InsurTech startups under State-Owned Insurer	State-funded	40000	Senior Executive	14
003	Insurance company	State-funded	300000	Mid-Level Manager	6
004	Insurance company	State-funded	200000	Mid-Level Manager	11
005	Insurance company	State-funded	100000	Mid-Level Manager	10
006	Insurance company	State-funded	100000	Mid-Level Manager	12
007	Insurance company	State-funded	300000	Mid-Level Manager	16
008	Insurance company	Private	30000	Senior Executive	16
009	Insurance company	State-funded	180000	Senior Executive	20
010	Insurance company	Private	1500	Senior Executive	16
011	InsurTech startups	Private	80	CEO, Co-funder	5
012	InsurTech startups	Private	100	CEO, Co-funder	17
013	Insurance company	State-funded	100	Senior Executive	17

Interviewee No.	Company Type	Nature of Company	Company size	Job title	Years of experience
014	InsurTech startups	Private	8	CEO	23
015	InsurTech startups	Private	10	Senior Executive	11
016	Branch under State-Owned Insurer	State-funded	100	Vice-President	12
017	Reinsurance company	State-funded	100	Senior Executive	18
018	InsurTech startups	Private	300	Vice-President	20
019	Insurance company	State-funded	80000	Mid-Level Manager	15
020	Insurance company	State-funded	2000	Mid-Level Manager	15
021	InsurTech startup under State-Owned Insurer	State-funded	500	Senior Executive	14
022	InsurTech startups	State-funded	30	Senior Executive	10
023	Technology incubator	Private	30	CEO	3
024	InsurTech startups	Private	30	Mid-Level Manager	10
025	Investment platform	Private	15	Senior Executive	7
026	Investment platform	Private	30	CEO	10
027	Branch under State-Owned Insurer	State-funded	180000	Vice-President	18
028	Technology incubator	Foreign-funded	2000	Mid-Level Manager	20

6.2.2 Collection Method

Qualitative interviews involved face-to-face or telephone interviews with participants. The interviews were conducted in Chinese by one-hour Zoom sessions in Mandarin and English. All the interviews were recorded with the interviewees' signed consent. The transcripts were obtained in Chinese first and then translated into English. Typical questions were given to everyone, regardless of background, while some specific questions were asked to participants with different backgrounds.

Qualitative data collection may include gathering documents like meeting minutes or private documents like emails. Another form of qualitative data includes audio and visual materials like emails and text messages (Pink, 2001).

In this study, interviews were chosen as a data collection method. One-on-one online interviews were conducted. Although this approach lacked control over the interviewees' physical environment, this approach facilitated the collection of valuable and in-depth information from participants in a comfortable climate (Lo Iacono et al., 2016).

6.3 Data Recording Procedures

The study created and implemented an interview protocol to pose questions and document responses during the qualitative interview.

- Documenting observations is an essential aspect of conducting a qualitative study. Participants must participate in numerous observations throughout the study's duration. Utilising an observational protocol is crucial for systematically recording information while actively observing.
- Gathering information through questions and documenting responses is fundamental to conducting a qualitative interview. The interview data can be recorded through handwritten notes, audiotaping, or videotaping. The interview protocol is detailed in Appendix 3.

The following questions were asked of all participants in the interviews:

- What is your understanding of InsurTech? Sub-questions included what influences people's perception of insurance technology (for example, competitive relationships, personal characteristics, IT infrastructure construction, work efficiency, cost reduction, risk reduction, organisational culture, etc.).

- What factors influence the adoption of technology in an insurance organisation?
- What factors do you think will drive companies to adopt InsurTech? For example, what are customer needs, data security, workflow simplification, cost reduction, corporate strategy, cultural needs, or others?
- What are the barriers to organisations adopting InsurTech technology? What are the possible obstacles?
- What do you think is the value of an accelerator? For example, what does the accelerator generally support the primary activities? How will people feel about accelerators (the IT infrastructure, the resources of accelerators, the innovation, or other things? Do you think this kind of small business is likely to adopt acceleration? What are the incentives for that?

For insurance company executives:

- Does your organisation have a strategy to launch InsurTech?
- Could you tell us something about your current insurance technology project?
- How does insurance technology benefit you in terms of work processes? Can insurance technology help you better accomplish your business objectives? How does the adoption of insurance technology affect you? If your competitors and colleagues were to adopt InsurTech, would that influence you to follow suit?
- Do you think the InsurTech Accelerator has a future? Are you likely to recommend InsurTech platforms to other insurance companies?

For accelerator practitioners:

- What do you think is the value of the InsurTech acceleration product?
- Which of the acceleration features are needed for startups? Do they need more?

For InsurTech startups:

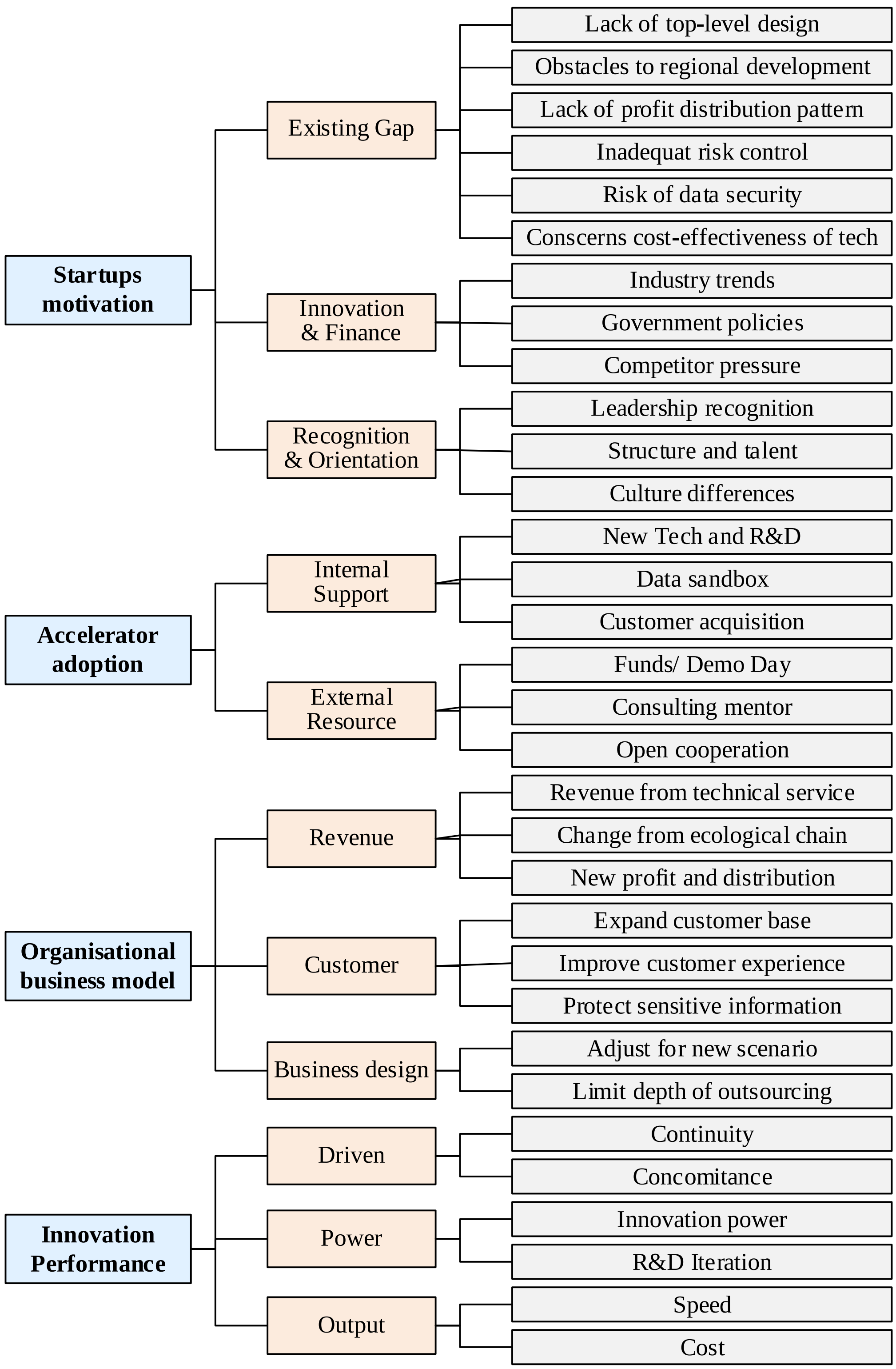
- Since your startup company is developing, your business model may not happen overnight: What would be the significant barriers for an insurance company looking to buy your products or equivalent products from other InsurTech startups?
- What benefits do you think the accelerator might have for your startup?

6.4 Coding Process

Three stages of coding were conducted: open coding, systemic coding and theme identification (Edwards-Jones, 2014). Open coding applies keyword labels to interview transcripts. At least one code is labelled for each interviewee's response to a question, providing at least ten codes were used in each interview transcript. The packages of initial codes were then converted to nodes and mapped to the main variables of this study. Themes were derived for further analysis if relevant to qualitative and quantitative studies, while codes irrelevant to specific variables were placed into a single 'other' category. Describing, categorising, classifying, and mapping the codes was conducted mainly in NVivo 12. They used the coding process to describe the setting, people, and themes for analysis. NVivo (Halcomb et al., 2014) and Maxqda (Guetterman et al., 2015) have been used. Considering the broad adoption of NVivo in accelerator research (Lange, 2018) and InsurTech study (Stoeckli et al., 2018), this study selected NVivo as a tool to support and document the qualitative analysis. In the qualitative research, interviews were used to collect data coded in three levels, shown in Figure 31.

Figure 31

Three-level Coding of Interviews



The coding process employs vivid descriptions of the setting, people, and categories or themes for analysis. Its significance in our research is that it directly contributes to achieving the research goals and provided a comprehensive understanding of the subject matter and the research context.

NVivo (Halcomb et al., 2014) and Maxqda (Guetterman et al., 2015) have been commonly used. Considering the broad adoption of NVivo in accelerator research (Lange, 2018) and InsurTech study (Stoeckli et al., 2018), this study selected NVivo for the qualitative analysis, a decision based on its widespread use in similar studies.

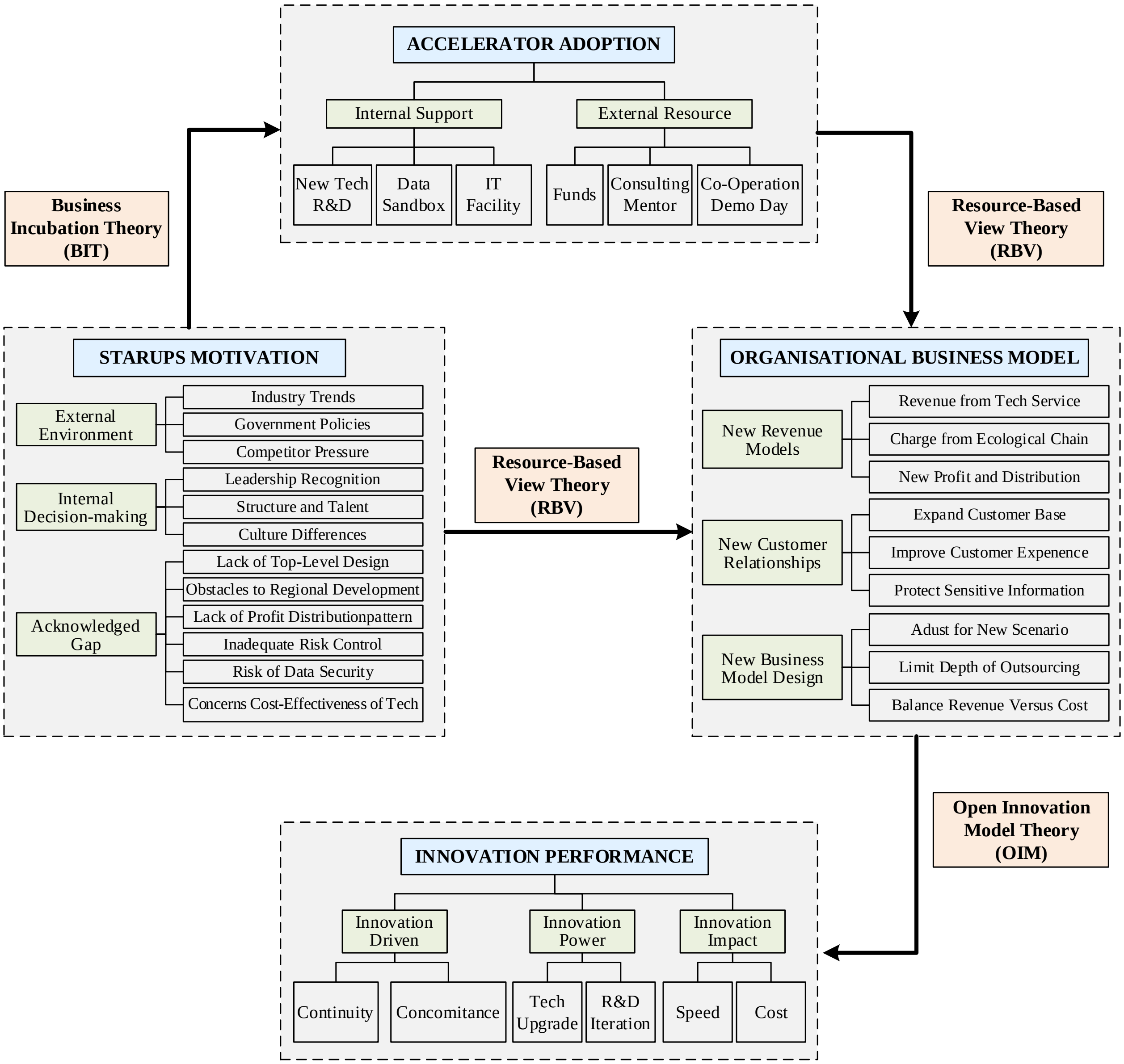
Three stages of coding were conducted: open coding, systemic coding and theme identification (Edwards-Jones, 2014). Open coding applies keyword labels to interview transcripts. At least one code is labelled for each interviewee’s response to a question, providing at least ten codes were used in each interview transcript. The packages of initial codes were then converted to nodes and mapped to the main variables of this study. Themes were derived for further analysis if relevant to qualitative and quantitative studies, while codes irrelevant to specific variables were placed into a single ‘other’ category. Describing, categorising, classifying, and mapping the codes was conducted thoroughly and precisely, mainly in NVivo 12.

6.5 Data Analysis

Figure 32 presents a comprehensive qualitative study reflecting specific characteristics learned from our extensive literature review. This thorough approach ensures that our findings are well-informed and provide a deep understanding of the subject matter.

Figure 32

Factors Underpinning the Qualitative Study



6.5.1 Gap Analysis between China Insurer and Technology Startups

This section discusses development barriers and InsurTech startups' challenges as they innovate and grow. This section was subdivided into five critical areas of concern. First, the lack of top-level design highlights the potential pitfalls of underestimating the implications of new technologies on various business processes. Second, regional development explores how local operational habits and regulatory landscapes impede progress. Third, the lack of long-term solutions discusses how short-term thinking can hinder sustained growth. Fourth, unpreparedness for risk control points to the importance of risk management, especially when navigating new and uncharted territories. The final barrier relates to the cost-effectiveness of technological investments.

The primary gap identified is the perceived lack of top-level design and the underestimation of the impact of new technology applications on other business processes. The interviewees consistently stressed the crucial role of top-level design and management focus in successfully integrating InsurTech into the business model. They highlighted that there may be obstacles to the effective implementation of innovative solutions without sufficient priority given by senior executives, particularly the top executive and CFO.

This finding highlights the necessity of senior leadership buy-in and strategic direction for successful InsurTech implementation. It supports the fundamental argument that one critical factor in making InsurTech work is the lack of top-level design and the tendency to underestimate the impact of new technology applications on other business processes.

Insufficient focus or strategic direction from senior management can lead to a lack of resources or misalignment between InsurTech initiatives and broader business goals. Furthermore, underestimating the wider implications of new technology applications can lead to ineffective integration and potentially disrupt existing processes. Therefore, a clear strategic vision, a comprehensive understanding of technology implications, and concerted support from senior leadership are beneficial and essential for overall business optimisation with InsurTech.

Leadership is critical to business strategy: Leaders must judge the risks of adopting new technology early. New technology might make many practices obsolete or require many to be rebuilt. The cost of these changes could be prohibitive if not planned for. If there are disagreements among senior management during the process, that can exacerbate the problem.

The second gap concerns obstacles to regional development. Some technology business models may not achieve the expected results if they are immature. While technology may assist human operators, relying entirely on machines comes with certain risks.

Significant process changes can lead to resistance for a large insurance institution with regional outlets. Therefore, the most suitable initial applications for InsurTech are in services aimed at solving specific pain points in existing processes or management mechanisms. It is essential to anticipate barriers between subsidiaries and branches within larger organisations and to emphasise that integrated operations must share benefits for all, fostering a sense of collective effort and inclusion.

Therefore, it is vital to establish an organisational structure supportive of InsurTech, including roles responsible for digital initiatives, clear and measurable objectives, and a plan for managing the change at all levels of the organisation. This can include training and support to help employees adapt to new technologies and processes, thereby ensuring the effective implementation and success of InsurTech initiatives. Traditional insurance companies are inherently risk-averse industries with established, traditional institutional mechanisms. They are also highly committed to risk management and prevention, which can slow down insurance technology innovation.

Another crucial factor influencing the successful implementation of InsurTech is the shifting landscape of interests within the insurance sector. As InsurTech signifies a redefinition of the traditional insurance value chain, it naturally induces disruptions and challenges in both the conventional insurance sector and its upstream and downstream segments. However, it also opens up new opportunities and potential benefits that can reshape the industry.

The traditional insurance industry is inherently conservative and risk-averse, with institutional mechanisms firmly rooted in established business methods. High-risk management and prevention standards, an integral part of the industry's fabric, can seem at odds with insurance technology's agile, innovative, and iterative nature. Indeed, the interviewee points out the difficulty of fostering innovation and iterative improvements within these conventional mechanisms.

Hence, to successfully implement InsurTech, companies must navigate these challenges, finding ways to integrate innovation while maintaining rigorous risk management. This requires a delicate balancing act, encouraging a culture of innovation and flexibility without compromising the industry's need for stability and caution. Recognising and addressing this issue is crucial to bridging the divide between traditional insurance practices and the innovative possibilities of InsurTech.

Several factors can obstruct the application of InsurTech: There are some barriers between headquarters and local branches.

- First, it is crucial to recognise that while technology implementation can offer significant benefits from the headquarters' perspective, it could also pose challenges for a small unit’s operator. The potential increase in workload and the subjective perception of this change could hinder the widespread adoption of technology.

- Second, it is essential to appreciate the diversity of our workforce, which spans various age groups. This diversity is not just a fact but a source of unique perspectives and responses to learning new technology, enriching our approach to technology adoption.
- Third, the success of streamlining cooperation within the insurance group is in our hands. It depends on two core issues: the effective combination of people and technology and the crucial role of the group’s executives in providing the necessary support. This underscores our collective responsibility and power to shape the group’s future.

The third gap is the lack of a long-term talent mechanism. This deficiency, primarily attributed to the scarcity of professionals with a comprehensive understanding of insurance and technology, is a significant challenge. Establishing mechanisms that attract specific talents, defining appropriate career pathways, and implementing project structures that align with their interests and skills is crucial and needs to be addressed urgently.

From the customer’s point of view, insurance is not only about price and quality competition but also about quality service competition. High-quality customers’ discerning needs and expectations drive the industry’s focus on service quality. They can expect better claims experiences, lower premiums, and superior services from top industrial professionals. The successful implementation of future InsurTech projects could drive organisational restructuring and attract new talents, whether they resemble new models or traditional hierarchical forms, ushering in an exciting era of growth and change.

The fourth gap is inadequate risk control. An insurance company is inherently a risk management organisation. Implementing radical technologies is often only aimed at solving specific problems. However, technology can supply broad solutions to problems or suggest new directions for the industry. New products can quickly generate premiums. In such new scenarios, there is an increase in risk, which may be challenging to control. However, it is crucial to remember that the law of large numbers still governs insurance, providing a stable foundation for the industry. This mindfulness about the industry's fundamentals is critical, especially as new products with a short history due to rapid premium rises are introduced.

Mounting concerns relate to underwriting risks within the context of InsurTech's rapid development. They note that new insurance products and scenarios, spurred by technology innovation, introduce risks that may not be initially comprehended within traditional insurance frameworks. However, the rapid growth of emergent insurance products like million-dollar medical coverage and loan assistance insurance, which have shown quick premium growth, also presents opportunities for the industry to expand and evolve. This underscores the urgency of understanding and managing these new risks.

The traditional insurance industry operates under the law of large numbers, relying on a substantial history of claims to price and control risks. However, with these newer products, there is a paradox: fast premium growth coupled with a short history and limited claims data makes risk management a formidable challenge.

Adding another layer to this complexity is the industry's transition towards greater reliance on data analysis and intelligent systems for underwriting, pricing, and claims settlement. While this shift enhances operational efficiency, it simultaneously undermines human decision-making input. Furthermore, dependence on centralised data platforms, especially those controlled by third-party InsurTech companies, presents a risk to traditional insurers who could lose control over pricing and claims settlement.

As the industry embraces InsurTech, it must also strengthen its risk management capabilities. This is especially true considering the unique challenges of new insurance products and the increased reliance on technology for critical decision-making processes. Embracing the potential of InsurTech and balancing it with robust risk control measures is crucial for the industry's successful evolution, inspiring us with the exciting possibilities of this necessary change.

- ***Gap between solving immediate problems and driving industry reform.*** There is a lack of suitable mechanisms and a shortage of talent. Comprehensive talents who understand both insurance and technology are scarce in the industry. What kind of mechanism will attract these talents, match their career path, and attract them through what sort of project system and structure? It is difficult for the regulatory authority to change the rules. What they previously allowed, they now prohibit, and it is a big challenge to predict what will be allowed or prohibited in the future. However, many regulatory departments will examine how mature international markets protect and constrain insurance financial institutions for reference logic.
- ***The difficulty stemming from the insurance company's operating system.*** An insurance company is a risk management institution, so the existing model does not adopt a trial-and-error attitude to organisational change. This makes it challenging to introduce new technology. If decision-makers make unsuccessful changes, they will likely face the risk of unemployment and liability.

The fifth gap is the risk of data security. Data security is a complex issue, especially in the current context. Implementing new technologies can be risky if it leads to the creation of data that is not securely managed and subject to strict regulations. The proliferation of big data and advanced methods of gathering customer information raises concerns about potential breaches of customer privacy. While technology holds promise, it may inadvertently breach certain legal and regulatory grey areas. It is crucial to emphasise that these risks become even more significant without regulatory support.

Regulatory agencies have taken a firm stance on data policies, especially in cases of illegal misappropriation and trading of user data. In this context, obtaining authorisation, including purchasing data from telecommunications companies, plays a crucial role. It involves signing agreements from a compliance perspective and assigning responsibilities to ensure data security.

Smaller insurance companies are grappling with unique challenges in the context of InsurTech implementation. Their reliance on third-party technology companies for critical processes, such as claims management, underwriting, and pricing, presents a significant hurdle in their journey towards digital transformation.

- First, this dependency risks eroding their internal capabilities in these critical processes. By outsourcing these functions, companies could find themselves with diminished internal expertise, leading to potential service delays, increased errors, and a loss of competitive edge. This could prove detrimental in the long run, as these are core competencies of any insurance provider.
- Second, and more prominently, is the issue of data security. The necessity to share data with third parties opens a potential Pandora’s box of security threats, including data breaches and leakage. It also brings up the issue of control over proprietary information. In an industry where data is a primary asset, the potential loss of control over it can have far-reaching implications, sparking concern among decision-makers.

- Moreover, future data control and security uncertainties further compound these risks. As data becomes increasingly integral to the insurance process, particularly with the application of big data analytics and AI in decision-making, these concerns become even more pressing.

Consequently, data security emerges as a significant barrier to the development of InsurTech, particularly for smaller insurance companies. As the industry advances towards a tech-centric future, these companies must carefully evaluate partnerships with technology providers and ensure robust data protection measures to guard against potential threats. This proactive approach to data security is essential for these companies to leverage the benefits of InsurTech while fully mitigating associated risks.

The sixth gap concerns the cost-effectiveness of technological investments. Technological investments need to be assessed in terms of cost-effectiveness. If a solution is helpful to the demanders but is not deemed essential or urgent by the operators, its implementation becomes problematic.

- The first difficulty is a lack of prioritisation. A technology might be helpful to just one or two people within an organisation, improving their efficiency and reducing their labour costs. However, it is unlikely to be necessary for broader company operators.
- The second difficulty is time misalignment. The problem occurs before the benefits, and the benefits may slowly become apparent. Technological investment is cyclical, and often, it is not hard to show results in the early stages. Balancing short-term effectiveness with long-term benefits is problematic for decision-makers.
- The third difficulty is measuring the input-output ratio. The promotion of technology often involves a significant investment. Hardware equipment, software development, and

later maintenance costs are substantial, and it is common for additional investments to be added to the initial investment later.

- The fourth difficulty lies in the lack of practical exemplars. Using new technology in traditional enterprises requires a particular process, and most of the innovations produced by startups cannot be verified or show successful case studies. Therefore, it needs to have benchmarked cases.

6.5.2 In-depth Analysis of Startup Motivation

This section reports on the multifaceted motivations driving InsurTech startups, capturing a panoramic view of internal and external forces that shape this growing industry. At the core, the initial driving force of the organisation context explores the intricate interplay between high-level management decisions, organisational structure, talent recruitment, and demand-driven innovation, laying out the fundamental internal mechanisms that fuel the startup's growth. Next, with the context of external factors, attention turns to industry trends, such as government regulations, the competitive landscape, and customer feedback, which shape InsurTech initiatives, acting as both external catalysts and constraining forces. Together, these sections weave a narrative of the complex motivations steering InsurTech startups, offering a profound and nuanced understanding of what propels their journey in the rapidly evolving digital insurance space.

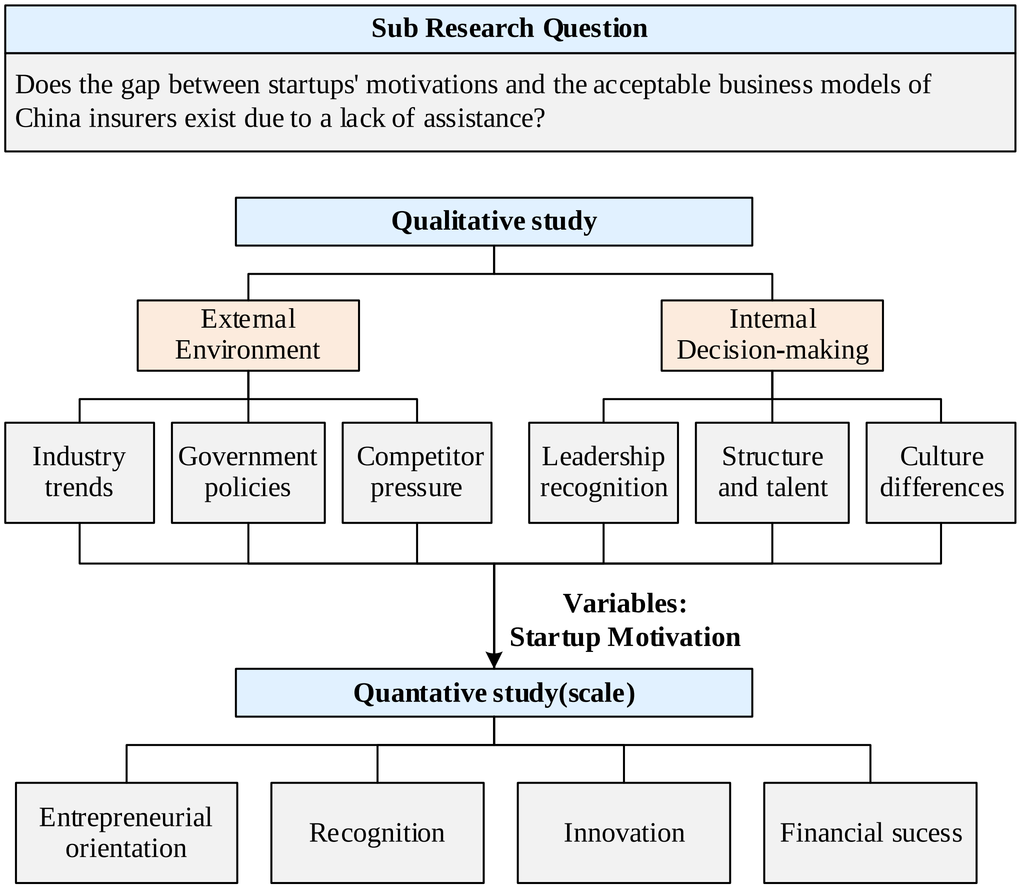
The historical trajectory of InsurTech has evolved through several stages: electrification, digitisation, and artificial intelligence. First, the early stage primarily involved the shift from offline paperwork to online documentation. Second, from 2008 to 2020, InsurTech was used to digitise the insurance industry, focusing mainly on integrating operations across the insurance value chain to reduce costs and increase efficiency. The third stage, the future, is intelligence, where integrating InsurTech accelerators with large Internet enterprises is possible. This creates or identifies new insurance risks, thus requiring the invention of new insurance sales modes and new claims methods. Novel insurance requirements were born from the increasing intelligence of InsurTech and the continuous evolution of major internet firms and digital technology.

> *For example, On the underwriting end, provision of policy entry, policy screening, or intelligent risk control; On the sales end, centred on how to sell insurance better; On the claims end, it reduces claim costs and improves claim efficiency through the application of InsurTech. On the service end, it enhances customer experience by applying InsurTech services. (Interviewee 001)*

Therefore, from a future perspective, there will be innovations in product sales and categories, and insurance has increasingly integrated into different human and internet scenarios, causing transformations in the entire underwriting and claim process.

Figure 33

In-depth Discussion of Startup's Motivation from Quantitative Results



For external environment, this leads to examining the many influences outside the organisational boundaries that profoundly impact InsurTech startups. This section can be divided into three subsections: industry trends and government policies, including macroeconomic indicators and regulatory frameworks that guide the strategies and compliances of InsurTech entities. These create both opportunities and challenges that startups must navigate with strategic decision-making. Second, competitive pressure dominates the insurance industry and even other types of business. This competitive landscape demands constant innovation and strategic positioning. Lastly, customer feedback and experience emphasise the importance of a user-centric business approach. This subsection underscores the importance of enhancing the customer journey, whether at the purchasing stage, the underwriting process, or streamlining claims management. Keeping the customer's needs and experiences at the forefront impels startups to innovate and evolve continuously. These external factors form a complex web that InsurTech startups must understand and adapt to as they strive to find their place and succeed in today's dynamic marketplace.

The first discussion about the external environment is industry trends. When the industry is under significant pressure, it forces change and significantly impacts innovation. The primary focus in such situations is on acquiring premiums through product sales, often leaving little time and energy for innovation. Even in cases where innovation occurs, it is primarily aimed at increasing premium revenue and reducing claims costs. Only during prosperous stages of industry development were more resources allocated to insurance technology innovation.

> *Around 2015, in China, the entire insurance industry was in a phase of platform ascension; both large and small insurers established innovative technology organisations. However, in the past two years, the industry has shown remarkable resilience despite the decreased enthusiasm of external investment funds. Insurers have managed to navigate challenges with limited time, energy, and resources to support innovation. (Interviewee 001)*

This interview quote clearly illustrates that the insurance industry's cyclical nature impacts InsurTech development. Despite significant industry pressure, insurance companies demonstrate adaptability by focusing primarily on product sales to generate premiums, leaving little capacity for innovation. When innovation does occur under these circumstances, it is typically geared towards immediate business needs such as increasing revenue or reducing claims costs.

On the other hand, during prosperous phases of industry development, there is more room for investing time, energy, and resources in InsurTech innovation. The quote below refers to 2015 in China when large insurance companies and smaller InsurTech enterprises established innovative organisations during a more favourable industry climate.

In the past, the demand for the insurance industry was more for risk protection. Still, it must be better integrated into the social governance system and assist government and social management. (Interviewee 005)

However, enthusiasm for InsurTech appears to be influenced by external factors, such as the overall industry trend and the availability of external investment. In periods when these factors were less favourable, InsurTech development suffered. This ties into the critical point regarding the role of external factors like industry trends or government policies in promoting InsurTech. The interviews demonstrate that these external factors significantly influence the extent and direction of InsurTech innovation within insurance companies.

Therefore, insurance services need to be front-loaded, and traditional service upgrades were not enough to achieve this. They require digital or informational assistance.

The current China insurance market still has a long way to go. The changes are more thunderous in sound than the traditional methods still being used. Most changes lean more towards IT-based management or merely old wine in new bottles. (Interviewee 017)

InsurTech can be divided into several sub-sectors:

Internet insurers' business models and management philosophies are significantly different from traditional companies in terms of technological investment; precision *product providers provide product and R&D; 2C direct-to-customer companies provide price comparison platforms, product design, customer service, etc., directly to customers; 2A companies offer tools for agents. (Interviewee 026)*

InsurTech's sphere of operation is all-encompassing, spanning three primary structural levels: strategic, business, and back-end support. It optimises front-end marketing and customer management, mid-tier operations and product design, and back-end compliance, finance, and investment. Back-end support relies on technology, including branding, ecosystem construction, product innovation, customer experience, differentiation, and cost optimisation. InsurTech has become integral to every aspect of an insurance company's operations — its influence is pervasive, touching every area.

For instance, a financial service company serving as an incubator for an ultra-large insurer is actively involved in a technological innovation project. The 'CAR SERVICE' project is vital for post-service car management. How do we measure its success? We look at cost control, project conversion effectiveness, and coverage and penetration rates. (Interviewee 027)

The second discussion is that the external environment affects government policies. The whole country is undergoing digital transformation and technological empowerment. The entire insurance industry is involved in the country's social governance and the construction of smart cities and countries. The external environment or impact has brought about a new understanding of the importance of insurance technology and increased the need for investment.

For example, in agricultural insurance, everyone uses technological means to improve the accuracy of underwriting and claims and meet regulatory requirements. (Interviewee 009)

In conclusion, this analysis reveals that the successful implementation and development of InsurTech in insurance companies is not solely a function of internal company factors. External factors, including industry trends and governmental policies, were critical to creating an environment conducive to InsurTech innovation and growth. These conditions must be favourable to allow insurance companies to dedicate the time, energy, and resources to support innovative initiatives. However, technology is now an indispensable element integrated into the lifeblood of the insurance industry, reflecting the present era as one of fast technological development.

The third discussion about the external environment concerns competitor pressure, including the insurance industry and other business formats. The application cycle of innovation achievements is relatively long, and insurance companies face significant overall profitability pressures. Insurance companies must prioritise innovation in their high-level business strategies, even if it means generating premiums is not the sole focus. Combining technology with marketing strategies is necessary to increase innovation and stay competitive.

Competition from rivals is expected, particularly in property insurance, which is the core segment of insurance companies. Whether in terms of investment or underwriting, insurance companies were increasingly incorporating insurance technology or adopting new customer acquisition methods. This may significantly impact traditional insurance companies' direct customer recruitment. On the claims side, as insurance companies improve their claims processes, reduce losses, and enhance anti-fraud measures, they may face challenges in controlling claims costs and maintaining profitability.

However, on the positive side, if there is an open mindset and collaboration between the insurance technology industry and established players, such as insurance accelerators, when solutions were developed in conjunction with insurance companies' scenarios, they can be widely promoted throughout the industry, thereby improving overall efficiency. This, in turn, can influence the industry, especially the top four insurance conglomerates, to drive industry-wide profitability, bringing hope for a more efficient future.

> *Through the transformation of underwriting and claims processes, truly high-quality insurance companies will stand out. Companies with a vast network of grassroots branches, strong service capabilities, and a comprehensive, cutting-edge application of technology will demonstrate their differentiated advantages in underwriting. This creates pressure and motivation for other players in the industry to enhance their abilities and compete effectively. (Interviewee 001)*

The quote touches on an essential aspect of the insurance industry's operational dynamics: a continuous cycle of innovation achievements and stable profitability. However, this constant demand for generating premium income in the face of competitive pressure from industry peers means that incorporating innovative strategies and practices may often take a back seat.

This tendency could be due to the perception of digital innovation, particularly InsurTech, as a long-term investment with a prolonged gestation period before visible returns. Given the competitive landscape and profitability pressures, insurance companies may focus on immediate business priorities that directly contribute to premium generation rather than long-term strategic investments in innovation. In an industry facing high competition, the attention is more likely to lean towards immediate profitability than building a future-facing, technology-driven strategy.

However, an opportunity exists to overcome this challenge: integrating innovation with marketing strategies. This could mean utilising InsurTech not only as a back-end efficiency enhancer but also as a front-end tool for marketing and customer engagement, which can, in turn, support premium generation.

The key point, therefore, aligns well with the quote, suggesting that while competitive pressure within the insurance industry can hamper the focus on InsurTech, there is a strategic advantage to be gained in coupling innovative and marketing strategies. By leveraging InsurTech as part of their marketing efforts, insurance companies could mitigate competitive pressure, boost immediate business objectives, and simultaneously lie the foundation for a technology-driven future.

Competition in the same industry. After entering the e-commerce era, some insurance businesses' core competitivity has been affected, with their thoughts shifting to sales, risk control, claims, and the internalisation of product innovation within the firm. The trend in the insurance industry has been to move from risk management to risk reduction. Therefore, major insurance companies worldwide started their digital transformation, anticipating this change. For example, it is now challenging to work seamlessly in foreign and domestic financial markets; the resources are constrained by legislation, the market is often closed, and the models in each region were inconsistent. Domestic enterprises must seek to find a new balance in international dealings. Faced with some who were more proactive in adapting or trying new business structures, some companies will wait and see. However, establishing a separate technology company can make the leading company's risk control policy more agile. Some internet insurance companies and joint-stock insurance companies were leaders in terms of technology strength and investment. A good tech company needs to integrate broad thinking and rigorous action.

For example, urban insurance, a pioneer in inclusive health insurance, has set a benchmark for model innovation and development in the insurance technology sector. Its leadership role is a testament to its success. (Interviewee 008)

For example, technological advancements, such as intelligent diagnosis and drug delivery, are reshaping the health insurance and life insurance industry, opening up new business models and occupying new high grounds. (Interviewee 004)

Competition across industries. Competition within the industry is generally manageable, and future trends can be predicted. However, predicting potential competitors outside the industry, such as tech giants, is difficult. Those who often disrupt the entire industry tend to come from outside.

For instance, Alipay entered the third-party payment field and gradually transformed from an e-commerce company into a financial group with a complete licence. The speed and scale of its development are both astonishing. It is important to note that payment has financial attributes, meaning that once customers open a payment account, they will not quickly abandon it. (Interviewee 022)

For internal decision making, for a technology to truly take root, it must find a specific demand-driven scenario. The more closely it aligns with this, the stronger its vitality. Management must be willing to support it with data and experience. They also need a prepared structure and team relevant support teams.

From the multifaceted viewpoint of internal dynamics, three elements need to be emphasised: First is the role of top management, where high-level needs and goals were effectively channelled from the top of the hierarchy down to every level. Second, the structural and HR components can align as the backbone for innovative operations. Third, cultural differences between the different levels of the corporation should be minimised. Collectively, these components present a well-rounded view of the internal motivations and structures that were paramount in shaping the success trajectory of InsurTech startups.

The first discussion about decision-making is that leadership recognition is paramount. Top management's identification and pivotal role must be transmitted from top to bottom, specifically the CEO's role in spearheading digital transformation within the industry. Leadership recognition and strategic intervention go hand in hand, especially within digital commerce. The successful execution of digital initiatives demands more than just implementing new technologies; it requires a practical top-down approach.

> *High-level recognition is crucial. The CEO needs to prioritise from a strategic height. Many companies, such as McKinsey and PricewaterhouseCoopers, have mentioned the concept of 'digital commerce'. This concept emphasises the recognition of top executives. It is of utmost importance that the CEO takes the lead in acting as a digital pioneer. (Interviewee 001)*

This argument is especially salient in the context of insurance. The success of these companies in the digital landscape is significantly influenced by the actions and decisions of their top management. Endorsement from these leaders is not only a matter of providing resources or approval for digital projects. More importantly, it is about setting the strategic direction, establishing a digital culture, and leading by example as a digital pioneer.

Without active participation and sincere commitment from top leadership, especially the CEO, even the most promising InsurTech ventures could be hampered in their pursuit of digital transformation. The CEO's role in providing strategic vision, setting the tone, and ensuring the entire organisation's alignment cannot be overstated. Hence, for an InsurTech company to flourish, it needs the active involvement of its top management in all its digital endeavours.

The promotion of new projects within an organisation should follow a top-down process. Regarding top-level design, senior management should possess a clear understanding, a strong sense of urgency, and the determination to implement new projects. Later, during actual operations, when the foundation of an InsurTech is solid, others will gradually see market opportunities and add thoughtful ideas. Corporate leaders must formulate strategies to leverage forward-looking trends and developments, especially those InsurTech presents.

> *For example, two repair shops in Guangdong province welcomed InsurTech technologies to enhance their productivity and efficiency. They readily accepted the InsurTech management platform tailored for repair shops. Another example is a branch company whose manager came from the headquarters with progressive ideas and smooth communication. (Interviewee 012)*

In summary, the leaders' awareness of change and determination to embrace it was paramount. Although teams may have varying capabilities, the leader's vision is the starting point for all endeavours. These were like seeds—given time, cultivation, and fertilisation, these seeds will yield bountiful fruits. Therefore, it is critically important to understand the kind of company one wishes to establish. This is a crucial concern for investors at the inception of a venture. If the seed is good, the internal factors were correct, and the capital is sufficient, the seed will grow as initially envisioned.

However, the perception of leaders in large corporations is relatively outdated. Future development could be better if the organic integration of insurance and technology could be combined with the government's digitalisation plans. (Interviewee 023)

The second discussion about decision-making is the need to prepare the internal structure and attract talent. This is usually managed by establishing a chief data officer (CDO) role or equivalent and assigning high status to that role. In practice, these CDOs or equivalent roles were often assigned to the existing chief information officers (CIOs), exemplifying a belief in using existing knowledge and expertise within an organisation to lead the digital transformation. However, the change in job title to CDO also signifies a shift in the CIO's role from merely overseeing IT infrastructure to leading strategic data-driven initiatives. Weak organisational governance in this respect will lead to a dearth of professional expertise, making implementing new technology challenging.

A systematic organisational structure can link the board of directors to the management level to ensure project initiation. The board of directors should be the first to consider strategic factors. Problems may arise if InsurTech and the core insurance business operate separately. Consequently, if the strategic side of the core business is not linked intimately with InsurTech, it will not be able to drive InsurTech innovation, leading to continuous failures.

Boards of Directors should establish an InsurTech Strategic Management Committee within the board. This committee's duty would be to research the development trends of InsurTech and examine which aspects of the company can undergo adjustments and transformations. They would provide insightful proposals to the board. (Interviewee 001)

Moreover, companies must establish data-driven links to harness advanced technological resources outside their enterprises. This strategy ensures a continuous influx of innovative solutions and ideas that can be integrated into their operations. Methods such as incubation, investment, and project management may be adopted to facilitate the integration of these external technologies into their existing insurance framework.

Professional managers with substantial experience in insurance and Fintech strategy should be hired at the management level. InsurTech cutting-edge technologies can be introduced and integrated through incubation acceleration, investments, or project management.

> *Companies can better explore advanced technological elements from outside sources, such as Allianz, AIG, and AIA, from a perspective of advanced international practices, precisely positions such as CDO or established 'InsurTech Space'. (Interviewee 003)*

Professional managers should establish working groups related to InsurTech. Large organisations should form small, agile, efficient teams to promote technological innovation.

> *For example, traditional insurance groups or large financial groups usually have a top-down, layered structure. However, startups have many new, small, project-based teams that are better for testing. (Interviewee 001)*

The long-term preservation and use of professional talent can ensure InsurTech's long-term implementation, remembering that such innovation requires both digital and insurance expertise. While not forgetting the underlying risks to profitability, the project also needs to introduce internet-savvy talent.

People are the foundation of innovation, and only by integrating internet talents, insurance talents, and industry talents can progress be driven. (Interviewee 008)

However, InsurTech is a field that crosses borders. Tech personnel must understand the insurance industry’s needs, and insurance experts must also be prepared to accept technology. The industry lacks professional talent, although it has accumulated many professionals in the central business of insurance, which requires long-term experience and a comprehensive understanding of products, underwriting, claims, and customer service. One interviewee explained the issue.

Therefore, there is a natural lack of talent, particularly the composite talent that understands insurance and technology. The absence of intermediaries and platforms also affects the implementation time of technology. (Interviewee 027)

Only those who genuinely understand insurance and technology will focus strongly enough on product innovation. One of the significant reasons for the failure of InsurTech companies in recent years is that they saw the entrepreneurial opportunities in InsurTech but did not understand the insurance industry’s pain points. They undertook superficial profit-seeking activities and withdrew quickly when they encountered difficulties.

Some professionals from the insurance industry have also started their ventures. However, if the team lacks a specific role, in that case, their direction may be limited to what the team is currently proficient at, such as tool-type work, including helping agents manage policies, users, user stratification, user recommendations, and agent management. While this is valuable, it is somewhat superficial and easily replicated. (Interviewee 010)

A data-driven strategy requires deep collaboration between the company's CIO and CDO. The digital strategy for insurance needs to align highly with the company's business strategy. This alignment is critical to reaching a high level of consensus among the leadership and better promoting the deployment of InsurTech.

The third discussion related to decision-making is that cultural differences between headquarters and subsidiaries should be minimised. The insurance industry chain is very long, and if small startups attempt to develop InsurTech, they may encounter issues due to a lack of industrial context and resources. On the other hand, large insurance companies often have such extended chains that they fail to communicate appropriately with them. However, it is only through an open and connected approach, identifying the most painful points and pressing issues in the value chain, that advanced external technological concepts and solutions can be integrated. This fusion, combining the pain points to be addressed with external capabilities, can promote the implementation of InsurTech, as described by the interviewee below:

> *Many large insurers innovate for innovation's sake and may not solve substantial problems. If the accelerator could combine the pain points of large enterprises and problem-solving capabilities of small enterprises, it can be genuinely implementable. (Interviewee 001)*

Traditional companies do not necessarily represent backwardness, and startups do not always represent advancement. The key lies in the company's governance structure and cultural guidance. Accepting new business models and organisational change should not be an issue if these can be effectively communicated.

> *For example, some small startups have a relatively flat structure with a short decision-making process. This could make the feedback time for possible innovations more efficient and conducive to trial and error in technology and breakthroughs. (Interviewee 004)*

This statement underscores the shared challenges that both small startups and large insurance companies face when navigating the intricate and lengthy chain links of the insurance industry. Startups might lack the necessary industrial context and resources, while larger companies can struggle to identify an appropriate starting point. This highlights the inherent complexity of the insurance industry and the resulting difficulties in implementing technological innovations, such as InsurTech, within it.

The interview comment above suggests that the solution lies in an open and interconnected approach, incorporating technological innovations such as industry accelerators. InsurTech, with its potential to identify critical issues and pain points within the value chain, offers a reassuring solution. It goes beyond surface-level innovation to address issues more profoundly within the industry, providing a sense of security about its effectiveness.

The interview quote also underscores the importance of collaboration between large and small enterprises. By combining the resources and capabilities of large companies with the innovative, problem-solving approach of startups, more effective and applicable InsurTech solutions can be developed. This collaborative approach empowers the industry to drive technological progress, fostering a new culture that embraces technology and values open innovation.

Thus, this analysis highlights the importance of understanding the industry's specific challenges in the InsurTech industry. Companies must cultivate an organisational culture that aligns with and supports technology-driven development to work effectively. This involves collaborating across companies of different sizes and leveraging technology for problem-solving. Such understanding will ensure the industry's healthy progress and make everyone feel informed and knowledgeable about the industry's direction.

However, there is an apparent disparity between the insurance company's headquarters and branch offices. It is as if one is flying in the sky while the other is running on the ground. While the headquarters vigorously advance, the branches have their heads down to complete everyday tasks. The benefits of technology sometimes weaken at levels further down the hierarchy.

> *However, the headquarters are already speeding on the highway, while the subsidiaries still use more primitive methods. For instance, the subsidiary may only understand how junior technology replaces traditional manual work. The high level includes precise marketing through data analysis and end-to-end service in claims, and integrated applications are complex to implement. (Interviewee 027)*

Regarding corporate culture, the head office could be more proactive in designing and promoting systems to guide the company toward aligning with InsurTech trends.

> *The development vision of the company's culture should ideally be based on the needs of the next 3-5 years, which gives it more vitality and longevity. (Interviewee 010)*

In summary, interviews underscore the critical importance of aligning institutional structures, culture, and strategy with the goals of InsurTech innovation. This alignment is not just good practice but a necessity, as it ensures that actual business needs to drive their technology innovations and contribute effectively to the success of their overall business operations. Whether an organisation adopts a specific technology or model primarily originates from problem-oriented or demand-driven perspectives, as traditional models can be too costly or inefficient, as described by the interviewee below:

For example, cost control in health insurance has always been a challenge. Previous methods mainly relied on the workforce to synchronise data with bank documents. Especially when hospitals may have hundreds of thousands of types of medications, only data and system integration platforms can achieve precise differentiation of medications covered by medical insurance and prices accurately. (Interviewee 005)

InsurTech needs to support the triangular balance of three facets: cost, efficiency, and service. The industry will face explosive market demand in the future, which is where its value lies.

In the case of agricultural insurance, the traditional method was to rely on manual surveys and verification of land parcel information. Now, agricultural insurance relies more on GPS satellite navigation or drone models, which can accurately match plot information, underwriting information, and precise crop planting information, which is both efficient and accurate. (Interviewee 005)

Traditional insurance companies do not rely so heavily on technology, unlike new startups, which must start from scratch to research the market and figure out how to incorporate emerging technological advances. A significant lack of technological support within the company is often a constraint.

For instance, the internal user data platform still does not have a unified or complete data set. This means it must still use the original methods to collect relevant data from each *company when conducting IT construction or technology development. After data collection, manually clean the data before providing IT support. (Interviewee 007)*

In terms of their internal management needs, insurance companies have a wealth of data, many insurance agents, a variety of insurance types, and various sales channel partnerships, all of which require significant technological assistance to manage.

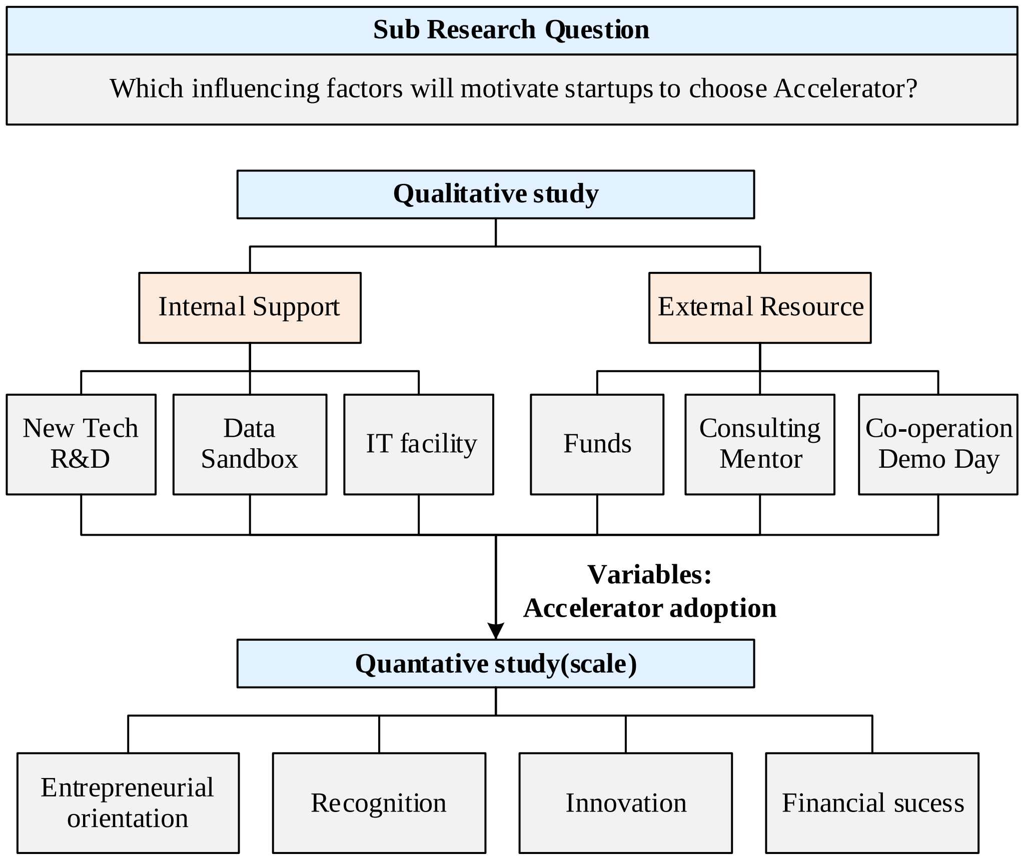
Insurance companies can streamline their five-level structure by integrating internal operations and management. Using technology to relay information swiftly up and down the chain allows for timely adjustments and resource allocations, enhancing market response speed. (Interviewee 017)

6.5.3 In-depth Analysis of Accelerator Adoption

This section turns to the adoption of InsurTech accelerators, focusing on two primary areas: First, there were internal factors, such as an R&D program handling the intricate relationship between adopting new technologies and aligning them with existing resources. Data sandbox tells us that technological innovation needs a natural testing environment to succeed in a highly competitive landscape. Next, accelerators act as incubators and experimentation grounds, vital for nurturing and testing new technology integration in business ideas with their associated IT facilities. The availability of external funding also represents financial scaffolding vital to startups’ growth and ongoing progress.

Figure 34

In-depth Discussion of Accelerator Adoption from Quantitative Results



The advance of InsurTech is inevitable, yet introducing accelerators involves disrupting the existing status quo, thereby adding complexity to the process. However, accelerators can provide a platform for small-scale experimentation, the successful iterations of which can be later scaled up and broadly implemented. This approach minimises risk and ensures the effective integration of technology in insurance. While implementing technological advancements, traditional business operations within companies may experience significant disruptions. Thus, a pivotal challenge lies in promoting technological development through readily accepted methods.

Identifying genuine pain points and leveraging specific scenarios to disrupt long-established industry models were crucial to driving transformation. Accelerators play a vital role in this process, as simply relying on insurance and technology companies to develop independently can be likened to a blind person touching an elephant. On the other hand, accelerators can address many of the challenges traditional enterprises face while helping startups effectively find their direction, thereby driving significant progress. Insurance technology accelerators can effectively address industry pain points and drive innovation by identifying and targeting deficiencies.

For Internal Support, the first discussion is that the accelerator can supply new tech R&D that is closely targeted to meet the insurance industry's needs. China's insurance market is in an early period of contraction or stabilisation. InsurTech is undoubtedly the future of insurance development, with its ability to reduce operational costs, improve efficiency, and enhance customer satisfaction.

> *The China market is still in its early stages, with excellent potential for future growth. Meanwhile, InsurTech accelerators are expected to have promising prospects. (Interviewee 009)*

Temporal, spatial, and cognitive disparities marked the traditional insurance industry. The temporal gap comes from investing in the collected premiums; the spatial disparity is the law of large numbers, and the cognitive disparity is a deeper understanding of risk pricing where the claim rate determines profits. In the future, embracing technology and cross-industry collaboration is necessary, eliminating barriers. Technological advances follow a process of continuous evolution and maturation, which require constant refinement during industry application.

For example, blockchain technology has passed the hype stage. As the market enters a phase of calmness, the technology will genuinely settle and mature by being applied in more scenarios and gaining insights from customers. (Interviewee 005)

Many technology startups excel in technology R&D but often lack a deep understanding of the insurance industry.

For example, if insurance does not participate in product research and development in new energy self-driving car insurance, it will be difficult for the product to meet policy requirements. (Interviewee 017)

Therefore, if technology companies want to achieve fundamental innovation within the insurance industry, they must understand insurance companies' needs, customise their products, be deeply involved in all aspects of the business chain, and carry out regular upgrades.

For example, the business scenarios of reinsurance companies are more complex than those of primary insurance companies, and they need to be more involved in the research and development of insurance technology products. (Interviewee 013)

Otherwise, constantly overhauling business processes, disrupting existing structures, and reorganising them are overwhelming challenges for insurance companies.

For example, centralised processing is the most efficient approach in the insurance underwriting business. Attempting to incorporate technology into this process for its sake would only increase costs and management complexities. (Interviewee 005)

From the perspective of insurance companies, their leaders were pragmatists. A large amount of investment will focus on how technology integration can adapt to specific insurance scenarios and how technology can reduce costs and improve efficiency rather than investing in the R&D of purely technical algorithms.

For instance, a successful collaboration with Baidu in AI model was trained in reinsurance and Optical Character Recognition (OCR) graphic recognition. (Interviewee 013)

Another interviewee mentions that AI technology makes detecting fraudulent cases possible and even pre-emptively avoiding them during the claim settlement.

For instance, a farmer might buy insurance for 1/2 pigs, leading to doubling the claim of payout rate. AI recognition is for each pig with ear tags, standardised feeding, testing and quarantine, entering the slaughterhouse, market sales, and ensuring that from birth to the consumer's table are standard traceable. (Interviewee 016)

Another interviewee explained that underwriting processes, such as Telematics-Based Assessment, can enhance operational efficiency and opportunities in health insurance through OCR technology.

For instance, in agricultural insurance, 'snap-to-weigh, snap-to-measure' technology for pig farming allows farmers to determine data by photographing a pig with a scale indicator, eliminating manual measurements. (Interviewee 009)

Some businesses, such as claims, no longer need to visit accident scenes for inspections: simple photo uploads enable claim recognition and completion, significantly enhancing efficiency.

For instance, in the case of freight insurance claims, photo intelligent analysis technology can determine the extent of goods loss, significantly saving costs and improving accuracy. (Interviewee 020)

In another example, image recognition technology allows for more precise data on previously ambiguous animal subjects.

By partnering with pet hospitals and iteratively refining data, risk can be further quantified and adverse selection can be prevented. (Interviewee 010)

For Internal Support, the second discussion is that the accelerator can provide internal support for data sandbox testing, uniquely establishing competitiveness. Technology startups lack data but need it more and more. Customer data, for example, is essential to insurance companies. Accelerators provide a proving ground for new ideas and solutions in that area. Establishing a data sandbox within a specified and relatively secure range could be used to verify and optimise the new customer data system. Accelerators provide a proving ground for new ideas and solutions. However, one interviewee points out a difficulty:

However, insurers may face resistance when sharing their data externally. First, utilising public data, even in a small region, would be preferable to understand its potential thoroughly. This approach may lower barriers. (Interviewee 020)

Large insurance companies prefer to host developed products on their servers to avoid data security issues and were hesitant to entrust critical functions to small companies.

For example, Chinese hospitals handle billions of outpatient visits yearly and lack the motivation to share data, especially considering privacy concerns. So, insurers help hospitals improve their rates through data analysis services. (Interviewee 005)

The accelerator should provide a testing bed. In the early stages of insurance technology development, many aspects rely on speculation and design, which may have limited demand and high uncertainty. Therefore, market matching and bridging were needed during the early acceleration phase.

Accelerators, akin to laboratories, provide an environment for trial and error on a smaller scale. By combining small-scale incubation, management typically accepts the transformation more readily. (Interviewee 001)

Accelerators must provide essential insurance resources. Startups need to access insurance companies' business scenarios to test the technology's maturity and the data's accuracy.

For example, an accelerator can provide startups with the number of subsidiaries of insurance companies that can cooperate, the number of orders received, etc. As the project develops, each business segment can be split to meet the requirements of all parties. (Interviewee 001)

For Internal Support, the third discussion is that an accelerator can provide internal support for customer acquisition and rapidly expanding market share. Traditional insurance companies could face disruption as InsurTech and novel customer acquisition methods gain traction. They may see their conventional customer acquisition models being challenged, and the increased emphasis on claims management could lead to a shift towards a greater focus on cost control.

For example, WeChat and Ant Financial have accumulated large amounts of data and can diversify risks based on the law of large numbers. By cooperating with licensed insurance companies, data can be interconnected to create a win-win situation and share benefits. (Interviewee 017)

In customer acquisition, startups greatly benefit from accelerators that reduce customer acquisition costs, such as improving customer acquisition frequency and breadth, directly impacting their business models. It would be even better if the accelerator could bring in potential orders.

For instance, a powerful technology in the industry called the big data risk control model helps insurance companies identify risks and develop pricing models. However, business development is relatively slow due to insufficient insurance customer resources. (Interviewee 002)

Customer acquisition and referrals were essential. If a company’s product is exceptional, having an accelerator to promote it and recommend it to customers is advantageous.

For External Resources, the first discussion is the three types of funds: mature capital investments, significant insurance company investments, and independent industry-driven investments. The China InsurTech market is worth hundreds of billions in investment and deserves significant attention. Regarding financial support, government capital will likely follow current trends and vigorously support innovation and entrepreneurship. Capital is allocated to startups with growth potential, attracting the integration of talents and technology and ultimately forming a value network.

> *Investment in insurance technology should be prioritised in areas that can promote actual business development without causing significant risks. (Interviewee 016)*

From the perspective of technology startups, external funding and accelerators enable them to leverage valuable resources that enable growth. Financial support is crucial to the survival of early-stage companies.

> *Take Waterdrop Insurance, for example; it started with an internet-based model and later introduced venture capital. This approach aligns more with the logic of business investment. (Interviewee 018)*

However, technology companies in their early stages do not need vast financing. They try to minimise their equity dilution and focus on quickly developing refined products.

> *For example, suppose a company is already well-formed and has 100% confidence in its product. In that case, it may not want excessive financial intervention that would result in equity dilution and a loss of decision-making power. Instead, it may seek a resource-intensive environment. (Interviewee 015)*

Accelerators typically work with companies in the early stages of development, aiming to help them grow. Business startups look the same as eggs; through the incubation process, they have the potential to hatch into chickens if things go badly and turn into spoiled eggs. Therefore, startups adopting accelerators will often have just a primary product and a certain number of sales.

The motivation of insurers has to be improved by holding the majority stake in startups to ensure that other large corporations do not acquire them. (Interviewee 006)

Accelerators need to be aligned with the market to drive growth and innovation. External funding for accelerators must be obtained from multiple sources, from different roles, and to create strategic alliances.

However, finding an accelerator that can provide resources, technology, guidance, and support is difficult, as the market is harsh and realistic without being perfect. (Interviewee 018)

Incubators need to provide startups with opportunities to showcase themselves. By organising InsurTech innovation competitions and providing platforms for showcasing promising projects with expert and financial evaluations, the ecosystem can grow and evolve from incubation to acceleration, investment, and the development of unicorns. This enables the integration of external projects.

Regular internal discussions and inviting insurance technology department heads from various industries for talks and exchanges can facilitate validation. (Interviewee 023)

For instance, insurance industry conferences serve as effective platforms for promoting the application of technology to various levels of decision-makers in important annual or monthly meetings and business lines. (Interviewee 012)

Currently, industrial accelerators fall into three main types: First, investors in significant funds support the entrepreneurship of small and medium-sized insurance startups. This then accelerates independent investment and incubation of large insurance companies. The second type is accelerators supported by third-party platforms in the industry. Moreover, the third type is directly sponsored by large insurance companies. The differences between these three:

- ***The first type of accelerator is a mature capital investment insurance industry accelerator that uses its brand to provide continuous financing capabilities.***

The endorsement of financial backers' brands and resources plays a significant role. In terms of the professionalism of the funding bodies, having accumulated experience in the insurance industry is an excellent way to incorporate financing along the industry value chain. Sometimes, the brand of the investors is more important than the funding, especially when it comes to subsequent rounds of financing.

> *This type of investment is becoming increasingly common, with significant brokers and investment funds like China International Capital Corporation (CICC), CITIC Securities, and Tianfeng Securities beginning to release many InsurTech research reports. (Interviewee 001)*

- ***The second type of accelerator is an insurance accelerator, which large insurance companies invest in as a testing ground for new technologies.***

On the one hand, startups need to coordinate the support of multiple resources, face the challenges of various restrictions, and seek to integrate additional resources to maximise profits. On the other hand, startups have the flexibility to make adjustments if their experiments fail, and if they succeed, insurance companies can invest further.

> *Funds can come from anywhere, but subsequent resources can usually only be obtained from large insurance companies. (Interviewee 015)*

Additionally, whenever incubation and empowerment are involved, the issue of who provides resources and how benefits are allocated becomes crucial. The most critical aspect of equity relationships is the sharing of interests between entrepreneurs and insurance companies. In the initial stages, having equity involvement from an insurance company can provide startups with more reassurance.

> *For example, startups have been integrated with company-led accelerators for a year, and various restrictions have made it difficult for startups to cooperate with other insurance companies. (Interviewee 012)*

The benefit of gradually introducing the accelerator into an insurance company is that it enables them to build a solid foundation and gain positive feedback before gradually expanding their reach. Accelerators must start with smaller, more precise, flexible, cost-effective projects. This approach is like investing in companies within a conglomerate, where strong ties to the core business are crucial. Accelerators combine the pain points of large enterprises with the problem-solving capabilities of small businesses to achieve genuinely effective innovation and ultimate success for InsurTech.

> *Establishing an accelerator by large companies can have drawbacks, as their tolerance for trial and error may not be as high. Implementing a more Westernised development approach through a socialised accelerator in China may face challenges and risks. (Interviewee 016)*

However, a big problem for insurance companies is that their decision-making chain is too long, and their relatively conservative decisions may affect marketisation. If an industry accelerator, backed by a large conglomerate, lacks an open attitude, this may deter small InsurTech companies and incubation projects from adopting it.

> *The advantage is the deeply integrated business scenario if the insurer holds the majority stake. However, the failure rates are very high, at 90%. (Interviewee 022)*

- ***The third type of accelerator is an industry-driven accelerator, which is independent and unrestricted.***

The insurance technology accelerator can aggregate insurance, technology, investment, government, and industrial ecological resources. As innovation strengthens, an incubator mechanism is needed to nurture it.

> *For instance, local industry associations or regulatory agencies in China, such as Sichuan and Ningbo, are leading the way in experimenting with the accelerator model. With the full support of local governments, these initiatives inspire a new wave of collaboration and innovation. (Interviewee 010)*

However, companies will find participating difficult if accelerators are set up without administrative authority.

> *Large insurers will be a burden in the long run, as others will not be willing to face data risk of control. (Interviewee 025)*

For External Resources, the second discussion is the need for consulting mentorship. To meet the needs of early startups, the mentoring team should consist of industry leaders in the relevant fields who have established good relationships or can be directly hired as mentors.

For example, a startup incubated for about a year may not receive financial support from enterprises, but the daily interactions and mentor support can be beneficial. (Interviewee 011)

The accelerator should have experienced experts in business strategy, including mentors with entrepreneurial experience, to provide valuable guidance and help startups avoid unnecessary detours.

The sharing of mentor experiences, guidance, and exchanges is precious. They cleared the path from the business model to market positioning, especially in the specific stage of development and future directions. (Interviewee 005)

Coaching and training are crucial. The accelerator can provide consulting and guidance during startups' strategic development processes, helping them avoid unnecessary detours by sharing experiences.

Moreover, large insurance companies that join an accelerator can benefit from interacting with industry mentors and sharing experiences with peers, including paying attention to seemingly insignificant business models of startup insurance companies, which may become the seeds of industry disruption. (Interviewee 003)

For External Resources, the third discussion is the need for cooperation. From the perspective of InsurTech startups, insurance technology innovation should adopt an open and collaborative approach. Using an accelerator, startups can collaborate long-term with other insurance companies, gaining insights into the most promising new products and services.

For example, in-home property insurance, on-site surveys, and cooperation with extended warranty platforms can address loss and damage assessment challenges. (Interviewee 011)

Through the accelerator platform, people inside and outside the industry can establish a common perspective that promotes stakeholder cooperation. Reaching consensus and taking steps to move the industry forward requires knowledge sharing and a level playing field of market information.

To enhance their expertise, accelerators must expand their development in more specialised fields, such as health insurance and retirement insurance. (Interviewee 004)

- ***From the perspective of insurers, they may lack the capacity to drive innovation from within and could benefit immensely from an open and collaborative approach.***

By forging partnerships with external small and medium-sized InsurTech enterprises, these conglomerates can tap into a rich vein of innovation that could transform the traditional insurance industry.

Some insurance companies may be unable to undertake innovation internally, thus necessitating open connections and collaborations with external small and medium-sized insurance technology enterprises. This cooperation is essential for achieving innovation in the traditional insurance industry. (Interviewee 001)

Truly high-quality insurance companies will stand out through their willingness to transform underwriting and claims processes. Companies with a vast network of grassroots branches, excellent service capabilities, and comprehensive application of technology will show their superiority in all underwriting processes.

By integrating InsurTech accelerators with industry scenarios, insurance companies can develop viable solutions that significantly enhance the industry's efficiency. By adopting an open attitude, large companies could drive the adoption of InsurTech across the sector, promoting industry-wide profitability.

> *Significant national companies are already investing in insurance technology; industry self-insurance companies, including Petro and Railway, whose businesses are concentrated within their shareholder industry chains; and regional insurance companies, which focus on regional characteristics. (Interviewee 017)*

The relationship between insurance companies and tech companies should be cooperative. Insurance companies are essential partners for tech companies because they must provide insurance policies. However, insurance companies are relatively coarse-grained, covering many types of businesses and various channels, making their systems and service models less flexible. At this point, InsurTech companies have an advantage because they operate on the market front end, and their technical applications are finer grained and flexible. Thus, forming deep partnerships can lead to stable business models, steady product output, and mutual dependency.

> *Therefore, establishing InsurTech accelerators that can incubate a more significant number of enterprises bridging insurance and technology is necessary. (Interviewee 028)*

- ***From the perspective of accelerators***, as relatively independent third-party entities, they play a crucial role in creating a platform for shared benefits, helping startups, insurance companies, and external partners to connect their resources from upstream to downstream.

In the broader context of modernising social governance, this approach fosters the collaboration of ecosystem partners, connecting them through a shared platform within the accelerator.

> *Suppose there is an open mindset, such as integrating insurance technology industry accelerators with scenarios provided by the Company, turning them into solvable solutions, and promoting the application and adoption of insurance technology across the entire industry. In that case, it can enhance the sector's efficiency. (Interviewee 001)*

In resource connectivity, an accelerator aims to create an ecosystem that benefits insurance and InsurTech firms. All parties can exchange valuable insights and expertise to promote the industry's joint development through sharing knowledge. Collaborating with external partners to build an industry platform ecosystem is crucial.

> *For instance, reinsurance companies can assist direct insurance companies in developing products, and after development, the products can be shared back with the reinsurance companies. (Interviewee 013)*

In conclusion, the key to leveraging InsurTech lies in recognising and embracing the role of external factors, specifically industry collaboration and interconnectivity. Insurance companies that balance competition with cooperation and keep an open mindset to external innovation will likely thrive in the evolving InsurTech landscape.

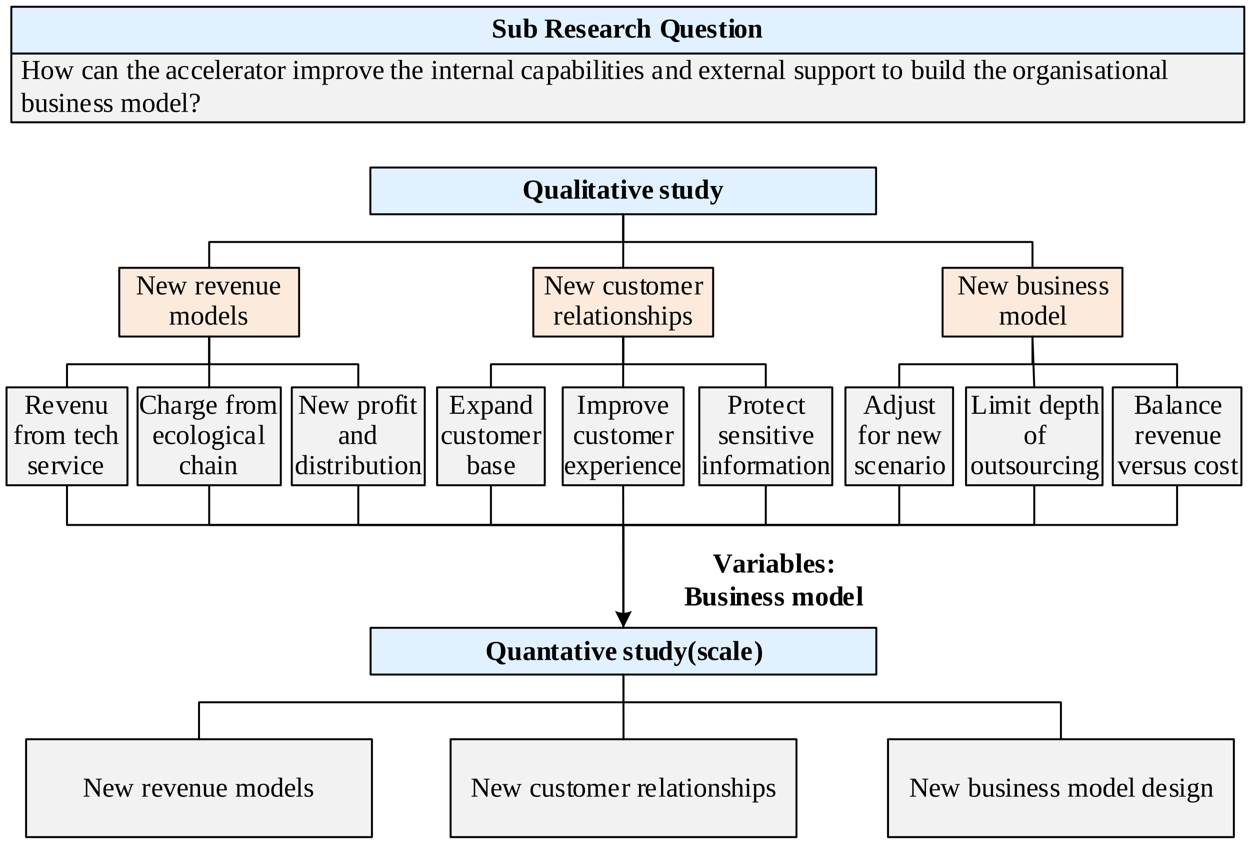
> *Incubation platforms have a future. InsurTech has a broad application space, and the time is good for encouraging innovation. (Interviewee 022)*

6.5.4 In-depth Analysis of Organisational Business Model

This section examines the organisational business model in the context of InsurTech startups. It discusses strategic considerations that shape and redefine the revenue streams, customer relationships, and overall design of a new business model within the industry. It first considers profit models in the ecosystem, offering insights into the delicate balance of cost and revenue. It then discusses ways for startups to broaden their customer bases, reach new economic markets, and handle sensitive information. Finally, it considers strategies for internal improvements, collaborations, and outsourcing. The business model serves as a conduit through which innovative ideas are transformed into tangible business practices, shaping how startups respond to market demands and technological advancements.

Figure 35

Quantitative Results for the Organisational Business Model



When startups introduce an accelerator, they tend to have an existing business model. Willingness to adjust the business model throughout the accelerator implementation process is vital.

> *For those startups that were not very clear at the beginning, they might find a new focal point in the acceleration process. (Interviewee 004) However, completely changing the business model can be pretty tricky. (Interviewee 028)*

For new revenue models, after adopting an accelerator, the startup's business model must be adjusted. By adjusting financial strategies, companies create revenue while controlling their operating costs. Their purpose is to reduce costs and improve efficiency, forming a new revenue and profit model for the company.

Taking claims settlement cases as an example, the average cost involving labour, site fees, and investigation fees is about 300 yuan. When an insurance company pays 10-20 employees to a technology platform, its cost will be reduced by 100 yuan, and the revenue model has also changed. (Interviewee 021)

The first discussion concerns how the revenue model may change with increased data services. Insurance is a collection of big data, and the insurance industry strongly correlates with big data and artificial intelligence. Especially in data mining and risk identification, it creates value for the company by extracting data. By fine-tuning product pricing and risk control models, the insurance industry will develop in a more sophisticated direction.

For example, in Guangdong, 100,000 cars enter a car repair shop every month. Through insurance technology, the repair shop collects vehicle dwell time and consumption data through cameras, provides it to the insurance company's back-end improved algorithm, and then tells the repair shop what to do. (Interviewee 012)

The second discussion is that technology may transform some companies from others in the ecological chain. Insurance pricing and actuarial calculations will change once additional data is included. Big data can also personalise insurance rates.

For example, InsurTech companies will change the profit point, and based on the recommendation of the insurance company, the repair shop can also make more profits

> *from other parts of the vehicle that need to be repaired in addition to insurance repairs. (Interviewee 021)*

The third discussion is that increased technology may create new profit points to distribute among the leading ecological chain bodies. For example, advanced risk identification techniques could create different insurance products. The new focus could be reducing claims costs and implementing risk prevention measures.

> *For example, the cost of measuring the damaged area was high in agricultural insurance claims. After InsurTech intervenes and incubates, insurance companies will calculate the compensation amount more accurately with the help of satellite, remote sensing data and technology. (Interviewee 006)*

New customer relationships, InsurTech accelerator platforms can increase the stickiness between customers and insurance companies. By converting platform users into insurance company customers, they can bring tangible benefits to insurance companies, thus strengthening the relationship between technology companies and insurance companies.

> *For example, a comprehensive service platform combined with insurance technology provides farmers with the service of purchasing seeds and fertilisers and delivering them to their doorsteps. This is a win-win solution that facilitates farmers and makes the sales process smoother. (Interviewee 009)*

The first discussion is expanding the customer base. Through big data, customer portraits can be accurately described, and risk control can be significantly improved. Big data helps to screen out high-quality customers and conduct precise marketing of profitable products, thereby increasing customer repurchase rates. At the same time, good customer service makes communication between enterprises and customers smoother, increasing customer retention rates.

> *The market in China is enormous, with a population of 1.4 billion, and a family needs many different insurances. However, the purchase and repurchase rate is not high. (Interviewee 024)*

Traditional marketing requires a lot of human resources for product sales, and differences in people will lead to differences in communication between salespeople and customers. Technical tools can solve the problem of standardisation very well.

> *For example, in sales, repetitive tasks such as initial information gathering can be solved through technology. Moreover, humans do the personalised work. Technology can help in terms of customer needs, cost-effectiveness and market dynamics (Interviewee 020)*

The iteration and widespread application of third-party payment technology could solve the payment link for the entire insurance claims business, making it easier to pay online for some insurance.

> *Take payment as an example. Among all the data involved in the industry chain, transaction data is the core. A new type of payment technology charges fees for information services of new solutions developed for specific business scenarios instead of traditional split-settlement transaction fees. (Interviewee 022)*

In terms of new product supply, the development of digital insurance technology solutions allows all processes, such as purchase, payment, information entry, and claims, to be completed in one transaction. This breakthrough enables insurance companies to offer many simple, complex policies. Very dispersed risks are transformed into small products, bringing greater returns. For InsurTech companies, catering to customer needs is paramount. Before developing a product, these companies must thoroughly understand their customers' needs, usually via collaborating insurance firms.

> *For example, purchasing accident insurance for taking a ferry, a long-distance bus, etc., requires a fixed policy of 3-5 yuan. Among them, sales, policy issuance, policy filing, collection, etc., add up to no profit. Online electronic insurance has no cost; the rest is profit so that more products will be provided to customers. (Interviewee 022)*

The second discussion is improving customer experience. In the future, the insurance industry will emphasise end-to-end digitisation, including scenario-based customisation of insurance products and intelligent insurance services.

> *For instance, the Usage-Based Insurance (UBI) vehicle risk pricing model. Installing a device can precisely measure driving behaviour data and price it accordingly. Simultaneously, when a claim occurs, claims can be efficient and significantly reduce losses. (Interviewee 004)*

In terms of insurance claims, after the incubation of InsurTech, insurance company customers can enjoy the entire claims process through online service. Many aspects of daily life are carried out through technology and mobile devices. Therefore, mobile platforms must also offer a personalised service to insurance customers.

> *Previously, claims required calling, showing up at the scene, submitting documents, going to a repair shop, and receiving payment. After intelligently settling claims, you only need to call to report the case and use self-service on your mobile phone. The customer service experience is better, and the loyalty to insurance companies is higher. (Interviewee 001)*

Regarding customer service, the accelerated insurance service process is closer to customer needs and genuinely sustainable. With the addition of technology, the granularity of risk identification by insurance companies has become increasingly refined, and insurance companies can improve more tailored services to achieve high customer satisfaction. Recently, the competition among insurance companies has shifted from competition on quality and price to competition on quality and customer service.

The third discussion is the importance of protecting sensitive information. Accelerators can provide enterprises with more customer information, often leading to more sales services. At the same time, insurance companies will also use this information to provide better services to customers. This will be a win-win result.

> *For example, with the customer's permission, personal information may be collected when 1,000 customers register at an auto repair shop. Seven hundreds of them are uninsured. Through recommendations, car owners can more easily be converted into customers of insurance companies. (Interviewee 012)*

Insurance companies usually determine prices for customers based on previously held data. For example, health insurance companies include the customer's past medical history, occupation, age, etc. After incubation through technological means, the previous fragments of information become more complete and thus better used by insurance companies.

For example, a state-owned health insurance company cooperates with an Internet platform to provide supplementary health and critical illness insurance to 40 million users. The platform offers giant data customer portraits and jointly builds risk control models with insurance companies. (Interviewee 008)

Secured business and consumer information is vital. To avoid data leakage, trials with a small sample and slow implementation of digitisation are necessary.

For instance, Tencent Health can provide comprehensive data about a customer's daily physical activities, screen time, social media interactions, payment habits, and even driving or walking routines. These granular insights allow companies to filter and identify valuable customers rapidly. (Interviewee 002)

Artificial intelligence can develop targeted solutions for identifying and processing sensitive data. At the same time, third parties participate in machine learning and continuously train data to improve the model's accuracy in customer data.

For example, medical insurance data is confidential and involves patients' basic information and cases. All data is now authenticated directly through technical tools. At the same time, medicines can automatically identify whether they are covered by medical insurance, allowing 24-hour quick claims settlement, significantly improving efficiency. (Interviewee 010)

New business model design. As a startup company, the first thing is to survive, and you should prepare several pathways for future development because the time it takes to access the market is unpredictable. The selection of business models and determining the competitive field are essential. Some companies might find an itching point, not a real pain point. At an early stage, it is critical to the team and investors if the accelerator can help startups quickly validate and finalise new business models.

> *For instance, in the case of Ping An's serious illness insurance, hospitals charge first, and the insurance company reimburses later, leading to a time gap. To resolve this pain point, through technical means, blockchain and artificial intelligence can quickly judge whether the insured can repay and provide advances, thus creating a new business model. This project received Series C financing last year. (Interviewee 025)*

The first discussion is to adjust a business model to match real scenarios. Insurance companies must use real scenarios to test the business process during the startup acceleration phase. This process often needs to be carried out with a customer, which makes it more robust.

> *For example, an insurance claim for a morning workday needs less time than a weekend. Therefore, the process is re-engineered and divided by customers and insurers based on vision tech, which uses image recognition for flexible loss assessment. (Interviewee 021)*

The second discussion concerns limiting the depth of outsourcing. Insurance accelerators are like an ecosystem that can share resources and reduce costs. However, how deeply technology companies integrate with insurance companies will always be a concern.

> *For example, a payment platform responsible for transactions, settlements, and claims was outsourced in partnership with a large insurance company. After 1-2 years of operation, the platform fully grasps the insurance rates and risk levels of different regions and*

merchants, so they use this as a bargaining chip to force insurance companies to reduce charges. (Interviewee 022)

In the above example, even if the outsourcing platform does not have an insurance license, it can still conduct risk-free arbitrage under this model, reflecting the data value from another aspect. If a technology company's solution for an insurance company is customised, the insurance company honours that and will not allow the solution to be sold to other companies.

For example, an intelligent procurement system connects all procurement processes. On one hand, the customer pays 100% if the supplier only fulfils 80%, which cannot be noticed; on the other hand, the supplier will not be paid after the project. The workflow of the business model has changed significantly due to InsurTech innovation. (Interviewee 007)

Ideally, technology companies can provide products that serve the entire insurance industry, not just one company, but in practice, they are often subject to certain limitations.

For example, a claim project about intelligent tagging and modelling invested 2-3 million RMB and matched IT and finance resources through acceleration. This project has already reached a break-even point with revenue of tens of millions of RMB. (Interviewee 001)

The third discussion is balancing revenue growth versus cost reduction. The adoption of InsurTech in large insurance companies is relatively slow. The main reason is that technology requires a significant installation project, which is very expensive. Currently, management must weigh whether to spend much money to implement technology all at once or to implement it slowly in increments.

For example, data storage security is determined by the investment size. For example, you may build a private cloud to ensure absolute security or rent a cloud and face certain risks. Practice shows that if you invest 100 million yuan, the accident rate may be reduced to 1%; if you only invest 10 million yuan, the accident rate may rise to 30%. (Interviewee 005)

One way to reduce costs is to connect upstream and downstream resources and integrate data to provide better quotes. China's insurance products are relatively homogeneous regarding similar coverage, making most consumers willing to choose lower-priced products.

For example, satellite remote sensing data shows the affected areas and the extent of damage, and underwriters take samples to verify data matching, which can be used to investigate damaged areas in flood disasters. (Interviewee 009)

Cost reductions are also reflected in the application of core insurance technologies. For example, the large-scale adoption of AI and other technologies, such as intelligent external phone calls, brilliant automatic return visits to customers, and innovative quality inspections, has replaced many labor-intensive roles and significantly reduced the number of employees to some extent.

For example, in the reinsurance OCR order identification system, the machine is responsible for inputting, and personnel only need to review, which significantly improves efficiency. (Interviewee 013) What used to be half an hour of manual work can now be completed by a robot in five minutes, and the effect is remarkable. (Interviewee 025)

Cost reduction is reflected in underwriting, claims reduction, and reduction of staff allocation. However, optimising the allocation of labour does not mean completely replacing labour. Otherwise, many people will be unemployed, bringing substantial new problems to the entire industry and society more broadly. Properly handling the relationship between technology and personnel and the coordinated development of old and new relationships are issues that must be considered in developing science and technology.

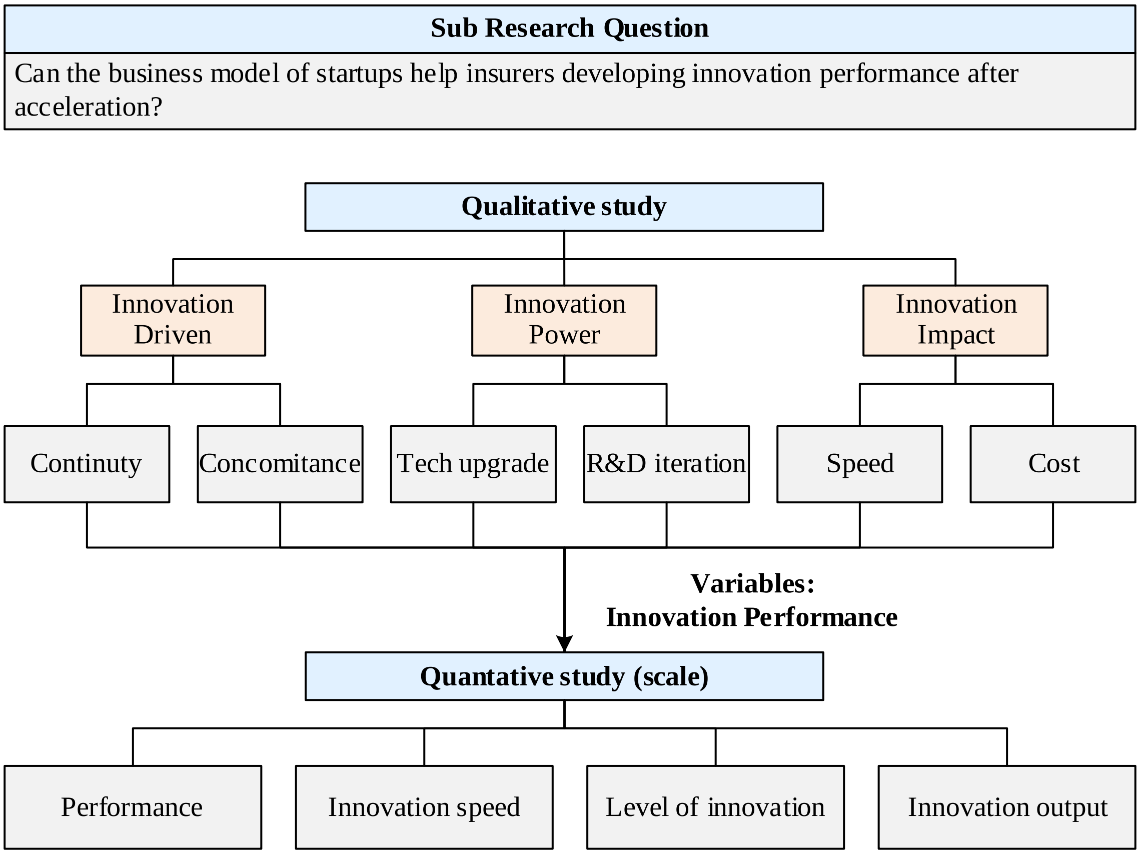
> *As an early example of deposit treasure by an internet company, the original intention was to replace all claims adjusters. Such an approach is hard to survive. Instead, it should help them work better. (Interviewee 021)*

6.5.5 In-depth Analysis of Innovation Performance

This section concludes the qualitative findings by critically examining the metrics and considerations underpinning innovation performance within InsurTech startups. This section is split into two main parts: First, the innovation rate subsection considers the pace and success rate of innovations, highlighting the efficiency, effectiveness, and adaptability of the startup's innovation performance. It underscores the balance between speed and quality in bringing new concepts to fruition. Next, innovation spending explores how resources are allocated towards innovation regarding budgetary decisions and investment choices, noting the financial commitment required to foster and sustain a culture of innovation.

Figure 36

A Pictorial Representation of Innovation Performance from Qualitative Results



Innovation is often a series of optimisations and improvements based on an original model. All new ideas, however, carry the gene of innovation. Introducing an accelerator often leads one to see things differently, inspiring more innovation.

> *At present, large insurance companies are redesigning their business logic. The accelerator platform may support a systematic brand that organises with planning, purpose, and system. (Interviewee 014) Startups, after incubation, have significantly improved their competitiveness compared to before. (Interviewee 028)*

The first innovation driver is continuity and concomitance with the core business. Establishing mechanisms that support innovation is essential for maintaining its sustainability. Financial companies' established structures and traditional decision-making processes may not support innovation agilely and efficiently. Without support, a disconnect can emerge between core insurance and insurance businesses. This disconnect may result in InsurTech losing profitability and the ability to deliver significant benefits from continued innovation.

> *For example, in traditional financial companies, achieving success through agile, efficient, or independent decision-making methods to support innovation is often challenging. (Interviewee 001)*

Large insurance groups should adopt an open-connection attitude. Cooperation between small and medium-sized insurance technology enterprises can lead to more innovation.

The success of InsurTech companies depends on having an internal organisational structure that fosters innovation and hires appropriate talent. This readiness creates a conducive environment for the implementation of InsurTech. Hence, for InsurTech companies to thrive, they need to structure their internal organisation to enable and support technological innovation.

Innovation must be appropriate for China's cultural context. Localising technology is essential because many foreign models are unsuitable for China's national conditions. In product development, collaboration between the head office and subsidiaries is crucial since innovation often begins at the corporate level, while subsidiaries primarily focus on day-to-day assigned tasks.

Suppose you can create a smaller, innovation-focused working group within a large company. This can create a decision-making environment conducive to technological innovation and the development of specialised solutions to newly identified needs and challenges.

> *For instance, a company established a financial services company with a mission to explore existing technology projects. However, it only serves its enterprise, like an OEM, for internal innovation, which does not empower the industry. (Interviewee 007)*

The second driver of innovation is regular upgrading and iteration of technology. The insurance business is constantly evolving, so technology innovation must maintain a certain degree of continuity.

Large insurance companies generally find innovation difficult because innovation equals trial and error, which carries risks. However, the company's tolerance for error might be more significant than expected. Most companies do not see technology as disruptive.

By establishing or participating in an acceleration environment that supports rapid innovation and encourages iterative development based on market needs and business needs, insurers can ensure that their technological advancements directly contribute to solving real and future problems in the insurance industry.

The third driver of innovation is cost-effectiveness. Innovation is the inevitable driver of productivity improvement at a particular stage of economic development. Creating new business models and adopting an InsurTech accelerator will significantly increase a company's level of innovation. The benefits will multiply quickly, putting them ahead of their competitors.

The application of new technologies on incubation platforms always requires time. It may not provide short-term gains, but a qualitative change is expected to emerge over time.

> *The accelerator will be a vast platform in the future, and its market share will significantly increase in the next 3-5 years. (Interviewee 023)*

InsurTech companies adopting an accelerator will realise that significant expenses will be incurred. Therefore, cost-effectiveness must be a prime factor in the new business model. Technology can bring about substantial improvements, but measuring the costs, time frames, and effectiveness of implementing technological solutions is essential.

> *The future is undoubtedly promising, bringing an InsurTech mindset to more grassroots frontline agencies and letting them genuinely feel the value and charm of InsurTech. (Interviewee 027)*

6.6 Validity and Reliability

The research validation process involves ensuring the findings' accuracy and credibility. Qualitative validity focuses on checking the accuracy of the findings through specific procedures, while qualitative reliability ensures that the researcher's approach is consistent across various researchers and projects (Gibbs, 2007). Validity is considered a key strength of qualitative research, as it aims to determine the accuracy of the findings from the perspective of the researcher, the participant, or the readers of a report (Creswell & Miller, 2000). There are various methods researchers use to verify the accuracy of their research findings:

One method is to evaluate multiple data sources and cross-reference information obtained. Another approach is to employ continual member checking, which involves the researcher validating qualitative findings by presenting interview transcripts to participants and asking for feedback on their accuracy.

6.7 Conclusion

Numerous interview responses were analysed to identify statements that address the varied research questions this paper wished to answer. The analysis identified and prioritised the challenges and success factors learned from international accelerators and insurers. Changes to internal organisational structure and recruitment of specialised technical talent were critical issues for Chinese startups. Findings indicated significant gaps in understanding between InsurTech startups and China's insurers, underscoring the importance of developing effective communication and collaboration strategies to bridge these disparities. Interviewees identified contemporary challenges for insurers, many of which were expected to be met better with the assistance of accelerators. Interviewees mentioned internal factors, such as organisation structure, and external factors, such as competition, funding shortfalls, and customer liaison. Inquiring about the factors that motivate startups to adopt an accelerator, this chapter also sheds light on organisational business models related to innovation performance. The qualitative research also identified significant barriers, such as the lack of top-level design, underestimation of technology's impact, and enablers, like the potential role of external funds/resources and new revenue models in fostering startup success.

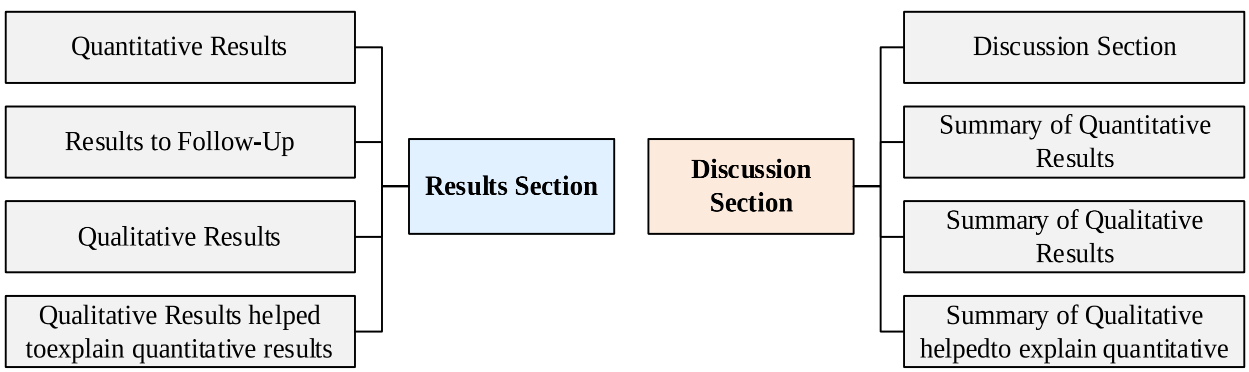
Complementing the qualitative interviews, the quantitative study validated accelerator adoption from enterprise orientation, recognition, financial success, and innovation perspectives. Quantitative analysis could measure the changes driven by accelerator adoption in the context of technology and the business environment. These findings contribute to knowledge about the critical attributes of successful accelerators that foster collaboration and innovation. Accelerator adoption was also linked to required business model improvements in its ability to create new information about revenue management, customer relationships and business model design. Innovation performance was also measured and discussed.

Chapter 7. Discussion, Findings and Recommendations

Integration is conducted by four standard methods: (1) connecting, (2) building, (3) merging, and (4) embedding. The chosen method is commonly linked to the selected type of research design. Connecting is used in sequential designs while merging can be used in any design. An intervention design often adopts embedding (Fetters et al., 2013). In this research, merging is selected and linked to the research design, as the quantitative results tested the model. Then, the qualitative results helped to explain the results and led to an in-depth discussion, following the procedure shown in Figure 38 below.

Figure 37

Ideal Structure for an Explanatory Sequential Study



7.1 Integration Results of Quantitative and Qualitative Discussions

The research model was tested using the quantitative results, and then an in-depth discussion is developed around each construct from the qualitative research. The two data bases and literature findings were integrated though inductive and deductive reasoning.

In a quantitative study, statistical techniques like regression, analysis of variance, and cross-tabulation driven by a hypothetical-deductive model are used, and the results are carried out with SPSS software. Simultaneously, qualitative data from interviews and open-ended questions underwent content analysis, combining manual coding and NVivo-assisted tools. By integrating findings from both methodologies, this study aims to comprehensively understand the complex relationships among accelerators, startups, and insurance companies in China’s insurance technology landscape.

7.1.1 Qualitative Discussion of Startups’ Motivation Explaining the H1 Model

In a quantitative study, the H1 result indicates that the more assistance startups obtain, the better acceptable business model created by Chinese insurers. In the qualitative study, two constructs of H1 were analysed: startups’ motivation in section 6.6.1 and organisational business model in section 6.6.3. In the constructs of startup motivation:

External environment applied to industry trends in the qualitative study and to government policies and competitor pressure in the quantitative research. The in-depth discussion includes top management high-level cognition, internal organisational structure support and talent (firm-scope organisation settings), and demand-driven tech innovation with continuous iterations (institutional support).

The qualitative study assessed internal decision-making, while the quantitative study assessed leadership recognition, structure and talent, and cultural differences. The in-depth discussion includes industry trends and government policies, competitive pressure, insurance and other business formats, customer feedback and customer experience, and industry collaboration and interconnectivity.

In summary, the qualitative results offered an in-depth exploration of ‘startup motivation’, and the quantitative findings were used to address the subsidiary research question 1, “Does the startup company have the motivation to obtain assistance on creating business model?”

7.1.2 Qualitative Discussion of Accelerator Adoption Explaining the H2 Model

In a quantitative study, the H2 result indicates that the more influencing factors, the better interaction and connections, the better the chance that InsurTech startups will select the accelerator. In the qualitative study, two constructs of H2 were analysed: startup motivation in section 6.6.1 and accelerator adoption in section 6.6.2. In the constructs of accelerator adoption:

Internal support was discussed in the qualitative study, as were new tech and R&D, Data sandbox, and **customer acquisition** in the quantitative research. The in-depth discussion includes these parts: new technologies in applications and connection of internal resources; relative advantage (understanding of the market, creating ecology, providing mentors); and in-depth integration with the company’s strategy.

External resources in the qualitative study discussed **funds/ demo day, consulting mentor and open cooperation** in the quantitative research. The in-depth discussion includes External funds/resources, equity, and structure design.

In summary, the qualitative results offered an in-depth exploration of ‘accelerator adoption’, and the quantitative findings addressed the subsidiary research question 2, “What factors will motivate startup to consider adopting an accelerator?”

7.1.3 Qualitative Discussion of Organisational Business Model Explaining the H3 Model

In a quantitative study, the H3 result indicates that adopting an accelerator will positively influence startups from internal and external perspectives, enhancing their business model. The H3-1 result indicates that adopting accelerators will positively affect internal Support and consequently increase the efficiency of the business model. In the quantitative study, the H3-2 result indicates that the better the business model design, the more external resources will be raised during the acceleration. In the qualitative study, the two constructs of H3 are accelerator adoption in section 6.6.2 and organisational business model in section 6.6.3. In the constructs of the organisational business model:

New revenue models suggested in the qualitative study included discussed revenue from technical services, changes in the ecological chain, and new profit and distribution in the quantitative research. The in-depth discussion includes automating tasks, increasing efficiency, and optimising resource use.

New custom relationships were discussed in the qualitative study. Such as expanding the customer base and improving customer experience. The quantitative study focused on protecting sensitive information. The in-depth discussion included broadening customer bases, reaching new economic markets, improving communication processes, and securing sensitive information.

Business model design was discussed in the qualitative study, along with adjusting for the new scenario, limiting the depth of outsourcing, and balancing revenue versus cost in the quantitative study. The in-depth discussion includes increased employee productivity.

In summary, the qualitative study provides an in-depth exploration of the organisation’s business model, and the quantitative study findings addressed subsidiary research question 3, "Can the acceleration process change the internal capabilities and external support to build the organisational business model?"

7.1.4 Qualitative Discussion of Accelerator Adoption Mediation Effect Explaining H4 Model

The quantitative study's H4 result indicates that accelerator adoption mediates the relationship between the constructs of business model improvement and InsurTech startups' motivation. In the qualitative study, three constructs of H4 were also addressed: startups' motivation in section 6.6.1, accelerator adoption in section 6.6.2, and organisational business model in section 6.6.3.

In summary, the qualitative study provided an in-depth exploration of 'mediation', and the quantitative findings addressed the research question "How can InsurTech Accelerator bridge the gap between China Insurers and Technology Startups?"

7.1.5 Qualitative Discussion of Innovation Performance Explaining the H5 Model

The H5 result indicates that the perception of an improved business model will positively correlate with enhanced innovation performance. The H5-1 result indicates insufficient evidence to support the hypothesis that new revenue models lead to higher innovation performance. The H5-2 result indicates insufficient evidence to support the hypothesis that perceptions of new customer relationships lead to higher innovation performance. The H5-3 result is positive that better or new business model design leads to higher innovation performance. In the qualitative study, two constructs of H5 were analysed: the organisational business model (section 6.6.3) and innovation performance (section 6.6.4). In the constructs of innovation performance:

Innovation drivers in the qualitative study related to the impact of **continuity and concomitance** in the quantitative study, including innovation performance.

Innovation power in the qualitative study related to **R&D Update** and impact of **Tech Iteration** in the quantitative study, including the level of innovation.

The impact of innovation in the qualitative study was related to the impact of speed and **cost** in the quantitative study, including innovation speed and output.

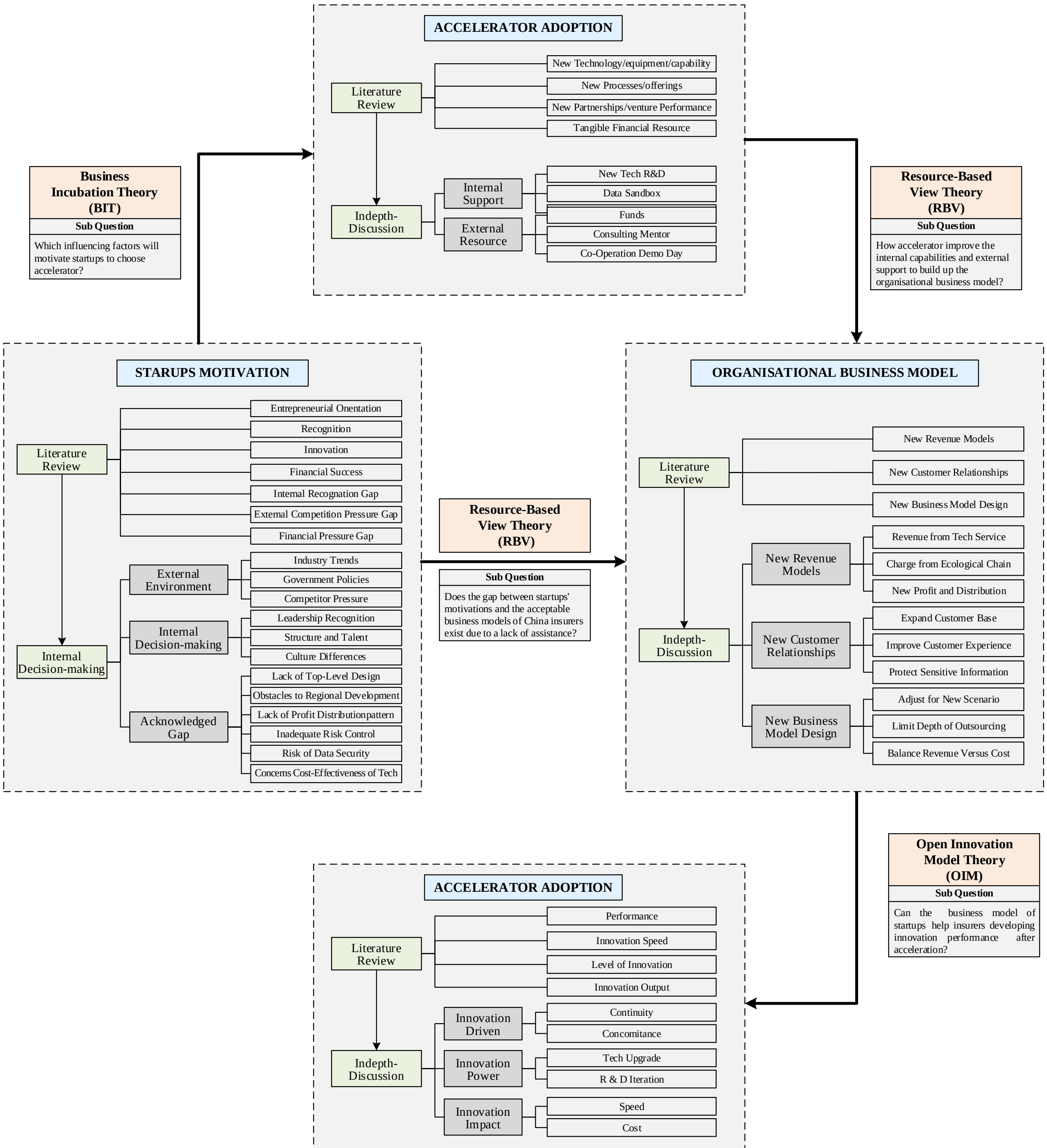
In summary, the qualitative results offered an in-depth exploration of ‘innovation performance’, and the quantitative findings related to the subsidiary research question 4 “How does business model relate to innovation performance after acceleration?”

7.2 Findings of the Study

Through a comprehensive literature review, this study identified a gap between the business models designed by InsurTech startups and those required by insurance companies. To address this gap, we formulated a research question that was broken down into several sub-questions. Additionally, three theories—BIT, RBV, and OIM—were identified to support this study. The literature review also helped to identify the constructs and variables that informed the creation of the conceptual framework. The quantitative study validated the interrelationships and hypotheses. Quantitative data were collected from 519 questionnaires, with factor analysis, confirmatory factor analysis (CFA) and structural equation modelling (SEM) applied. The study demonstrated the robustness of its findings by showing consistent results across a range of demographic variables. Subsequently, qualitative data from comprehensive interviews provided an in-depth discussion of all variables, further enriching the constructs within the conceptual framework (Figure 38). These insights reveal the intricate dynamics within the InsurTech landscape and offer valuable contributions to business accelerator research and industry practice. Furthermore, integrating quantitative and qualitative discussions produced the critical findings of this study.

Figure 38

In-depth Discussion of the Conceptual Framework



7.2.1 The Gap between Startups and Chinese Insurers

To answer the sub-question 1, “Does the startup company have the motivation to obtain assistance on creating business model?” The literature review shows that the existing gaps include internal recognition gaps, external competition pressure gaps, and financial pressure gaps.

The quantitative study of the statistical analysis revealed a positive relationship between startup motivation and the organisational business model, supporting Hypothesis 1. The results confirm various hypotheses: Startup motivation positively influences accelerator adoption and the organisational business model, ultimately raising innovation performance.
The qualitative study of gap analysis discovered the gap between technology startups and Chinese insurers and also tested using accelerators to bridge the gap.

This research investigated whether InsurTech accelerators can work successfully with startups and insurance firms in China. The study has contributed to InsurTech accelerator research by providing an in-depth understanding of startups’ motivation, business models and innovation performance, showing that all these can be enhanced by adopting accelerators from both internal and external perspectives. In particular, the research also identified a compelling rationale for InsurTech startups to adopt an accelerator early. There are gaps in our knowledge of business needs between InsurTech startups and China’s insurers, including in the following areas:

(1) Identification of top management high-level issues and requirements.

(2) Harnessing of internal organisational support and talent.

(3) Need for cross-cultural recognition.

(4) Moving to demand-driven technological innovation in a climate of continuous updates and iterations.

The primary success factors for InsurTech startups are as follows:

(1) Strongly improving business efficiency (incorporating analytics to support faster business decision-making).

(2) Ability to leverage technology and innovative solutions.

(3) Cost reduction.

(4) Understanding industry trends and government policies.

(5) Handling competitive pressure, including competitors in the insurance industry.

(6) Listening to and acting on customer feedback.

(7) Revised business model based on collaboration and interconnectivity.

The main barriers to success for InsurTech startups are:

(1) Lack of top-level design and underestimation of the impact of new technology applications on other internal business processes.

(2) Obstacles to regional development.

(3) Local personnel's reluctance to change the mode of working.

(4) Lack of long-term organisational structure as a guarantee.

(5) Lack of complete preparations to control risks.

(6) Data security weaknesses.

(7) Poor evaluation of the cost-effectiveness of technological investments.

7.2.2 Motivating Startups to Choose an Accelerator

To answer the sub-question 2, "What factors will motivate startup to consider adopting an accelerator?"

According to the literature review, “startup motivation” variables include entrepreneurial orientation, recognition, innovation, and financial success.

The quantitative study of the statistical analysis revealed a positive relationship between startup motivation and accelerator adoption, supporting Hypothesis 2. The results confirm various hypotheses: Internal support and external resources positively affected the organisational business model.

The qualitative study of startup motivation looked at both external and internal factors. External factors include industry trends, government policies, and competitive pressures. In contrast, internal factors include top management commitment, organisational support and talent, cultural recognition, and demand-driven technological innovation. The primary in-depth analysis had two parts. In terms of the external environment:

- **The first finding is that industry trends force change.** Mature foreign insurance companies have entered the Chinese market, bringing more advanced ‘insurance’ concepts and applications. The rapid development of big data, artificial intelligence, and new technology has revolutionised traditional insurance. There is a vast ‘technological’ impact, bringing significant change.
- **The second finding relates to the influence of government policies.** Government supervision policy is inevitable but can be a double-edged sword. The rapid development of insurance technology has caused the regulatory authorities to lag because they do not understand the combination of technology and insurance. Therefore, there will be a significant imbalance because the industry is restricted by regulation while insurance technology is developing rapidly.

- **The third finding relates to competitive pressure within the insurance industry.** Competition within the insurance industry and external forces, including disruptive tech giants, is shaping the insurance landscape.

In terms of the discussion of decision-making:

- **The first finding is that leadership recognition is critically important.** This includes top management's participation in the InsurTech project and conveying awareness to every company level. Insurance technology applications should be implemented with the expectation that every link in the company chain will enjoy the dividends of technological change when they see that such change can genuinely solve practical problems.
- **The second finding is that the company's internal structure must be prepared, and new talent must be sought.** Only by the melding of insurance knowledge and technological knowledge can the insurance industry benefit from applying new technology. Systemic change will be essential in the future. Simply applying technology to insurance is a prelude to disaster.
- **The third finding is that cultural differences between headquarters and the subsidiaries must be bridged.** One of the major findings from the qualitative portion of the study was the vast difference in terms of views and attitudes between headquarters and regional branches. Recognising and dealing with this is essential for the real adoption of new technologies. It involves recognising that true innovation is not just about using technology for its own sake but about leveraging it to create meaningful improvements in the industry's operation. When all parts of the company are on the same page it makes adoption both more feasible and beneficial.

7.2.3 Accelerator Improves the Support of Organisational Business Model

To answer the sub-question 3, "Can the acceleration process change the internal capabilities and external support to build the organisational business model"

The literature review states that "organisational business model" variables include new revenue models, new customer relationships, and new business model design.

The quantitative study findings include that:

- The statistical analysis revealed a positive relationship between accelerator adoption and the organisational business model, supporting Hypothesis 3.
- The statistical analysis revealed a positive relationship between internal support and the organisational business model, supporting Hypothesis 3-1 (path coefficient: 0.176, significant at p-value < 0.01).
- The statistical analysis revealed a positive relationship between external resources and the organisational business model, supporting Hypothesis 3-2 (path coefficient: 0.745, significant at p-value < 0.01).

The results provide evidence in support of key hypotheses: Internal support and external resources positively affected the organisational business model.

The qualitative study of Accelerator adoption found that accelerator adoption can help to navigate the disruptive impact of InsurTech, allowing controlled experimentation and scalable implementation of technological advancements as the sector undergoes transformative change. In the context of R&D (H3-1), more collaboration between HQ and subsidiaries could ensure the seamless integration of new technology aid startups by increasing new customer acquisition and enhancing data sharing. The external context, driven by external funding (H3-2), often involves government policies that incentivise innovation and foster business ecosystems, leading to the convergence of talent and technology. The healthy growth of early-stage startups hinges on financial support and backers' endorsements. Industry-driven accelerators act as experimental grounds for all insurance players, aligning with the capital market's forward projections for the insurance sector.

In terms of the discussion of Internal support:

- **The first finding is that InsurTech R&D should follow the Insurers' use cases.** From an insurance company's perspective, they are pragmatists. Technology will be recognised as soon as it is combined with specific insurance use cases. Technology mismatching the customer requirements will be ignored. From a tech startup perspective, there is often a lack of understanding of the insurance industry. The accelerator should help technology startups customise products, get all the critical stakeholders of the business ecosystem involved, and implement sustainable updates.
- **The second finding is that data sandbox testing establishes competitiveness.** From a tech startup's perspective, lack of data is the biggest problem. However, insurance companies are worried about data security issues and will not easily trust small startups. The accelerator should provide both parties with a safe and realistic data testing environment.
- **The third finding is customer acquisition rapidly expanding market share.** For startups, acquiring customers and being referred to them is crucial. If the startup's product is excellent, the accelerator can promote it to customers.

In terms of the discussion external resources:

- **The first finding is three types of funds: mature capital investments, significant insurance company investments, and independent industry-driven investments.** They have brand capital advantages, industry testing ground and independent and unrestricted advantages. Funding is needed from a startup’s perspective, but not too much. It is ideal to incorporate early-stage R&D that can be relatively self-financed until sales can be generated. From an investor’s perspective, it mainly depends on the probability of success and the knowledge that an accelerator will support every incubated company.
- **The second finding is the importance of mentoring.** The accelerator’s mentor team should comprise leading figures in the insurance and technology fields. Good relationships should be established to form a mechanism for regular guidance rather than casual chats and social interaction.
- **The third finding concerns open cooperation.** Insurance groups may lack the motivation to drive internal innovation. However, external partnerships can quickly reach the market and encourage evolution. From the perspective of an accelerator, it can connect the diverse dots across the insurance ecosystems via a relatively independent third-party perspective and build a platform to share the value.

7.2.4 Accelerator Bridging the Gap

To answer the research question, “How can InsurTech Accelerator bridge the gap between China Insurers and Technology Startups?” The literature review reveals that “accelerator adoption” variables include new technology/equipment/capability, new processes/offerings, and new partnership/venture performance.

- There was a partial mediating effect, supporting Hypothesis 4 (the total effect is 1.397, the direct impact is 0.351, and the effect ratio is 74.87%).

The result validated that H4: Accelerator adoption mediates the relationship between insurer startup motivation and business model improvement.

In the qualitative study of the organisational business model, regarding the second moderator, the organisational business model, startups collaborate with established insurance companies to strengthen their core competencies and upgrade their profit models from income sources to cost-controlled profit models. Accelerators can help drive this transformation. Under new revenue models (H5-1), startups charge insurance companies or other entities in the ecosystem for their services, creating new profit points and sharing profits with insurers. Building new customer relationships (H5-2) sees startups expanding customer bases, reaching new markets, and safeguarding sensitive data. The new business model design (H5-3) involves improving internal processes and collaborating more as they start to outsource. These factors collectively raise innovation.

From the perspective of new revenue models:

- **The first finding is that the profit model may change when insurance companies are based on data services.** Technology companies can gradually enhance their abilities through successful collaborations with insurance companies rather than competing with insurance companies and ignoring their use cases.
- **The second finding is that technology companies may charge from other entities in the ecological chain.** InsurTech could reduce compensation costs by connecting with a professional platform.

- **The third finding is that technology companies may create new profit points and distribute them among the leading bodies in the ecological chain.** Insurers might distribute their profits to technology companies that provide services.

From the perspective of new customer relationships:

- **The first finding relates to the need for a broad customer base. Customers are always the core part of a company.** After being accelerated by InsurTech, not only can the number of users using InsurTech be converted into an increase in insurance customers at a certain percentage, but also the reliance on technology can enhance the stickiness between customers and insurance companies, demonstrated by increased renewal rates.
- **The second finding relates to improved customer experience.** After passing the acceleration period, InsurTech companies can provide customers with customised solutions and create new profits for insurance companies. At the same time, with the addition of technology, many scattered and small risks that were not included before will now be transformed into insurable risks and newly designed products, creating more potential benefits for insurance companies.
- **The third finding relates to protecting sensitive information.** Acceleration through the adoption of new technologies is a double-edged sword. It will bring new opportunities and risks. New InsurTech with superior cyber security capability could enable insurance companies to protect customers' privacy better, consequently obtaining more customer data and understanding more comprehensive customer requirements. Secure InsurTech could drive long-term sustainable development for Insurers.

From the perspective of new business model design:

- **The first finding relates to adjusting the business model to match the use case.** Technology must be derived from the real use cases it competes in and should create real world value. Balancing the existing InsurTech models and customers' ideal models is a common challenge faced by InsurTech startups.
- **The second finding relates to limiting the depth of outsourcing.** How deeply technology companies should integrate with insurance companies is always something to consider. Obtaining the insurance company's support is necessary, but it is best to maintain a distance. Ideally, technology companies could collaborate with the entire insurance industry.
- **The third finding relates to balancing revenue increase versus cost reduction.** There must be a balance between optimising the labour force, replacing labour through technology, and optimising the structure to arrange excess personnel into appropriate positions to ensure that a more significant unemployment problem is not created.

7.2.5 Business Models Develop Innovation Performance

To answer the sub-question 4, "How does business model relate to innovation performance after acceleration?" The literature review states that "innovation performance" variables include performance, speed, level of innovation, and output.

The quantitative study is:

- The statistical analysis revealed a positive relationship between the organisational business model and innovation performance, supporting Hypothesis 5.
- The statistical analysis revealed a positive relationship between new revenue models and innovation performance but did not support Hypothesis 5-1.

- The statistical analysis revealed a positive relationship between new customer relationships and innovation performance but did not support Hypothesis 5-2.
- The statistical analysis revealed a positive relationship between new business model design and innovation performance, supporting Hypothesis 5-3.

The results confirm various hypotheses: New business model design emerges as a significant driver of innovation performance. At the same time, new revenue models and customer relationships did not significantly enhance innovation performance.

In Qualitative study of innovation performance. It found that innovation performance was assessed through two key metrics. The innovation rate gauges the revenue generated from newly introduced products or services, reflecting the degree of a company's success in market contributions. Innovation spending evaluates the proportion of total revenue allocated to internal support, product development, and innovation-related endeavours, indicating that external resources do foster future growth.

- **The first finding relates to central business continuity and compatibility.** Innovation must have continuous organisational support and be closely integrated with the central business.
- **The second finding relates to the continuous updating and iteration of technology.** Most companies do not develop cutting-edge technologies but instead innovate by combining existing technologies with new use cases in mind.
- **The third finding relates to speed and cost of implementation.** The incubation of new technologies always takes time. Technology may not bring immediate benefits in the short term, after its processes become embedded, it can alter the very nature of firm operations.

This underscores the need for a more comprehensive data pool to explore those variables further within the distinctive Chinese insurance landscape. However, these results represent a trend and could be a potential subject for future research.

7.3 Findings from Different Perspectives in this Study

From the perspective of Insurers, there is an apparent demand for insurance technology accelerators within large insurance companies. These companies face high costs when experimenting with new products, and it would be beneficial to have accelerator operatives test and validate models before implementing them on a larger scale. Adopting a mindset that failure is a stepping stone to success and welcoming opportunities for further trial and error can be highly beneficial. Due to their large size and lengthy decision-making processes, traditional Chinese insurers are often reluctant to abandon established work habits and processes for new technological solutions. However, accelerators can act as a bridge, facilitating collaboration between funding sources, technology providers, and insurance companies, enabling an organic combination of these stakeholders. Such collaboration can help to accelerate the technology implementation process and bring recognisable benefits more quickly. However, one significant challenge with insurance company-backed accelerators is the tendency to prioritise projects based on their perceived usefulness to the company in the short run. This can sometimes blind firms to project's long-term profitability.

From the perspective of startups, relying solely on industry forces may not be feasible in China. The industry association in China insurance is a weak service organisation rather than a regulatory body. Its talent pool is limited, so its operatives do not always deeply understand business models and management dynamics. Moreover, the insurance industry in China is unevenly developed, making it challenging to find one unified technical solution that can be widely implemented. A startup should choose one insurer to work with. By addressing that insurer's specific needs, the startup can share testing data in a secure environment. This can work well in the short term for startups lacking a fully developed product or market positioning and operating on a relatively small scale. The next step would be to adopt an open, collaborative approach using an external industry accelerator. The aim would be to study those more advanced technological solutions and incorporate those learnings into the insurance industry.

From the perspective of China context, multinational corporations have long recognised the importance of insurance technology. They have adopted the approach of using accelerators as pilot programs to develop into mature processes. While this approach has not been evident in the Chinese market, China's advantage lies in its ability to leverage a larger market size. In recent years, the Chinese market has undergone a process of rapid development and is gradually forming a systemic industry framework. This will facilitate and lead to the dominant role of these companies in the development, incubation, acceleration, and application of insurance technology solutions. However, insurance technology incubation is still considered an emerging industry in China, and the industry's business model is not yet well-defined.

Chapter 8. Conclusion and Suggestions for Future Research

8.1 Conclusion

This study sought insights into successfully establishing an InsurTech accelerator in China. The investigation has supported the advancement of InsurTech startups and insurance firms, enabling them to consider technological innovation confidently. Moreover, this research gives businesses considering this innovation a comprehensive understanding of the contemporary China insurance landscape. The study used a combination of quantitative and qualitative methodologies to address a series of fundamental questions that define its research objectives.

The literature review was conducted to gather the results of similar research, and it confirmed the appropriateness of adopting a mixed methods approach for the present study. Questionnaires were designed to capture stakeholder views and performance-related data pertinent to the proposed conceptual model. Interview questions were formulated to evaluate each component of the model’s framework. In terms of future research, this approach to choosing methodologies could be applied to new issues, as reported in recent articles in the field, allowing for incorporating new information to enhance the theoretical model further.

This study has also significantly contributed to identifying gaps in current research related to InsurTech accelerators. It has revealed the need for meaningful incubator classifications and a refined technology model adapted specifically for the financial industry. Through its comprehensive approach, this research contributes to developing and enhancing the InsurTech accelerator landscape in China.

8.2 Limitations

There are several limitations to the current study. First, the interviews showed that different-sized insurance companies might hold different opinions regarding accelerators and startups. The concerns of large insurers are different from those of smaller ones. A future study could focus on insurers of a particular size rather than collecting feedback from insurers of all sizes. Second, InsurTech accelerator research was minimal when this study was initiated, and the survey participants gave the answers about accelerators based on their knowledge at the time; however, those answers might reflect their limited understanding of trends in the field that are now more apparent. A future study could compare the present results with future findings on the first InsurTech accelerator in China. Third, the data collection stage of this study was intended to be conducted face-to-face; however, it had to be done online due to the COVID-19 pandemic. Additional valuable feedback might have been provided with face-to-face interactions.

The study has other limitations that warrant consideration. One relates to the composition of the sample group. Most study participants were sourced from insurance companies, which suited the overarching objective of establishing China’s inaugural insurance technology accelerator. This emphasis on a developing area of research may have inadvertently led to an underrepresentation of individuals associated with accelerator incubators. Acknowledging this potential sample bias is essential, as a more comprehensive and diverse representation of accelerator personnel could offer a more nuanced perspective on the research variables.

To address this limitation, future iterations of the study could actively seek to engage a broader spectrum of participants, including those from accelerator incubators. As the insurance technology landscape continues to evolve and mature, including more voices from the accelerator community could provide valuable insights and enhance the overall generalisability of the findings. Such an expanded sample would contribute to a more holistic understanding of the research variables and ensure a more comprehensive analysis.

Furthermore, evaluating how much impact this research might have within the current academic literature is essential. Although the study’s findings provide valuable insights into the dynamics of startup motivation, accelerator adoption, organisational business models, and innovation performance, their broader implications also need consideration. For example, it is unclear to what extent these findings contribute to bridging gaps or introducing new perspectives within the academic discourse. Additional exploration could determine whether the research outcomes can serve as a suitable basis for innovative problem-solving approaches or whether they could benefit from a different analytical perspective.

Hopefully, this research can stimulate future investigations and new research studies. Although the current study analysed the relationships among the variables under investigation, subsequent studies could delve deeper into specific dimensions or examine other different or related factors. In this way, the present research could be a launching pad for further exploration and inquiry, broadening the scope of knowledge within the insurance industry ecosystem of InsurTech and the accelerator.

To conclude, this study seeks to provide a valuable contribution to our growing understanding of accelerator adoption by insurance startups in the context of current organisational business models operating in the innovation climate that characterises China’s insurance industry. However, the study’s limitations are acknowledged. A future assessment of the study’s academic contribution is needed to measure its enduring significance within contemporary scholarly discourse.

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Appendix 1. Global 18 Accelerators

No.	Name	Country	Description	Website
1	Silicon Valley Insurance Accelerator	US	As InsurTech's first open innovation outpost, SVIA's sole object is to help the insurance industry develop Innovative InsurTech products and services. Through InsurTech Silicon Valley Summits and events, custom executive innovation programs and an InsurTech innovation lab program.	http://sviaccelerator.com/
2	Global Insurance accelerator	US	The Global Insurance Accelerator is a mentor-driven business accelerator designed to foster innovation in the insurance industry by supporting startups targeting the global insurance industry.	http://www.globalinsuranceaccelerator.com
3	Fintech Innovation Lab	US	The Fintech Innovation Lab gives early and growth-stage companies the platform to develop trials and prove their proposition alongside leading banks. This 12-week mentorship program runs in New York, London, and Hong Kong.	http://www.fintechinnovationlab.com/
4	Plug and Play Tech Centre	UK	Alongside the partners, Munich Re and USAA, it is launching a 12-week program for early and growth-stage startups. Bespoke deal flow sessions, themed workshops, and face-to-face interaction will drive engagement between financial powerhouses and young upstarts. Investment, mentorship, demo days, and the potential of pilot projects have rocketed startups to success.	http://plugandplaytechcenter.com/insurance/
5	Founders Factory	UK	It invests seed capital and couples that with a six-month program. The program has two core elements – direct operational support from world-class operators and a directed program of events and speakers. It focuses on specific sectors for the accelerator program that are aligned with the interests of partners and the operating team. This means immediate access to top experts to quickly formulate a strategy around a particular business area and drive execution.	https://foundersfactory.com/
6	Startupbootcamp	UK	Startup Boot Camp is a global network of industry-focused startup accelerators. The company provides €15,000, 6 months of co-working space, over €450,000 in sponsored	https://www.startupbootcamp.org/

No.	Name	Country	Description	Website
			services, and the platform to pitch to over 400 investors on Investor Demo Day. It was founded in 2010 and operates in cities such as Amsterdam, Barcelona, Berlin, Copenhagen, Israel, Eindhoven, Istanbul, London, Rome and Mumbai	
7	WERK1 Forward InsurTech accelerator	Germany	W1 Forward InsurTech accelerator was launched by WERK1 and leading insurance companies with the vision to establish one of the world's leading ecosystems for InsurTech startups in Munich and help them boost the market.	http://werk1.com/
8	Tech Founders	Germany	Germany. The accelerator brings tech startups together with industry partners and venture capitalists and allows them to cooperate with one of the industry partners. It can access hardware prototypes, data, and APIs to test and further develop the product. The demo day is a great opportunity to raise capital, and it will meet more than 100 VCs, business angels, industry partners, and the press.	http://www.techfounders.com/
9	Mundi Lab	Spain	Mundi Lab is an insurance tech acceleration program designed to facilitate the go-to-market of startups with innovative solutions for the insurance and reinsurance industries. It is divided into two phases: An intensive 5-week program designed to take 10 selected teams in very diverse industries to the next level and open infinite opportunities with free cash and equity. Munich Re will choose the best-performing companies to enter in a second phase focused on closing a commercial deal with Munich Re.	http://mundi-lab.com/
10	Swiss Re	India	InsurTech Accelerator is a 16-week intensive program in India. In this program, startups will have the opportunity to engage with Swiss Re and have access to Swiss Re's expertise–Internet of things (home, industrial, health and motor), Systems of engagement (innovative distribution channels and models, digital assistants/ Robo advisers etc.); Smart analytics (across the insurance value chain).	http://www.swissre.com/events/2016_insur_tech_accelerator.html
11	F10	Switzerland	F10 has a proven track record of innovation, acceleration and creating products for future financial services.	http://www.f10.ch/

No.	Name	Country	Description	Website
			Supported by its corporate members, consisting of financial infrastructure provider SIX, banks, and insurance companies, F10 is uniquely positioned to foster worldwide collaboration between startups and international finance organisations.	
12	Nestholma Renewal accelerator	Finland	Nestholma runs on-site accelerators for new products and learning with large corporations like Nordea, Microsoft, and Nokia. Nestholma also invests in the startups in the programs.	https://nestholma.com/
13	Kickstart accelerator	Switzerland	Kickstart accelerator is one of Europe's largest multi-corporate, zero-equity accelerators and serves as a fast-track gateway for international entrepreneurs to access the Swiss innovation ecosystem. In 11 weeks, 30 of the most promising international startups will be based in Switzerland, with living and co-working space, monthly stipends, direct access to over 15 leading corporate partners, and top-level mentors and experts. Moreover, they have the chance to win up to CHF 25'000 and the possibility to attain proof-of-concept trials with industry partners.	https://kickstart-accelerator.com/
14	Protecting	Portugal	It is powered by Fidelidade & Fosun and supported by Beta-i. It aims to constantly improve and protect life and support customers throughout their lives. Protecting supports innovative startup projects in protection and prevention, as well as services in insurance and health.	http://www.protechting.pt/
15	InsurTech Factory 2017	Norway	Fintech Factory is a 12-week accelerator program powered by The Factory, which is conducted in cooperation with strategic Norwegian governmental organisations, NGOs, Nordic banks, and strategic partners. The project, ideas and companies accepted into the program will work and cooperate in close relations with partners. The Factory accepts applications from Scandinavia and Nordic countries.	http://www.fintechfactory.no
16	L'Atelier	France	A unique InsurTech accelerator program pairs up with a BNP Paribas business line to collaboratively experiment for 4 months of Coaching and Mentoring. Exclusive	https://lab.atelier.net/en/fintech-InsurTech

No.	Name	Country	Description	Website
			business and technical coaching sessions will be held by entrepreneurs and CTOs in residence and by experts. Up to 100k€ in funding, free office spaces in central Paris, and a unique set of services, such as CEO lunches, WAI not a beer, and startup lunches.	
17	Income Future Starter	Singapore	Income Future Starter, powered by TAG.PASS is an 11-week accelerator program comprised of three core phases – business model development and validation, product development and pitch for investments. Startups will undergo intensive training and guidance where they are expected to conduct field interviews, problem-solution validation, rapid prototyping, storyboarding, software and hardware development, growth hacking, marketing, branding, sales, and business pitching, among others.	http://income.com.sg/future-starter/index.html
18	Collab	Singapore	MetLife, the innovation leader in life insurance, brings Collab to you. Collab selects 8 startups to compete for a US$100k contract from MetLife. Collab is an open innovation platform that matches startups with the right opportunities within MetLife Asia. It partners with startups that have viable solutions to challenges.	http://collab.lumenlab.sg/

Appendix 2. Questionnaire

This questionnaire is part of a PhD research titled InsurTech Accelerator: A Model Bridging the Gap between China Insurers and Technology Startups. The study aims to explore whether InsurTech accelerators can be helpful for InsurTech startups and China's insurers. You will be asked a series of questions for which your honest responses are requested. There are no right or wrong answers. All information and opinions provided will be strictly confidential, used for research purposes only and managed by the NH&MRC Code of Ethical Conduct in Research. Thank you for your time and cooperation in assisting the educational development of students at Victoria University.

SECTION A. GENERAL QUESTIONS

Please tick (√) the boxes applicable to you.

1. Please indicate your gender.

☐ Male ☐ Female ☐ Other

2. Please indicate your age group.

☐ 20 – 21 ☐ 32 - 47 ☐ Over 67

☐ 22 – 31 ☐ 48 – 67

3. Please indicate your highest level of education.

☐ High School ☐ Bachelor degree ☐ Doctoral Degree

☐ Diploma ☐ Master Degree ☐ Other (Specify)……

4. Please indicate your current occupational group.

☐ InsurTech Startup Executives ☐ Insurance Professional

☐ Accelerator Professional

5. Please indicate your annual gross income group.

☐ CNY 120,000 & under ☐ CNY 300,001-500,000 ☐ CNY1,000,001-1,500,000

☐ CNY 120,001- 300,000 ☐ CNY 500,001-1,000,000 ☐ Over CNY1,500,000

SECTION B. Startup Motivation, Accelerator adoption, Business Model, Innovation performance

Please tick (√) your choices related to the startup's motivation to adopt accelerators in China.

6. Please indicate your level of agreement with the following statements about the factors that motivate InsurTech startups to use an accelerator (Startup Motivation). '1' means that you do not agree at all, while '5' means that you strongly agree. '3' means that you have a neutral opinion on the statement. The higher the number you choose, the more you are confident with the statement.

1= Not at all **5=Very much so**

Entrepreneurial orientation					
How confident are you that InsurTech startups are good at identifying opportunities?	1	2	3	4	5
How confident are you that InsurTech startups will always take initiative in every situation (e.g., facing competitors, working with others)?	1	2	3	4	5

Entrepreneurial orientation					
How confident are you that InsurTech startups will take the initiative to respond to the responses of other organisations?	1	2	3	4	5
How confident are you that InsurTech startups will encourage employees to assume the expected risk of new ideas?	1	2	3	4	5
How confident are you that InsurTech startups will emphasise the opportunities for exploration and experimentation?	1	2	3	4	5
How confident are you that InsurTech startups often try new ideas?	1	2	3	4	5
How confident are you that InsurTech startups will be creative in operating methods?	1	2	3	4	5

1= Not at all **5=Very much so**

Recognition					
How confident are you that the InsurTech Startup founders want to be respected by my family and friends?	1	2	3	4	5
How confident are you that the InsurTech Startup founders want to obtain a higher position for themselves?	1	2	3	4	5
Innovation					
How confident are you that the InsurTech Startup founders want to be innovative with cutting-edge technology?	1	2	3	4	5
How confident are you that the InsurTech Startup founders want to create an idea for a product?	1	2	3	4	5
How confident are you that the InsurTech Startup founders want to have the power to influence an Organisation?	1	2	3	4	5
Financial Success					
How confident are you that the InsurTech Startup founders want to have long-term wealth?	1	2	3	4	5

7. Please indicate your level of agreement with each of the following statements about your opinion on accelerator adoption and Business Model. ‘1’ means that you do not agree at all, while ‘5’ means that you strongly agree. ‘3’ means that you have a neutral opinion on the statement. The higher the number you choose, the more you are confident with the statement.

1= Not at all **5=Very much so**

New technology/equipment					
How confident are you that InsurTech accelerates and keeps the technical resources of their companies up-to-date?	1	2	3	4	5
How confident are you that relative to InsurTech acceleratees' competitors InsurTech acceleratees' technical equipment is very innovative?	1	2	3	4	5
How confident are you that InsurTech acceleratees regularly utilise new technical opportunities to upgrade InsurTech acceleratees' product and service portfolio?	1	2	3	4	5
New capability					
How confident are you that InsurTech acceleratees receive regular training to develop new competences?	1	2	3	4	5
How confident are you that relative to InsurTech acceleratees' direct competitors, InsurTech acceleratees have very up-to-date R&D knowledge and capabilities?	1	2	3	4	5
How confident are you that InsurTech accelerates reflects on which new competencies are needed to adapt to changing market requirements?	1	2	3	4	5
New processes					
How confident are you that InsurTech startups were recently able to improve their internal processes significantly?	1	2	3	4	5
How confident are you that InsurTech acceleratees utilise innovative procedures and processes while manufacturing products?	1	2	3	4	5
How confident are you that InsurTech acceleratees' existing processes are regularly assessed and significantly improved if needed?	1	2	3	4	5
New offerings					
How confident are you that InsurTech acceleratees address new, unmet customer needs?	1	2	3	4	5
How confident are you that InsurTech acceleratees' products or services are very innovative about InsurTech acceleratees' competitors?	1	2	3	4	5
How confident InsurTech acceleratees' products or services regularly solve customer needs, which competitors did not solve?	1	2	3	4	5

1= Not at all **5=Very much so**

New partnerships					
How confident are you that Accelerators will enable InsurTech acceleratees to find more partnerships?	1	2	3	4	5
How confident are you that Accelerators will enable InsurTech acceleratees to regularly utilise opportunities from integrating new partners into their processes?	1	2	3	4	5
How confident are you that Accelerators will enable InsurTech acceleratees to evaluate the potential benefits of outsourcing regularly?	1	2	3	4	5
How confident are you that Accelerators will enable InsurTech acceleratees to find new collaboration partners regularly to help further develop their Business Model?	1	2	3	4	5
New Channels					
How confident are you that Accelerators will enable InsurTech acceleratees to regularly utilise new distribution channels for their products and services?	1	2	3	4	5
How confident are you that Accelerators will enable InsurTech acceleratees to change their channels, leading to improved efficiency of their channel functions?	1	2	3	4	5
How confident are you that Accelerators will enable InsurTech acceleratees to change their portfolio of distribution channels consistently?	1	2	3	4	5

After attending Accelerators, Startups’ financial performance questions

1= Not at all 5=Very much so

New venture performance					
Will the graduated InsurTech be satisfied with its annual sales?	1	2	3	4	5
The graduated InsurTech Accelerate will be satisfied with its net profits?	1	2	3	4	5
Will the graduated InsurTech be satisfied with its returns on assets?	1	2	3	4	5
Tangible financial resource					
The graduated InsurTech will own adequate financial assets to operate their business.	1	2	3	4	5
The graduated InsurTech will own adequate physical assets to operate their business.	1	2	3	4	5

8. Please indicate your level of agreement with each of the following statements about your feedback on the InsurTech Startup Business Model and Innovation performance. '1' means that you do not agree at all, while '5' means that you strongly agree. '3' means that you have a neutral opinion on the statement. The higher the number you choose, the more you are confident with the statement.

1= Not at all 5=Very much so

New Revenue Models					
How confident are you that Accelerated InsurTech Startups will develop new revenue opportunities (e.g., additional sales, cross-selling)?	1	2	3	4	5
How confident are you that Accelerated InsurTech Startups will increasingly offer integrated services (e.g., maintenance contracts) to realise long-term financial returns?	1	2	3	4	5
How confident are you that Accelerated InsurTech Startups will complement or replace one-time transaction revenues with long-term recurring revenue models (e.g., Leasing)?	1	2	3	4	5
New customer relationships					
How confident are you that Accelerated InsurTech Startups will increase customer retention with new service offerings?	1	2	3	4	5

How confident are you that Accelerated InsurTech Startups will emphasise innovative/modern actions to increase customer retention (e.g., CRM)?	1	2	3	4	5
How confident are you that Accelerated InsurTech Startups will strengthen customer relationships?	1	2	3	4	5
New business model design					
How confident are you that Accelerated InsurTech Startups will offer new products, services, and information combinations?					
How confident are you that Accelerated InsurTech Startups' Business Model will link stakeholders to transactions in novel ways?					
How confident are you that Accelerated InsurTech Startups' Business Model will increase the richness (i.e., quality and depth) of some of the links between participants?					
How confident are you that Accelerated InsurTech Startups' Business Model will be scalable (i.e., can handle a small number of transactions)?					
How confident are you that Accelerated InsurTech Startups' Business Model will make the transactions transparent?					
How confident are you that Accelerated InsurTech Startups' Business Model will offer high transaction efficiency?					

1= Not at all **5=Very much so**

Innovation rate					
As stated in the business plan, the ROI of Accelerated InsurTech Startups would exceed what investors expected.	1	2	3	4	5
Accelerated InsurTech Startups would meet this new venture's predefined goals and objectives (profitability, sales, etc.).	1	2	3	4	5
Innovation speed					
How confident are you that Accelerated InsurTech Startups' innovation speed (the time elapsed between initial development and ultimate commercialisation) is faster than competitors?	1	2	3	4	5
How confident are you that Accelerated InsurTech Startups have a reputation of being among the first to introduce new products into the market?	1	2	3	4	5
How confident are you that Accelerated InsurTech Startups' development 'on-time performance' is often?	1	2	3	4	5

Level of innovation					
Accelerated InsurTech Startups are leading in utilising the most adequate equipment and materials.	1	2	3	4	5
Accelerated InsurTech Startups have introduced many new construction methods or techniques.	1	2	3	4	5
Accelerated InsurTech Startups are leading the application of new ideas in the planning, organising, and managing of work on-site.	1	2	3	4	5
Innovation spending and output					
How confident are you that Accelerated InsurTech Startups acquire new groups of customers?	1	2	3	4	5
How confident are you that Accelerated InsurTech Startups actively contribute to developing new products or services?	1	2	3	4	5
How confident are you that Accelerated InsurTech Startups acquire new knowledge?	1	2	3	4	5

Appendix 3. Interview Questions

1. Interview Identifier

Interviewer: Lan Zang		
Interviewee Personal Code:		IDT ID:
Date:	Start Time:	Finish Time:
Notes (behavioural observations, i.e., does the interviewee seem nervous, irritable, hurried, etc.?):		
Office use: Interview Transcript		
Stored (file reference):	Created on (date):	By (initials):

2. Interview Schedule: Insurer and InsurTech

2.1 Interview Script

Note: An informed consent form and demographic questions must be provided and completed before the interview commences.

Thank you very much for participating in this interview. It aims to obtain your experiences and opinions of InsurTech and insurance working with Accelerators.

My name is Lan Zang, and I will conduct this interview as part of my PhD research titled ‘InsurTech accelerator: A model bridging the gap between China Insurers and Technology Startups’. The aim is to examine whether the InsurTech accelerators can bridge the gap between InsurTech Startups and China’s insurers. You will be asked a series of questions, and your honest responses will be requested. There are no right or wrong answers. Your responses will be confidential, and your anonymity will be maintained by using a coded identifier you created before this interview. Your participation is voluntary, and you can withdraw from this interview and the research study anytime.

This interview is being recorded to ensure I capture your responses correctly. Only the chief investigators and I will have access to the recordings. The interview will be transcribed for analysis, with coded responses used in a PhD thesis, journal articles, and a summary report for organisations participating in this research.

By signing the informed consent form, you agree to participate in this interview and permit your responses to be used as advised. Are you happy to continue with this interview?

I will now commence the interview questions. You can stop the interview at any time. Is there anything you wish to ask or do not understand?

Thank you

2.2 Interview Questions

Q.	Primary question	Secondary questions	Research Question to answer	Reference
Background questions				
1.1	What type of insurance enterprise is your Organisation? (Is it a foreign or local insurance enterprise?)	How many employees are there in your Organisation?	What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Huang et al., 2011)
1.2	What is your position in the Organisation?	How long have you worked in the Organisation? How long have you worked in the insurance industry?	What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Huang et al., 2011)
1.3	Does your Organisation have the strategy to initiate InsurTech?	What are, if any, the major InsurTech interaction activities and projects in your Organisation?	What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Huang et al., 2011)
InsurTech perception and practice				
2.1	What is your perception of InsurTech?	What would influence people's perception of InsurTech, for example, competition, individual characteristics, IT infrastructure, efficiency, cost reduction, risk mitigation, Organisation, and culture? Could you name the InsurTech companies that you used?	What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Huang et al., 2011)

2.2	What are the factors affecting InsurTech adoption?	What would encourage you to consider engaging with InsurTech? What are the incentives? What should be done before deciding on partnership/acquiring InsurTech companies?) What are the main factors that may influence people's attitude to adopt InsurTech in your Organisation, for example, improving job performance, being easy to learn and use and pressure from others? What would encourage people to adopt and apply InsurTech, such as customer demand, data security, streamlining the process, cost deduction, explicit strategy, and culture? What are the barriers to adopting and applying InsurTech in your Organisation? What is the perceived usefulness?	What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers? What are the main barriers and enablers for success for InsurTech Startups in China?	(Huang et al., 2011)
2.3	What are the benefits of InsurTech to you?	How can InsurTech help you to perform your job/business better? How would you be affected by InsurTech's adoption and implementation of others, such as your competitors, co-workers, and managers?	What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Huang et al., 2011)
2.4	What would disturb you (or make you feel uneasy) to adopt and implement InsurTech? (What would make it difficult for you to adopt or apply InsurTech?)	What would prevent people from adopting and applying InsurTech?	What are the major gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Singapurwoko, 2019) **(**Huang et al., 2011)
2.5	Do you think that the adoption and application of InsurTech is a normal practice in the insurance industry?	What would make people more willing to adopt and apply InsurTech? What needs to happen (i.e., put it into place) to adopt InsurTech?	What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Singapurwoko, 2019) (Huang et al., 2011)

2.6	What is your perception of the value and uptake of InsurTech and Accelerator?	What do you think are the main activities involved in Accelerator? What would influence people's perception of Accelerator, for example, IT infrastructure, resources, and innovation? What would encourage you to consider participating in Accelerator? What are the incentives?	What can be learned from using Accelerators to support Startups in other countries? What factors will motivate startups to consider adopting an Accelerator? What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Huang et al., 2011)
2.7	What are the benefits of Accelerator to you?	Do you think adopting and applying Accelerator is a standard practice in the insurance industry? What would make people more willing to support Accelerator? How would joining the Accelerator program affect you, for example, your competitors, co-workers, and managers? How do you see how the practice of Accelerator would affect your organisational performance? How do you see the adoption of Accelerator improving your organisational performance?	What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers? How does the Business Model relate to innovation performance?	(Huang et al., 2011)
Perceived expected performance				
3.1	How do you see how the practice of InsurTech would /could affect your organisational performance?	How do you see the adoption of InsurTech would improve your Organisational performance?	How does the Business Model relate to innovation performance? What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Choi et al., 2020) (Huang et al., 2011)

3.2	Could you think of a time when you successfully used InsurTech?	What went well?	How does the Business Model relate to innovation performance? What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Heinz, 2013)
3.3	Could you think of a time when you encountered difficulty using technology?	What went wrong? What was difficult?	What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Heinz, 2013)
3.4	To what extent would you expect the popularity and availability of future applications of your InsurTech platform?	Would you recommend this InsurTech platform to other insurers?	What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Song et al., 2013, August 15–17)
3.5	How do you foresee your future use of this platform?	Do you plan to try or switch to alternative platforms?	What are the significant gaps in understanding of business needs between InsurTech Startups and China's insurers?	(Song et al., 2013, August 15–17)
3.6	How important is it for your Organisation to maximise efficiency regarding the delivery of InsurTech?		How does the Business Model relate to innovation performance?	(Bilodeau, 2010)
3.7	Would you like to add anything that we have not already discussed?		How does the Business Model relate to innovation performance?	(Clauss, 2017)

Appendix 4. Ethics Approval

Quest Ethics Notification - Amendment Request Process Finalised - Application Approved quest.noreply@vu.edu.au Wed 12/10/2022 6:53 AM To: Catherine.Lou@vu.edu.au Cc: Elisabeth.Wilson-Evered@vu.edu.au; Lan Zang Dear PR CATHERINE LOU.

Your amendment request for the following ethics application has been formally reviewed and finalised. » Application ID: HRE21-054 » Chief Investigator: DR CATHERINE LOU » Other Investigators: MS Lan ZANG, PROF ELISABETH WILSON-EVERED » Application Title: InsurTech Accelerator: A model bridging the gap between China Insurers and Technology Startups » Form Version: 13-07

The amendment request for this ethics application has been accepted and deemed to meet the requirements of the National Health and Medical Research Council (NHMRC) ‘National Statement on Ethical Conduct in Human Research (2007)’ by the Victoria University Human Research Ethics Committee. Approval has been granted for two (2) years from the original approval date, 18/11/2021. Continued approval of this research project by the Victoria University Human Research Ethics Committee is conditional upon providing a report within 12 months of the above approval date or upon the completion of the project (if earlier). A report proforma may be downloaded from the Office for Research website at http://research.vu.edu.au/hrec.php. Please note that the Human Research Ethics Committee must be informed of the following: any changes to the approved research protocol, project timelines, and any severe events or adverse and unforeseen events that may affect the continued ethical acceptability of the project. In these unlikely events, researchers must immediately cease all data collection until the Committee has approved the changes. Researchers are also reminded of the need to notify the approving HREC of changes to personnel in research projects via a request for a minor amendment. It should also be noted that the chief investigator must ensure the research project is conducted per the recommendations outlined in the NHMRC ‘National Statement on Ethical Conduct in Human Research (2007)’. On behalf of the Committee, I wish you all the best in conducting the project.

Secretary, Human Research Ethics Committee Phone: 9919 4781 or 9919 4461 Email: researchethics@vu.edu.au

Appendix 5. Exploratory Factor Analysis

Table 42

Demographic Information Form of Questionnaire

Information		Count
Gender	Male	268
	Female	251
Age	20-21	3
	22-31	36
	32-47	317
	48-67	163
	Over 67	0
Education	High School	23
	Diploma	94
	Bachelor degree	77
	Master degree	232
	Doctoral Degree	93
	Other (Specify)...	0
Occupation	InsurTech startup executives	122
	Insurance professional	207
	Accelerator professional	190
Income	CNY 120,000 & under	28
	CNY 120,001- 300,000	115
	CNY 300,001-500,000	117
	CNY 500,001-1,000,000	128
	CNY1,000,001-1,500,000	116
	Over CNY1,500,000	15

Table 43

Full-Model-1: Exploratory Factor Analysis – Startups motivation, Accelerator adoption, Organisational business model, and Innovation performance

Table 43.1 Full-Model-1: Assessment of the Four-Construct Measurement

Constructs	Average Variance Extracted (AVE)	Composite Reliability (CR)	Maximum Shared Variance (MSV)
Startups motivation	0.514	0.932	0.352
Accelerator adoption	0.802	0.990	0.705
Organisational business model	0.846	0.985	0.705
Innovation performance	0.767	0.973	0.496

Table 43.2 Full-Model-1: communalities

Communalities											
Startups Motivation			Accelerator adoption			Organisational Business Mode			Innovation performance		
Factor	Initial	Extraction	Factor	Initial	Extraction	Factor	Initial	Extraction	Factor	Initial	Extraction
6-1	.668	.610	7-1	.858	.826	8-1	.831	.796	8-4	.780	.758
6-1	.638	.578	7-1	.842	.801	8-1	.952	.956	8-4	.778	.763
6-1	.628	.581	7-1	.856	.811	8-1	.862	.848	8-5	.762	.751
6-1	.511	.469	7-2	.843	.803	8-2	.844	.830	8-5	.802	.783
6-1	.647	.601	7-2	.848	.800	8-2	.846	.824	8-5	.781	.765
6-1	.614	.575	7-2	.858	.825	8-2	.829	.798	8-6	.777	.766
6-1	.648	.614	7-3	.855	.798	8-3	.839	.812	8-6	.798	.779
6-2	.705	.622	7-3	.869	.830	8-3	.844	.823	8-6	.774	.769
6-2	.573	.535	7-3	.851	.815	8-3	.838	.816	8-7	.775	.765
6-3	.698	.588	7-4	.840	.802	8-3	.837	.812	8-7	.785	.766
6-3	.524	.437	7-4	.833	.804	8-3	.870	.843	8-7	.773	.773
6-3	.609	.542	7-4	.831	.782	8-3	.972	.979			
6-3	.581	.491	7-5	.849	.795						
			7-5	.846	.798						
			7-5	.850	.790						
			7-5	.828	.786						

			7-6	.848	.805					
			7-6	.836	.786					
			7-6	.846	.791					
			7-7	.855	.817					
			7-7	.843	.792					
			7-7	.767	.705					
			7-8	.852	.795					
			7-8	.842	.806					
Extraction Method: Maximum Likelihood.										

Table 43.3 Full-Model-1: all reflective measures and total variance explained

Construct	**Factor**	**All reflective measures**			**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**
		Loading	Construct Reliability (Cronbach's alpha)	AVE (Average Variance Extracted)	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
Startups Motivation	6-1	0.711	0.94	0.514	33.797	56.329	56.329	33.131	55.218	55.218	30.568
	6-1	0.702			5.886	9.811	66.139				
	6-1	0.629			4.609	7.681	73.820				
	6-1	0.733			1.747	2.912	76.733				
	6-1	0.721			.870	1.450	78.183				
	6-1	0.708			.788	1.314	79.496				
	6-1	0.737			.670	1.117	80.613				
	6-2	0.656			.586	.977	81.590				
	6-2	0.753			.537	.894	82.485				
	6-3	0.725			.518	.863	83.348				
	6-3	0.768			.487	.812	84.159				
	6-3	0.754			.451	.752	84.911				

	6-3	0.709			.415	.692	85.603				
Accelerator adoption	7-1	0.906	0.989	0.802	.388	.646	86.250	4.921	8.201	63.419	20.349
	7-1	0.892			.362	.604	86.853				
	7-1	0.891			.316	.527	87.381				
	7-2	0.899			.312	.520	87.901				
	7-2	0.908			.301	.502	88.403				
	7-2	0.9			.289	.481	88.885				
	7-3	0.898			.279	.466	89.350				
	7-3	0.893			.272	.453	89.804				
	7-3	0.904			.262	.437	90.241				
	7-4	0.896			.254	.424	90.664				
	7-4	0.897			.249	.415	91.080				
	7-4	0.891			.243	.406	91.485				
	7-5	0.912			.231	.385	91.871				
	7-5	0.9			.228	.379	92.250				
	7-5	0.843			.224	.374	92.624				
	7-5	0.903			.216	.361	92.984				
	7-6	0.903			.211	.352	93.337				
	7-6	0.894			.202	.336	93.672				
	7-6	0.889			.201	.336	94.008				
	7-7	0.889			.193	.321	94.329				
	7-7	0.899			.188	.313	94.642				
	7-7	0.883			.185	.308	94.950				
	7-8	0.909			.179	.298	95.248				
	7-8	0.898			.177	.294	95.543				
Organisational business model	8-1	0.894	0.985	0.846	.174	.291	95.833	3.382	5.636	69.055	15.002
	8-1	0.902			.166	.277	96.110				
	8-1	0.912			.156	.261	96.371				
	8-2	0.994			.156	.259	96.630				
	8-2	0.982			.152	.253	96.883				
	8-2	0.92			.144	.240	97.123				
	8-3	0.912			.141	.235	97.358				
	8-3	0.907			.138	.230	97.588				
	8-3	0.892			.135	.225	97.813				
	8-3	0.902			.133	.222	98.034				

	8-3	0.908			.119	.199	98.233				
	8-3	0.905			.117	.195	98.429				
Innovation performance	8-4	0.873	0.973	0.767	.112	.186	98.615	3.546	5.910	74.965	27.102
	8-4	0.874			.110	.184	98.799				
	8-5	0.878			.109	.181	98.980				
	8-5	0.873			.102	.170	99.150				
	8-5	0.867			.094	.156	99.306				
	8-6	0.884			.090	.151	99.457				
	8-6	0.878			.085	.142	99.599				
	8-6	0.876			.083	.138	99.737				
	8-7	0.883			.074	.124	99.861				
	8-7	0.879			.062	.104	99.964				
	8-7	0.867			.021	.036	100.000				
Extraction Method: Maximum Likelihood.											

Table 43.4 Full-Model-1: factor matrixa, pattern matrixa and structure matrixa

Construct	**Factor**	**Factor Matrix[a]**				**Pattern Matrix[a]**				**Structure Matrix[a]**			
		Startups motivation	Accelerator adoption	Organisational business model	Innovation performance	Startups motivation	Accelerator adoption	Organisational business model	Innovation performance	Startups Motivation	Accelerator adoption	Organisational business model	Innovation performance
Startups Motivation	6-1	.565	.189	.379	.335	.133	-.128	.610	.222	.526	.266	.747	.534
	6-1	.435	.175	.331	.499	.099	.019	.739	-.073	.414	.231	.757	.377
	6-1	.489	.127	.356	.446	.047	.013	.697	.067	.443	.279	.756	.452
	6-1	.383	.098	.381	.410	-.064	-.020	.666	.107	.330	.203	.682	.371
	6-1	.409	.129	.374	.527	-.008	.044	.785	-.039	.368	.232	.775	.368
	6-1	.397	.163	.384	.494	.014	-.018	.762	-.012	.365	.194	.758	.359
	6-1	.410	.144	.434	.487	-.049	-.042	.783	.071	.362	.197	.782	.388
	6-2	.364	.180	.347	.580	.053	.050	.828	-.178	.349	.190	.781	.301
	6-2	.388	.168	.375	.465	.024	-.038	.729	.003	.359	.181	.731	.351
	6-3	.342	.162	.382	.547	-.012	.014	.812	-.099	.316	.167	.762	.298
	6-3	.371	.034	.391	.381	-.153	.007	.634	.180	.295	.221	.650	.379
	6-3	.368	.108	.380	.501	-.059	.034	.759	-.010	.321	.207	.735	.340
	6-3	.373	.151	.315	.479	.056	.030	.704	-.084	.351	.201	.699	.323

Accelerator adoption	7-1	.837	.306	-.172	.031	.935	-.006	.005	-.034	.908	.493	.441	.673
	7-1	.836	.253	-.187	.055	.887	.069	.013	-.051	.894	.533	.438	.675
	7-1	.821	.315	-.193	.024	.957	-.006	-.014	-.063	.899	.481	.419	.652
	7-2	.818	.314	-.179	.060	.941	.009	.030	-.087	.894	.482	.447	.647
	7-2	.820	.298	-.196	.018	.940	.007	-.025	-.050	.894	.490	.409	.655
	7-2	.819	.303	-.244	.049	.992	.059	-.021	-.147	.904	.507	.406	.635
	7-3	.809	.300	-.229	.028	.969	.035	-.034	-.107	.890	.492	.394	.634
	7-3	.847	.292	-.166	-.016	.918	-.030	-.041	.038	.910	.495	.415	.693
	7-3	.828	.312	-.176	.035	.940	-.007	.007	-.050	.902	.485	.437	.661
	7-4	.821	.288	-.212	.019	.944	.028	-.035	-.065	.894	.500	.400	.653
	7-4	.819	.304	-.200	.001	.951	-.008	-.043	-.040	.895	.482	.397	.654
	7-4	.843	.244	-.111	-.020	.808	-.032	-.019	.133	.881	.502	.429	.714
	7-5	.842	.263	-.126	.027	.844	-.005	.022	.051	.891	.506	.456	.698
	7-5	.841	.261	-.146	.015	.861	.004	-.002	.040	.893	.510	.437	.695
	7-5	.847	.219	-.151	.037	.820	.062	.011	.035	.886	.545	.444	.704
	7-5	.843	.252	-.102	.027	.809	-.012	.035	.085	.884	.506	.467	.708
	7-6	.852	.258	-.106	.037	.824	-.006	.044	.070	.895	.513	.477	.712
	7-6	.841	.255	-.117	-.004	.825	-.026	-.005	.101	.885	.500	.438	.706
	7-6	.858	.208	-.109	-.011	.772	.007	-.013	.151	.884	.536	.437	.734
	7-7	.862	.243	-.119	.009	.824	-.002	.006	.100	.901	.526	.454	.726
	7-7	.841	.271	-.111	-.008	.837	-.047	-.003	.104	.888	.489	.441	.705
	7-7	.813	.189	-.064	.060	.685	.036	.080	.114	.830	.517	.479	.696
	7-8	.845	.265	-.098	.019	.820	-.031	.032	.094	.889	.498	.467	.710
	7-8	.858	.236	-.114	.044	.809	.026	.043	.067	.895	.534	.476	.719
Organisational business model	8-1	.874	-.114	.112	-.079	.200	.086	.005	.667	.756	.651	.453	.879
	8-1	.943	-.101	.183	-.150	.181	-.019	-.020	.857	.810	.656	.481	.971
	8-1	.886	-.150	.179	-.094	.102	.059	.025	.787	.743	.656	.475	.916
	8-2	.883	-.113	.162	-.105	.158	.030	.008	.760	.755	.636	.465	.904
	8-2	.882	-.127	.117	-.129	.185	.060	-.044	.739	.757	.651	.424	.898
	8-2	.868	-.142	.150	-.056	.129	.098	.046	.698	.735	.655	.477	.885
	8-3	.876	-.148	.132	-.076	.144	.104	.015	.705	.743	.666	.458	.892
	8-3	.883	-.136	.128	-.095	.164	.083	-.005	.720	.754	.661	.450	.898
	8-3	.873	-.126	.155	-.117	.144	.037	-.009	.768	.743	.635	.446	.898
	8-3	.877	-.105	.148	-.099	.177	.037	.007	.730	.754	.632	.460	.893
	8-3	.895	-.183	.083	-.049	.160	.193	.009	.644	.759	.720	.455	.900
	8-3	.958	-.110	.175	-.137	.186	.006	-.012	.843	.822	.678	.492	.982

Innovation performance	8-4	.646	-.477	-.240	.236	.011	.865	.053	-.025	.500	.869	.288	.596
	8-4	.645	-.464	-.285	.223	.069	.878	.015	-.071	.511	.872	.258	.583
	8-5	.627	-.482	-.276	.223	.031	.884	.017	-.059	.487	.866	.250	.572
	8-5	.643	-.504	-.291	.176	.029	.883	-.041	-.006	.497	.884	.217	.595
	8-5	.638	-.513	-.231	.205	-.042	.866	.021	.037	.479	.874	.261	.603
	8-6	.663	-.490	-.236	.172	.001	.830	-.010	.068	.510	.874	.255	.626
	8-6	.660	-.511	-.231	.170	-.029	.843	-.013	.085	.499	.881	.250	.628
	8-6	.656	-.503	-.253	.146	.000	.834	-.049	.080	.502	.875	.223	.621
	8-7	.635	-.500	-.249	.224	-.012	.882	.031	-.014	.483	.874	.265	.589
	8-7	.662	-.503	-.228	.150	-.021	.820	-.030	.108	.503	.873	.241	.633
	8-7	.648	-.472	-.284	.224	.061	.885	.015	-.066	.511	.878	.260	.587
	Extraction Method: Maximum Likelihood.												
	a. four factors extracted. 4 iterations required.					a. Rotation converged in 6 iterations.				Rotation Method: Promax with Kaiser Normalisation.			

Table 44

Sub-Model-2: Internal Support, External Resource to Organisational Business Model

Table 44.1 Sub-Model-2: Maximum Likelihood Estimates regression weights and standardised regression weights (Group number 1 - Default model)

Construct			Regression Weights					Standardised Regression Weights
			Estimate	**S.E.**	**C.R.**	**P**	**Label**	**Estimate**
Business Model	<---	Internal Support	.097	.083	1.166	.244	par-35	.092
Business Model	<---	External Resource	.810				par-36	.759
@7-1	<---	Internal Support	1.000					.917
@7-1-A	<---	Internal Support	.990	.028	35.836	***	par-1	.910
@7-1-B	<---	Internal Support	1.002	.027	36.748	***	par-2	.917
@7-2	<---	Internal Support	.989	.028	35.335	***	par-3	.906

Construct			Regression Weights					Standardised Regression Weights
			Estimate	S.E.	C.R.	P	Label	Estimate
@7-2-A	<---	Internal Support	1.021	.028	36.260	***	par-4	.913
@7-2-B	<---	Internal Support	1.013	.028	36.720	***	par-5	.917
@7-3	<---	Internal Support	1.024	.029	35.870	***	par-6	.910
@7-3-A	<---	Internal Support	1.008	.027	36.953	***	par-7	.919
@7-3-B	<---	Internal Support	1.002	.028	36.262	***	par-8	.913
@7-4	<---	Internal Support	1.000	.028	35.267	***	par-9	.905
@7-4-A	<---	Internal Support	.990	.028	35.416	***	par-10	.906
@7-4-B	<---	Internal Support	.935	.031	29.951	***	par-11	.851
@7-5	<---	External Resource	.998				par-12	.914
@7-5-A	<---	External Resource	.994				par-13	.906
@7-5-B	<---	External Resource	.970				par-14	.901
@7-5-C	<---	External Resource	.967				par-15	.902
@7-6	<---	External Resource	.968				par-16	.912
@7-6-A	<---	External Resource	.957				par-17	.904
@7-6-B	<---	External Resource	.968				par-18	.908
@7-7	<---	External Resource	1.005				par-19	.918
@7-7-A	<---	External Resource	.986				par-20	.909
@7-7-B	<---	External Resource	.943				par-21	.856
@7-8	<---	External Resource	.997				par-22	.911
@7-8-A	<---	External Resource	.982				par-23	.909
@8-1	<---	Organisational Business Model	1.000					.891
@8-1-A	<---	Organisational Business Model	1.019	.025	40.792	***	par-24	.976

Construct			Regression Weights					Standardised Regression Weights
			Estimate	**S.E.**	**C.R.**	**P**	**Label**	**Estimate**
@8-1-B	<---	Organisational Business Model	1.009	.030	34.068	***	par-25	.919
@8-2	<---	Organisational Business Model	1.011	.030	33.289	***	par-26	.911
@8-2-A	<---	Organisational Business Model	.992	.030	32.941	***	par-27	.908
@8-2-B	<---	Organisational Business Model	.976	.031	31.499	***	par-28	.891
@8-3	<---	Organisational Business Model	.993	.031	32.293	***	par-29	.901
@8-3-A	<---	Organisational Business Model	1.000	.030	32.847	***	par-30	.907
@8-3-B	<---	Organisational Business Model	.995	.031	32.567	***	par-31	.904
@8-3-C	<---	Organisational Business Model	.965	.030	32.361	***	par-32	.901
@8-3-D	<---	Organisational Business Model	1.029	.031	33.192	***	par-33	.910
@8-3-E	<---	Organisational Business Model	1.090	.026	42.708	***	par-34	.989
Business model	<---	Internal Support	.176	.068	2.580	.010		
Business model	<---	External Resource	.745	.070	10.674	***		
External funds/Resource	<-->	Internal Support	1.528	.099	15.447	***		

Table 44.2 Sub-Model-2: Covariances and Correlations (Group number 1 - Default model)

Construct	Covariances	Correlations

			Estimate	S.E.	C.R.	P	Label	Estimate
Internal Support	<-->	External Resource	1.560				par-37	.937

Table 44.3 Sub-Model-2: Variances (Group number 1 - Default model)

Construct	Variances				
	Estimate	S.E.	C.R.	P	Label
External Resource	1.614	.100	16.093	***	
Internal Support	1.695	.105	16.093	***	
Organisational Business Model	.595	.037	16.093	***	

Table 44.4 Sub-Model-2: Frequency table

Valid		Frequency	Per cent	Valid Percent	Cumulative Percent
Gender	Male	268	51.6	51.6	51.6
	Female	251	48.4	48.4	100.0
	Total	519	100.0	100.0	
Age	Age20-21	3	.6	.6	.6
	Age 22-31	36	6.9	6.9	7.5
	Age 32-47	317	61.1	61.1	68.6
	Age 48-67	163	31.4	31.4	100.0
	Total	519	100.0	100.0	
Occupation	InsurTech Startup Executives	122	23.5	23.5	23.5
	Insurance Professional	207	39.9	39.9	63.4
	Accelerator Professional	190	36.6	36.6	100.0
	Total	519	100.0	100.0	
Income	CNY 120,000 & under	28	5.4	5.4	5.4
	CNY 120,001- 300,000	115	22.2	22.2	27.6
	CNY 300,001-500,000	117	22.5	22.5	50.1
	CNY 500,001-1,000,000	128	24.7	24.7	74.8

	CNY1,000,001-1,500,000	116	22.4	22.4	97.1
	Over CNY1,500,000	15	2.9	2.9	100.0
	Total	519	100.0	100.0	

Table 45

Sub-Model-3: New Revenue Models, New Customer Relationships, New Business Model Design to Innovation Performance

Table 45.1 Sub-Model-3: Maximum Likelihood Estimates regression weights and standardised regression weights (Group number 1 - Default model)

Construct			Estimates Regression Weights					Standardised Regression Weights
			Estimate	S.E.	C.R.	P	Label	Estimate
Innovation performance	<---	New Revenue Model	1.385	1.182	1.172	.241	par-17	1.533
Innovation performance	<---	New Customer Relationships	-1.804	3.098	-.582	.560	par-18	-1.936
Innovation performance	<---	New Business Model Design	1.020	3.770	.271	.787	par-19	1.116
@8-1-B	<---	New Revenue Model	1.000					.917
@8-1-A	<---	New Revenue Model	1.009	.022	45.843	***	par-1	.973
@8-1	<---	New Revenue Model	.992	.029	33.805	***	par-2	.890
@8-2-B	<---	New Customer Relationships	1.000					.891
@8-2-A	<---	New Customer Relationships	1.015	.031	32.886	***	par-3	.906
@8-2	<---	New Customer Relationships	1.033	.031	33.093	***	par-4	.908
@8-3-B	<---	New Business Model Design	1.000					.904
@8-3-A	<---	New Business Model Design	1.006	.029	34.147	***	par-5	.907

Construct			Estimates Regression Weights					Standardised Regression Weights
			Estimate	S.E.	C.R.	P	Label	Estimate
@8-3	<---	New Business Model Design	.998	.030	33.533	***	par-6	.901
@8-4	<---	Innovation performance	1.000					.869
@8-4-A	<---	Innovation performance	.997	.036	28.003	***	par-7	.872
@8-5	<---	Innovation performance	1.023	.037	27.543	***	par-8	.865
@8-5-A	<---	Innovation performance	1.035	.036	28.771	***	par-9	.883
@8-5-B	<---	Innovation performance	1.008	.036	28.200	***	par-10	.875
@8-6	<---	Innovation performance	1.032	.037	28.255	***	par-11	.876
@8-6-A	<---	Innovation performance	1.022	.036	28.707	***	par-12	.882
@8-6-B	<---	Innovation performance	1.035	.037	28.310	***	par-13	.876
@8-7	<---	Innovation performance	1.025	.037	28.034	***	par-14	.872
@8-7-A	<---	Innovation performance	1.001	.035	28.199	***	par-15	.875
@8-7-B	<---	Innovation performance	1.050	.037	28.318	***	par-16	.876
@8-3-C	<---	New Business Model Design	.970	.029	33.524	***	par-23	.901
@8-3-D	<---	New Business Model Design	1.036	.030	34.618	***	par-24	.912
@8-3-E	<---	New Business Model Design	1.094	.024	45.309	***	par-25	.988

Table 45.2 Sub-Model-3: Covariances and Correlations (Group number 1 - Default model)

Construct			Covariances					Correlations
			Estimate	S.E.	C.R.	P	Label	Estimate
New Revenue Model	<-->	New Business Model Design	1.894	.129	14.667	***	par-20	1.004
New Revenue Model	<-->	New Customer Relationships	1.864	.128	14.587	***	par-21	1.008
New Customer Relationships	<-->	New Business Model Design	1.834	.127	14.446	***	par-22	1.002

Table 45.3 Sub-Model-3: Variances (Group number 1 - Default model)

Construct	Variances				
	Estimate	S.E.	C.R.	P	Label
New Revenue Model	1.907	.139	13.695	***	par-26
New Customer Relationships	1.793	.138	13.021	***	par-27
New Business Model Design	1.865	.140	13.347	***	par-28
@7-1-e1	.831	.103	8.060	***	par-29
@7-1-e2	.360	.023	15.334	***	par-30
@7-1-e3	.110	.010	11.445	***	par-31
@7-2-e4	.494	.032	15.639	***	par-32
@7-2-e5	.464	.031	15.027	***	par-33
@7-2-e6	.403	.027	14.676	***	par-34
@7-3-e7	.407	.028	14.610	***	par-35
@7-3-e8	.419	.027	15.454	***	par-36
@7-3-e9	.406	.026	15.425	***	par-37
@7-4-e10	.430	.028	15.473	***	par-38

Construct	Variances				
	Estimate	**S.E.**	**C.R.**	**P**	**Label**
@7-4-e11	.504	.034	14.742	***	par-39
@7-4-e12	.490	.033	14.708	***	par-40
@7-5-e13	.551	.037	14.798	***	par-41
@7-5-e14	.470	.032	14.541	***	par-42
@7-5-e15	.486	.033	14.668	***	par-43
@7-5-e16	.505	.034	14.656	***	par-44
@7-6-e17	.463	.032	14.556	***	par-45
@7-6-e18	.504	.034	14.644	***	par-46
@7-6-e19	.515	.035	14.702	***	par-47
@7-7-e20	.479	.033	14.668	***	par-48
@7-7-e21	.518	.035	14.642	***	par-49
@7-7-e22	.406	.026	15.473	***	par-50
@7-8-e23	.407	.026	15.385	***	par-51
@7-8-e24	.055	.006	9.283	***	par-52

Table 46

Multi-group Analysis and Effect of Positive and Negative Effects on the Relationship among Startup Motivation, Accelerator Adoption, Organisational Business Model, and Innovation Performance

Table 46.1-1,2 The difference of different Age and Gender in the model

Construct	**Age**			**Gender**		
	Difference	1-tailed *p*-value	2-tailed *p*-value	Difference	1-tailed *p*-value	2-tailed *p*-value

			(22 -31 vs 32-47)	(22 -31 vs 48-67)	(22-31 vs 32-47)	(22-31 vs 48-67)	(22-31 vs 32-47)	(22-31 vs 48-67)	(Male-Female)	(Male vs Female)	(Male vs Female)
Accelerator adoption	→	Organisational business model	0.016	0.068	0.438	0.216	0.438	0.216	0.016	0.338	0.675
Organisational business model	→	Innovation performance	-0.204	-0.188	0.971	0.954	0.029	0.046	-0.025	0.687	0.626
Startup motivation	→	Accelerator adoption	0.096	0.108	0.174	0.167	0.174	0.167	0.091	0.091	0.182
Startup motivation	→	Organisational business model	-0.178	-0.281	0.92	0.986	0.08	0.014	-0.009	0.564	0.871

Table 46.1-3 The difference between different **Incomes** in the model

Construct			**Income**					
			Difference		1-tailed *p*-value		2-tailed *p*-value	
			(CNY 120,000 & under - CNY 300,001-500,000)	(CNY 120,001-300,000 - CNY 300,001-500,000)	(CNY 120,000 & under vs CNY 300,001-500,000)	(CNY 120,001-300,000 vs CNY 300,001-500,000)	(CNY 120,000 & under vs CNY 300,001-500,000)	(CNY 120,001-300,000 vs CNY 300,001-500,000)
Accelerator adoption	→	Organisational business model	-0.03	0.02	0.699	0.331	0.602	0.661
Organisational Business model	→	Innovation performance	0.072	0.079	0.139	0.093	0.279	0.186
Startup motivation	→	Accelerator adoption	0.019	0.01	0.417	0.45	0.834	0.899

Startup motivation → Organisational business model	0.055	-0.003	0.249	0.518	0.499	0.963

Table 46.1-4 The difference of different **Occupation** in the model

Construct	**Occupation**					
	Difference		**1-tailed *p*-value**		**2-tailed *p*-value**	
	(Accelerator Professional vs Insurance Professional)	(InsurTech Startups Executives vs Insurance Professionals)	(Accelerator Professional vs Insurance Professional)	(InsurTech Startups Executives Insurance Professional)	(Accelerator Professional vs Insurance Professional)	(InsurTech Startups Executives vs Insurance Professionals)
Accelerator adoption → Organisational business model	0.061	-0.048	0.091	0.817	0.183	0.366
Organisational business model → Innovation performance	-0.099	-0.011	0.912	0.567	0.176	0.865
Startup motivation → Accelerator adoption	0.096	0.006	0.136	0.467	0.272	0.934
Startup motivation → Organisational business model	-0.02	0.053	0.61	0.232	0.779	0.463

Table 46.2-1 The coefficients of different **Gender** in the model

Construct			Gender	Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
						B	Std. Error	Beta		
Startup motivation	→	Accelerator adoption	Male	1	(Constant)	-2.635	.621		-4.243	.000
					Motivation	1.361	.131	.539	10.428	.000
			Female	1	(Constant)	-1.386	.701		-1.976	.049
					Motivation	1.086	.147	.424	7.382	.000
Organisational business model	→	Innovation performance	Male	1	(Constant)	.984	.153		6.422	.000
					Business Model	.662	.041	.701	16.021	.000
			Female	1	(Constant)	.994	.141		7.047	.000
					Business Model	.658	.040	.726	16.642	.000
Accelerator adoption	→	Organisational business model	Male	1	(Constant)	-.075	.148		-.506	.000
					Accelerator adoption	.921	.037	.838	25.016	.000
			Female	1	(Constant)	-.107	.161		-.666	.000
					Accelerator adoption	.904	.041	.815	22.191	.000
Startup motivation	→	Organisational business model	Male	1	(Constant)	-3.645	.683		-5.337	.000
					Motivation	1.496	.144	.538	10.417	.000
			Female	1	(Constant)	-2.787	.766		-3.637	.000
					Motivation	1.283	.161	.451	7.978	.000

Table 46.2-2 The coefficients of different **Ages** in the model

Construct			Age	Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
						B	Std. Error	Beta		
Startup motivation	→	Accelerator adoption	Age 22-31	1	(Constant)	-.388	1.565		-.248	.806
					Motivation	.800	.333	.381	2.405	.022

			Age 32-47	1	(Constant)	-2.946	.630		-4.675	.000
					Motivation	1.337	.133	.494	10.081	.000
			Age 48-67	1	(Constant)	-5.207	1.042		-4.995	.000
					Motivation	1.792	.218	.545	8.238	.000
Accelerator adoption	→	Organisational business model	Age 20-21	1	(Constant)	1.314	.675		1.946	.846
					Accelerator adoption	.719	.169	.973	4.246	.001
			Age 22-31	1	(Constant)	.025	.530		.047	.648
					Accelerator adoption	.862	.133	.743	6.481	.000
			Age 32-47	1	(Constant)	-.149	.139		-1.075	.589
					Accelerator adoption	.925	.035	.833	26.686	.000
			Age 48-67	1	(Constant)	-.024	.189		-.127	.966
					Accelerator adoption	.904	.048	.830	18.849	.000
Organisational business model	→	Innovation performance	Age 20-21	1	(Constant)	-5.768	1.731		-3.332	.057
					Business Model	2.170	.416	.982	5.216	.034
			Age 22-31	1	(Constant)	1.715	.454		3.775	.000
					Business Model	.421	.128	.492	3.292	.000
			Age 32-47	1	(Constant)	.991	.128		7.717	.000
					Business Model	.668	.035	.730	18.982	.000
			Age 48-67	1	(Constant)	.897	.191		4.694	.000
					Business Model	.678	.053	.713	12.899	.000
Startup motivation	→	Organisational business model	Age 22-31	1	(Constant)	-1.046	1.190		-.879	.386
					Motivation	1.050	.253	.580	4.151	.000
				1	(Constant)	-1.910	.566		-3.372	.001

			Age 32-47		Motivation	1.210	.119	.496	10.149	.000
			Age 48-67	1	(Constant)	-3.016	1.009		-2.990	.003
					Motivation	1.413	.211	.468	6.714	.000

Table 46.2-3 The coefficients of different **Occupation** in the model

Construct			**Occupational**	**Model**		**Unstandardised Coefficients**		**Standardised Coefficients**	**t**	**Sig.**
						B	**Std. Error**	**Beta**		
Startup motivation	→	Accelerator adoption	InsurTech Startups Executives	1	(Constant)	-3.334	1.107		-5.619	.000
					Startup motivation	1.480	.229	.507	10.389	.000
			Insurance Professional	1	(Constant)	-2.920	.826		-8.792	.000
					Motivation	1.411	.173	.494	15.653	.000
			Accelerator Professional	1	(Constant)	-1.168	.657		-4.313	.000
					Motivation	1.062	.139	.486	11.226	.000
Startup motivation	→	Organisational business model	InsurTech Startups Executives	1	(Constant)	-4.966	1.184		-7.001	.000
					Motivation	1.724	.245	.540	11.416	.000
			Insurance Professional	1	(Constant)	-3.976	.895		-10.024	.000
					Motivation	1.552	.188	.500	15.898	.000
			Accelerator Professional	1	(Constant)	-2.315	.740		-6.817	.000
					Motivation	1.214	.157	.491	12.751	.000
Organisational business model	→	Innovation performance	InsurTech Startups Executives	1	(Constant)	.944	.205		7.318	.000
					Business Model	.674	.057	.732	19.501	.000
			Insurance Professional	1	(Constant)	.821	.163		7.799	.000
					Business Model	.708	.044	.744	25.534	.000

			Accelerator Professional	1	(Constant)	1.189	.179		9.341	.000
					Business Model	.602	.049	.667	19.501	.000
Accelerator adoption	→	Organisational business model	InsurTech Startups Executives	1	(Constant)	1.292	.171		.655	.513
					Accelerator adoption	.749	.048	.820	26.523	.000
			Insurance Professional	1	(Constant)	1.164	.129		.110	.912
					Accelerator adoption	.770	.035	.838	35.596	.000
			Accelerator Professional	1	(Constant)	1.360	.135		.577	.564
					Accelerator adoption	.725	.037	.820	31.973	.000

Table 46.2-4 The coefficients of different **Income** in the model

Construct	**Income**	**Model**		**Unstandardised Coefficients**		**Standardised Coefficients**	**t**	**Sig.**
				B	**Beta**	**Beta**		
Accelerator adoption → Organisational business model	CNY 120,000 & under	1	(Constant)	3.595	.311		.981	.331
			Accelerator adoption	.262	.078	.879	13.406	.000
	CNY 120,001-300,000	1	(Constant)	4.041	.138		-.615	.539
			Accelerator adoption	.181	.035	.841	20.208	.000
	CNY 300,001-500,000	1	(Constant)	4.019	.121		.419	.676
			Accelerator adoption	.191	.030	.847	29.488	.000
	CNY 500,001-1,000,000	1	(Constant)	3.950	.113		-.363	.717
			Accelerator adoption	.210	.027	.843	29.841	.000
	CNY1,000,001-1,500,000	1	(Constant)	4.152	.127		-1.023	.308
			Accelerator adoption	.164	.033	.860	23.888	.000
	Over CNY1,500,000	1	(Constant)	3.938	.412		-.757	.453
			Accelerator adoption	.184	.107	.833	9.524	.000
		1	(Constant)	.294	.312			2.133

Organisational Business Model → Accelerator adoption	CNY 120,000 & under		Organisational Business Model	.873	.083	.900	.900	10.228
	CNY 120,001-300,000	1	(Constant)	1.047	.211			6.941
			Organisational Business Model	.621	.061	.691	.691	12.928
	CNY 300,001-500,000	1	(Constant)	1.087	.224			7.078
			Organisational Business Model	.650	.060	.709	.709	20.257
	CNY 500,001-1,000,000	1	(Constant)	.738	.248			7.36
			Organisational Business Model	.713	.065	.697	.697	19.365
	CNY1,000,001-1,500,000	1	(Constant)	1.223	.206			6.538
			Organisational Business Model	.603	.057	.702	.702	15.731
	Over CNY1,500,000	1	(Constant)	.915	.431			2.125
			Organisational Business Model	.714	.132	.832	.832	8.705
Startup Motivation → Accelerator adoption	CNY 120,000 & under	1	(Constant)	-1.517	1.590			2.133
			Startup motivation	1.154	.344	.550	.900	10.228
	CNY 120,001-300,000	1	(Constant)	-1.231	.967			6.941
			Startup motivation	1.054	.204	.437	.691	12.928
	CNY 300,001-500,000	1	(Constant)	-2.737	1.028			7.078
			Startup motivation	1.383	.215	.514	.709	20.257
	CNY 500,001-1,000,000	1	(Constant)	-3.312	.949			7.36
			Startup motivation	1.517	.198	.564	.697	19.365
	CNY1,000,001-1,500,000	1	(Constant)	-1.515	1.046			6.538
			Startup motivation	1.087	.219	.422	.702	15.731
	Over CNY1,500,000	1	(Constant)	-1.062	2.707			2.125
			Startup motivation	1.002	.584	.430	.832	8.705
		1	(Constant)	-.558	1.614			1.758

Startup Motivation → Organisational business model	CNY 120,000 & under		Starup motivation	.897	.349	.450	.550	3.727
	CNY 120,001-300,000	1	(Constant)	-3.192	1.078			-5.044
			Startup motivation	1.350	.227	.488	.437	8.690
	CNY 300,001-500,000	1	(Constant)	-4.269	1.117			-3.275
			Startup motivation	1.618	.234	.542	.514	8.868
	CNY 500,001-1,000,000	1	(Constant)	-4.504	1.083			-7.347
			Startup motivation	1.685	.226	.554	.564	13.741
	CNY1,000,001-1,500,000	1	(Constant)	-2.439	1.122			-6.183
			Startup motivation	1.211	.235	.435	.422	11.814
	Over CNY1,500,000	1	(Constant)	-2.238	2.608			-1.563
			Startup motivation	1.122	.563	.484	.430	3.887

Figure 39

Histogram and Q-Q Diagram

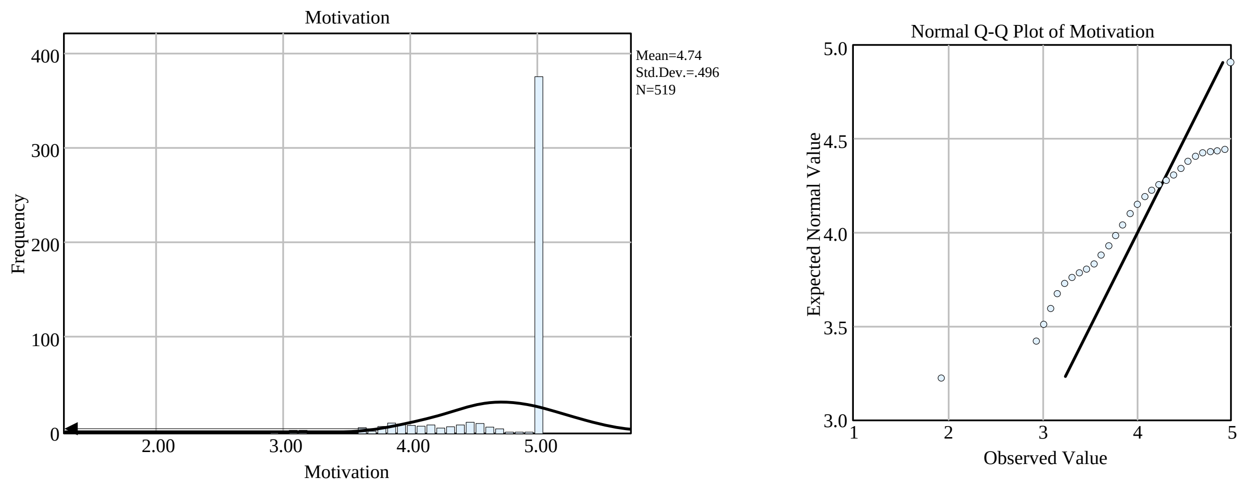

Figure 39.1-1 Startups Motivation

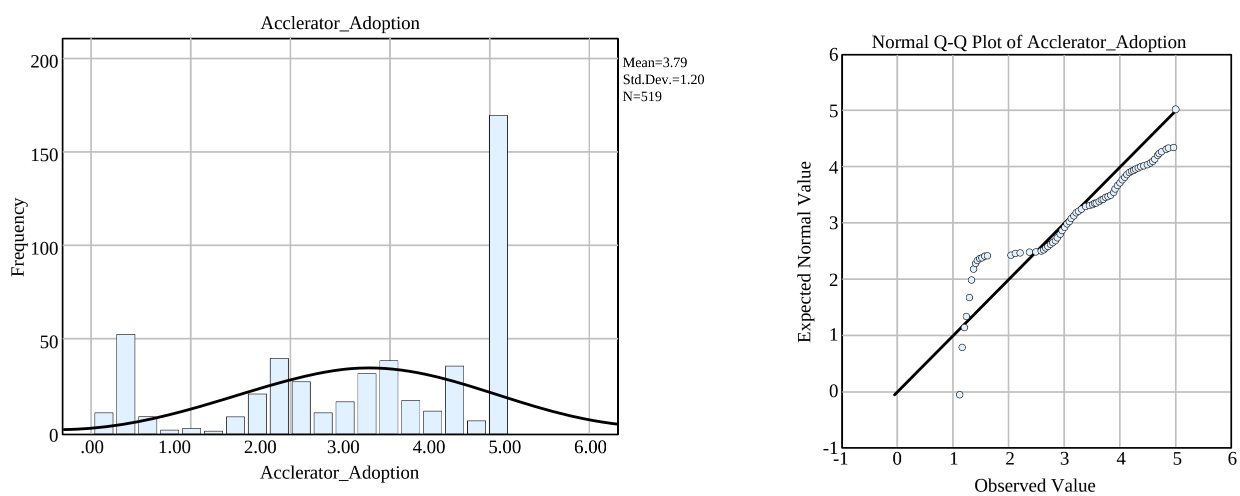

Figure 39.1-2 Accelerator adoption

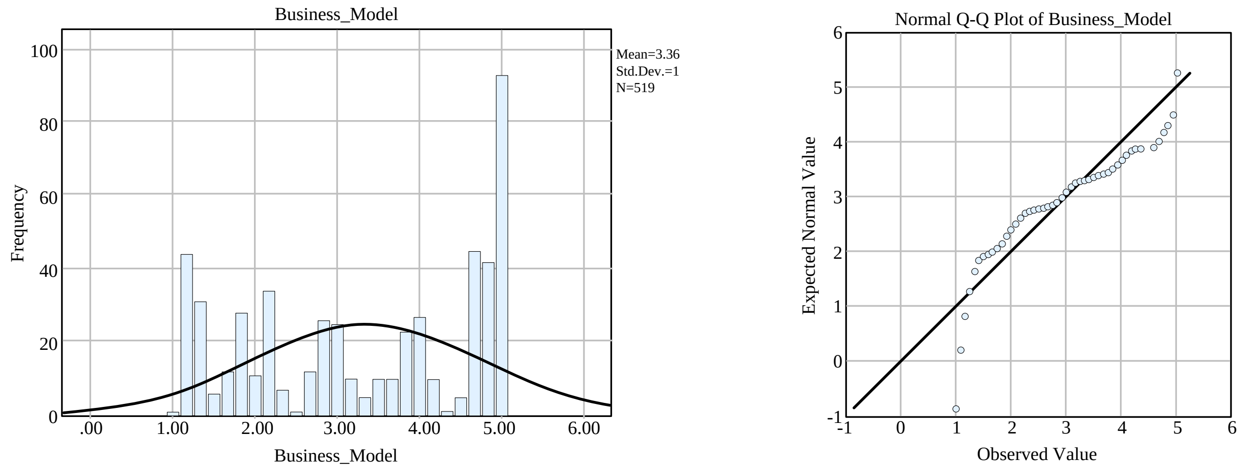

Figure 39.1-3 Organisational business model

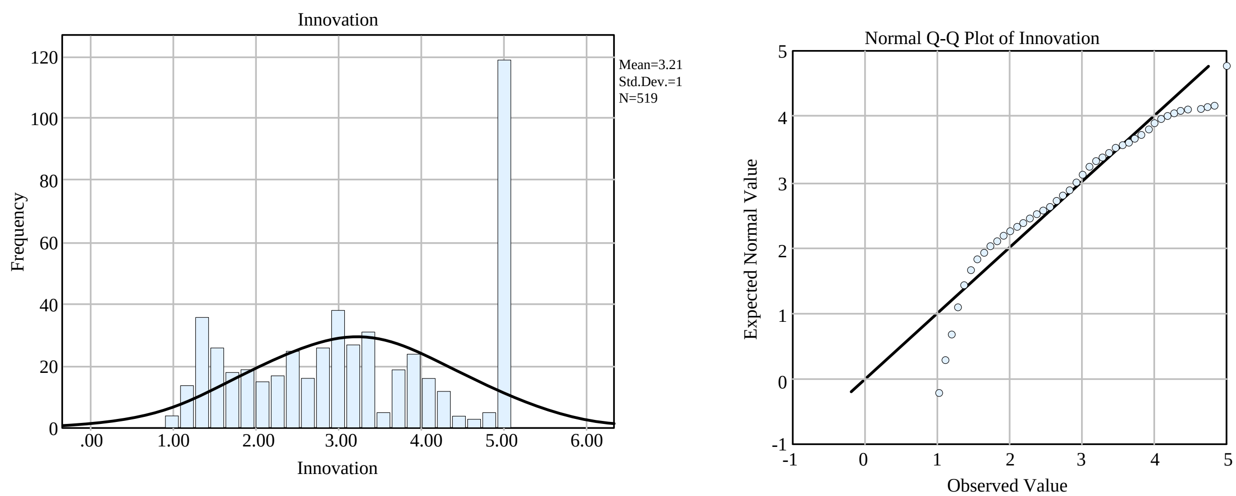

Figure 39.1-4 Innovation performance

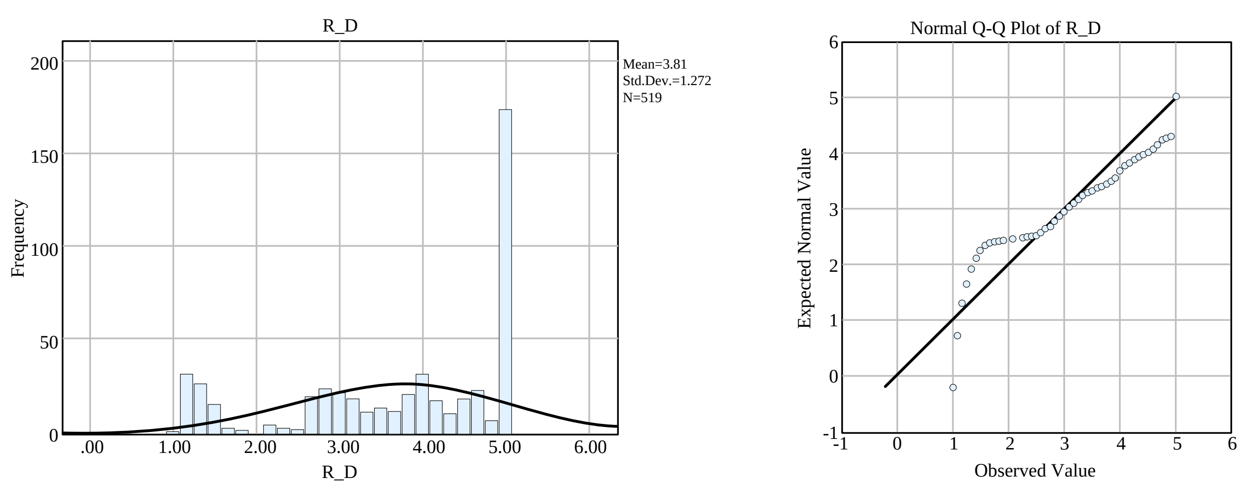

Figure 39.2-1 Internal Support

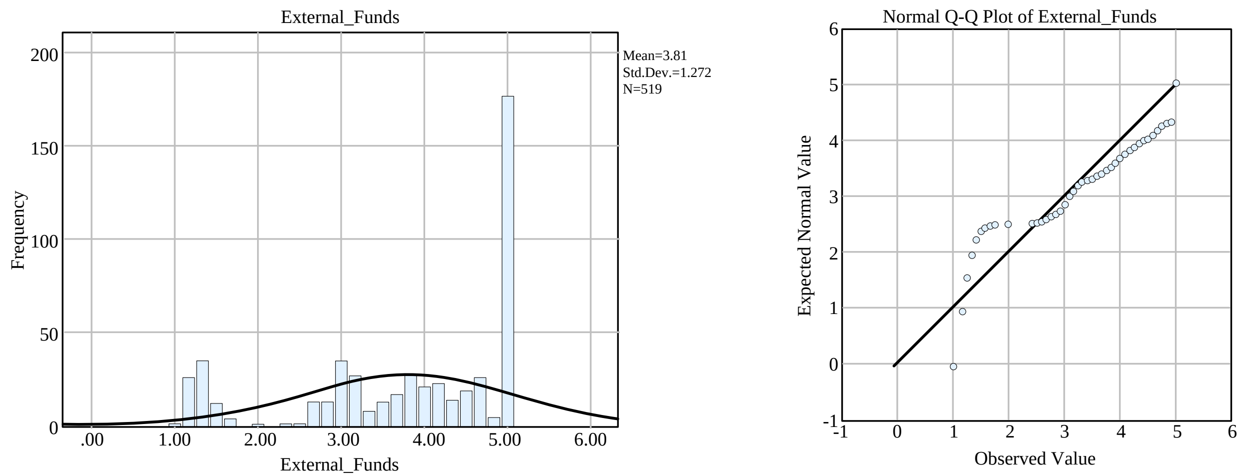

Figure 39.2-2 External Funds/ Resource

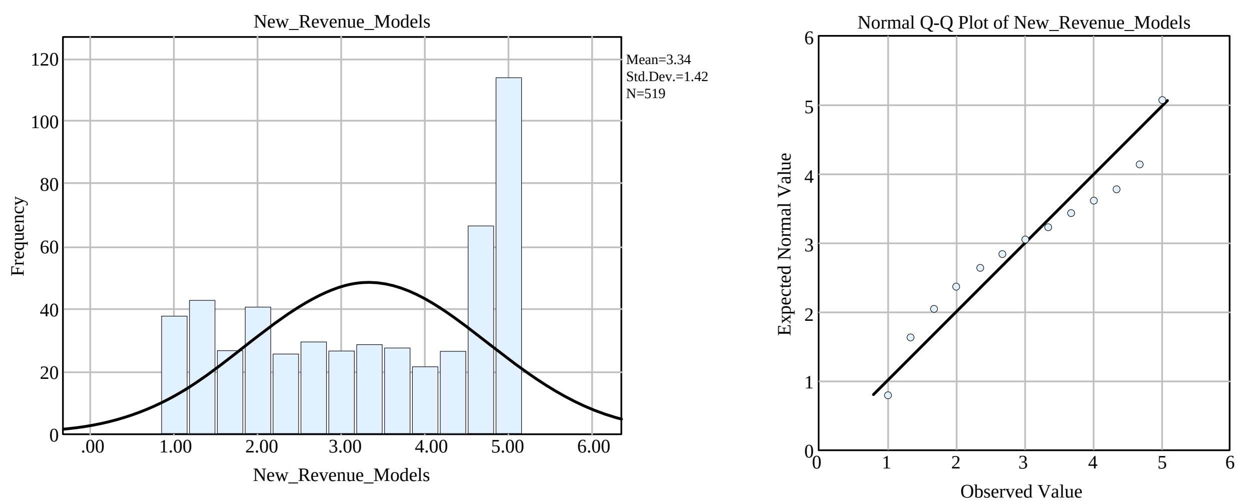

Figure 39.3-1. New Revenue Models

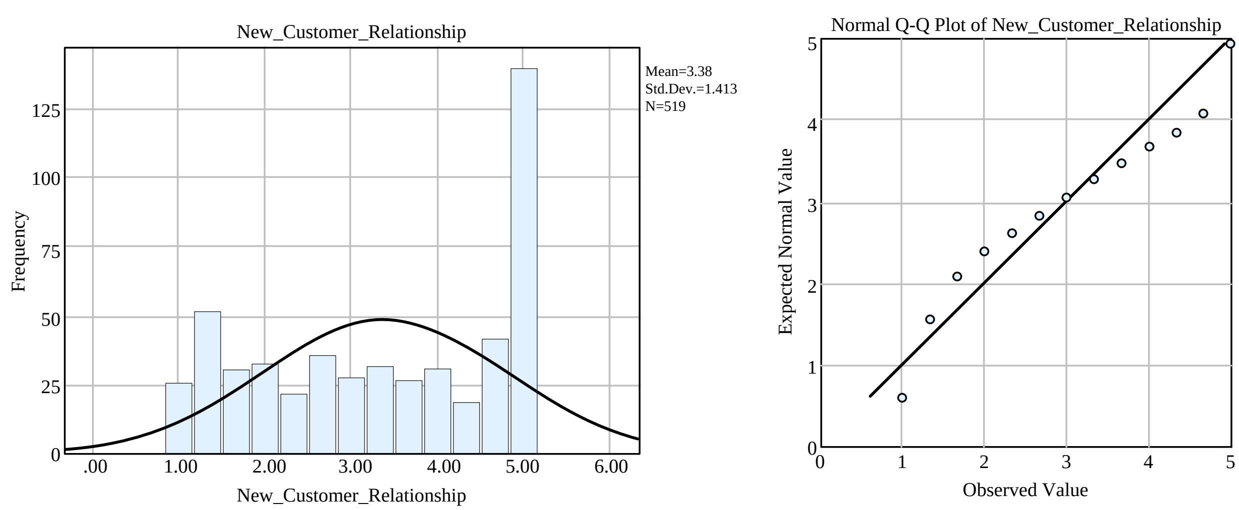

Figure 39.3-2. New Customer Relationship

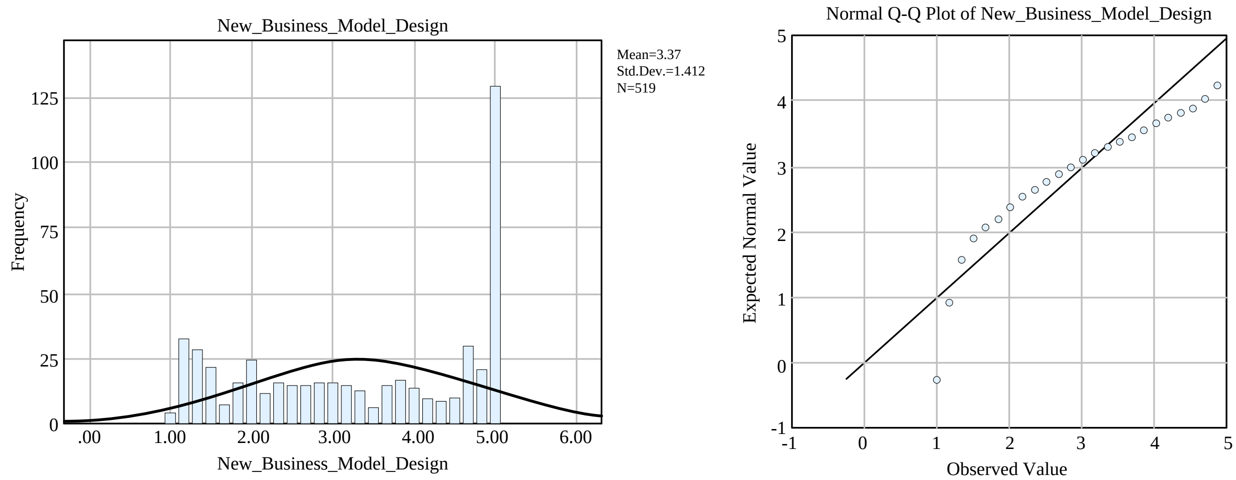

Figure 39.3-3. New Business Model Design