INSURTECH ADOPTION AND ITS INFLUENCE ON CUSTOMER SATISFACTION AND CUSTOMER LOYALTY IN LIFE INSURANCE

Thesis Submitted for the Award of the Degree of

DOCTOR OF PHILOSOPHY

in

Management

By

Pavanpreet Kaur

Registration Number: 12021096

Supervised By

Dr. Maninder Singh (19446)

Mittal School of Business (Associate Professor)

Lovely Professional University

LOVELY PROFESSIONAL UNIVERSITY, PUNJAB

2024

DECLARATION

I, hereby declared that the presented work in the thesis entitled "INSURTECH ADOPTION AND ITS INFLUENCE ON CUSTOMER SATISFACTION AND CUSTOMER LOYALTY IN LIFE INSURANCE" in fulfilment of degree of **Doctor of Philosophy (Ph. D.)** is outcome of research work carried out by me under the supervision Dr. Maninder Singh, working as an Associate Professor, in the Mittal School of Business of Lovely Professional University, Punjab, India. In keeping with the general practice of reporting scientific observations, due acknowledgements have been made whenever work described here has been based on findings of other investigator. This work has not been submitted in part or full to any other University or Institute for the award of any degree.

(Signature of Scholar)

Pavanpreet Kaur

12021096

Mittal School of Business

Lovely Professional University,

Punjab, India.

CERTIFICATE

This is to certify that the work reported in the Ph. D. thesis entitled "INSURTECH ADOPTION AND ITS INFLUENCE ON CUSTOMER SATISFACTION AND CUSTOMER LOYALTY IN LIFE INSURANCE" submitted in fulfillment of the requirement for the reward of degree of **Doctor of Philosophy (Ph.D.)** in the Mittal School of Business, is a research work carried out by Pavanpreet Kaur, Registration No. 12021096, is bonafide record of her original work carried out under my supervision and that no part of thesis has been submitted for any other degree, diploma or equivalent course.

(Signature of Supervisor)

Dr. Maninder Singh (19446)

Associate Professor

Mittal School of Business

Lovely Professional University

Phagwara, Punjab (India).

ABSTRACT

Purpose- The current industrial revolution, known as Industry 4.0, is characterized by a powerful convergence of digital tools, automation processes and data-driven analysis. This convergence is rippling across all sectors, and insurance is no stranger to its impact. There has been a fundamental shift in core functionalities, from risk management leveraging real-time data for personalized coverage to automated claims processing powered by artificial intelligence. This digital revolution unlocks the potential for entirely new insurance products, fundamentally altering the way to approach and manage the risks. The emergence of InsurTech, a term blending "insurance" and "technology", has carved out a unique space within the larger FinTech (Financial technology) industry (Liu et al., 2023). This new field is driven by the potential of technology to transform various aspects of insurance, as identified by (Albrecher et al., 2019). These transformations include streamlining internal processes through automation, developing innovative insurance products and using data analytics and artificial intelligence (AI) to expedite and improve risk assessment (underwriting). InsurTech also fosters a more engaging customer experience by offering interactive mobile applications and AI-powered chatbots. It also disrupts traditional distribution channels, allowing insurers to reach new customer segments through online platforms and partnerships. Ultimately, InsurTech opens doors to entirely new business models and redefines how insurance products are delivered and utilized. As India strives to become a developed nation, its various sectors, including insurance sector are undergoing significant transformation and leveraging digital platforms. This goes beyond just promoting products online (Kaur & Singh, 2023). It encompasses a holistic approach, aiming to improve pre- and post-services for existing customers, as well as efficiently responding to inquiries from potential customers. Essentially, digital platforms are becoming a cornerstone for enhanced customer experience within the Indian insurance industry. Previous studies have documented the transformative power of this digital innovation across the entire insurance landscape and its impact has been felt throughout the whole insurance value chain. Furthermore, digital tools have revolutionized sales and distribution channels, pricing strategies and even the way insurance companies manage their assets and liabilities. As, the concept of InsurTech and its aspects have been individually discussed in the past. Thus, this study aims to introduce a novel model investigating the relationship between InsurTech adoption and customer loyalty in the life insurance sector. It specifically examines how customer satisfaction mediates this association,

aiming to understand how InsurTech adoption influences loyalty through its impact on satisfaction. Additionally, this study explores the potential moderating effect of demographic factors (gender, income and age) on the link between InsurTech adoption and customer satisfaction. By considering these factors, the study seeks to provide a more nuanced understanding of how InsurTech can influence customer loyalty in the Indian life insurance market.

Design/Methodology/Approach- To investigate the relationship between InsurTech adoption and customer loyalty, this study employed a survey approach. A questionnaire specifically designed to capture various aspects of InsurTech adoption was distributed to the life insurance policyholders in India's north-west region. For clarity, the survey questions were accompanied by detailed explanations and assurances of confidentiality. The questionnaire was disseminated digitally through two primary channels: email and LinkedIn. A convenience sampling technique, a non-probabilistic method was chosen due to difficulty of precisely estimating the target population size. The study aimed for a sample size of 600 participants, which is considered sufficient to draw generalizability of the conclusions of the study. The research design of the study was descriptive in nature.

This study utilized partial least squares (PLS) path modeling, a form of structural equation modeling (SEM), to analyze the survey data. Software called the SmartPLS 4.0 assessed the significance of various aspects (constructs) related to online insurance services and customer satisfaction and loyalty (Ringle & Sarstedt, 2022). PLS-SEM was chosen for its ability to handle complex models, a common feature in social science research (Hair et al., 2019). This approach was ideal for examining how one variable influences relationship between others (moderation effects) and identifying key constructs within the study's framework. The analysis began by evaluating the measurement models, then used a bootstrapping technique (statistical method) to analyze core model's ability. Finally, the research explored mediation and moderation effects and was conducted by pinpointing the most crucial and effective indicators within the constructs used in the study. To assess the predictive relevance of the model, PLS prediction analysis has been employed. Furthermore, to investigate the performing and important constructs of the conceptual framework, an importance performance map analysis (IPMA) was employed.

Findings- The findings of the study showed that male respondents within the age group of 18-30 years are showing a higher interest in utilizing InsurTech services. The study

establishes a statistically significant positive correlation between InsurTech adoption and customer satisfaction. This means that strategically leveraging technology can be a powerful tool for insurance companies to improve customer satisfaction and experience. The conceptual model of the study is a higher-order model; thus, a two-phase measurement model assessment was conducted. This rigorous approach verified the reliability and validity of the chosen indicators (outer loading > 0.708, composite reliability 0.70-0.95) following established guidelines by (Hair et al., 2019; Sarstedt et al., 2019, 2022). The results demonstrate a substantial positive impact of InsurTech adoption on customer satisfaction, accounting for a significant variation of (R^2), indicated variation of 73%. This key finding underscores the critical role InsurTech plays for insurance companies in fostering a satisfied customer base. Furthermore, the study addressed potential multicollinearity concerns variance inflation factor (VIF values between 1.000 and 1.130), safeguarding the integrity of the analysis. Additionally, the study investigated a strong positive relationship between customer satisfaction and customer loyalty, showing R^2 value of 75.6%, explaining the variance in loyalty. The results of structural model assessment show a positive influence of InsurTech adoption on customer satisfaction with p- value = 1.000 and a well-fitting model standardized root mean square residual (SRMR) value = 0.063, lower than the critical threshold of 0.08. The effect size of the model has been found to be large. The prediction relevancy of the conceptual model has been assessed and the results show that the model has a high predictive relevance. The mediation effect of customer satisfaction in the relationship between InsurTech adoption and customer loyalty has been investigated significant showing a p – value = 0.000. Three demographic variables (gender, income and age) have been used to assess the moderating effect of these demographic variables on the relationship between InsurTech adoption and customer satisfaction. The results of the analysis show that these moderators strengthen the positive relationship between InsurTech adoption and customer satisfaction but statistically, results are insignificant.

Research limitations/Implications- This study investigated the moderating effect of three demographic variables: gender, income and age. While these are important factors, future research could delve deeper into demographic influences by incorporating other demographic variables. While this study provides valuable insights into how customers in north-western part of India perceive InsurTech and its influence on their satisfaction and loyalty, the data collection being limited to this region restricts how broadly these findings can be applied to the entire Indian life insurance market. To gain a more comprehensive understanding of

InsurTech's impact nationwide, future research should incorporate data from a sample that encompasses a wider geographical range within India. This broader perspective would strengthen the generalizability of the conclusions. This study sheds light on the life insurance industry in India, a more comprehensive understanding could be gained by extending the research framework to the non-life insurance sector as well. By examining both segments and comparing the findings, valuable insights could be examined in future.

Practical implications- This study is one of the first to explore the association between InsurTech adoption, customer satisfaction and customer loyalty and has investigated the positive association. This suggests a key opportunity for insurance providers to encourage customers to readily adopt InsurTech services. To achieve this, companies should focus on more than just the technology itself. Their communication strategies should highlight the specific benefits that InsurTech offers customers. By emphasizing the overall positive influence of how InsurTech simplifies the experience and improves outcomes, insurance companies can encourage policyholders to embrace InsurTech. This can ultimately lead to a more loyal and satisfied customer base, potentially expanding market share for insurance providers.

Originality/Value- This study stands out as one of the first studies to explore the intricate relationships between InsurTech adoption, customer satisfaction and ultimately, customer loyalty. In this study, a novel model has been developed examining the association between these constructs. Further, mediation and moderation effects have been assessed within the model. The depth of the analysis is particularly valuable for India's booming online insurance market. Policymakers now have a unique opportunity to leverage these findings. By crafting targeted initiatives based on this study, they can significantly improve customer experience with this rapidly growing sector.

Keywords- Digitalization, Industrial Revolution (IR) 4.0, InsurTech adoption, Policy management, Claims Management, Policy management, Customer satisfaction, Customer loyalty

PREFACE

The completion of a thesis is a significant undertaking, filled with challenges and moments of immense satisfaction. As I reflect on this journey, I am incredibly thankful for the support of many individuals who played a crucial role in bringing this thesis to fruition. First and foremost, to the Almighty for granting me the strength, perseverance and guidance to see this work through.

I would like to express my deepest gratitude to my research advisor, Dr. Maninder Singh (Associate Professor, Mittal School of Business, Lovely Professional University) for his invaluable guidance, patience, and encouragement throughout this process. His insights and expertise were instrumental in shaping the direction of my research and refining my approach.

A big thanks to Dr. Pawan Kumar (Professor and Research Coordinator, Mittal School of Business) for his active cooperation, support, encouragement and valuable suggestion throughout my research.

I would like to express my gratitude to Dr. Rajesh Verma (Professor and Head of School at Mittal School of Business), Dr. Krishan Gopal, Dr. Harish Saini and Dr. Ashwani Panesar for their valuable guidance during my end term presentations.

A special thanks to Dr. Atul Shiva (Associate Professor, Jaipuria Institute of Management, Noida), for his immense support and guidance on learning and implementing the statistical tool SmartPLS during my research work. A big thanks to Dr. Neeraj Kaushik (Associate Professor, National Institute of Technology (NIT), Kurukshetra) for providing the detailed description on learning SmartPLS through his YouTube videos. A special thanks to Dr. Amandeep Singh (Assistant Professor, School of Electronics and Electrical Engineering, Lovely Professional University) for his immense cooperation from the first day of my PhD journey.

On a personal note, I would like to express my sincere appreciation to my husband, Mr. Gurpreet Singh. His unwavering support throughout this process allowed me to fully dedicate myself to my research. I am grateful for his understanding and for taking on additional responsibilities during this demanding time. Furthermore, I extend my heartfelt thanks to my parents, Mr. Narinder Singh, Mrs. Gurbachan Kaur, and my sister Mrs. Harpreet Kaur, for

their constant encouragement and belief in my abilities. Their support, particularly during challenging periods, provided me with the strength and motivation to persevere.

I am particularly grateful to my friend Dr. Ankita Soni (Assistant Professor, School of Electronics and Electrical Engineering, Lovely Professional University) for her unwavering support and encouragement during my research journey. My heartfelt thanks to Mr. Tushar Tyagi (Assistant Professor, School of Electronics and Electrical Engineering, Lovely Professional University) for providing an accurate direction throughout this journey.

I would like to acknowledge the contribution of my in-laws Mr. Davinder Singh, especially my mother-in-law, Mrs. Balbinder Kaur, for their encouragement and motivation to concentrate on my research work without thinking about other issues.

Last but not least, I am grateful to all the respondents who gave their valuable time to fill my questionnaire.

DATE:

PLACE: PAVANPREET KAUR

.

Content

Declaration i
Certificate ii
Abstract ..... iii-vi
Preface ..... vii-viii
Table of Content ..... ix-xiii
List of Tables ..... xiv-xv
List of Figures ..... xvi-xvii

Table of Content

Serial no.	Title	Page no.
1	**Chapter 1: INTRODUCTION**	
1.1	Global Insurance Sector	1
1.2	Insurance Penetration Globally	2
1.3	Comparison Between the Insurance Scenario of Development Nations	3
1.4	History of Insurance	4
1.5	The Emergence of Modern Insurance	5
1.6	Role of Insurance in Economic Development	5
1.7	Indian Insurance Sector	6
1.8	Regulation of Indian Insurance Sector	7
1.9	Life Insurance Industry in India	8
1.10	Introduction to InsurTech	9
1.10.1	Basic IT Applications of InsurTech	11

1.10.2	Inclusion of InsurTech in Insurance Industry	12
1.11	Customer Satisfaction	14
1.11.1	Corporate Image	15
1.11.2	Service Quality	15
1.11.3	Price	16
1.11.4	Perceived Value	16
1.12	Customer Loyalty	16
1.12.1	Trust	17
1.12.2	Communication	17
1.12.3	Commitment	18
1.12.4	Switching Cost	18
1.13	Need of the Study and Proposed Research Questions	19
1.14	Structure of the Thesis	20
2	**CHAPTER 2: REVIEW OF LITERATURE**	
2.1	Theoretical Literature Review	21
2.2	Studies Related to InsurTech Adoption and Customer Satisfaction	21
2.2.1	Online distribution and Customer Satisfaction	22
2.2.2	Claims Management and Customer Satisfaction	23
2.2.3	Policy Management and Customer Satisfaction	24
2.2.4	Customer Service Management and Customer Satisfaction	24
2.3	Studies Related to Customer Satisfcation and Customer Loyalty	28
2.3.1	Antecedents of Customer Satisfaction	31

2.3.1.1	Corporate Image	31
2.2.1.2	Service Quality	31
2.3.1.3	Price	32
2.3.1.4	Perceived Value	32
2.3.2	Antecedents of Customer Loyalty	33
2.3.2.1	Commitment	33
2.3.2.2	Communication	33
2.3.2.3	Trust	33
2.3.2.4	Switching Cost	33
2.4	Mediating Role of Customer Satisfaction	34
2.5.	Moderating Influence of Demographics (Age, Income and Gender)	35
2.5.1	Moderating Influence of Gender	36
2.5.2	Moderating Influence of Age	36
2.5.3	Moderating Influence of Income	37
2.6	Control Variables in the Study	37
2.7	Research Gap	40
3	**CHAPTER THREE: RESEARCH METHODOLOGY OF THE STUDY**	
3.1	Introduction	42
3.2	Research Design	42
3.2.1	Defining the Research Problem	43
3.2.2	Purpose of the Study	43
3.2.3	Scope and Focus: Study Setting and Unit of Analysis	44

3.3	Time Frame of the Study	44
3.4	Objectives of the Study	44
3.5	Formulation of Research Hypotheses	45
3.6	Research Design Adopted For Study	46
3.6.1	Universe of the Study and Sampling Procedure	47
3.6.2	Sample Size	48
3.6.3	Data Collection	49
3.6.4	Instrument Used for Data Collection	50
3.7	Description of the Questionnaire Statements	53
3.8	Pre-Testing and Pilot Testing	57
3.8.1	Validity of the Research Instrument	57
3.8.1.1	Content Validity	57
3.8.1.2	Construct Validity	58
3.9	Statistical Tools for Data Analysis	64
3.9.1	Introduction to Partial Least Square Structural Equation Modeling (PLS-SEM)	65
3.9.2	Mediation Analysis	66
3.9.3	Moderation Influence	66
4	**CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION**	
4.1	Demographic Description	68
4.2	To Examine the Influence of InsurTech Adoption on Customer Satisfaction	70
4.2.1	Measurement Model Assessment (Reflective- Reflective)	71
4.2.1.1	Measurement Model Assessment of First Order constructs	72

4.2.1.2	Measurement Model Assessment of Second Order Constructs	81
4.2.2	Structural Model	83
4.2.2.1	Structural Model Assessment	84
4.3	Mediating Influence	93
4.3.1	To Analyze the Mediating Effect of Customer Satisfaction Between InsurTech Adoption and Customer Loyalty	95
4.4	Moderation Effect	96
4.4.1	Moderating Influence of Demographics (age, income and gender) on the Relationship Between InsurTech Adoption and Customer Satisfaction	97
4.5	Importance Performance Map Analysis (IPMA)	105
4.6	Summary of Data Analysis	107
5	**CHAPTER FIVE: CONCLUSION, IMPLICATION AND FUTURE SCOPE OF THE STUDY**	
5.1	Overview of the Study	109
5.2	Conclusion	111
5.3	Discussions and Theoretical Implications	112
5.4	Managerial Implications	114
5.5	Societal Implications	116
5.6	Limitations and Future Scope of the Study	116
6	**REFERENCES**	119-145
7	**QUESTIONNAIRE**	146-154
	RESEARCH PAPER	
	Exploring the impact of InsurTech adoption in Indian life insurance industry: a customer satisfaction perspective	

LIST OF TABLES

Table No.	Name of the Table	Page No.
2.1	Studies related to determinants of InsurTech in the insurance industry	25
2.2	Studies related to InsurTech Adoption	38
3.1	Selected cities and sample size	48
3.2	Constructs and sub-constructs of the study	50
3.3	Description of the Scale Indicators	53
3.4	Results of Composite Reliability (Pilot Testing)	60
3.5	Results of Convergent Validity (Pilot Testing)	61
3.6	Results of Discriminant Validity (Pilot Testing)	62
3.7	Findings of Construct Reliability and Validity (Pilot Testing)	63
4.1	Demographic Description of the Insurance Policyholders	68
4.2	Results of Indicators Reliability	73
4.3	Results of Construct Reliability and Validity	76
4.4	Results of Convergent Validity	77
4.5	Results of Discriminant Validity with HTMT Criterion	78
4.6	Results of Discriminant Validity with Fornell Larcker Criterion	80
4.7	Results of Constructs' Outer loading Values	82
4.8	Results of Reliability and Validity of Higher Order Constructs	83
4.9	Results of Discriminant Validity (HTMT ratio)	83
4.10	Results of VIF Inner Values	85
4.11	Results of Coefficient of Determination (R-square)	86

4.12	Results of Structural Model Assessment	88
4.13	Results of Effect Size (f^2)	89
4.14	Results of Model Fitness	90
4.15	Results of Comparison Between Structural Model Assessment with and Without Control Variables	91
4.16	Results of PLS Prediction Analysis	93
4.17	Results of Mediation Analysis	95
4.18	Results of Moderation Analysis of Gender	99
4.19	Results of Moderation Analysis of Income	100
4.20	Results of Moderation Analysis of Age	100
4.21	Results of Combined Moderation Analysis	102
4.22	Comparison Between the Moderation Analysis of Demographics Individually and Combined	103
4.23	IPMA Results	106
4.24	Hypotheses Results	107

LIST OF FIGURES

Figure No.	Name of the Figure	Page No.
1.1	Total Premium (in USD bn) for the year 2021 and 2022	3
1.2	Global Growth of Life Insurance Premiums in Developed and Developing Nations	4
1.3	IRDAI and its Insurance Bodies	7
1.5	Top Ten Life Insurance Companies Worldwide	9
2.1	Conceptual Framework of the Study	41
3.1	Conceptual Model of the Study	45
3.2	Indirect Mediating Effect	66
3.3	Indirect and Direct Mediating Effect	66
3.4	Interaction Moderation	67
4.1	Demographic Description of the Respondents	70
4.2	Measurement Model Assessment	72
4.3	Measurement Model Assessment of First Order Constructs	73
4.4	Measurement Model Assessment of Second Order Constructs	82
4.5	Measures of Structural Model	85
4.6	Structural Model Assessment (Model 1)	87
4.7	Structural Model Assessment (Model 2)	88
4.8	Structural Model Assessment Without Control variables	92
4.9	PLS Prediction Process	92
4.10	Steps of Mediation Approach	94

4.11	Moderation Flow Chart	97
4.12	Moderating Effect of Gender	98
4.13	Moderating Effect of Income	99
4.14	Moderating Effect of Age	100
4.15	Combined Moderation Analysis (Model 1)	101
4.16	Combined Moderation Analysis (Model 2)	102
4.17	Slope Analysis of Gender as a Moderator	104
4.18	Slope Analysis of Income as a Moderator	104
4.19	Slope Analysis of Age as a Moderator	105
4.20	IPMA Matrix	106

CHAPTER ONE

INTRODUCTION

Robust financial planning necessitates a safety net against unforeseen contingencies. Insurance fulfills this role admirably, acting as a collective risk sharing mechanism to mitigate the impact of potential financial setbacks. An insurance contract is a legal contract between an individual or organization (the insured) and an insurance firm (the insurer), whereby the insurer agrees to pay the insured's financial losses resulting from specific events in exchange for a premium (Apergis et al., 2012). This agreement, documented as an insurance policy, outlines the terms and conditions of coverage. While its primary purpose is financial protection, insurance also offers peace of mind and risk management benefits (Lee et al., 2018). Insurance is a crucial component of financial planning, providing protection against unexpected events that could lead to financial losses (Kester, 2022). Insurance companies generate income from premiums and investments made with the collected funds (Tsvetkova et al., 2019). The intangible nature of insurance policies, acting as promises of future benefits, emphasizes the importance of trust between policyholders and insurers (Zhong et al., 2015). In recent years, insurance has become a widely used method for transferring risk and providing financial benefits and protection against losses. Diverse insurance types, encompassing life, health, property, and automotive coverage, provided targeted financial support during critical junctures. Understanding the core principles of insurance empowers individuals to make informed coverage decisions. Each policy outlines the scope of coverage, limitations and premium obligations, ensuring transparency and clarity (Kester, 2022). In essence, insurance policies serve as a cornerstone for individuals and businesses, safeguarding their financial stability against life’s unpredictable twists and turns.

1.1 Global Insurance Sector

The global insurance market serves as a powerful force in the financial landscape, significantly impacting economies worldwide (Litvinova et al., 2022). The insurance organizations act as risk management masters, providing essential services like pricing financial assets, shielding against unforeseen events and transferring risk, allowing individuals and businesses to operate with greater financial confidence (Demianchuk et al., 2019). The global insurance industry is dynamically adapting to the changes in the financial landscape (Litvinova et al., 2022). The global insurance market is indeed experiencing robust

growth, valuation of $6 trillion in 2022, and projected substantial increase in the upcoming years. Some of the current trends in the global insurance market include: 1. Shift towards digitalization: Digital technologies are being adopted by insurance businesses more frequently in an effort to improve efficiency, optimize client experience, and streamline operations. 2. Rise of InsurTech: The emergence of innovative technologies such as artificial intelligence, blockchain and big data analytics is reshaping the insurance industry. Fueled by innovation, InsurTech startups are shaking up the traditional insurance landscape. These companies offer personalized coverage options and cater to the growing demand for on-demand insurance solutions (Gómez & Pineda, 2023). 3. Focus on customer centricity. 4. Increase demand for cyber insurance: With the rise in cyber threats and data breaches, there is a growing demand for cyber insurance coverage to protect businesses from potential financial losses.

1.2 Insurance Penetration Globally

Insurance penetration is a metric used to gauge the level of insurance activity within a particular country. It's calculated as the percentage of a nation's Gross Domestic Product (GDP) dedicated to insurance premiums. In simpler terms, it reflects how much of a country's economic output goes towards insurance coverage. It's a key indicator of the development and accessibility of the insurance sector within the nation. From 2020- 2022, the global insurance penetration was reported to be 6.7%. The Allianz global insurance report 2023 reveals significant insights into the global insurance market. With a total premium income exceeding EUR 5.6 trillion in 2022, the industry demonstrated notable resilience despite an 8.6% global inflation rate. Property and casualty (P&C) insurance registered an impressive 8.7% growth. In contrast, the life insurance segment experienced a subdued 2.4% growth and Health insurance maintained a 4.9% growth rate, reflecting its vital role in healthcare coverage.

As per a report from Swiss Re institute, the global premium of insurance market of top twenty countries for the year 2021 vs 2022 has been described in figure 1.1 below. In the figure, the total premium of the year 2021 and 2022 and the percent change in the total premium has been described. Further the total market share of the top twenty countries in both the years has been depicted. As per the estimates by Institute, volume of global premium will increase to USD 7.1 trillion in 2023.

Rank	Country/market	Total premium volume (USD bn)	Total premium volume (USD bn)	Total premium volume (USD bn)	Global market share	Global market share
		2022	2021	% change	2022	2021
1	US	2 960	2 725	8.6%	43.7%	40.3%
2	China	698	696	0.2%	10.3%	10.3%
3	UK	363	374	-2.8%	5.4%	5.5%
4	Japan	338	398	-15.1%	5.0%	5.9%
5	France	261	293	-10.7%	3.9%	4.3%
6	Germany	242	272	-11.3%	3.6%	4.0%
7	South Korea	183	193	-5.3%	2.7%	2.9%
8	Canada	171	166	2.8%	2.5%	2.5%
9	Italy	160	192	-16.5%	2.4%	2.8%
10	India	131	123	6.5%	1.9%	1.8%
11	Taiwan	86	113	-23.8%	1.3%	1.7%
12	Netherlands	84	92	-9.2%	1.2%	1.4%
13	Brazil	76	63	20.7%	1.1%	0.9%
14	Australia	72	72	-0.7%	1.1%	1.1%
15	Hong Kong	69	73	-5.6%	1.0%	1.1%
16	Spain	68	73	-6.7%	1.0%	1.1%
17	Switzerland	56	58	-3.2%	0.8%	0.9%
18	Sweden	54	59	-8.5%	0.8%	0.9%
19	Singapore	47	45	3.9%	0.7%	0.7%
20	South Africa	46	50	-7.9%	0.7%	0.7%
	Top 20 markets	6 165	6 131	-0.5%	91.0%	90.7%
	World	6 782	6 765	0.3%		

Figure 1.1 Total premium (in USD bn) for the year 2021 and 2022 [Source: Swiss Re Institute]

1.3 Comparison Between the Insurance Scenario of Developed and Developing Nations

In developed economies, individuals view insurance as a crucial safety net, readily protecting their assets, health and lives (Drakulevski & Kaftandzieva, 2021) Conversely, cultural, ideological, religious and economic factors in many developing nations render insurance a perceived luxury. Additionally, specific cultural practices, beliefs and economic realities often dictate demand for insurance in these countries (Iyawe & Osamwonyi, 2017).

In 2023, the global life insurance market was expected to experience a lackluster growth of 0.7% in real terms (4.6% in nominal terms), reaching a total premium volume of USD 2.9 trillion by year-end. This follows a 3.1% contraction in 2022, attributed to high inflation that eroded consumer savings and nominal premium growth. A modest uptick of 1.5% in

premiums is projected for 2024. Figure 1.2 below shows the global growth of life insurance premiums.

Figure 1.2: Global growth of life insurance premiums in developed and developing nations [Source: Swiss Re Report 2023]

The rapid rise in interest rates last year served as a boon for the life insurance sector's profitability. This trend has been expected to continue in 2023, with rising wages and interest rates in developed markets creating favorable conditions for both market and profitability growth. Developing countries are predicted to have a growth rate of 4.2% in 2023 and 4.8% in 2024, driven by aggregate nominal incomes supporting incomes supporting savings and protection business in these markets.

Growth in both developed and developing markets is predicted to remain below the average observed between 2012 and 2021, with health insurance continuing to show low performance. Nonetheless, profitability is expected to improve in 2023 and 2024, driven by a combination of better pricing strategies, higher interest rates and a potential easing of inflation's impact on claims severity.

1.4 History of Insurance

The 19th century insurance industry's journey began with initial resistance. Public perception, influenced by concerns about gambling and religious conflicts (Baker, 2001), saw insurance as an undesirable concept. To counter this, insurance advocates reframed it as a responsible act of protecting loved ones and securing one's future. This shift in perception,

emphasizing moral obligation over gambling, paved the way for widespread acceptance. The first form of insurance to gain traction was marine insurance, offering coverage for ships and cargo against the perils of the sea like storms, piracy and other maritime dangers (Jnawali & Jaiswal, 2022). This pioneer form laid the foundation for future insurance types.

As urbanization and industrialization intensified, fire risk became a pressing concern. Fire insurance emerged as a crucial tool, providing financial compensation for property damage caused by fires, a direct consequence of urban density (Jnawali & Jaiswal, 2022).

The most significant development was the birth of life insurance. This revolutionary concept offered financial security to individuals and families in the face of life's uncertainties, securing the well-being of loved ones even after the policyholder's passing (Nepochatenko et al., 2023). It became an essential tool for future planning and risk management, forever altering the financial landscape. The 19th century witnessed a remarkable expansion of the insurance industry. New companies offering diverse policies emerged, driven by factors like economic growth, urbanization and increased literacy. This expansion led to a highly competitive environment with companies vying for market share.

1.5 The Emergence of Modern Insurance

The story of insurance is not just about protecting possessions, but about adapting to the ever-shifting tides of society and technology. While the need to safeguard property sparked early forms like marine and fire insurance (Yu & Guo, 2014), the industry's growth truly blossomed alongside financial institutions and economic expansion. Fueling this expansion was a symbiotic relationship with the financial world. A flourishing economy nurtured a demand for risk management solutions, encouraging insurance companies to innovate and diversify their offerings. This adaptability has been a hallmark of the industry throughout history. From the ancient roots of risk-sharing communities to the digital revolution's impact, insurance has constantly evolved in response to changing circumstances. The recent surge of digital technologies and the rise of the platform economy have further ignited this dynamism, paving the way for new trends like cyber insurance (Litvinova, 2022).

1.6 Role of Insurance in Economic Development

The insurance industry acts as a key pillar in fostering economic stability, protection, and growth. By mitigating the risks that disrupt individual and business harmony-accidents, natural disasters, illness-insurance offers a protection, fostering resilience against financial

shocks (Reddy et al., 2019). This piece of mind, in turn, strengthens the economic fabric, allowing businesses and individuals to weather financial storms with greater composure.

Beyond individual protection, insurance conducts a vital symphony of mobilization, channeling funds from households towards the productive sectors that drive economic expansion. These investments lead to infrastructure development, manufacturing and entrepreneurial ventures, propelling the engine of growth (Reddy et al., 2019). This capital infusion not only develops the economy but also fosters innovation and job creation, as businesses empowered by financial stability can confidently take risks and expand. Furthermore, insurance acts as a safety net for aspiring entrepreneurs, mitigating the inherent risks that could silence their entrepreneurial symphonies.

1.7 Indian Insurance Sector

The Indian insurance landscape has undergone a dramatic transformation in recent years. Regulatory reforms and influx of private players have injected intense competition, boosting customer options and industry efficiency (Ghosh, 2013). Insurance companies, beyond their social responsibilities, play a vital role in serving rural communities. This potential has attracted private players, who have swiftly captured significant market share including health insurance and competition has become fierce (Dey, 2022). Since the 2000 "Insurance Regulatory and Development Authority Act" opened the door to private players, the market has grown steadily, contributing to India's economic growth (Ghosh, 2013). This liberalization in 2001, coupled with the influx of foreign players, has fueled the health insurance boom, with private standalone companies leading the charge.

However, this rapid expansion has not been without its challenges. Staying profitable in a competitive market demands continuous innovation to meet the dynamic needs of a varied customer base. Embracing technology to streamline processes and enhance customer experience is crucial for insurance companies navigating this dynamic landscape. Additionally, bridging the gap in insurance penetration in rural areas and addressing the needs of underserved populations remain key challenges that demand attention.

Despite these challenges, the Indian insurance sector's continued growth and private player presence present compelling opportunities. Tapping into the vast untapped market, expanding product offerings to cater to diverse needs, and embracing digital platforms for effortless access are just some of the exciting prospects.

1.8 Regulation of Indian Insurance Sector

In the dynamic realm of the insurance industry of India, the Insurance Regulatory and Development Authority of India (IRDAI) stands as a vital pillar, playing a multifaceted role in its continued growth and stability. IRDAI was established in 1999 on the recommendation of Malhotra committee. This independent regulatory body functions as the guiding hand of the insurance industry, meticulously managing a harmonious balance between promoting market development and safeguarding policyholders' interests.

IRDAI mandate is twofold: to promote a vibrant and competitive insurance ecosystem while protecting the interests of those who entrust their financial security to it. This dual responsibility translates into a comprehensive set of functions. IRDAI establishes the basis for the industry's operations through its robust regulations and guidelines. These encompass licensing and registration of insurance companies, setting and monitoring solvency margins, approving insurance products and overseeing the conduct of intermediaries.

Beyond setting the rules, IRDAI exercises vigilant financial oversight. It continuously monitors the financial health of insurers, conducts regular inspections and audits and takes swift action to address any non-compliance or financial instability. IRDAI champions the rights and interests of policyholders. It ensures fair and transparent insurance products and adequate coverage. Accessible grievance redressal mechanisms, comprehensive awareness programs, and

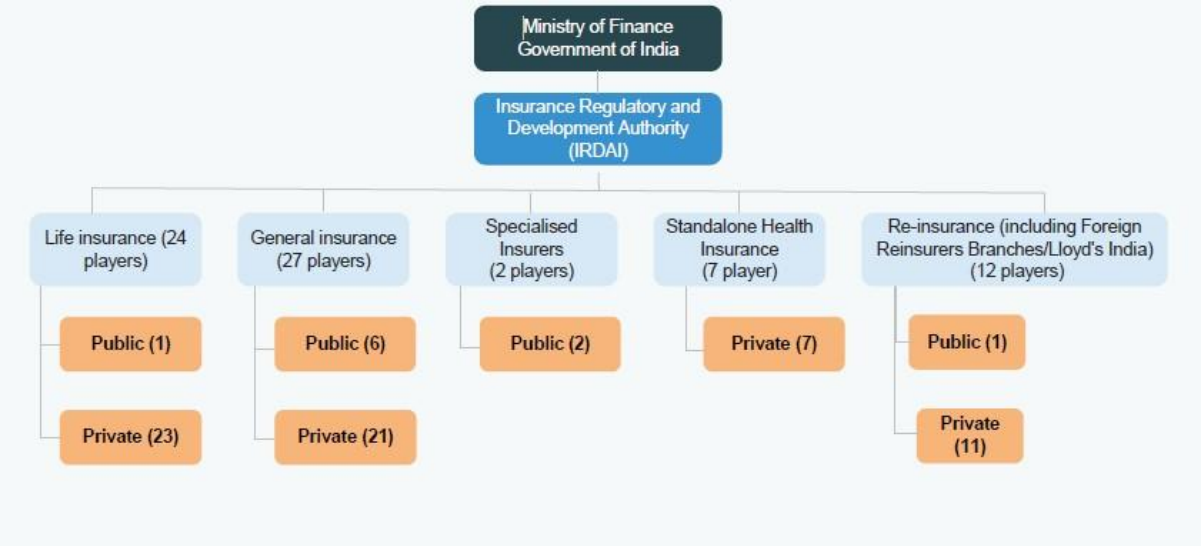


Figure 1.3: IRDAI and its Insurer Bodies [Source: IBEF]

enforcement of fair claims settlement practices are just some of the tools IRDAI employs to empower policyholders.

In 2000, IRDA allowed foreign companies with ownership of up to 26% and the subsidiaries of general insurance company (GIC) were re-established as independent insurance companies. Figure 1.3 shows the IRDAI regulatory insurance bodies.

1.9 Life Insurance Industry in India

In 1818, life insurance came to India and established its first company known as Oriental Life Insurance Company. Initially it was started to help widows of the Europeans community in Kolkata. In 1870, Bombay Mutual Life Assurance Society was established. It was the first insurance company of India. In the starting, this company used to insure the lives of Indians at nominal rates. In 1912, The LIC (Life Insurance Companies) Act, 1912 was passed. Later in 1938, this act was replaced by the Comprehensive Insurance Act, 1938. Again in 1950, this act was amended.

Finally in 1956, Life Insurance Corporation Act, 1956 was passed and business for life insurance in India was nationalized and Life Insurance Corporation was established. The LIC took over 245 insurers including Indians as well as foreigners' insurers. LIC remained a monopoly in the insurance sector till the 90's with the arrival of private insurers. At present, The Indian life insurance sector comprises 24 companies, with a single public sector undertaking and the rest being private players.

The Indian life insurance sector has emerged as a cornerstone of financial security for individuals, families and organizations, navigating a robust growth trajectory over the years (Ghosh, 2013). This expansion can be ascribed to a confluence of several factors, including the entry of private companies, often in joint ventures with foreign players, bringing in expertise, innovation and a diverse array of products tailored to the evolving needs of the Indian middle class. Additionally, the Indian government's initiatives to promote financial inclusion have played a significant role in expanding access to life insurance products. The life insurance sector of India landscape features both private and public players, with LIC holding a prominent position as the sole public sector entity (Muthulakshmi & Muthumoni, 2023).

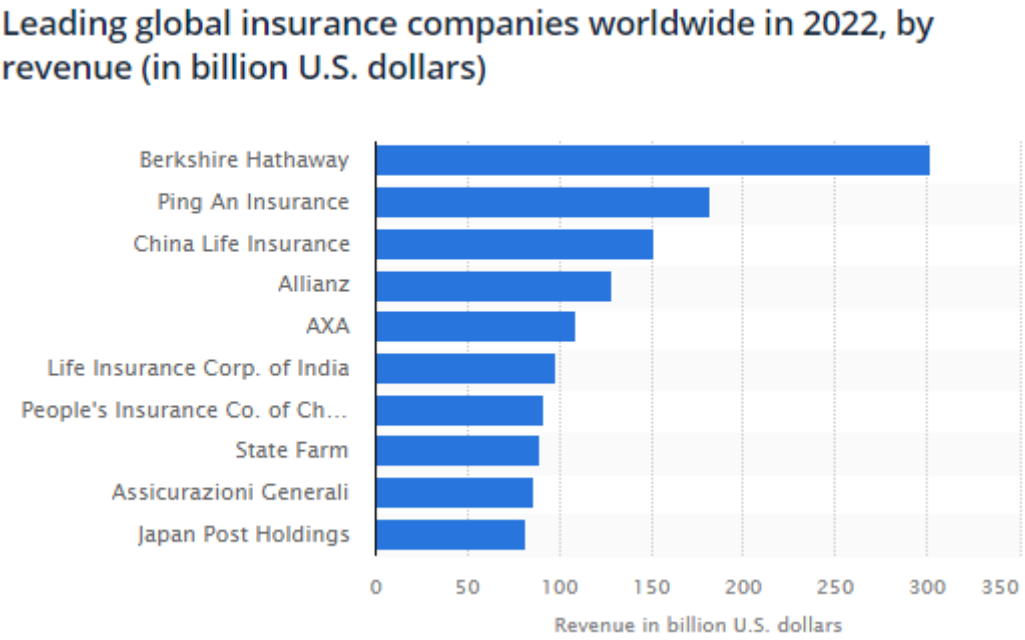


Figure 1.4: Top ten life insurance companies worldwide [Source: Statista annual report 2022]

The life insurance industry in India is intensely competitive, not only providing risk protection for individuals but also fostering a robust culture of saving and investment. This characteristic is further amplified by the sector's ability to attract long-term funds, which fuel the development of the Indian economy in diverse ways (Ramamoorthy et al., 2018). As per a report from the Statista 2022, LIC was among the top ten leading insurance companies worldwide by revenue (Figure 1.4).

1.10 Introduction to InsurTech

The insurance sector is experiencing a dramatic transformation driven by the disruptive technologies of Industry 4.0. This includes a wave of innovations like cloud computing, the Internet of Things (IoT), blockchain technology, artificial intelligence (AI) and, all poised to reshape the industry landscape, these innovations are disrupting traditional models and paving the way for a more dynamic, data-driven, and personalized future (Nicoletti, 2021.; Cappiello, 2020). The sophisticated technologies of Industry 4.0 are acting as catalysts for digital transformation within insurance companies. This translates into a wave of innovation, with insurers introducing novel insurance products, reimagining value chain activities, and developing entirely new business models. (Schwab, 2017; Ching et al., 2020).

The term "InsurTech" is a recent innovation, a fusion of "insurance" and "technology," signifying the convergence of innovative technologies with the insurance industry. While

initially categorized as a sub-sector of FinTech (financial technology) in the early 2010s, InsurTech's distinct focus within the insurance realm has propelled its recognition as a separate field by around 2015 (Liu et al., 2023; Soa, 2021). At its core, InsurTech aims to revolutionize the insurance industry by enhancing efficiency of the processes, development of products, underwriting practices, customer engagement strategies, and distribution channels. Furthermore, it fosters the creation of entirely new business models (Albrecher et al., 2019).

The insurance industry is undergoing a digital revolution, and InsurTech adoption is emerging as a critical strategic step for companies navigating this transformative landscape (Liu et al., 2023). This trend is not only reshaping the industry, but also accelerating economic growth. The global InsurTech market is experiencing significant growth, with a projected revenue increase from 5.48 billion in 2019 to 10.14 billion by 2025, reflecting a CAGR of 10.80%. This positive outlook is further reinforced by India's thriving InsurTech sector, which witnessed a substantial funding surge in 2021, reaching US$ 1.33 billion – a significant leap from US$ 304.8 million in 2020 (IBEF, 2022).

The adoption of Information and Communication Technology (ICT) is playing a significant role in propelling the rise of the life insurance market (Sibindi, 2022). One key driver of this growth is the ability to design and deliver personalized products and services. ICT empowers insurers to move beyond standardized offerings and cater to individual needs and circumstances. This, in turn, facilitates improved risk assessment, paving the way for tailored insurance premiums that are more reflective of each policyholder's unique profile (Albrecher et al., 2019; Njegomir et al., 2021). According to the Indian Brand Equity Foundation's (IBEF) E-commerce report (2022), India's insurance penetration rate stood at 4.2% in FY2021, with the life insurance sector experiencing a notable 13% growth compared to the previous year. This highlights the potential for further growth within the Indian insurance market. A key driver of this potential is the ongoing digital transformation of the insurance value chain. As highlighted by Eling & Lehmann (2018), The digital revolution is transforming the business landscape. It streamlines administrative tasks, empowers more informed decision-making through enhanced data analysis, and fundamentally redefines how businesses connect and interact with their customers. Furthermore, Tardieu et al. (2020) emphasize the ability of digital technologies to unlock new value propositions for clients through innovative products and benefits that surpass traditional offerings.

1.10.1 Basic IT Applications of InsurTech

Big Data: It alludes to a specific type of dataset that allows for the collection, processing, and analysis of vast amounts of information beyond just traditional, structured data (Eckert & Osterrieder, 2020). This includes semi-structured and unstructured data, which is often generated in large volumes by sources like telematics devices, social media platforms, and other internet applications (Eling et al., 2022).

Artificial Intelligence: A computer system that can perceive its surroundings, learn, and act on what it learns; the three forms of artificial intelligence are narrow, general, and super, based on their degree of intelligence. Machine learning serves as the technology that empowers us to train algorithms and develop this narrow AI (Kelley et al., 2018). Deep learning, a subfield of machine learning, has garnered significant attention in recent years due to its capabilities.

Internet of Things: This concept describes a network of physical objects, often equipped with sensors, software, and other technologies. These interconnected devices can communicate with the internet and exchange data, creating a vast network of information exchange (Radwan, 2019). These devices, ranging from smartphones and smart TVs to wearables and connected vehicles, are fundamentally transforming numerous industries. Within the insurance sector, IoT holds immense potential for innovation. Sensors like webcams, health monitors, GPS trackers, and environmental sensors can generate valuable data that can revolutionize risk assessment, pricing models, and even claim processing.

Cloud Computing: Files saved online and so available at any time and from any location (Yaneva, 2021)**.** It is an efficient and flexible procedure that saves money on setup, development, hardware, licensing, installation, and maintenance of a legacy system, data availability anywhere and at any time.

Blockchain: Emerging in 2008, blockchain technology initially gained recognition as the foundation for Bitcoin, the first cryptocurrency. However, its potential extends far beyond financial transactions. Blockchain is a distributed ledger system that facilitates the recording of immutable and verifiable transactions without the need for intermediaries (Casino et al., 2019). This core functionality offers a range of advantages, including consensus mechanisms, secure identification, anonymity control, efficient protocols, data immutability, and distributed ownership and management. The increasing interest in blockchain transcends

academic circles, attracting significant attention from industry practitioners as well (Kar & Navin, 2021).

1.10.2 Inclusion of InsurTech in Insurance Industry

InsurTech encompasses a broad spectrum of innovations impacting the insurance industry. It extends beyond simply digitalizing existing processes; it fosters the emergence of entirely new business models and even novel competitors from the technology sector entering the insurance space (Njegomir et al., 2021). At its core, InsurTech thrives on digital transformation. By streamlining operations across the insurance value chain, InsurTech empowers insurers to deliver a more efficient and customer-centric experience (Bruggmann et al., 2018). This translates to improved customer satisfaction and value creation for all stakeholders.

Driven by these advancements, customers are increasingly demanding simpler, more transparent, and flexible products and services (Naujoks et al., 2017). InsurTech serves as a catalyst for insurers to adapt and meet these evolving customer expectations, fostering a more responsive and dynamic insurance landscape. The following are the important aspects of the insurance industry which have been influenced by the emergence of InsurTech.

The rise of Information and Communication Technology (ICT) has significantly reshaped the insurance value chain, with sales and distribution experiencing some of the most profound impacts (Cappiello, 2020). The way insurance services are delivered, consumed, and ultimately, how insurers interact with customers has been fundamentally transformed by digital technologies. A key driver of this change is the shift towards online channels for purchasing insurance policies. Platforms like websites and social media have become prominent touchpoints for customer engagement, reflecting a significant change in insurance distribution strategies (Eling & Lehmann, 2018; Njegomir et al., 2021). Furthermore, the industry is prioritizing the development of modern digital tools for insurance personnel, alongside the implementation of multi-channel distribution solutions (El Arif, 2020). These tools, such as company websites, aggregator platforms, and online portals, empower customers to gather information, compare features, pricing, and payment options across different insurance providers (Singh et al., 2022). This multi-channel approach offers customers greater flexibility in how they access and utilize insurance services.

For insurance companies, digitalizing distribution channels presents an opportunity to enhance efficiency, effectiveness, and profitability. Reduced interaction time translates to cost

reductions and the potential for improved pricing strategies (Kramer et al., 2002; Humphrey et al., 2003).

Policy management, encompassing the entire lifecycle of an insurance policy from customer acquisition to claim processing and termination, plays a crucial role within the insurance sector (Holland, 2022). The integration of technology is transforming how insurers manage policies, with a focus on improving efficiency and enhancing the customer experience. Digital tools are enabling processes like digital signing and identification procedures, streamlining operations and reducing administrative burdens (Stoeckli et al., 2018). This aligns perfectly with evolving customer expectations for simplicity, customization, and user-friendly interfaces, along with a desire for quicker turnaround times and immediate cost analysis (Singh et al., 2022). Effective policy management through digital channels offers a win-win scenario for both insurers and policyholders. These online self-service options not only empower customers to manage their policies effortlessly, but also contribute to cost reductions for insurance companies (Holland, 2022; Singh, 2022). Furthermore, digitalization allows insurers to create a more engaging customer experience by providing user-friendly applications and web interfaces (Radwan, 2019).

Digital claims management is rapidly gaining traction within the insurance industry. This growing trend aligns with insurance companies' strategies to minimize in-person interactions and enhance efficiency (Gowanit et al., 2016). A core objective of Insurance 4.0 is to increase transparency throughout the claims process, encompassing fraud detection and premium application (Nicoletti, 2021). Emerging technologies like smart contracts, a hallmark of Insurance 4.0, hold promise for streamlining claim processing (Kimberly et al., 2022). The Internet of Things (IoT) also offers potential for simplifying claims by enabling automated filing and damage assessment, potentially reducing disputes and the need for constant status updates. From a customer perspective, digital claims management translates to a more user-friendly experience. Customers can now submit claims electronically, track progress, and receive real-time status updates. This can significantly reduce the time and effort required to manage a claim, ultimately leading to higher customer satisfaction (Yan et al., 2018). Furthermore, big data and Artificial Intelligence (AI) are playing an increasingly important role. These technologies can automate claim settlements, identify and prevent fraud using data analysis, and even facilitate secure claim payouts through blockchain technology (Eling & Lehmann, 2018).

Digitalization is prompting a fundamental shift in claims processing within the insurance industry. A key strategy involves reevaluating the claims journey from the customer's perspective and then leveraging technology to streamline each step behind the scenes (Njegomir et al., 2021). This approach empowers insurers to become more agile in meeting customer demands, automate repetitive tasks, and significantly reduce claim processing times (Bruggmann et al., 2018). From a customer standpoint, advancements in technology are shaping how they interact with insurance providers. The ideal customer service experience demands a user-friendly technological interface that complements, rather than replaces, human interaction (A. Kumar & Telang, 2012). Conversational interfaces, such as chatbots powered by Artificial Intelligence (AI), are revolutionizing customer communication (Selamat & Windasari, 2021). These chatbots can answer questions and handle requests through various online channels, including email, text messaging, web chat, and social media platforms (Lui & Lamb, 2018; Tamrakar & Badholia, 2022). Customers can interact with these virtual assistants through text or speech to obtain information, complete transactions, or request assistance.

Chatbots not only provide valuable information but also empower customers to find and request relevant details pertaining to their insurance policies (Riikkinen et al., 2018). By eliminating the need to navigate complex menus, chatbots allow customers to ask direct questions and receive immediate answers, significantly improving the service experience (Tamrakar & Badholia, 2022). Ultimately, this digital transformation ensures that customers can access personalized support whenever and wherever they need it, fostering a higher level of service quality (Forbes, 2017).

1.11 Customer satisfaction

Customer satisfaction hinges on the gap between a customer's expectations and their actual experience. It reflects how well an insurance company delivers on its promises (Kim, 2012). The rise of Industry 4.0 (IR 4.0) presents significant opportunities for improving customer satisfaction within the insurance industry. Automation of routine tasks, particularly those involving straightforward interactions, can streamline processes and reduce service costs, ultimately leading to happier customers (Pauch & Bera, 2022). Virtual assistants are transforming customer engagement by providing immediate answers to inquiries, eliminating the constraints of time and location (Gatzioufa & Saprikis, 2022). Effective communication between businesses and customers is crucial for fostering a positive purchasing experience

and ultimately, higher customer satisfaction (Chung et al., 2020). The digital age empowers customers to research and purchase insurance products through a variety of channels. Customers may use online resources to compare options before making a purchase decision, potentially utilizing different channels for research and purchase (Mau et al., 2015). The insurance industry has responded by providing a wider range of service channels, including websites, email, mobile apps, live chat, text messaging, blogs, and social media platforms (Nicoletti, 2021). These digital applications offer a significant advantage in managing customer satisfaction by enabling more frequent and personalized interactions (Spender et al., 2019; EIOPA 2019).

Previous studies suggest that key factors influencing customer satisfaction in the insurance industry include corporate image, service quality, price, and perceived value (Eckert et al., 2022; Nguyen et al., 2018).

1.11.1 Corporate Image

Corporate image goes beyond a company's actual state; it reflects how the public perceives it (Barich & Kotler, 1991). This perception is shaped by a customer's cumulative experiences with the company over time, including interactions with products or services (Andreassen & Lindestad, 1998). A company's reputation, built on past customer satisfaction or dissatisfaction, also plays a role (Boltan & Drew, 1991; Fornell, 1992). A positive corporate image can influence how satisfied customers are perceived. Essentially, happy customers with a favorable view of the company are more likely to be seen as highly satisfied (Andreassen & Lindestad, 1998). This positive perception can further improve customer behavior towards the business, creating a positive feedback loop.

1.11.2 Service Quality

Customers assess service quality by comparing what they expect from a service to their experience of the actual service delivered. High-quality service, from a customer's perspective, means receiving the accurate service, at the right time, and in a reliable way (Parasuraman et al., 1988; Bouranta et al., 2009). In today's competitive business environment, two main factors contribute to successful service delivery. First, companies must design and execute services effectively. This ensures that services meet customer needs and provide a competitive advantage (Atiyah, 2017). Second, businesses must be adaptable. The ability to adjust services to a changing environment is crucial for survival (Atiyah, 2017).

By focusing on these two aspects, companies can bridge the gap between customer expectations and service delivery, ultimately leading to higher customer satisfaction.

1.11.3 Price

Price plays a significant role in influencing customer decisions (Son & Jin, 2019). It represents the value assigned to a good or service, essentially acting as a measure of how well the provider has performed in delivering that good or service (Prasilowati et al., 2021). Customers consider price in relation to the perceived value they receive in exchange (Cakici et al., 2019). In fact, price is a critical factor not only in initial purchase decisions but also in establishing customer satisfaction and loyalty (Wantara & Tambrin, 2019). Customers assess their purchases carefully, evaluating whether they are getting the most value for their money. Therefore, ensuring a fair price relative to the perceived value of the service is crucial for insurance companies to achieve high customer satisfaction.

1.11.4 Perceived Value

Perceived value hinges on the gap between what a customer pays for a service and what they believe it's truly worth (Kuo et al., 2009). It reflects a customer's assessment of the balance between the benefits received and any sacrifices made to obtain the service (Zeithaml, 1988; Monroe, 1990). Insurance companies can increase perceived value in two keyways: by enhancing the benefits of their services or by offering more competitive pricing (Lovelock, 2001). By focusing on these strategies, insurance companies can ensure customers feel they are getting a good deal, ultimately leading to higher customer satisfaction.

1.12 Customer Loyalty

Customer loyalty goes beyond simply making a purchase. It reflects a customer's strong preference for a particular brand and their tendency to continue choosing that brand over competitors in the future (Oliver, 1999). As marketplaces get more competitive, a lot of businesses understand how important it is to hold onto their current client base, and several have started a range of initiatives to increase customer loyalty. Business professionals do, in fact, generally acknowledge the advantages of customer loyalty (McMullan & Gilmore, 2008) The insurance industry hinges on building strong relationships with its customers. Customer loyalty does more than just boost profitability; it’s the cornerstone of long-term success. Loyal customers are less likely to switch providers, generate positive worth of mouth, and contribute to a steady stream of renewed policies (Kumar et al., 2020). This loyalty stems from a carefully cultivated experience of satisfaction. Insurance companies that

prioritize customer satisfaction by providing prompt and efficient claims processing, transparent policies and personalized service foster a sense of trust and security that keeps customers engaged. For instance, offering convenient online interfaces for policy management and claims submission can significantly enhance customer satisfaction, leading to higher loyalty.

Moreover, loyalty in the insurance industry is fueled by a competitive edge. In a market saturated with options, companies must differentiate themselves by offering unique value propositions. This could involve innovative product offerings tailored to specific needs, pricing strategies, or exceptional customer service initiatives like proactive risk assessment and financial planning support.

1.12.1 Trust

Trust can be defined as the commitment to depend on a partner in a transaction, based on a sense of confidence in their reliability (Moorman et al., 1992). It is an essential factor in relationships both logically and based on experience, as suggested and confirmed in marketing literature (Moorman et al., 1993) Trust and customer loyalty in the insurance market are strongly correlated as customer loyalty and the likelihood of repurchasing insurance policies from the same firm are positively correlated with the level of trust customers have in their insurance providers (Ramij, 2021). The establishment and cultivation of trust requires a multi-prolonged approach. Ethical sales practices, where honesty reigns supremacy, lay the foundation. Accurate and readily available information empowers customers, allowing them to make informed decisions (YAZID, 2020). Reliable claims processing, a litmus test of an insurer's integrity, develops trust further (Khokhar et al., 2019). Finally, exceptional customer service, delivered with empathy and efficiency transform customers into loyal partners (Sugiharto, 2021).

1.12.2 Communication

Therefore, it is imperative for insurers to establish and nurture robust connections with their customers to ensure loyalty. An essential factor in attaining the loyalty within the insurance sector is the implementation of efficient communication (Rashid et al., 2019) The establishment of trust and commitment between insurers and their clients relies heavily on the implementation of effective communication. Insufficient communication hinders the insurers from building a solid connection with their clients, resulting in an inability to retain their loyalty. In addition, proficient communication also has a vital impact on improving the customer satisfaction. Effective communication between insurance agents and their clients enables the agents to answer any issues or queries, ensuring that the clients feel appreciated

and listened to. Such a high degree of attentiveness and responsiveness greatly contributes to the development of trust and loyalty among insurers and insured ones. Through proficient communication, insurance companies can showcase their proficiency and expertise, instilling confidence in customers that they are under competent guidance (Chen, 2021). The high level of proficiency and knowledge amplifies trust and loyalty, since customers have faith in their insurance providers' capability to manage their insurance requirements (Rashid et al., 2019). Furthermore, proficient communication also contributes to reducing the impact of price sensitivity on insurance products. Customers who experience a profound sense of affinity and confidence in their insurance provider are less inclined to prioritize price as the only determinant in their purchase choices (Oluwabiyi et al., 2022).

1.12.3 Commitment

Given the intensifying competition in the insurance industry, organizations must surpass the mere provision of coverage. In order to maintain customer retention over an extended period of time, it is imperative for them to cultivate dedication and allegiance with their customers. Delivering great customer service is a crucial aspect in fostering commitment and client loyalty in the insurance industry (Shafique et al., 2015). Insurance firms should prioritize delivering expeditious and effective service to policyholders, ensuring that the claims procedure is as smooth as feasible. This includes prompt responses to inquiries, transparent communication regarding policy specifics, and expedited claims processing. In addition, insurance businesses must exhibit their dedication to policyholders by consistently improving their offerings and services to align with the changing demands of customers. One can achieve this by conducting frequent market research, keeping up of industry developments and integrating customer feedback into product development (Leiria et al., 2022). Furthermore, personalized interactions and the establishment of relationships can help develop commitment and customer loyalty.

1.12.4 Switching Cost

Switching costs acts as an impediment for customers to change insurance providers, resulting in heightened customer loyalty. Customers who have dedicated time and effort to choose their existing insurance provider are generally less inclined to go through the same process again. Moreover, the monetary sanctions and legal intricacies linked to changing can dissuade customers from purchasing other options. Insurance businesses exploit switching costs by providing extended contracts or advantages that encourage customer loyalty. As an illustration, certain insurance companies provide discounts or reduced rates to customers who

agree to multi-year contracts (Ahmad Ganaie & Ahmad Bhat, 2021). The presence of these cost incentives creates a higher level of difficulty for consumers who wish to switch to a different insurance provider, thereby enhancing customer retention and loyalty. Furthermore, switching costs not only serve as an obstacle to customer defection, but also impacts the connection between customer satisfaction and loyalty (Lee et al., 2001). Customer loyalty is strongly influenced by their satisfaction with their current insurance provider when they face significant switching cost (Ahmad Ganaie & Ahmad Bhat, 2021).

1.13 Need of the Study and Proposed Research Questions

The concept of InsurTech adoption has been explored in previous studies such as (Kaur & Singh, 2023); explored the impact of InsurTech adoption on the satisfaction of customers of Indian life insurance industry. The other recent studies by (Cosma & Rimo, 2024; Kewal & Saxena (2024); Shamsuddin et al., 2023) have performed the bibliometric analysis and systematic literature review on InsurTech. Kiwanuka & Sibindi (2024) explored the association between InsurTech adoption, digital literacy and insurance inclusion in Uganda. (de Andrés-Sánchez & Gené-Albesa, 2024) examined the acceptance of chatbot among insurance customers. Kim & Kim (2024) identified the determinants of acceptance of InsurTech among customers in the South Korean insurance industry. Bharti et al. (2024) investigated the effectiveness of websites of insurance companies on the purchasing behavior of the customers. Previous studies have not explored the impact of InsurTech on the satisfaction and loyalty of the policyholders.

This study aims to analyze the influence of adoption of insurance technologies in the insurance sector and how this adoption affects the satisfaction of policyholders which ultimately affects the loyalty of the customers. Building on the insights regarding InsurTech adoption and its impact on customer satisfaction and loyalty, this study aims to analyze the relationship between these factors. The research will address the following questions:

RQ1: In the context of the Indian life insurance industry, how do InsurTech adoption and customer satisfaction impact customer loyalty?

RQ2: What is the predictive power of the loyalty of the policyholders of Indian life insurance companies of India?

RQ3: What are the important and performing determinants of customer loyalty in digitalized insurance landscape?

1.14 Structure of the Thesis

The structure of the proposed chapter is as follows:

Chapter 1: This chapter establishes the core concepts for study. It explores InsurTech adoption and its impact on insurance processes, including distribution, claims, policy management, and customer service. Then it delves into customer satisfaction, examining factors like price, value perception, service quality, and company image. Finally, the chapter introduces customer loyalty, its drivers (communication, commitment, trust, switching costs), and outlines the research questions and study structure.

Chapter 2: This chapter covers the theoretical background covers studies related to InsurTech adoption and customer satisfaction, Studies related to customer satisfaction and loyalty, Mediating role of customer satisfaction, moderating role of demographic factors (income, gender and age), research gap and conceptual model of the study.

Chapter 3: This section covers the Introduction to research methodology, Research design, Defining the research problem, outlining the study's purpose, Scope and Objectives. Then the Formulation of research hypotheses, Research Design, Universe of the study and explanation of sampling procedure, Sample size for the study, Data collection, Instrument used for data collection, Pre-testing and pilot testing of the study, Introduction to Partial least square Structural equation modeling (PLS-SEM) as a statistical technique to analyze the data, Mediation analysis, Moderation influence.

Chapter 4: This chapter includes the final data analysis and interpretations of the results presenting demographic profiles of the life insurance policyholders, Investigating the impact of InsurTech adoption on customer satisfaction and customer loyalty in life insurance segment, Examining the mediating role of customer satisfaction, Examining the moderating role of demographic variables (income, gender, age) in the relationship between InsurTech adoption and customer satisfaction, Predictive relevance of the conceptual model of the study, Importance and performance analysis (IPMA) for analyzing the important and performing construct of customer loyalty.

Chapter 5: The last chapter is comprised of Summary, Findings of the study, Future implications and limitations of the research, Theoretical discussions and Managerial implications of the study.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Theoretical Literature Review

The insurance industry is undergoing a paradigm shift, propelled by the relentless march of technology. This phenomenon, called "InsurTech" promises to revolutionize every aspect of the industry, from product design to claims settlement. However, amidst this transformative wave, a critical question emerges: how does InsurTech impact the delicate balance between insurer and insured? Does it foster a deeper, more meaningful connection, or lead to a disconnected, transactional relationship? This research investigates the complex relationship between InsurTech adoption and its subsequent effects on customer satisfaction and loyalty. Through a rigorous examination of key academic studies, this study will delve into the multifaceted dimensions of this relationship, unraveling the association that binds technology adoption, customer-centric strategies and the enduring loyalty of policyholders. This chapter examines prior research in three key areas: technology adoption within the insurance sector, policyholder satisfaction, and policyholder loyalty.

2.2 Studies Related to InsurTech Adoption and Customer Satisfaction

The term "Insurtech" combines the terms "insurance" and "technology" refers to technological developments and inventions that are intended to improve services and technology within the insurance industry (Liu et al., 2023). This emphasis is consistent with the ongoing industrial revolution and the current progressive technology landscape (Shamsuddin et al., 2023). This digital revolution is the combination of both analog and digital realms through cutting-edge techniques (Bukhtiarova et al., 2018) that promotes consumer involvement, more efficient business operations, and easier access to data (Eling & Lehmann, 2018).

InsurTech is an ecosystem that brings together a number of interconnected businesses to improve customer services, thereby helping insurers and their customers (PwC, 2020). It entails the use of digital techniques to communicate with employees and customers, technological overhaul, and the enlargement of data processing abilities. This digitalization also includes the implementation of digital and contactless systems for underwriting and resolution of claims (KPMG, 2020). The adoption of technology can be influenced by a

number of factors, including cost savings, customer preferences alignment, enhanced service quality, increased competitiveness, and more (Kaigorodova et al., 2021). Indian insurance businesses are actively utilizing digital platforms in line with the global trends. They are using these platforms to advertise their selection of products and to augment the service quality for ongoing customers before and after sale (Kaur, 2022; Uma Maheswari & (India), 2018). The insurance business is experiencing a significant impact of digitalization across multiple facets. The impact of InsurTech isn't limited to specific areas; it permeates the entire insurance business. This influence is felt across all stages of the insurance lifecycle, from the development and design of new products to the way they are sold and distributed. InsurTech is transforming how insurance companies assess risk and process claims, allowing them to develop innovative pricing models and strategie (Eckert et al., 2021; Eling & Lehmann, 2018). Customers now have the convenience to compare the insurance products on different distribution platforms and make informed decisions when purchase insurance policies (Park et al., 2021). The impact of digitalization in streamlining operations across the insurance value chain results in improved customer satisfaction and add values to all the stakeholders associated with insurance ecosystem Bruggmann et al., 2018). The rise of InsurTech fosters a win-win situation for both insurance companies and their policyholders (Kumar et al., 2023). Driven by rising expectations, customers are demanding a digital transformation in the insurance industry. They expect insurers to offer products and services that are clear, easy to understand (transparent), and adaptable to their needs (flexible) (Naujoks et al., 2017). India's strategic use of technology positions it well to compete with other developing countries in driving economic growth (Maduri & Sen, 2022). The Boston Consulting Group (BCG) predicts significant growth in India's InsurTech industry, with a projected Compound Annual Growth Rate (CAGR) of 43% by 2025. This technological leap is expected to fundamentally change how customers interact with insurance companies, automate operational processes, and ultimately drive overall industry growth.

2.2.1 Online Distribution and Customer Satisfaction

The digital revolution has significantly reshaped insurance sales and distribution channels. This transformation has redefined how services are delivered, accessed by customers, and most crucially, how insurers connect and interact with their policyholders (Cappiello, 2020). The insurance industry is witnessing a paradigm shift in distribution methods. Online channels, encompassing websites and diverse social media platforms, are emerging as primary avenues for customer acquisition (Eling & Lehmann, 2018; Njegomir et

al., 2021). Customers are capable of comparing the various aspects of different policies, which includes the features of policies, payment methods, pricing etc. (Sharma & Kadyan, 2013). This sales and distribution process leads to enhance the effectiveness of insurance organizations, particularly in terms of improving satisfaction of customers (Shetty et al., 2022). Insurance companies are utilizing InsurTech to streamline policy administration, making processes like digital signing and identification more efficient (Stoeckli et al., 2018).

2.2.2 Claims Management and Customer satisfaction

Digitized claims management is also another significant facet of the insurance industry that has been impacted by this digital revolution. The insurance industry is witnessing a surge in the adoption of digital tools, aligning with a strategy to minimize physical interaction with clients (Gowanit et al., 2016). This trend is driven by advancements like smart contracts, a key feature of "Insurance 4.0," which automates claim processing. By leveraging Internet-of-Things (IoT) connected devices, these smart contracts can streamline claim filing, damage assessment, and payouts, potentially reducing disputes and inquiries about claim status (McKinsey, 2020). Overall, Insurance 4.0 aims to achieve greater transparency throughout the claims process, including fraud detection and premium pricing structures (Bernardo & Rome, 2020).

The profitability of insurance firms can be impacted by innovative and cutting-edge technologies, with related competition policy considerations. The claims processes have been simplified and policies with specialized coverage target a specified market segment that would not be available otherwise. Payments processes have become faster because of advancements in communication networks and computing power. Now online systems can process claims more quickly (OECD, 2020). Digitalization is revamping insurance claims. Big data and AI power faster settlements, smarter fraud detection, and even automated payouts with blockchain. Secure data storage streamlines the process for everyone. These advancements make claims quicker, more secure, and beneficial for both insurers and policyholders (Eling & Lehmann, 2018).

The digital transformation of claims allows customers to conveniently report claims online, track their progress in real-time, and receive ongoing status updates. This streamlined approach potentially reduces the time and effort required to manage a claim, ultimately leading to increased customer satisfaction (Yan et al., 2018).

2.2.3 Policy Management and Customer Satisfaction

In today's digital landscape, customers demand clear, customizable, and user-friendly insurance plans with quick processing and cost analysis tools (Singh & Deshmukh, 2022). This empowers them to seek better service, putting them in control. It provides more convenience and flexibility to policyholders by enabling them to handle their policies such as policy purchasing, policy endorsement etc. It has become easy to read, understand and make a decision for purchase. By leveraging these services, policyholders can manage their policies conveniently, minimizing time spent on administrative tasks (Singh & Deshmukh, 2022). Customers are adapting their behavior as digitization progresses. They access different platforms to acquire information about insurance products and expect personalized products. Personalized interactions are becoming a cornerstone strategy for insurance companies, placing the customer at the center of their operations.

The digital age empowers customers to conveniently purchase insurance with a few clicks. User-friendly dashboards help them navigate complex plans, estimate monthly costs, and assess how these policies align with their long-term financial goals. Digital platforms now show customers how complicated insurance pricing works, so they can understand how rates change and choose the best plan for them. Also, digitalization has made it easier for customers to keep track of how their insurance plans grow and change. Recognizing the importance of user experience, insurance companies are revamping their digital applications and web interfaces to be more user-friendly and visually appealing (Radwan, 2019).

2.2.4 Customer Service Management and Customer Satisfaction

Customer service is the process of providing advice and support to a service provider’s customers. The development of customer service is to enhance the customers’ loyalty to the service provider and enhance business profits, or it can just be made to give users the required guidance and information (Goldstein et al., 2002). Technology is now able to meet consumer demands for prompt responses outside of a real facility, as opposed to the traditional service agent engagements that necessitate direct face-to-face customer/service provider contacts. Customers are increasingly embracing online services as they provide enhanced efficiency, accessibility, the cost and time saving as compared to the offline services (Escobar, 2016). Customers increasingly expect user-friendly interfaces when interacting with technology for customer service (Kumar & Telang, 2012). This trend has led to the rise of conversational interfaces, acting as a communication bridge between businesses

and their customers (Selamat & Windasari, 2021). Often referred to as chatbots, these Human-Computer Interaction (HCI) systems leverage AI technology to answer questions and provide support through various online channels like email, text messages, web chats, social media, and even virtual assistant platforms (Lui & Lamb, 2018; Tamrakar & Badholia, 2022). Customers can interact with these chatbots using text or speech to obtain information, complete purchases, or receive assistance.

Chatbots empower customers to easily find and request information relevant to their insurance needs (Riikkinen et al., 2018). These AI-powered tools go beyond simply answering questions; they can provide valuable resources and personalized interactions, eliminating the need to navigate complex menus (Tamrakar & Badholia, 2022). This technology enhances the customer service experience by ensuring immediate and personalized support, whenever and wherever a customer needs it (Forbes, 2017).

The emergence of virtual assistants like chatbots has fundamentally transformed customer engagement and communication (Gatzioufa & Saprikis, 2022). These AI-powered tools provide prompt answers to inquiries, eliminating time and geographical limitations for customer support. This improved communication between companies and customers can ultimately lead to a more positive customer experience and increased satisfaction (Chung et al., 2020).

Some of the key relevant studies related to technology adoption among the insurance companies have been discussed in the table 2.1 below:

Table 2.1: Studies related to determinants of InsurTech in the insurance industry.

Sr. no.	Construct	Variables	Author(s)	Key Results
1	InsurTech	Online Distribution	G. Singh et al., (2022)	Embracing innovative technologies empowers insurance companies to optimize the entire insurance value chain. This translates to enhanced customer experiences, streamlined operations, and a stronger competitive edge within the dynamic digital landscape.
			Singh & Deshmukh (2022)	The growing adoption of online distribution channels, alongside continuous advancements in

				insurance technology, is causing a substantial shift away from traditional offline channels.
			Stoeckli et al., (2018)	A crucial aspect of understanding InsurTech's lasting impact lies in examining its effects on customers over time. This necessitates a deep dive into customer perceptions, specifically regarding trust, perceived value, and underlying motivations. By delving into these factors, we can illuminate customer expectations and how InsurTech is shaping their long-term relationship with the insurance industry.
		Claims Management	Gebert-Persson et al. (2019)	A user-friendly and intuitive website interface is crucial for attracting customers to online insurance applications. Customers are more likely to engage with an insurance provider's online platform if they find it easy to navigate and use.
			Zariņa et al. (2019)	In growing economies, the digitalization of the insurance sector is revolutionizing claims management. This transformation is streamlining processes, enhancing efficiency, and potentially reducing costs, all of which benefit both insurance companies and policyholders.
			Radwan (2019)	Insurance companies can save money on claims and beat the competition by being more upfront about managing risks and offering better deals to customers.
			Sasanti et al. (2022)	A positive attitude towards technology can encourage people to take advantage of the convenience offered by online claims services.
			Kemboi (2022)	By empowering policyholders with self-service tools like mobile apps and web portals, insurance companies can elevate their

				service quality. These solutions provide greater control and transparency over the claims process, fostering a sense of empowerment for policyholders.
		Policy Management	Adam & Hikmah (2022)	The Indonesian life insurance industry is witnessing a surge in online policy issuance. This digital shift streamlines and expedites the process for both insurers and customers, enhancing overall convenience.
			Niraula & Kautish (2019)	By implementing user-friendly digital channels, insurance companies can empower customers to easily research and purchase policies. This convenience not only enhances the customer experience but also unlocks new market opportunities for insurers.
			Stoeckli et al. (2018)	The emergence of digital insurance intermediaries fosters greater customer control over insurance policies. These platforms provide convenient access for customers to examine coverage details, comprehend included benefits, and effortlessly modify their plans as circumstances change.
			Holland (2022)	Within the insurance industry, streamlining policy administration processes serves as a fundamental element for creating value. This efficiency translates into multiple advantages for insurance companies, such as lower customer service costs and enhanced operational effectiveness.
		Customer service management	Tamrakar & Badholia (2022)	The digital transformation reshaping customer-business interactions is poised to make chatbots a dominant channel for customer service management.
			Gatzioufa & Saprikis	The digital migration of customer behavior is prompting companies

			(2022)	to adapt their strategies. By meeting their audience on the platforms they frequent, businesses can foster deeper engagement and deliver more effective services.
			Chung et al., (2020)	By incorporating AI-powered e-service agents and digital assistants, organizations can significantly improve customer interactions at every touchpoint throughout the customer journey. This enhancement in customer experience translates to increased brand satisfaction and fosters the development of stronger, more long-lasting customer relationships.
			Pirilä et al. (2022)	Providing customers with the flexibility to choose between chatbot and human interaction caters to a wider range of preferences. This dual approach can not only enhance customer satisfaction but also gradually increase user acceptance of chatbot technology.

2.3 Studies Related to Customer Satisfaction and Customer Loyalty

The insurance sector is experiencing a rapid rise in InsurTech adoption. This wave of technological innovation empowers customers by providing them with flexible and adaptable insurance solutions (Eling & Lehmann, 2018; Grima et al., 2020). InsurTech has the potential to enhance customer satisfaction (Eckert et al., 2022) which leads to retain customer loyalty (Helgesen, 2006). Insurers are working to enhance the reputation of their brands and strengthen their relationship with customers. They aim to achieve this by elevating interactions with policyholders and engaging them in innovating new products and services. Embracing this new approach has the potential to not only improve customer satisfaction but also translate into increased loyalty and retention for insurance companies (Pauch & Bera, 2022). Research has consistently demonstrated a positive correlation between high customer satisfaction and customer loyalty in the insurance sector. This translates to a potential decrease in customer complaints for insurance companies, signifying a more satisfied and retained customer base (Fornell et al., 1996; Helgesen, 2006). Arora and Narula (2018)

depicted that quality-of-service influences customer satisfaction and satisfied customers become loyal. Luo & Bhattacharya (2006) delineated that corporate social responsibility has a direct association with customer satisfaction and satisfaction results in enhanced customer loyalty and loyal customers are crucial for the success of a company due to their propensity to make regular purchases and provide insightful feedback (Lee, 2019). They not only support consistent revenue streams but also serve as a brand promoter, attracting new customers through word-of-mouth referrals. Furthermore, their feedback helps with ongoing development (Lee, 2019; Reichheld FF, 1990). Research has revealed a strong correlation between customer satisfaction and loyalty. Factors like positive corporate image and high-quality service have been shown to directly influence customer satisfaction, ultimately leading to increased loyalty (Cameran et al., 2010). In a study of Vietnam life insurance industry by Nguyen et al. (2018) identified several key factors influencing customer satisfaction and loyalty. These factors include corporate image, perceived value, service quality, and price. Volosovych et al. (2021) explored the integration of InsurTech solutions, like chatbots for customer service, within the insurance industry. Their research suggests that such integration can streamline the insurance value chain, potentially leading to increased customer loyalty and trust. Lin & Hsieh (2006) emphasized a significant positive correlation between customer satisfaction and customer loyalty within the domain of e-CRM (Customer Relationship Management) landscape. The Indian life insurance industry is witnessing a paradigm shift. Customer interactions are being reimagined, with a focus on building loyalty and satisfaction as the key drivers of success for insurance companies (Vanniarajan & Shankari, 2008). In previous studies by Reichheld & Teal (1996); Reichheld FF, (1993) where customer satisfaction has been defined a prerequisite for customer loyalty for achieving the sustainable prosperity of the businesses. Ramamoorthy et al. (2018) highlighted the requirement for further research to explore the various dimensions of customer satisfaction and how customer relationship management (CRM) practices influence customer loyalty. Adding to the established link between customer satisfaction and loyalty, Ruefenacht (2018) further explored this positive effect specifically within the insurance industry. Customer loyalty is considered to be one of the greatest tangible resources and an important component of competitive advantage (Cossío-Silva et al., 2016). It also has a great potential for differentiation in both its attitudinal and behavioral dimensions. Kuo et al. (2011) identified a direct link between customer satisfaction and loyalty and cultivating customer satisfaction translates into a higher likelihood of repeat business. Notably, perceived value further amplifies this relationship. When customers find genuine value in InsurTech offerings,

their satisfaction translates into even stronger loyalty compared to those perceived lower value. Another study by (Lee, 2013) echoes these findings, emphasizing how high-quality service fuels customer satisfaction, ultimately leading to loyalty. Additionally, reasonable pricing and perceived switching cost play a role, with customers experiencing these factors exhibiting stronger loyalty ties.

Understanding the connection between customer satisfaction and loyalty is paramount for both business leaders and researchers. In today's competitive landscape, these factors are increasingly recognized as a strategic advantage, enabling organizations to differentiate themselves and achieve a competitive edge (Nguyen et al., 2018). The expectations and perceptions of service quality aspects have a greater influence on customer satisfaction and loyalty (Limna & Kraiwanit, n.d.) It is becoming progressively apparent that providing high-quality service is essential for companies looking to win over repeat business in the fiercely competitive market of today (Kanyama et al., 2022) Service quality should be the priority which has an influence on customer loyalty (Carelse, 2017) Customers who are actively engaged in insurance process and possess comprehensive knowledge about their policies and procedures foster a sense of confidence in service providers, enabling them to offer tailored services that align with the needs and expectations of their clientele. Consequently, this raises customer satisfaction and strengthens their allegiance to the insurance provider.

In the insurance industry where competition is fierce, the corporate image of an organization is vital for drawing in new business and keeping existing clients. The opinions that stakeholders have built up about an organization over time constitute its image (Pollack, 2009). A study by (Andreassen & Lindestad, 1998) found that corporate image plays a prominent role in fostering customer loyalty within the service industry. Their research suggests that a positive corporate image has both direct and indirect effects on customer loyalty. Furthermore, as early adopters of this theory Nguyen & Leblanc (2001) noted that corporate reputation ought to be considered when explaining loyalty in addition to satisfaction and the aspect of corporate reputation needs more attention in the service marketing. Another study by (Brady et al., 2005) depicted that practitioners and researchers today possess superior knowledge on how to measure service quality, how customers gain value from a service provided, and which customers are most likely to stick with a service provider. Price continues to be a pivotal element in the insurance sector, exerting a substantial influence on customer satisfaction and loyalty. A key determinant of customer satisfaction is their perception of value received for the cost of insurance products and services. Satisfaction

levels will rise if they consider that they are receiving a reasonable and competitive price for their insurance coverage. High customer satisfaction translates to policyholders who are more likely to remain with the same insurer and renew their policies, ultimately leading to stronger customer loyalty and business growth (He et al., 2008). Beyond just satisfaction, a customer's perception of value also significantly influences their loyalty. Customers who perceive their insurance plan as a good investment, in terms of value received for the cost, demonstrate a greater propensity to remain loyal to the insurance organization. They are more likely to be satisfied with and stick with their insurance provider when they believe they are getting value from their policies-such as reasonable prices, extensive coverage, and attentive customer service. According to Chang et al. (2009), this sense of value encompasses more than just pricing and takes into account things like how simple it is to process claims, how good the customer service is, and how the insurance business is all around. Additionally, research indicates that the provision of distinct value-delivering advantages that set apart from competitors has an impact on customer loyalty. To put it another way, insurance providers must do more than just satisfy the most basic requirements of their clients. Customer satisfaction and provider loyalty are higher among those who believe they are getting value out of their insurance policies-such as extensive coverage and genuine prices.

2.3.1 Antecedents of Customer Satisfaction

2.3.1.1 Corporate Image

Within the insurance sector, the way a company is perceived and trusted by stakeholders, consumers and the public are greatly influenced by its corporate image. An insurance firm stands out from the competition, draws in new business, keeps hold of current customers and ultimately contributes to its long-term viability and sustainability with a strong and good corporate image (Crete & Brodie, 2007). An insurance company’s reputation, identity and general market perception are all reflected in its corporate image (Gray & Balmer, 1998). It includes a range of elements, including business reputation, product image and social responsibility. Together, these elements shape the target audience’s perception of the brand and have a big impact on their propensity to make a purchase (Cretu & Brodie, 2007).

2.3.1.2 Service quality

The level of satisfaction with the services received is a critical aspect in attracting and keeping clients in the current competitive market (Ali & Tausif, 2018). Customer satisfaction

arises from a customer's assessment of a product or service after purchase. This evaluation considers their experience throughout the entire process, from initial interaction to usage (Kuo et al., 2013). Customer satisfaction in the insurance sector is directly related to service quality, which in turn raises customer satisfaction (Ali & Tausif, 2018) Insurance businesses need to put a premium on service quality if they want to stand out in this crowded industry. Delivering excellent service draws in new clients in addition to keeping current ones. Insurance businesses compete fiercely in their market, and maintaining a competitive edge depends on providing top quality services. High-quality services are a cornerstone of building customer satisfaction and loyalty. The better the service experience, the higher the likelihood that they will remain loyal to their service provider company (Kuo et al., 2013).

2.3.1.3 Price

Customer satisfaction in the insurance industry is essential for companies to prosper a keep a base of devoted clients (Thamrin et al., 2020). While cost is a major consideration for customers, it's important to recognize that affordability alone doesn't guarantee loyalty and satisfaction. A balance needs to be struck between competitive pricing and delivering a high-quality insurance experience (Kaura et al., 2015). Customers will be content if they can purchase insurance at a cost that is comparatively lower than that of other comparable insurance plans. Furthermore, it was revealed by Kaura et al. (2015), the importance of pricing in customer satisfaction and stated that price variable had higher estimated values than the other variables.

2.3.1.4 Perceived Value

Satisfaction among customers stems from their assessment of the excellence of the products or services they have utilized or bought. Thus, to increase customer satisfaction, businesses must concentrate on providing high-quality services (Hu et al., 2009). Perceived value is one of the key determinants that affects customer satisfaction (Ali & Tausif, 2018) The subjective assessment of the advantages or value that consumers feel they obtain from a good or service in comparison to its price is known as perceived value (Ruiz-Molina & Gil-Saura, 2008) Because it involves the consumer’s evaluation, customer perceived value is subjective. Businesses in the insurance industry stand to gain a great deal from comprehending and utilizing client perceived value. By offering premium services, insurance firms can enhance the satisfaction of their clients (Hu et al., 2009).

2.3.2 Antecedents of Customer Loyalty

2.3.2.1 Commitment

Commitment refers to the customers' steadfast and unwavering loyalty to a specific insurance provider (Alok & Srivastava, 2013) This dedication is demonstrated by a readiness to stick with the business, actively forming enduring connections, and regularly selecting its service over those of rivals. Building customer commitment goes beyond just satisfaction with products and services. It encompasses confidence and trust in the company's ability to fulfill customer needs and consistently deliver reliable coverage.

2.3.2.2 Communication

Customer loyalty is crucial for long-term business performance in the insurance industry. Insurance firms need to know how customer retention relates to other business characteristics to compete on loyalty (Alok & Srivastava, 2013). This comprehension enables them to measure the relationship between profitability and loyalty (Reichheld FF, 1993). Effective communication is essential in the insurance when it comes to customer loyalty. Building and sustaining solid relationships with insurance consumers requires effective communication. Insurance businesses can better understand their customers' requirements and expectations by communicating with them which also helps them address any problems or concerns that may arise (Loots & Grobler, 2014).

2.3.2.3 Trust

According to Alok & Srivastava (2013), trust acts as a cornerstone for fostering customer loyalty. It significantly influences how customers perceive service quality and ultimately shapes their overall satisfaction. Companies must embody their ethical commitments through actions. Upholding ethical practices, including reasonable data handling and fair claims adjudication, demonstrates genuine respect for customers. Within the insurance industry, building trust is paramount for fostering customer loyalty. This is because trust directly impacts how consumers perceive service quality and ultimately shapes their satisfaction levels (Kuo et al., 2013).

2.3.2.4 Switching Cost

Switching cost refers to the costs or difficulties a consumer can run into when thinking about moving from one insurance company to another (Alok & Srivastava, 2013).

These expenses may include monetary expenditures like cancellation fines or fees, the time and energy needed to look into alternative insurance companies and plans, as well as the possibility of losing any benefits or coverage that the client presently has with their present insurance company (Venkatesan & Jacob, 2019). Customers prefer to remain loyal to their present insurance carrier as a result of these fees acting as a disincentive and decreasing their likelihood of switching to other insurance providers (Alok & Srivastava, 2013).

2.4 Mediating Role of Customer Satisfaction

The mediating role of customer satisfaction in various relationships within the business landscape has been extensively explored in prior research, involving those conducted by (Ariffin et al., 2018; Caruana, 2002; Dahiyat et al., 2011; Hartono & Raharjo, 2015; Kamisah et al., 2021; C. Y. Lee, 2019; Ruefenacht, 2018; Viswanathan et al., 2020). Dahiyat et al. (2011) examined how customer satisfaction acts as a mediating factor between customer loyalty and customers' service skills. Alok & Srivastava (2013) explored the customer satisfaction as a mediating factor between service quality and customer loyalty in the scenario of Indian insurance services. In Caruana's (2002) research, customer satisfaction serves a significant link between loyalty and service quality. The satisfaction of customer is more important than providing excellent service in keeping customers loyal. According to the survey, great customer satisfaction results in improved loyalty from customers. This highlights how important it is to measure customer satisfaction and provide high quality services in order to cultivate enduring customer loyalty. In Damtew Gizaw & Pagidimarri's (2014) investigation within the insurance sector reinforces the notion of customer satisfaction as a crucial mediating factor. Their study suggests that service quality positively influences customer loyalty, and this effect is channeled, at least partially, through customer satisfaction. Ariffin et al. (2018) explored the connection between service customer loyalty, service quality and switching behavior, identified customer satisfaction as a critical mediating factor. Their study found that high-quality service directly fosters positive customer satisfaction. This satisfaction, in turn, acts as a mediator, significantly influencing both customer loyalty and intention to switch. In essence, good service doesn't automatically guarantee loyalty; it's the resulting feeling of satisfaction that motivates customers to stick around and resist switching providers. Study by Tandon et al. (2017) revealed that customer satisfaction is the hidden hero driving repurchases intentions in emerging economies' online shopping. They demonstrated that even a high-quality website (clear navigation, secure payments) isn't enough. It's the feeling of satisfaction it generates that truly influences

customers to return. The mediating function of customer satisfaction emphasizes the need to go beyond functionality. To foster a truly loyal customer base, organizations must prioritize a comprehensive approach that encompasses a deep understanding of customer needs, fosters trust and security, and incorporates active satisfaction measurement practices. In Budur & Poturak's (2021) research, customer satisfaction plays a starring factor as a mediator between employee performance and customer loyalty. The study suggested that strong employee performance, characterized by efficiency, expertise and helpfulness, doesn't directly translate to loyal customers. Instead, it's the satisfaction felt by customers that truly drives loyalty. High-performing employees are more likely to deliver positive customer experiences, leading to greater satisfaction. This satisfaction then acts as a bridge, fostering stronger and more enduring customer loyalty. Fostering loyal customers involves more than service standards, it involves exceeding expectations and generating positive feelings. By nurturing both service quality and satisfaction, businesses can unlock the key to lasting customer loyalty (Mosahab et al., 2010).

Previous research has investigated customer satisfaction as a mediator in various studies such as Soeharso (2024); Chowdhury et al. (2023); Wantara & Suryanto (2023); Satti et al. (2023); Mahadevan & Joshi (2022); Elgarhy & Abou-Shouk (2022); Mohammed & Mahmood (2022). A study by Khan et al. (2022) examined the mediating role of customer satisfaction between corporate reputation and customer loyalty as well as between customer relationship management and customer loyalty. Sometimes customer satisfaction doesn't directly boost loyalty, it involves cultural or industrial specific factors which influence the satisfaction- loyalty relationship (Flores et al., 2020). Customer satisfaction is a powerful bridge that helps in ensuring lasting loyalty (Tedjokusumo & R. Murhadi, 2023).

This digitalization of insurance services positively affects customer satisfaction Eckert et al. (2021) and customer satisfaction is a leading factor in retaining loyalty (Lee, 2019; Nguyen et al., 2018). The advent of digitalization has brought the service providers and customers closer together (Andranurviza et al., 2022). Other studies such as (Moneta, 2014); (Buehler & Maas, 2015)) have examined how new technologies impact the customer loyalty and satisfaction.

2.5 Moderating Influence of Demographics (Age, Income and Gender)

Demographic factors, as defined by Yusuf et al. (2014) encompass the characteristics of a population. This includes personal traits like gender and marital status, household

characteristics like living arrangements and language, and socio-economic aspects like education and income. Chaudhry et al. (2009) highlighted the importance of demographic and socioeconomic factors in marketing research when analyzing populations and identified demographic factors including age, gender, and income. In India, the observed differences in technology adoption between men and women may be influenced by cultural and social norms, particularly in the context of making financial decisions (Chawla & Joshi, 2017). It is crucial to understand the moderating impacts of demographics like age and gender. These variables can influence how individuals perceive and adopt technology, and therefore should be taken into account to obtain a comprehensive understanding of the adoption process (Mao & Palvia, 2008). In the present study, three demographic variables namely gender, age and income have been utilized.

2.5.1 Moderating Influence of Gender

Gender referred to as social division between men and women, their duties and the ways in which they shape society (Akram et al., 2016). While prior research has explored the moderating role of gender in various contexts, the influencet of gender on InsurTech adoption remains under-investigated. Riquelme & Rios (2010) investigated the moderating effect of gender in mobile banking adoption and found a positive influence of the moderator. Gender may also have an effect on how people view insurance companies, how likely they are to file a claim, and how involved they are with insurance-related goods and services in general. Mansori et al. (2020), looked at in their study how gender moderates these relationships and discovered that, when it comes to insurance decisions, women are typically more impacted by social influence and the endorsement of religious leaders than men. The demographic factors age, gender, marital status and occupation on the source of investment advice affect the investors' behavior and the likelihood of making an investment in the near future (Aggarwal, 2011). Gender has been considered as a moderating variable in technology adoption and women may be more influenced by contextual factors the men (Alexopoulos & Saxena, 2023).

2.5.2 Moderating Influence of Age

Age holds significant importance as a demographic moderator in research studies. Understanding its influence allows for deeper insights into customer behavior, preferences, risk profiles, ultimately leading to more tailored products, communication strategies and overall customer experience. Research on the adoption of technology shows that younger

users act and behave differently than older users because they are more cautious of technology and prefer-in-person interactions, older people have a tendency to be more relaxed when it comes to using it for transactions (Chawla & Joshi, 2018). Further, technology has become an integral part of the people and age of the individuals has a positive influence on technology adoption behavior of the people (Rishinanto et al., 2017).

2.5.3 Moderating Influence of Income

Income is the money that people or companies receive in return for their goods or services. Users' attitudes and behaviors are influenced by their income levels. Previous studies have explored the link between income and the user adoption of technology (Chawla & Joshi, 2018). Income can play a significant role in shaping customer behavior and preferences in the scenario of insurance coverage. Consumer income can impact their willingness to pay for insurance premiums and their overall ability to afford the monthly payments. According to Porter & Donthu (2006) research, customers with lower income are the ones that worry about costs the most, and they believe that costs are high when compared to perceived usefulness. Furthermore, it was suggested that there is a relationship between income levels and use of digital channels (Kanojia & Lal, 2023). Individuals with high income are more inclined to use digital payments and, including mobile payments (Bertrand & Ahmad, 2014).

2.6 Control Variables in the Study

Control variables are external factors statistically adjusted for or held constant in a research study. They represent external influences that could potentially impact the dependent variable, and by controlling for them, researchers can isolate the specific effect of the independent variable and draw more robust inferences about the true relationship under investigation (Shiau et al., 2024) Control variables are utilized to rule out alternative explanations for the study's findings even though they are not the main variables of interest in the study (Becker, 2005) Various studies including marketing research, control variables have been utilized (Deshpande et al., 2000). Previous studies have implemented demographic variables such as age, income and gender as their control variables of the study in different context. Yadav et al. (2022) utilized gender as a control variable in their study to explore the factors attracting students towards the selection of universities. Agnihotri et al. (2023) incorporated gender and degree as control variables in their study exploring the different forms of graduate capital. Nair et al. (2022) included three demographic factors such as

income, gender and age as control variables in their research exploring the determinants of mobile applications in the context of behavioral finance. Rishi et al. (2022) explored the attitude of investors towards the usage of credit cards and incorporated age, gender as control variables of the study. Thus, building on the aforementioned literature, this study incorporates three control variables: gender, income, and age. This comprehensive approach allows us to isolate the specific effect of InsurTech adoption on the satisfaction and loyalty of life insurance policyholders in the Indian insurance industry, by accounting for potential influences of these demographic characteristics.

Table 2.2: Studies related to InsurTech Adoption

Author(s)	Variables of the Study	Methodology Used	Key Findings	Limitation(s) of the Study
Khare et al., 2012	Online insurance, Service attributes	Survey, 192 participants from Allahabad, India	Improvements in the technological aspects of online insurance platforms can positively impact customer service utilization.	This study analyzed the perception of people towards online insurance services in non-metropolitical city.
Mcfall & Moor, 2018	Insurance, InsurTech, Personhood, Price, Data	An Introductory Framework on InsurTech	The distribution of responsibility and risk between humans and non-humans is evolving in the InsurTech industry, leading to the possibility of insuring the 'response-ability' of various devices	Research was limited to inclusion of InsurTech and its aspects changing the traditional insurance.
Gomber et al., 2019	Fintech Revolution	Review of existing studies on technology revolution in the financial industry	The emergence of novel technologies will develop the financial sector over time to make the things better for everyone.	Study aimed to introduce fintech revolution and emerging technologies across financial industry
Cao et al., 2020	Innovation, Insurance,	Used text mining	The findings revealed that multiple factors	Research was conducted on

	InsurTech, Insurance technology	technology on the datasets of InsurTech reports of China	contribute to the development of China's InsurTech industry, including government regulations, media attention and technological advancements. The global InsurTech market is currently undergoing development.	secondary data available in media resource library of China.
Xu & Zweifel, 2020	InsurTech	Modified Delphi approach and Analytical Hierarchical Process	This study presented a clear method for evaluating InsurTech innovations that can also offer directions for their future growth.	This study was limited to Delphi and AHP approach to evaluate indicators of InsurTech.
Wu et al., 2022	Online insurance, Customization, Core self-evaluation, Information richness, Intelligent agent, Trust	Survey, 644 participants from Taiwan	The findings indicated that customizing smart devices for users with insurance experience could lead to increased trust.	This study was conducted in a geographical region of Taiwan. Future research could explore more variables such as third-party and mobile payment systems.
Fritzsch et al., 2021	Digitalization, Market Valuation, Machine Learning	Latent Dirichlet Method (LDA) algorithm and natural language processing methods (NLP) on the insurance reports of United States.	Digitalization will significantly alter the way insurance companies operate.	This study only considered the word assumptions of LDA approach.
Kar et al.,	Blockchain,	Systematic	Blockchain is gaining	This review was

2021	Insurance, Smart Contracts	literature review on 51 articles	significant interest from both academic researchers and industry professionals.	limited to only one technological aspect i.e. blockchain.
Saeed et al., 2022	InsurTech, Internet of Things	Systematic literature review using PRISMA technique	There are various challenges for IoT adoption in Indian insurance sector which need to overcome to enhance the insurance penetration.	This research was limited to academic literature only.
Zbar & Ibrahim, 2024	Digital Insurance, Climate Change	Survey, 80 participants from Iraq	Insurance is recognized as a financial sector that contributes to mitigating climate change risks, especially when utilizing insurance information technology.	Limited variables had been involved in this study to analyze the insurance technology impact.

2.7 Research Gap

While existing studies have focused on the different facets of InsurTech adoption, with limited research on the analysis of InsurTech determinants and impact on satisfaction as well as loyalty of the customers. A critical gap exists in our understanding of how InsurTech adoption influences customer satisfaction and its potential role as a mediator driving customer loyalty. It also explores how demographics like age, income, and gender might influence this process. Thus, this study delves into this under-researched area to illuminate these dynamics within the insurance industry. This research aims to address this gap by examining these factors in the context of the insurance industry. The determinants of InsurTech have been discussed individually in different contexts of studies. Furthermore, Limited research explores the specific effects of InsurTech adoption on customer satisfaction and loyalty within the Indian life insurance sector. This study intends to contribute to this knowledge gap by analyzing relationship between these factors namely InsurTech, customer satisfaction, and customer loyalty and influence of their association in the Indian context.

Thus, the study has proposed a conceptual framework after conducting a thorough review of literature review in current study. The conceptual framework has been represented in Figure 2.1.

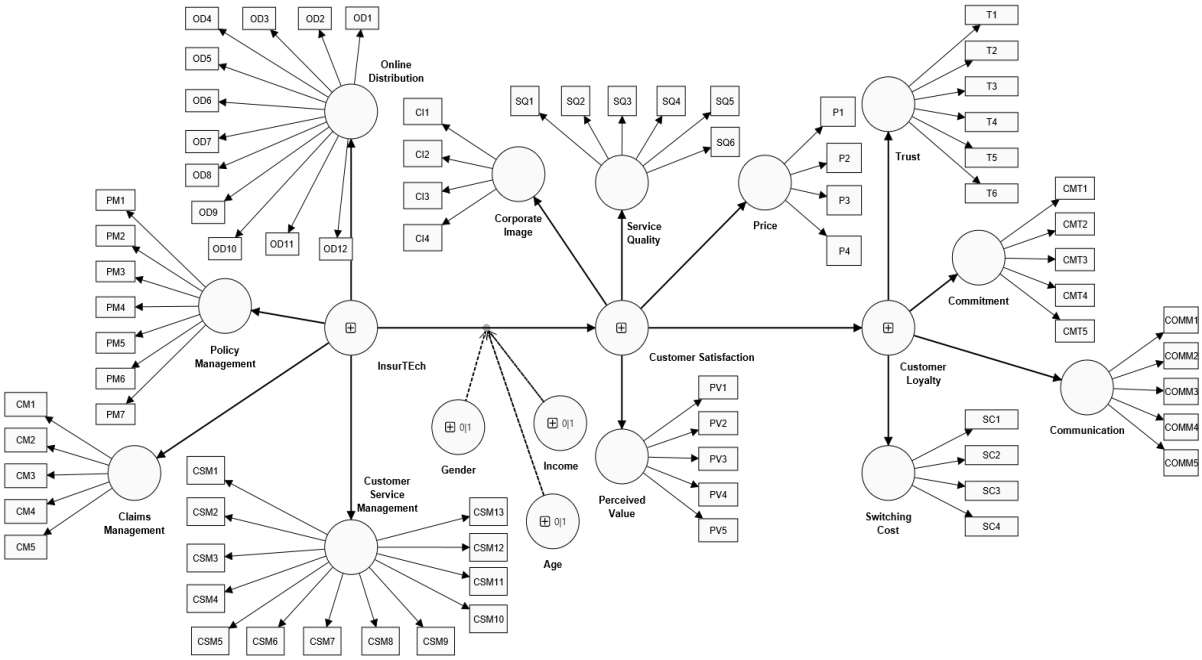


Figure 2.1: Conceptual Framework of the Study

As shown in figure 1 shows, all the three constructs namely InsurTech, Customer satisfaction, and Customer loyalty are 2nd order and sub-construct of each main construct has been explored with indicators on five-point Likert scale. The independent construct InsurTech will be evaluated with four antecedents including online distribution, claims management, policy management and customer service management practices (Ching, 2020; Cappiello, 2020; Eling & Lehmann, 2018). Customer satisfaction will be assessed using a multi-dimensional approach, encompassing four key aspects: corporate image, perceived value, service quality, and price (Eckert et al., 2022; Nguyen et al., 2018). The dependent construct of customer loyalty has been evaluated with four sub-constructs such as Trust, Communication, Commitment and Service Quality (Alok & Srivastava, 2013; Ball et al., 2004).

CHAPTER THREE

RESEARCH METHODOLOGY OF THE STUDY

3.1 Introduction

Every research project requires the researcher to explicitly define the type of research design they'll be employing. This could range from exploratory, descriptive, or diagnostic approaches to experimental, quasi-experimental, or ex-post facto investigations, and even qualitative methodologies. The chosen research design serves as a roadmap for the entire study, outlining a comprehensive plan for data collection and analysis. This plan should clearly demonstrate why the chosen methods and procedures are the most appropriate for achieving the research objectives given the specific data (Hair et al., 2010; Kothari, 2004). Embarking on a research journey necessitates initial identification of research gap through a rigorous literature review. This initial, crucial step serves as the core element for the entire research, carefully guiding the crafting of objectives, designing the research and collecting data. The researcher then meticulously determines the optimal sample size, conducts a pilot study if warranted, and carefully selects participants from the target population, ensuring representativeness. Choosing the most appropriate data sources and analysis techniques, particularly for multivariate scenarios, is paramount. Finally, the researcher interprets the findings with rigor, draws evidence-based conclusions, summarizes the key findings, and proposes potential avenues for future investigations, advancing the knowledge of the field.

3.2 Research Design

A well-crafted research design acts as the foundation for a study, setting clear boundaries and guiding the investigation in a systematic manner. It encompasses various aspects such as sampling, data collection, analysis and operational procedures. Given the comprehensive approach, the research design must prioritize objectivity, reliability, and validity to safeguard the research's integrity. This emphasizes the crucial role of these elements in ensuring a robust research process. Ultimately, the research aims to generate outcomes that are generalizable to the broader population, extending the scope of understanding and knowledge.

3.2.1 Defining the research problem

The insurance landscape stands poised for a paradigm shift. InsurTech, a burgeoning wave of innovative technologies, promises to revolutionize customer experiences and reshape insurance dynamics. Previous studies have extensively examined the adoption of technology, such as InsurTech, in insurance, shedding light on its potential benefits in terms of operational efficiency, risk assessment, and cost reduction. A growing body of research explores the challenges and solutions associated with integrating innovative technologies like InsurTech into the insurance industry. However, amidst the transformative potential, a critical question remains unanswered: how does InsurTech adoption impact the very essence of any business- customer satisfaction and loyalty? This study investigates the complex interplay between customer satisfaction, loyalty, and the transformative power of InsurTech adoption within the life insurance sector. Past literature has explored the individual aspects of InsurTech. This research addresses a crucial gap in the research by proposing a comprehensive framework that integrates the key determinants of InsurTech adoption. Through the analysis of this framework, the study seeks to shed light on the influence of InsurTech adoption on customer satisfaction and its subsequent impact on fostering customer loyalty within the life insurance sector. This study has developed a novel model and the constructs taken in model have been validated in the previous literature. Formulating the research problem constitutes the crucial stage in any research endeavor. Therefore, the problem of the study is framed as "INSURTECH ADOPTION AND ITS INFLUENCE ON CUSTOMER SATISFACTION AND CUSTOMER LOYALTY IN LIFE INSURANCE". Hence, the current study intends to discern the impact of adoption of the insurance technologies on the customer satisfaction and loyalty in life insurance sector in northern-western part of India in the state of Punjab.

3.2.2 Purpose of the Study

Quantitative research designs fall into two broad categories: exploratory, aimed at gathering initial insights, and conclusive, focused on testing hypotheses and establishing relationships. Examples of conclusive designs include descriptive, diagnostic, and experimental studies. In these, researchers investigate the association between independent and dependent variables and seek to generalize findings to a wider population. This study utilizes a descriptive research design to examine how insurance technology-based services impact the satisfaction and loyalty of life insurance policyholders. Developing a novel model, the study deploys

diagnostic methods to assess the potential links between the constructs and their degree of association. This enables the implementation of predictive analysis and another importance performance analysis of the constructs within the study's scope.

3.2.3 Scope and Focus: Study Setting and Unit of Analysis

In the realm of InsurTech adoption research, the study setting and unit of analysis are pivotal considerations that shape the investigative framework. The present study is conducted in its natural environment where the insurance policyholders purchase the insurance policies, manage their purchased policies, file a claim against their losses etc. using technology-based insurance services. The primary unit of analysis for this research is the individual policyholders who interact with these InsurTech solutions. By scrutinizing the experiences, preferences, and behaviors of policyholders, the study aims to unravel the intricate dynamics of how InsurTech adoption influences customer satisfaction and loyalty. By centering the analysis on the end-users (policyholders), this study enables a nuanced understanding of the real-world implications of InsurTech integration and offers valuable insights for insurance companies striving to navigate the evolving landscape of customer-centric technological advancements.

3.3 Time Frame of the Study

This study adopted a cross-sectional research design, employing an adapted questionnaire survey distributed to life insurance policyholders in Punjab, India, over 22-months period (March 2022 to January 2024). The data collection phase constituted a key component of the broader research project, which spanned a timeframe of March 2021 to April 2024.

3.4 Objectives of the Study

Within the life insurance industry, this study aims to understand how the adoption of InsurTech, technology specifically designed for this sector, impacts customer satisfaction and ultimately, their loyalty. Three objectives have been formulated for this study and each objective will be evaluated from the perspective of life insurance policyholders. The conceptual framework of the study has been shown in figure 3.1. The objectives of the study are:

1. To examine the influence of InsurTech adoption determinants on customer satisfaction.
2. To analyze the mediating effect of customer satisfaction between InsurTech adoption and customer loyalty.

3. To determine the moderating effect of demographics (Age, Income, Gender) on the relationship between InsurTech adoption determinants and customer satisfaction.

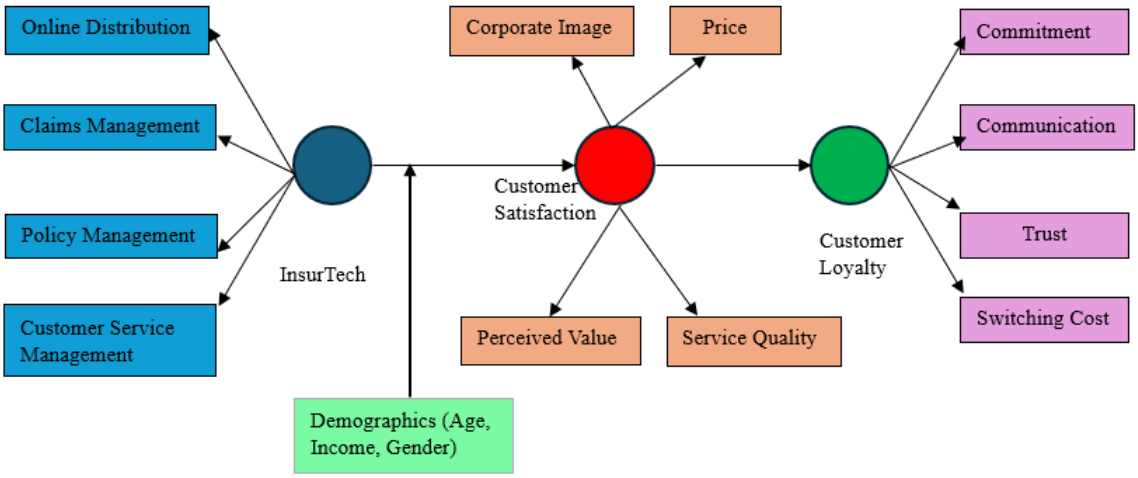


Figure 3.1 Conceptual Model of the Study (Source: By Researcher)

3.5 Formulation of Research Hypotheses

Based on a comprehensive review of literature, it is evident that insurance technologies, in all their multifaceted aspects, exert a significant influence on the customer experiences and their satisfaction. However, it is crucial to acknowledge that data collected from geographically diverse locations and disparate societal groups can yield variations in results due to inherent differences in respondents characteristics. This research, therefore, aims to examine this phenomenon through the following established hypotheses:

H1: There is significant influence of InsurTech adoption determinants on customer satisfaction.

H1a: There is significant influence of online distribution on customer satisfaction.

H1b: There is significant influence of policy management on customer satisfaction.

H1c: There is significant influence of claims management on customer satisfaction.

H1d: There is significant influence of customer service management on customer satisfaction.

H2: Customer satisfaction mediates the positive effect of Insurtech adoption on customer loyalty.

H3: Demographics moderate the relationship between InsurTech adoption and customer

satisfaction.

H3a: Age moderates the relationship between InsurTech adoption and customer satisfaction.

H3b: Income moderates the relationship between InsurTech adoption and customer satisfaction.

H3c: Gender moderates the relationship between InsurTech adoption and customer satisfaction.

3.6 Research Design Adopted for the Study

The foundation of any research project lies in its design, which lays out the roadmap for conducting the study. It meticulously establishes the steps involved, encompassing data gathering, measurement techniques, and analytical approaches (Creswell, 2009) This research centers on investigating the key drivers of InsurTech adoption in the life insurance industry. It explores how these drivers influence customer satisfaction and, subsequently, how satisfaction translates into customer loyalty. By examining these relationships, the study aims to illuminate the path from InsurTech adoption to a loyal customer base within the life insurance sector. Another aim of this research is to examine the moderating impact of demographic variables between the relation of InsurTech and customer satisfaction. Thus, the research employed a **Descriptive Approach**. Utilizing a structured questionnaire, the study gathered primary data from customers directly to understand their experiences and perspectives of InsurTech services.

Descriptive research generates rich datasets that can be further utilized for in-depth quantitative analysis. Within this design, two distinct types emerge: cross-sectional and longitudinal studies. Longitudinal studies depict repeated data collection from the same population over time, allowing for insightful follow-up analyses. In contrast, cross-sectional studies capture data from a population sample at a single point in time, offering a snapshot of their characteristics. The present study falls under the category of cross-sectional research, as data is collected from the chosen sample only once.

3.6.1 Universe of the Study and Sampling Procedure

All the customers of life insurance organizations in the state of Punjab will constitute the population of the study. As the researcher belongs to the state of Punjab and is aware of the geographical areas of the state. Secondly, Punjab constitutes to 2.20% of the total population of India, and finally, the motive of the researcher is to understand InsurTech adoption in the state of Punjab. As per the census of India 2021 data, the actual population of Punjab is 30,700,000, and the 16th most populous state in India. The literacy rate of Punjab is 67.68 percent.

A survey was conducted on 10 life insurance companies selected on the basis of turnovers such as Life Insurance Corporation (LIC), MAX Life, SBI Life Insurance, ICICI Prudential Life, HDFC Life, Bajaj Allianz Life, Kotak Aditya Birla Sun Life, Mahindra Life, PNB Met Life and TATA AIA Life.

The universe of the study involves the customers of top 10 life insurance companies, had been selected based on annual turnover. The responses were collected from these customers who do use InsurTech services. Within the realm of research, the selection of sample serves as a crucial role for drawing accurate inferences about targeted population. The act of sampling requires careful consideration of the target group, the sampling technique employed, and the optimal sample size. Selecting the right sample is fundamental to any research project, as it lays the groundwork for reliable and meaningful results. Beyond just identifying the target population, researchers must consider the specific sampling technique they'll use and the optimal sample size to ensure their findings accurately represent the broader group (Zikmund et al., 2013). For data collection, this study employs non-probability sampling technique i.e. purposive sampling Purposive sampling was employed to select the six cities from the three regions of Punjab namely: Majha, Malwa and Doaba on the basis of highest literacy rate and population of these selected cities and then data were collected from the customers of the selected cities. The researcher had chosen purposive sampling because she believes certain individuals who do use InsurTech services, based on the study's goals, will offer unique and valuable perspectives on the topic being explored. Therefore, these individuals are deliberately included in the sample (Campbell et al. 2020; Robinson, 2014). Table 3.1 shows the details of selected cities and sample from each of them for data collection purposes.

Table 3.1: Selected cities and sample size for the study

S.no	Region of Punjab	Selected Cities	Literacy rate (%)	Population	%age of Sample size	Sample size
1	Majha	Gurdaspur	79.95%	2,298,323	17.59%	105
		Amritsar	76.27%	2,490,656	19.06%	114
2	Malwa	Mohali	83.80%	9,94,632	7.64%	46
		Ludhiana	82.20%	3,498,739	26.78%	161
3	Doaba	Hoshiarpur	84.59%	1,586,625	12.14%	73
		Jalandhar	82.48%	2,193,590	16.79%	101
				Total= 13,062,561	Total= 100	Total= 600

3.6.2 Sample Size

A crucial factor in ensuring statistically valid research findings is determining the appropriate sample size. This number depends heavily on the design selected for the research and the specific goals of the study. For exploratory or qualitative studies, a smaller sample may suffice, allowing for in-depth analysis. Conversely, confirmatory and conclusive studies often require larger samples to ensure statistically significant results. Interestingly, even within quantitative research, sample size preferences vary. Business-related studies can often function effectively with a smaller sample of around 150 participants, while studies focusing on customer insights often require substantially more. Ultimately, a well-chosen and meaningful smaller sample can be far more valuable than a larger one selected haphazardly (Memon et al., 2020). The statistical tools used to analyze data also influence optimal sample size. This research utilizes partial least squares structural equation modeling (PLS-SEM), a specific software application for structural equation modeling and specifically considering its suitability for studies with moderate sample sizes. PLS-SEM's estimation methods allow for reliable analysis even in such cases, unlike covariance-based structural equation modeling (CB-SEM) programs which often necessitate larger samples for robust results (Hair et al.,

2019; Sarstedt et al., 2022). Kock & Hadaya (2018) introduced two novel methods, “inverse square root” and “gamma-exponential” for calculating the minimum sample size needed for PLS-SEM path models. Applying the inverse square root method yields a minimum of 160 observations, while the gamma-exponential approach reduces this requirement to 146. The present study is based on the adoption and usage of InsurTech services by the customers of life insurance industry. It was difficult to estimate the exact measure of the population who are using InsurTech services. Thus, this study employed a sample size determined using a calculation described by Cocharn (1977). This formula is particularly relevant for research involving large populations and where obtaining a representative sample for proportions is crucial.

$$\mathbf{n_0 = Z^2pq/e^2}$$

The above formula outlines the calculation for sample size in survey research. Here Z^2 represents the critical value from the normal curve that corresponds to the desired confidence level (1-α), where α is the significance level. The variable e signifies the desired precision or sampling error, typically expressed as a percentage, often set at +/-5 percent. The parameters p and q denote the estimated proportion and its complement in the population, respectively. A proportion of 0.5 is commonly used to indicate maximum variability in the population, ensuring a more conservative estimate when determining the sample size. In our study, a large sample size is employed, allowing for the utilization of the true variability of the population attribute. The critical value (Z) is determined from statistical tables, and in this instance, it is 1.96, representing the area under the normal curve. Following the recommendation of Yamane (1967) for populations exceeding 100,000, a sample size of approximately 400 respondents is suggested at a precision level of +/-5 percent. Given the absence of knowledge about the actual variability (ρ), a conservative assumption is made with ρ = 0.5, indicating maximum variability. Calculating the minimum sample size for a +/-5 percent precision with a 95 percent confidence level using the formula no = (Z^2*p*q)/(e^2), the outcome is 385 customers, indicating the minimum needed sample size for the study. The sample size of 600 participants in the study is considered sufficient for the generalization of the findings.

3.6.3 Data Collection

Data for this study was primarily gathered through a structured questionnaire distributed to life insurance customers in Punjab, India. The questionnaire was shared through email and

LinkedIn. Out of 632 initial responses, 45 were excluded as outliers. The remaining 587 complete and accurate responses formed the final sample for analysis from the customers' perspective. The response rate of 92.8 % reflects strong engagement from the target audience and justifies the use of online data collection methods.

3.6.4 Instrument Used for Data Collection

This study investigated the interrelationships between InsurTech adoption, customer satisfaction, and customer loyalty within the life insurance sector of the Indian insurance industry. To gather data, a standardized survey instrument was designed, aligned with a theoretical model that linked these key factors. The survey questionnaire comprised of five sections. Section A collected the demographic information about the participants. Then a screening question was asked to filter the relevant respondents based on their experience and use of InsurTech services. Section B, C and D each focused on a specific sub-variable within the model, employing 76 questions adapted from established academic research. The questionnaire employed a five-point Likert scale for each question. This scale allowed respondents to indicate their level of agreement or disagreement with the presented statements. Detailed information about the specific questions used for each variable can be found in Appendix A. The comprehensive data collection effort provides a solid foundation for analysis, paving the way to insights on InsurTech, customer satisfaction, and loyalty in India's life insurance sector. The details of each construct and sub-construct of the study have been described in the table below.

Table 3.2 – Constructs and sub-constructs of the Study

Sr. no.	Constructs and their definitions	Sub-constructs	Definition of the Sub-construct	References	Number of items
1.	InsurTech [InsurTech a blend of "insurance" and "technology" refers to the application of technological advancements to transform the traditional	Online Distribution	Online distribution of insurance services refer to the sale and servicing of insurance policies through digital channels, primarily the internet and mobile applications.	Singh & Deshmukh (2022)	12
		Policy Management	Policy management is the use of digital tools and platforms to store, organize, and access insurance policies,	Inamdar (2020)	7

	insurance industry]		warranties, contracts, and other important documents.		
		Claims Management	Claims management is streamlining the process of filing, tracking and resolving claims through digital channels.	Kemboi (2022); Angima & Jebiwott (2022)	5
		Customer Service Management	Customer service management is the practice of employing conversational AI-powered assistants to handle customer inquiries, resolve issues, and provide support through text-based messaging platforms.	Nordheim et al. (2019)	13
2	Customer Satisfaction [It refers to the positive or negative sentiments that policyholders have towards their insurance provider, based on their overall experience with the company, its products and its services.]	Corporate Image	Corporate image referred to as its brand image or public perception, is overall impression the public has of the company.	Cheng et al. (2014)	4
		Price	Price denotes the quantifiable monetary value ascribed to a good or service, serving as a medium of exchange within a market transaction.	Albari (2019)	4
		Perceived Value	It refers to a subjective assessment that a customer makes regarding the worth and desirability of a good or service in relation to its price.	Uzir et al. (2021)	5
		Service Quality	It encompasses the extent to which a service fulfills or surpasses customer expectations. It transcends the mere execution of a task,	Alok & Srivastava (2013)	6

			aiming to create a positive and enriching experience for customers throughout their entire interaction with the company.		
3.	Customer Loyalty [Customer loyalty is more than a satisfied customer; it is a deep and enduring commitment to a specific brand, product or service. It is the emotional and behavioural preference that keep customers coming back for more, even when faced with alternatives.]	Commitment	Commitment refers to a dedication a customer holds for a brand, manifested through repeated purchases, advocacy and unwavering trust.	Alok & Srivastava (2013)	5
		Communication	Communication can be defined as the act of transmitting and exchanging information, ideas and feelings between two or more individuals. It is the bridge that connects minds, fosters understanding and builds relationships.	Ball et al. (2004)	5
		Trust	Trust refers to the confident reliance on an individual or organization, based on a belief in their integrity, ability and sincerity.	Uzir et al. (2021)	6
		Switching Cost	Switching cost often referred to as switching barriers, are the expenses, inconveniences, and psychological hurdles that deter individuals or organizations from changing their current service provider to another. It is not just about the price, but also time, effort and potential risk involved in the transition.	Yang & Peterson (2004)	4
Source (s): Table by Researcher					

3.7 Description of the Questionnaire Statements

Table 3.3 shows the detailed description of the indicators of each sub-construct or latent variable of the study. In this study, three constructs have been taken, every construct consists of four sub constructs and each sub-construct has its own indicators or statements to measure. The items have been coded for analyzing the data in SmartPLS.

Table 3.3: Description of the Scale Indicators

Sr. no	Construct	Sub- Construct and number of indicators	Coding	Statements of the Variables
1	InsurTech	Online Distribution (12)	OD1	Online distribution of insurance policies is easily accessible.
			OD2	It is less expensive to buy than the offline version.
			OD3	It reduces operational costs.
			OD4	It removes the need for paper.
			OD5	Online purchasing is fast &effective.
			OD6	Online purchasing is environment-friendly.
			OD7	It saves time because it simply takes a few minutes and there is no need to stand in large queues.
			OD8	Online insurance renewal is a simple one-click process that includes auto-reminders.
			OD9	It is easy to evaluate and compare insurance products.
			OD10	The simplest and most secure way to get insurance.
			OD11	As all information is available online, it is easy to read, understand and take your own decision to purchase a policy.
			OD12	Online distribution of insurance saves from malpractices of selling of insurance products.
		Policy Management (7)	PM1	Policy endorsement is the simplest online self-declaration that will change the policy details.
			PM2	The agents and customers remain updated

				about the new product launches in the market.
			PM3	A record of all policy-related information is maintained.
			PM4	The processing time for policy issuance, updating, and cancellation has been reduced.
			PM5	The underwriting process has become less time-consuming.
			PM6	The process of renewal of policies is smooth.
			PM7	The process of renewal of policies is stress-free.
		Claims Management (5)	CM1	The speed of processing claims has been improved.
			CM2	The cost of managing the claims has been reduced.
			CM3	Insurance claims-related fraud has been reduced.
			CM4	It is easy to get a claim and follow the procedures online.
			CM5	The process of calculation and pay-out of claims has become automated.
		Customer Service Management (13)	CSM1	Chatbot services provide customer support.
			CSM2	Chatbot is easy to use.
			CSM3	Chatbot provides accurate information.
			CSM4	Chatbot provides the necessary information.
			CSM5	Chatbot provides responses to the queries as per the expectation.
			CSM6	Chatbot requires minimal mental effort.
			CSM7	The chatbot is quite quick in response.
			CSM8	The information provided by the chatbot is helpful regarding my questions or problems.
			CSM9	After-sale services provided by the chatbot service are as per the expectations.
			CSM10	The experience of using chatbot is as per

				my expectation.
			CSM11	Customer care is genuine.
			CSM12	The information available on the websites is accurate.
			CSM13	The information available on the websites is authentic.
2	Customer Satisfaction	Corporate Image (4)	CI1	The insurance company is concerned with the customers.
			CI2	The insurance company can be trusted in what it says and does.
			CI3	The insurance company is firmly established and stable.
			CI4	The company has a good reputation since it is always involved in corporate social responsibility (CSR) activities.
		Service Quality (6)	SQ1	The insurance company provides a sufficient range of life insurance products.
			SQ2	The service delivery process of the company is highly standardized and simple.
			SQ3	The insurance company has the technological capability to meet the expectations of its customers.
			SQ4	The insurance company provides access to information on products or services offered.
			SQ5	The insurance company is always ready to respond to the requests of its customers.
			SQ6	The confidentiality of the clients is always ensured.
		Price (4)	P1	The prices for insurance products are affordable.
			P2	The pricing of insurance services is uniform for all customers.
			P3	The insurance services provide the worth of money.
			P4	The prices are appropriate and reasonable.
		Perceived Value (5)	PV1	The service quality of online distribution of insurance is high.
			PV2	I feel relaxed about purchasing online insurance services.

			PV3	Online insurance services are as per my expectation.
			PV4	I feel trust and confidence in receiving insurance services through online purchases.
			PV5	The insurance company meets my expectations.
3	Customer Loyalty	Trust (6)	T1	Insurance company points out the best alternative.
			T2	Insurance company always provides appropriate advice at critical times.
			T3	Insurance company always delivers the services that are promised.
			T4	The online insurance services of the company are well structured.
			T5	I feel insurance services are safe.
			T6	I always rely on my company for purchasing insurance.
		Commitment (5)	CMT1	This insurance company deserves repeat purchasing and recommendations.
			CMT2	I feel a strong sense of belongingness to the company
			CMT3	I want to stay with the company because happy to be its customer
			CMT4	This insurance company has a great deal of personal touch.
			CMT5	Staying with the company because it provides greater benefits in comparison to other available options.
		Communication (5)	COMM1	The insurance company provides timely and trustworthy information.
			COMM2	Relationship with my insurance company is easy and satisfactory.
			COMM3	The insurance company provides information when there is a new insurance service.
			COMM4	The insurance company makes and fulfils promises.
			COMM5	Information provided by the insurance company is always accurate.
		Switching Cost	SC1	Comparing all life insurance providers in

		(4)		order to switch to a new company is important.
			SC2	Comparing the life insurance providers with one another takes a lot of energy and effort.
			SC3	In general, it would be a hassle to switch to another company.
			SC4	It costs me too much to switch to another insurance company.

3.8 Pre-Testing and Pilot Testing

The successful completion of any research depends on a robust and reliable research instrument, capable of capturing accurate and precise data. In this research work, the development of the structured questionnaire was a meticulous process, involving multiple stages to ensure its effectiveness. This iterative approach ensured that the instrument was well-suited to its intended approach and able to elicit the desired information from the targeted population. The upcoming paragraphs will detail the processes employed for checking the validity and reliability of the survey questionnaire.

3.8.1 Validity of the Research Instrument

To ensure the research instrument measured precisely what it aimed at, the questionnaire underwent rigorous validity testing. This involved assessing two key aspects: content validity and construct validity of the constructs or sub-constructs.

3.8.1.1 Content validity

In questionnaire design, content validity is paramount. It ensures that the questions accurately represent the intended construct (e.g., customer satisfaction, InsurTech adoption) being measured. In essence, content validity reflects how well the questionnaire captures the essence of the domain of interest. Developing a robust research instrument necessitates a comprehensive collection of constructs and items. Drawing upon a comprehensive review of the existing literature, this study identified a set of variables to gauge the influence of InsurTech adoption on customer satisfaction and, ultimately, customer loyalty. Once identified, these variables were translated into clear and concise questionnaire statements, ensuring content validity. This validation process involved two stages. First, three subject matter experts from the fields of statistics, management and marketing evaluated the

instrument and provided feedback. Additionally, two insurance company officials reviewed the questionnaire and offered their suggestions. All feedback was carefully considered, and the questionnaire constructs were refined accordingly. Through this prolonged approach, the final instrument was comprised of 76 items (Annexure A) divided into three constructs and twelve sub-constructs, each specifically tailored to the research objectives.

3.8.1.2 Construct Validity

Construct validity is a cornerstone of measurement in research. It assesses how well a test or questionnaire captures the intended theoretical construct, ensuring it truly reflects the abstract concept under investigation. To evaluate construct validity in this study, three measures were employed: convergent validity, composite reliability and discriminant validity.

Composite Reliability

Within structural equation modeling (SEM) research, composite reliability serves as a key statistical measure for evaluating the internal consistency of items designed to capture a latent construct. This study assessed composite reliability using three metrics: Cronbach's alpha, rho_a (composite reliability), and rho_c (composite reliability).

Cronbach alpha is the variance of individual items in the instrument and the degree to which the items are correlated with each other. The formula for Cronbach's alpha:

$$\alpha = (K^* \sum cov_{ij}) / [(\sum var_i) + (K-1) * \sum cov_{ij}]$$

Where:

α represents Cronbach's alpha coefficient

K is the number of items in the scale

$\sum$**cov_ij** is the sum of covariances between all pairs of items

$\sum$**var_i** is the sum of the variances of each item

Internal consistency, evaluated through Cronbach's alpha, is a crucial aspect of scale reliability. In this study, a value of 0.70 or higher for Cronbach's alpha will be considered indicative of adequate internal consistency, reflecting a strong correlation between the items

within each measure. Higher values suggest greater reliability, meaning the indicators in the scale are consistently measuring the same underlying construct.

rho_a is one specific way to calculate composite reliability. It's also known as Dijkstra-Henseler's rho and is commonly used in partial PLS-SEM.

The formula for calculating rho_a is:

$$\rho\_a = (\sum\lambda\_i^2) / [(\sum\lambda\_i^2) + \sum\Theta\_ii]$$

Where:

ρ_a is the composite reliability coefficient

λ_i is the standardized loading of item I on the construct

Θ_ii is the error variance of item I (1- λ_i^2)

Values of rho_a greater than 0.70 are generally considered acceptable for research purposes. Higher values indicate greater internal consistency and reliability of the scale.

In the context of PLS-SEM analysis employed in this study, **composite reliability (rho_c)** serves as another key measure of internal consistency reliability alongside rho_a (composite reliability). Both metrics assess the degree to which construct items cohere in reflecting the underlying latent variable they aim to capture. The formula for calculating rho_c is:

$$\rho\_c = (\sum AVE\_i) / [(\sum AVE\_i) + \sum\rho\_ij^2]$$

Where:

AVE_i is the average variance extracted for item i

ρ_ij^2 is the squared correlation between item i and item j

rho_c considers both item-construct relationships and item-item correlations. This makes it suitable for constructs with potentially multidimensional or hierarchical structures. It can be more accurate when a construct has distinct subscales or dimensions and can provide a more accurate assessment of reliability by accounting for the relationships between items within those subscales.

Table 3.4: Results of Composite Reliability (Pilot Testing)

Sr. no.	Constructs	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
1	Corporate Image	0.850	0.855	0.900
2	Claims management	0.879	0.884	0.912
3	Commitment	0.925	0.931	0.943
4	Communication	0.928	0.929	0.945
5	Customer Service Management	0.951	0.953	0.957
6	Online Distribution	0.958	0.959	0.963
7	Price	0.921	0.927	0.945
8	Policy Management	0.922	0.924	0.938
9	Perceived Value	0.911	0.918	0.934
10	Switching Cost	0.779	0.806	0.851
11	Service Quality	0.929	0.930	0.944
12	Trust	0.925	0.930	0.941

Convergent Validity

Convergent Validity examines how closely a measure (like questionnaire or scale) aligns with other measures that are designed to assess the same or similar constructs. It's essentially a way to test whether different tools that are intended to measure the same thing produce similar results. Average Variance Extracted (AVE) serves as a crucial metric for assessing convergent validity. It quantifies the amount of variance in a construct's measures (indicators) that can be explained by the construct itself, rather than by measurement error or unrelated factors. In simpler terms, AVE reflects how well a latent construct captures the variations observed in the items used to measure it. The formula to calculate the AVE is:

AVE = ∑ (Standardized Factor Loadings) ^2 / Number of Indicators

Where:

(Standardized Factor Loadings) ^2 means the square of each standardized factor loading for every item in the construct. Standardized factor loadings are correlation

coefficients between each item and the latent construct, typically obtained through factor analysis.

Number of Indicators refers to the total number of items/indicators in the construct

Table 3.5 Results of Convergent Validity (AVE) (Pilot Testing)

Sr. no.	Constructs	Average Variance Extracted (AVE)
1	Corporate Image	0.692
2	Claims management	0.675
3	Commitment	0.776
4	Communication	0.776
5	Customer Service Management	0.630
6	Online Distribution	0.686
7	Price	0.810
8	Policy Management	0.684
9	Perceived Value	0.739
10	Switching Cost	0.589
11	Service Quality	0.738
12	Trust	0.727

Discriminant Validity

The discriminant validity assesses whether measures of different constructs are truly distinct from each other, rather than being overly correlated and potentially measuring the same thing. This study utilizes the well-established Fornell-Larcker criterion to assess discriminant validity within the structural equation modeling (SEM) framework. This approach involves calculating the AVE (Average Variance Extracted) for each construct in the conceptual model. To establish discriminant validity, the research compared the square root of each construct's AVE with the correlation coefficients between that construct and all other constructs in the model. Discriminant validity is achieved when the square root of a construct's AVE is greater than its highest correlation coefficient with any other construct. This indicates that the variance captured by each construct is more substantial than the

variance it shares with any other construct in the model, signifying they are distinct measures. If this condition is met, it suggests that constructs in the model are sufficiently distinct from each other and have discriminant validity.

Table 3.6: Results of Discriminant Validity (Pilot Testing)

	Claims Management	Commitment	Communication	Corporate Image	Customer Service Management	Online Distribution	Perceived Value	Policy Management	Price	Service Quality	Switching Cost	Trust
Claims Management	**0.821**											
Commitment	0.667	**0.877**										
Communication	0.644	0.871	**0.881**									
Corporate Image	0.616	0.754	0.733	**0.832**								
Customer Service Management	0.716	0.707	0.745	0.7	**0.794**							
Online Distribution	0.611	0.627	0.731	0.558	0.638	**0.828**						
Perceived Value	0.74	0.749	0.829	0.67	0.665	0.750	**0.860**					
Policy Management	0.683	0.666	0.745	0.612	0.674	0.764	0.695	**0.827**				
Price	0.579	0.788	0.757	0.769	0.701	0.612	0.713	0.697	**0.900**			
Service Quality	0.58	0.686	0.777	0.724	0.708	0.599	0.68	0.659	0.791	**0.859**		
Switching Cost	0.629	0.566	0.634	0.533	0.663	0.565	0.523	0.521	0.517	0.665	**0.768**	
Trust	0.608	0.82	0.816	0.776	0.737	0.653	0.708	0.691	0.788	0.656	0.546	**0.853**

Table 3.7: Findings of the Construct Reliability and Validity (Pilot Testing)

Construct	Coding	Outer loadings	Cronbach's Alpha	rhoA	Composite Reliability (rhoC)	AVE
Corporate Image	CI1	0.842	0.85	0.855	0.9	0.692
	CI2	0.893				
	CI3	0.785				
	CI4	0.804				
Claims Management	CM1	0.786	0.879	0.884	0.912	0.675
	CM2	0.867				
	CM3	0.797				
	CM4	0.874				
	CM5	0.778				
Commitment	CMT1	0.803	0.925	0.931	0.943	0.776
	CMT2	0.933				
	CMT3	0.902				
	CMT4	0.876				
	CMT5	0.868				
Communication	COMM1	0.871	0.928	0.929	0.945	0.776
	COMM2	0.864				
	COMM3	0.879				
	COMM4	0.907				
	COMM5	0.882				
Customer Service Management	CSM1	0.774	0.951	0.953	0.957	0.630
	CSM10	0.811				
	CSM11	0.839				
	CSM12	0.82				
	CSM13	0.754				
	CSM2	0.756				
	CSM3	0.802				
	CSM4	0.804				
	CSM5	0.74				
	CSM6	0.788				
	CSM7	0.721				
	CSM8	0.879				
	CSM9	0.816				
Online Distribution	OD1	0.807	0.958	0.959	0.963	0.686
	OD10	0.82				
	OD11	0.816				
	OD12	0.834				
	OD2	0.739				
	OD3	0.86				
	OD4	0.886				
	OD5	0.855				

	OD6	0.801				
	OD7	0.82				
	OD8	0.854				
	OD9	0.838				
Price	P1	0.908	0.921	0.927	0.945	0.810
	P2	0.825				
	P3	0.914				
	P4	0.949				
Policy Management	PM1	0.737	0.922	0.924	0.938	0.684
	PM2	0.869				
	PM3	0.768				
	PM4	0.865				
	PM5	0.844				
	PM6	0.83				
	PM7	0.864				
Perceived Value	PV1	0.773	0.911	0.918	0.934	0.739
	PV2	0.872				
	PV3	0.937				
	PV4	0.868				
	PV5	0.84				
Switching Cost	SC1	0.764	0.779	0.806	0.851	0.589
	SC2	0.769				
	SC3	0.797				
	SC4	0.739				
Service Quality	SQ1	0.841	0.929	0.93	0.944	0.738
	SQ2	0.874				
	SQ3	0.871				
	SQ4	0.854				
	SQ5	0.866				
	SQ6	0.847				
Trust	T1	0.87	0.925	0.93	0.941	0.727
	T2	0.87				
	T3	0.769				
	T4	0.877				
	T5	0.863				
	T6	0.863				

3.9 Statistical Tools for Data Analysis

In this study, various tools have been employed for analyzing the data. These involve Descriptive analysis, PLS-SEM (partial least square structural equation modeling), mediation analysis, moderation analysis, prediction analysis and importance performance map analysis. All the statistical tools have been implemented using Smart PLS software version 4.

3.9.1 Introduction to Partial least square structural equation modeling (PLS-SEM)

In contrast to traditional structural equation modeling (SEM) which often emphasizes hypothesis testing and confirmation of established theories, PLS-SEM excels at exploring intricate relationships between variables. This capability makes PLS-SEM particularly suitable for this study, as it allows for the investigation of complex dynamics involving variables InsurTech adoption, customer satisfaction, and loyalty in the Indian life insurance sector, and the generation of reliable predictive insights. This three-stage method estimates latent variable score, calculates their interconnections, and refines the score for precise predictions. The strength of PLS-SEM lies in its flexibility and resilience. It tackles models with numerous dependent and independent variables, even when those independent variables exhibit multicollinearity (Hair et al., 2019; Henseler et al., 2015; Sarstedt et al., 2011). Additionally, it thrives in the face of noisy data, missing values, small sample sizes and non-normal in collected data. This robustness empowers PLS-SEM to deliver valuable insights even in complex scenarios, making it a powerful tool for researchers seeking exploration, prediction and robust findings. When research involves the analysis of multiple variables in tandem, multivariate analysis steps in with an array of statistical techniques. However, when research involves not only multiple independent and dependent variables but also mediating and moderating influences, alongside control variables, SEM emerges as the ideal tool to resolve these complexities. SEM's distinctive strength lies in its ability to simultaneously model and estimate the direct and indirect relationship among multiple variables, providing a comprehensive understanding of how they interact and influence one another. This makes it particularly valuable for unveiling the mechanisms underlying complex phenomena, where traditional methods fall short. Given the novelty of digital insurance services (InsurTech) for insurance policyholders, this study employs the PLS-SEM approach to achieve three key objectives. Firstly, it aims to uncover novel relationships between InsurTech and customers' satisfaction and loyalty. Secondly, it seeks to determine predictive capabilities which allow to translate the findings into actionable insights applicable to a wider pool of Indian life insurance policyholders as well as insurance providers. Third, it examines the important and performing variables of the conceptual model which provides valuable insights to the insurance industry. This study employs PLS-SEM as a robust analytical framework to meticulously examine the intricate relationships between variables in the context of InsurTech adoption.

3.9.2 Mediation Analysis

In the dynamic realm of relationships between variables, mediation emerges when a third variable, known as a mediator, steps into play a pivotal role. This variable explains some of how one thing (independent variable) affects another (dependent variable). It's like a middle step, and it can change how strongly the first thing influences the second. This mediator holds a key that can amplify, diminish, or even reverse the initial relationship between the dependent and independent constructs (Zhao et al., 2010; Nitzl et al., 2016).

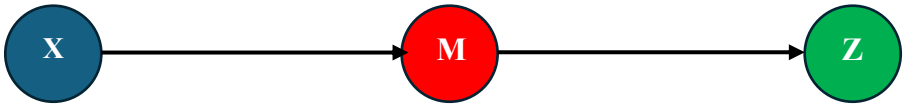


Figure 3.2 Indirect Mediating Effect

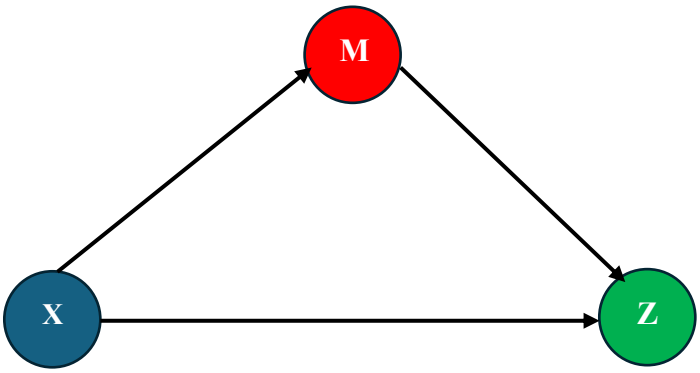


Figure 3.3 Indirect and Direct Mediating Effect

The mediator can either fully explain the relationship, meaning the first variable only affects the second through the mediator, or it can partially explain it, leaving a direct influence from the first variable as shown in figure 3.2 and 3.3.

3.9.3 Moderation Influence

A moderator variable acts as a third element that can strengthen, weaken, or even change the direction of the connection between the independent and dependent variables. This powerful tool allows us to investigate how things are not always what they seem, revealing hidden influences that can strengthen, weaken, or even reverse the expected associations. There are two types of moderators: 1) Categorical Moderator 2) Continuous Moderator

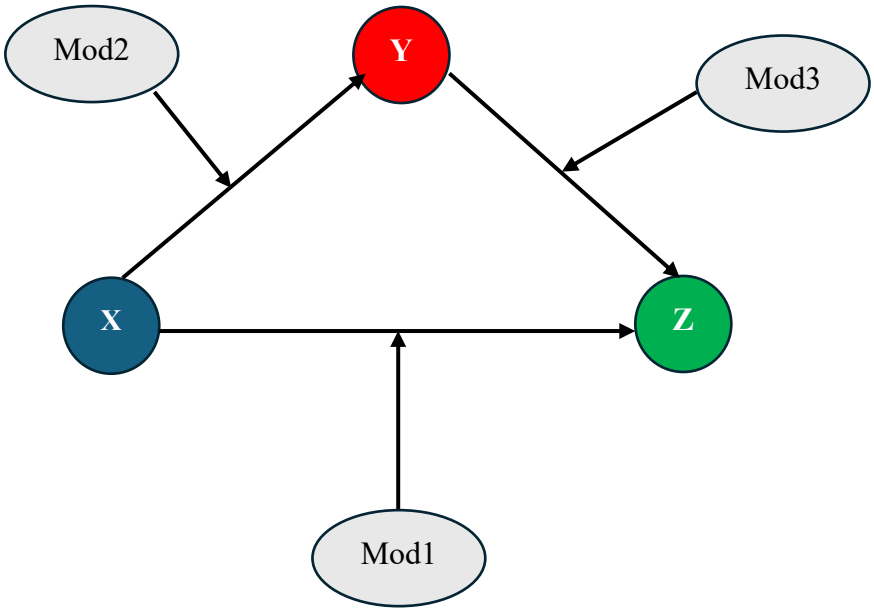


Figure 3.4 Interaction Moderation

Continuous Moderator is a continuous variable that involves interaction effect among linear relationships, where the strength between two variables changes gradually as the moderator increases or decreases. Figure 3.4 shows the interaction moderation with continuous moderator.

Categorical Moderator is a categorical variable with distinct groups that can reveal different patterns or strength of the relationship between variables across the different groups.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

Building upon the methodology outlined in the previous chapter, this section delves into the analysis of the collected survey data. By applying the appropriate statistical tools, the chapter presents a comprehensive interpretation of the study's findings. The first section of this chapter involves the demographic description of the customers of life insurance companies, who are the respondents of our study. The details about their demographic description have been analyzed and discussed to understand their behavior to adopt InsurTech services. Every research objective of the study has been discussed in detail. The second part of the chapter analyses the effect of InsurTech adoption on customer satisfaction, covering the first objective of the study. It has been followed by the mediation analysis and moderation analysis covering the second as well as third objective of the study. The predictive relevance of the conceptual model has been evaluated. Furthermore, to assess the critical and performing constructs of the study, an Importance performance analysis has been utilized.

4.1 Demographic Description

The description of demographic profile of the respondents is one of the crucial aspects in the analysis part of research study. It includes the description about their ages, gender, income and many other aspects relevant to the context of the study. In this study, a total of 587 respondents have been considered for the analysis. Out of the total respondents, 311 were male and 276 were female, representing the 53% and 47% of the total population. The category of age has been divided into four categories including the age range from 18-30 years (315 respondents), 31-40 years (169 respondents), 41-50 years (57 respondents) and above 50 years (46 respondents). The age group of 18-30 years has the highest frequency percentage 53.7% (Table 4.1).

Table 4.1 Demographic Description of the Insurance Policyholders

Demographics	Category	Frequency	Percentage
Gender	Female	276	47%
	Male	311	53%
	Total	587	100

Age	Between 18-30 years	315	53.7%
	Between 31-40 years	169	28.7%
	Between 41-50 years	57	9.8%
	Above 50 years	46	7.8%
	Total	587	100
Income	Up to Rs. 10,000	127	21.6%
	Between Rs. 10,000- Rs. 20,000	73	12.5%
	Between Rs. 20,000- Rs. 30,000	84	14.3%
	Between Rs. 30,000- Rs. 50,000	221	37.6%
	Above Rs. 50,000	82	14%
	Total	587	100
Geographical Location	Gurdaspur	107	18.23%
	Amritsar	110	18.74%
	Mohali	48	8.20%
	Ludhiana	151	25.80%
	Hoshiarpur	74	12.61%
	Jalandhar	97	16.52%
	Total	587	100

The income category has been divided into five categories from Rs. 10,000 to above Rs. 50,000. The income group of Rs. 30,000 to Rs. 50,000 has reported the highest frequency of value 221 indicating the percentage of 37.6% of the income categories. As the demographic analysis shows that male users of 18-30 years of age are more inclined towards the usage of InsurTech services and are satisfied and loyal customers. Table 4.1 and figure 4.1 show the demographic statistics in detail.

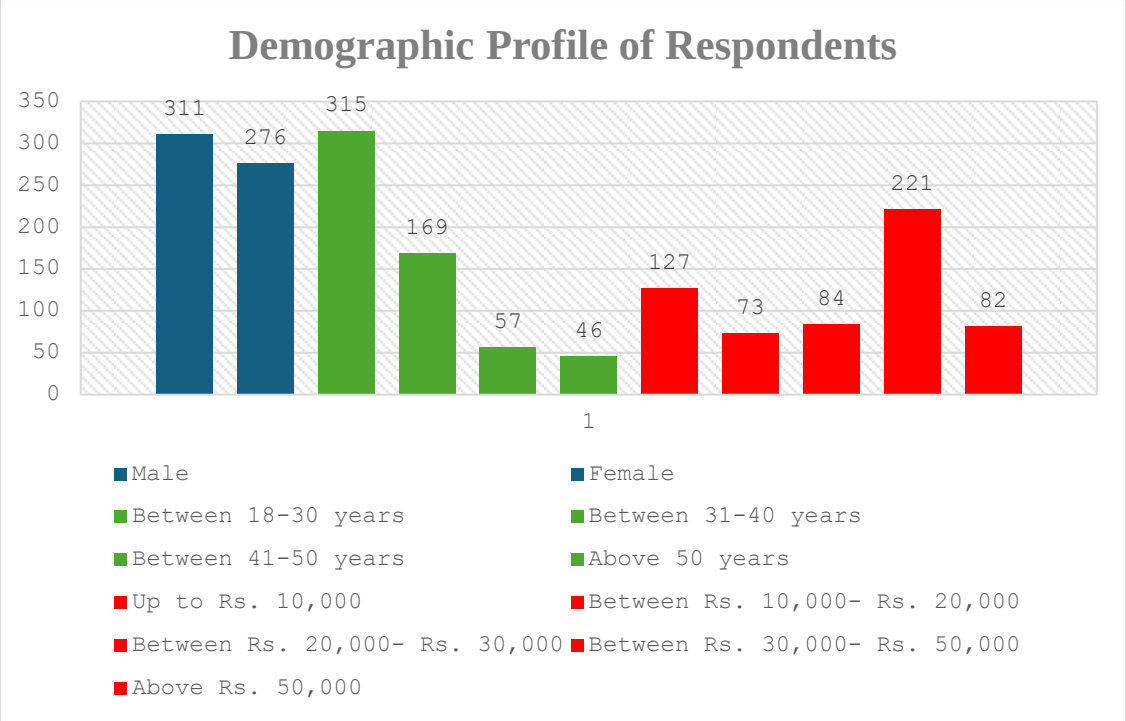


Figure 4.1 Demographic Description of the Respondents

4.2 To Examine the Influence of InsurTech Adoption Determinants on Customer Satisfaction

This study pursues three key objectives. First, it investigates how determinants of InsurTech adoption affect customer satisfaction within the Indian life insurance industry. Second, it examines whether customer satisfaction acts as a mediating factor in the connection between InsurTech adoption and customer loyalty. Finally, this study explores the potential moderating effect of demographic variables on the association between InsurTech adoption and customer satisfaction. This study employed structured equation modeling (SEM) approach to accomplish these objectives. A comprehensive literature review identified four key determinants of InsurTech adoption in the life insurance industry: online distribution of insurance products, policy management, claims management processes, and customer service management practices. Similarly, four determinants influencing customer satisfaction and loyalty have been identified. Based on this foundation, a theoretical framework was established to examine the association between these variables. The framework posits that InsurTech adoption has a significant positive influence on both customer satisfaction and customer loyalty. PLS-SEM (Partial least squares structural equation modeling) was employed to analyze the hypothesized relationships between the variables in this study. It is a robust statistical technique particularly suited for investigating complex models with latent

variables, making it ideal for examining the intricate interplay between InsurTech adoption, customer satisfaction, and customer loyalty. PLS-SEM employs a two-stage process. The initial stage, known as measurement model assessment, safeguards the model's validity. This assessment meticulously evaluates the relationships between the core theoretical constructs (latent variables) and the survey questions (indicator items) designed to measure them. In essence, this stage verifies that the survey questions accurately capture the intended underlying concepts. Internal consistency, convergent validity of constructs and discriminant validity are all assessed during this stage. Internal consistency reflects how well the questions within each concept measure the same underlying idea. Convergent validity checks if the questions accurately capture their intended concept. Finally, discriminant validity ensures that the core concepts are distinct from each other. By establishing a reliable and valid measurement model, the PLS-SEM analysis lays the groundwork for accurately examining the hypothesized connections between InsurTech adoption, customer satisfaction, and customer loyalty in the life insurance sector. This process is known as CFA (confirmatory factor analysis). The model of the study is higher-order in which every latent variable has its own items to measure. Thus, CFA has been evaluated in two phases: first by evaluating the reliability and validity of the indicators of the model then applying CFA on the latent variables of the study by evaluating the latent variables scores of the indicators. Once the measurement model is validated, the second stage , structural model is examined, which consists of examining the relationships between latent variables. This step allows researchers to test hypotheses about the relationships between constructs which includes the measures: R-value (Coefficient of determination), P value and beta value in the inner model, indicate the significance of hypotheses. This regression-based analysis indicates the direction and magnitude of the effect of one construct on another.

PLS-SEM's versatility extends to its ability to accommodate both formative and reflective measurement models. This study employs a reflective-reflective higher-order model. In this type of model, the indicator variables are considered interchangeable measures of the underlying latent constructs they represent.

4.2.1 Measurement Model Assessment (Reflective-Reflective)

The initial stage of PLS-SEM analysis focuses on the measurement model, evaluating the relationships between indicator variables and their corresponding latent constructs. As per the recommendations of Hair et al. (2019, 2022) guidelines, the initial concern in the measurement model evaluation is to establish the reliability and validity. The measures for

the assessment are different for reflective and formative constructs. In this study, all constructs are reflective in nature. Thus, the measurement model assessment has been evaluated by assessing outer loading, composite reliability and convergent validity. Figure 4.2 shows the steps to evaluate measurement model of reflective constructs.

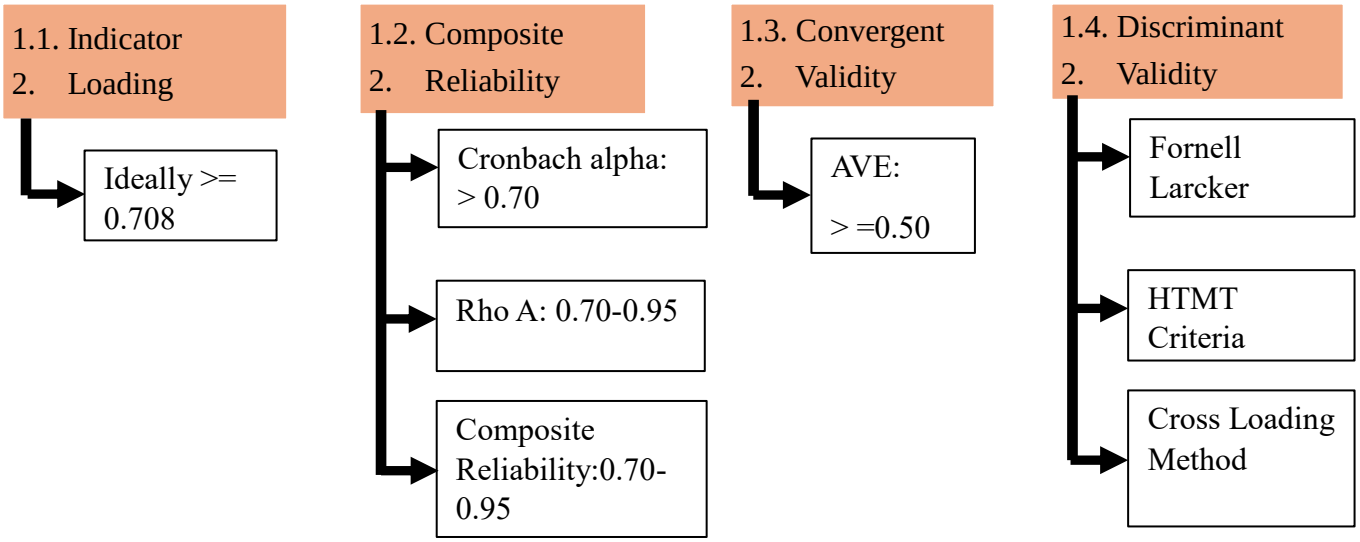


Figure 4.2 Measurement Model Assessment

4.2.1.1 Measurement Model Assessment of First Order Constructs

Evaluating a reflective measurement model involves examining various aspects to ensure its accuracy. While high indicator loadings, ideally exceeding 0.708 are desirable, they are not the sole criterion for keeping or removing indicators. An essential indicator of convergent validity in PLS-SEM is the AVE (Average Variance Extracted). Ideally, AVE values should exceed 0.50 for each construct. This threshold suggests that enough variance in the indicator variables being captured by the underlying latent construct they represent. However, even with some lower loadings, retaining indicators might be acceptable if the overall AVE and other reliability and validity measures, i.e. composite reliability and convergent validity are satisfactory. Convergent validity assesses if the chosen indicators truly capture the intended construct. The measurement model, showcasing both factor loadings and path coefficients, provides a visual representation of these relationships. The outer loading values of all indicators, along with the values of path coefficients have been shown in the measurement model (Figure 4.3).

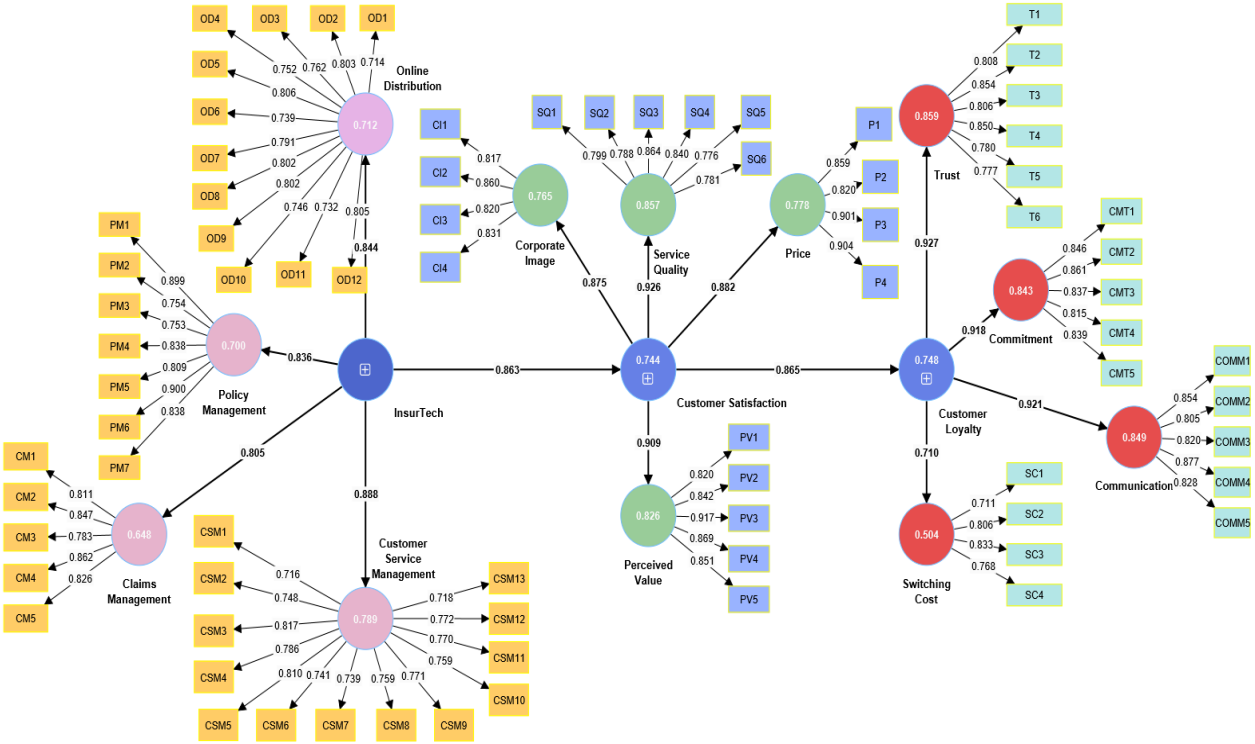


Figure 4.3 Measurement Model Assessment of First Order Constructs

As figure 4.3, outer loading values of all the indicators lie above 0.708, showing indicators' reliability (Hair et al., 2017; 2022).

❖ **Indicator Outer loadings**

The outer loading value of all indicators surpasses the threshold value of 0.708 (Hair et al., 2019). The items within latent variable (sub-construct) have been systematically coded, such as online distribution being represented as OD1, OD2 and claims management as CM1, CM2 and so forth.

Table 4.2: Results of Indicators Reliability

Construct	Sub-construct	Construct coding	Outer loadings
InsurTech	Online Distribution	OD1	0.714
		OD2	0.803
		OD3	0.762
		OD4	0.752
		OD5	0.806
		OD6	0.739
		OD7	0.791
		OD8	0.802

		OD9	0.802
		OD10	0.746
		OD11	0.732
		OD12	0.805
	Policy Management	PM1	0.899
		PM2	0.754
		PM3	0.753
		PM4	0.838
		PM5	0.809
		PM6	0.900
		PM7	0.838
	Claims Management	CM1	0.811
		CM2	0.847
		CM3	0.783
		CM4	0.862
		CM5	0.826
	Customer Service Management	CSM1	0.716
		CSM2	0.748
		CSM3	0.817
		CSM4	0.786
		CSM5	0.810
		CSM6	0.741
		CSM7	0.739
		CSM8	0.759
		CSM9	0.771
		CSM10	0.759
		CSM11	0.770
		CSM12	0.772
		CSM13	0.718
Customer Satisfaction	Corporate Image	CI1	0.817
		CI2	0.860
		CI3	0.820

		CI4	0.831
	Service Quality	SQ1	0.799
		SQ2	0.788
		SQ3	0.864
		SQ4	0.840
		SQ5	0.776
		SQ6	0.781
	Price	P1	0.859
		P2	0.820
		P3	0.901
		P4	0.904
	Perceived Value	PV1	0.820
		PV2	0.842
		PV3	0.917
		PV4	0.869
		PV5	0.851
Customer Loyalty	Commitment	CMT1	0.846
		CMT2	0.861
		CMT3	0.837
		CMT4	0.815
		CMT5	0.839
	Communication	COMM1	0.854
		COMM2	0.805
		COMM3	0.820
		COMM4	0.877
		COMM5	0.828
	Switching Cost	SC1	0.711
		SC2	0.806
		SC3	0.833
		SC4	0.768
	Trust	T1	0.808
		T2	0.854

		T3	0.806
		T4	0.850
		T5	0.780
		T6	0.777

The coding has been done to simplify the organization and analysis of data in SmartPLS. Thus, by meeting the threshold criteria for indicator outer loadings, the reliability of the indicators has been established. Table 4.2 shows the indicators' coding and outer loading values.

- **Construct reliability and validity**

Following the initial assessment of factor loading, evaluating the internal consistency is also crucial. Internal consistency, assessed through measures like Cronbach's alpha and composite reliability, ensures the indicators consistently capture the underlying concept. Generally, acceptable reliability in exploratory research falls between 0.60 and 0.70, while values between 0.70 and 0.95 are preferable. Additionally, rho_A offers another alternative to assess internal consistency reliability, as suggested by (Dijkstra & Henseler, 2015). It is noteworthy that the threshold values for these measures are generally consistent. It has been analyzed that values of Cronbach's alpha and CR's have exceeded 0.79, indicating that the constructs have strong internal consistency.

Table 4.3: Results of Construct Reliability and Validity

Construct	Cronbach's alpha (α)	Composite reliability (rho_a)	Composite reliability (rho_c)
Claims Management	0.883	0.886	0.915
Commitment	0.895	0.896	0.923
Communication	0.893	0.896	0.921
Corporate Image	0.852	0.852	0.900
Customer Service Management	0.940	0.940	0.947
Online Distribution	0.938	0.939	0.946
Perceived Value	0.912	0.914	0.934

Policy Management	0.923	0.924	0.939
Price	0.894	0.898	0.927
Service Quality	0.894	0.894	0.919
Switching Cost	0.786	0.786	0.861
Trust	0.897	0.898	0.921

The measurement model's reliability has been further confirmed by the CR and rho-A criteria, which has been utilized to evaluate construct reliability and internal consistency. All results are above the threshold of 0.70 (Table 4.3).

- **Convergent Validity**

Convergent validity, assessed through AVE, ensures indicators truly reflect their intended constructs. AVE gauges how much variance in an indicator is explained by the construct it measures.

Table 4.4: Results of Convergent Validity

Name of the Construct	**Average variance extracted (AVE)**
Claims Management	0.683
Commitment	0.705
Communication	0.701
Corporate Image	0.692
Customer Service Management	0.581
Online Distribution	0.595
Perceived Value	0.740
Policy Management	0.687
Price	0.760
Service Quality	0.654
Switching Cost	0.609
Trust	0.661

High AVE (>0.50) indicates successful measurement that the indicators are capturing a good amount of variance from the intended construct. The AVE values of all the constructs have been identified to be above the threshold of 0.50 (Table 4.4).

❖ **Discriminant Validity**

PLS-SEM recognizes discriminant validity as another crucial aspect of the measurement model. It evaluates the degree to which each construct stands apart from the others in the model. Ensuring discriminant validity strengthens the analysis by confirming that the constructs are truly distinct concepts, not simply different facets of the same underlying phenomenon. It ensures that each construct measures a unique and separate concept, rather than overlapping with or being redundant to other constructs. In this study, discriminant validity has been assessed with two methods: first is Heterotrait- Monotrait (HTMT) ratio and another is Fornell-Larcker Criterion.

Table 4.5: Results of Discriminant Validity With HTMT Criterion

Constructs	Claims Management	Commitment	Communication	Corporate Image	Customer Service Management	Online Distribution	Perceived Value	Policy Management	Price	Service Quality	Switching Cost
Commitment	0.671 [0.551: 0.769]										
Communication	0.680 [0.553: 0.779]	0.889 [0.820: 0.947]									
Corporate Image	0.766 [0.649:	0.727 [0.631:	0.766 [0.668:								

	0.859]	0.810]	0.845]								
Customer Service Management	0.780 [0.687: 0.852]	0.698 [0.589: 0.785]	0.720 [0.622: 0.800]	0.788 [0.699: 0.859]							
Online Distribution	0.565 [0.372: 0.722]	0.620 [0.492: 0.724]	0.589 [0.446: 0.711]	0.532 [0.365: 0.673]	0.631 [0.491: 0.742]						
Perceived Value	0.811 [0.731: 0.873]	0.826 [0.752: 0.891]	0.823 [0.748: 0.888]	0.810 [0.724: 0.881]	0.768 [0.682: 0.836]	0.710 [0.601: 0.796]					
Policy Management	0.699 [0.576: 0.795]	0.699 [0.595: 0.781]	0.700 [0.591: 0.786]	0.629 [0.500: 0.738]	0.640 [0.527: 0.732]	0.740 [0.615: 0.844]	0.738 [0.637: 0.821]				
Price	0.751 [0.652: 0.832]	0.800 [0.727: 0.862]	0.756 [0.661: 0.838]	0.845 [0.776: 0.902]	0.738 [0.631: 0.823]	0.531 [0.376: 0.658]	0.802 [0.714: 0.872]	0.590 [0.452: 0.706]			
Service Quality	0.769 [0.673: 0.843]	0.784 [0.700: 0.856]	0.799 [0.718: 0.867]	0.862 [0.773: 0.934]	0.786 [0.704: 0.852]	0.685 [0.563: 0.784]	0.873 [0.793: 0.935]	0.804 [0.722: 0.875]	0.831 [0.739: 0.907]		
Switching Cost	0.584 [0.417: 0.71	0.646 [0.501: 0.77	0.677 [0.528: 0.80	0.629 [0.468: 0.76	0.667 [0.529: 0.78	0.563 [0.388: 0.69	0.624 [0.469: 0.75	0.534 [0.364: 0.67	0.676 [0.534: 0.79	0.690 [0.552: 0.80	

	9]	0]	4]	4]	0]	6]	4]	0]	6]	0]	
Trust	0.719 [0.606: 0.811]	0.893 [0.826: 0.948]	0.888 [0.821: 0.943]	0.828 [0.752: 0.892]	0.748 [0.658: 0.822]	0.611 [0.469: 0.725]	0.833 [0.736: 0.911]	0.689 [0.574: 0.781]	0.826 [0.749: 0.892]	0.817 [0.704: 0.905]	0.650 [0.495: 0.782]
Source (s): Table by Researcher											

Drawing upon the Heterotrait-Monotrait (HTMT) ratio technique developed by Henseler et al. (2015), this study assessed the discriminant validity of the reflective constructs. The recommended values of HTMT ratio analysis should not exceed the critical value of 0.85 (Kline, 2023) or 0.90 (Gold et al., 2001). The outcomes have demonstrated the adequate discriminant validity of the measurement model (Table 4.5). To establish discriminant validity, the HTMT falls within the confidence intervals i.e. lower bounds and upper bounds (Table 4.5).

To achieve a thorough evaluation of discriminant validity, this research implemented two complementary techniques. Initially, the Heterotrait-Monotrait (HTMT) ratio provided valuable insights (Henseler et al., 2015).

Table 4.6: Results of Discriminant validity With Fornell Larcker Criterion

Constructs	**Claims Management**	**Commitment**	**Communication**	**Corporate Image**	**Customer Service Management**	**Online Distribution**	**Perceived Value**	**Policy Management**	**Price**	**Service Quality**	**Switching Cost**	**Trust**
Claims Management	0.826											
Commitment	0.596	0.840										
Communication	0.606	0.797	0.837									
Corporate Image	0.667	0.636	0.671	0.832								
Customer Service Management	0.714	0.645	0.664	0.707	0.762							

Online Distribution	0.517	0.568	0.54	0.476	0.601	0.772						
Perceived Value	0.73	0.748	0.745	0.715	0.717	0.659	0.860					
Policy Management	0.634	0.635	0.632	0.559	0.603	0.689	0.677	0.829				
Price	0.669	0.718	0.678	0.738	0.681	0.488	0.728	0.539	0.872			
Service Quality	0.684	0.701	0.715	0.752	0.725	0.628	0.788	0.730	0.744	0.809		
Switching Cost	0.492	0.560	0.587	0.517	0.579	0.496	0.542	0.471	0.571	0.589	0.780	
Trust	0.641	0.802	0.798	0.725	0.692	0.562	0.755	0.629	0.741	0.732	0.558	0.813

Subsequently, the well-established Fornell-Larcker criterion was employed for a more comprehensive assessment (Fornell & Larcker, 1981). This criterion compares the square root of the AVE for each construct with its highest correlation coefficient with any other construct in the model. Discriminant validity is established when the square root of the AVE is greater than or equal to this highest correlation. As shown in Table 4.6, the diagonal values of the square root of AVE exceed all other values in the table, both horizontally and vertically. These findings collectively provide strong evidence for discriminant validity within the research model.

4.2.1.2 Measurement Model Assessment of Second-Order Constructs

In the analysis of this study's second-order constructs, latent variable scores (LVS) were employed. These scores were derived from the lower-order constructs, specifically InsurTech adoption, customer satisfaction, and customer loyalty. Essentially, LVS represent the underlying dimensions captured by the lower-order constructs, allowing them to be integrated into the model as second-order constructs.

Table 4.7: Results of Constructs' Outer loadings Values

Construct	Sub-Construct	Outer loadings
InsurTech	Claims Management	0.856
	Online Distribution	0.809
	Customer Service Management	0.872
	Policy Management	0.855
Customer Satisfaction	Corporate Image	0.886
	Price	0.890
	Perceived Value	0.903
	Service Quality	0.916
Customer Loyalty	Commitment	0.912
	Communication	0.917
	Switching Cost	0.747
	Trust	0.915
Source (s): Table by Researcher		

The study provides the indicator loadings, rho-A, composite reliability (CR), and convergent validity (AVE). All the indicators indicated reliability over the threshold of 0.708 (Table 4.7) (Figure 4.4) (Hair et al., 2022). Figure 4.4 shows outer loading values along with path coefficients of inner model.

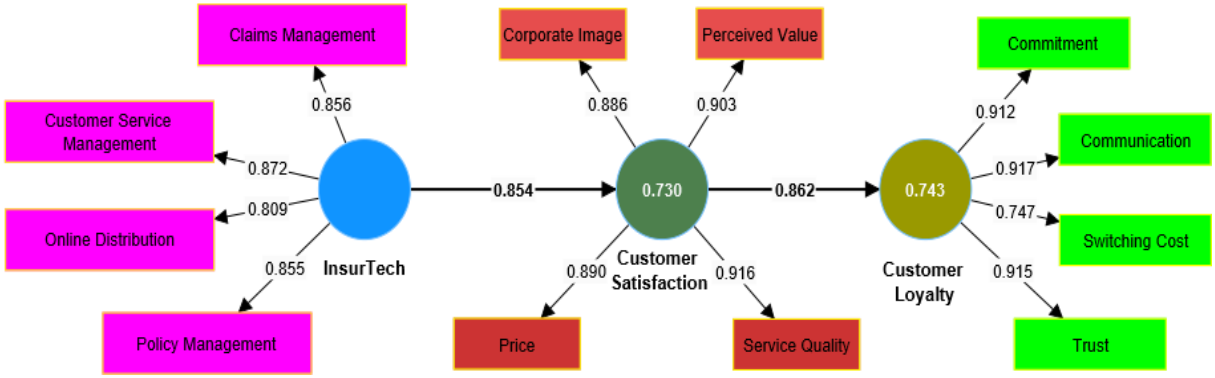


Figure 4.4: Measurement Model Assessment of Second Order Constructs

Building on the recommendations of Hair et al. (2019) and Sarstedt et al. (2019, 2022), this study observed that Cronbach's alpha (α) and composite reliability (CR) values fall within the generally accepted range of 0.70 to 0.95. Furthermore, the AVE scores for the constructs above 0.60 (Table 4.8), which is above the minimum requirement of 0.50 as specified in the conceptual model. These findings provide strong evidence for the validity and reliability of the second-order construct assessments, aligning with the previous studies conducted by Hair et al., (2019) and Cohen (1992).

Table 4.8: Results of Reliability and Validity of Higher Order constructs

Constructs	Cronbach's alpha	rho_a (Composite reliability)	rho_c (Composite reliability)	Average variance extracted (AVE)
Customer Loyalty	0.896	0.910	0.929	0.767
Customer Satisfaction	0.921	0.923	0.944	0.808
InsurTech	0.870	0.876	0.911	0.720

The study evaluated the HTMT ratio of correlations to evaluate the discriminant validity of higher-order constructs as shown in Table 4.9. While the HTMT ratios between InsurTech adoption, customer satisfaction, and customer loyalty exceeded the recommended range of 0.85-0.90 (Henseler et al., 2015; Hair et al., 2022), further analysis using confidence intervals confirmed discriminant validity.

Table 4.9: Results of Discriminant Validity of Higher Order Constructs (HTMT ratio)

Constructs	Customer Loyalty	Customer Satisfaction
Customer Satisfaction	0.945 [0.903: 0.982]	
InsurTech	0.903 [0.841: 0.951}	0.946 [0.903: 0.984}

Confidence intervals, in this context provide a range of values within which the true HTMT value is likely to lie. In this case, the HTMT ratios fell within their respective confidence intervals, validating the establishment of discriminant validity of the constructs.

4.2.2 Structural Model

The structural model must be validated after the measurement model has been satisfactorily measured. The evaluation of the structural models has been carried out following

the recommendations of (Hair et al., 2019; 2022). For evaluating the structural model assessment in Smart-PLS, R-square (R^2) and path coefficient have been assessed. The recommended value of R^2 is above 0.19. This suggests that at least 19% of the variance in the endogenous construct is explained by the model. Path coefficients in the structural model quantify the influence between constructs. A positive coefficient indicates a positive relationship, where one construct increases as the other does. Conversely, a negative coefficient signifies an opposing influence, where one construct decreases as the other increases. The absolute value of a path coefficient reflects the strength of the relationship. A value of above 0.1 is generally considered weak, while higher values indicate stronger relationships. P-value represents the probability of observing the obtained results. Within the context of this study, a p-value threshold of 0.05 is employed to assess statistical significance. A p-value less than 0.05 demostrates that the observed relationship between constructs is statistically significant, implying it's less likely due to random chance. This lends support to the hypothesized associations between the constructs in the model.

In Smart-PLS, Bootstrapping is a statistical technique used to evaluate the significance of path coefficients. As per the recommendations of Hair et al. (2022), bootstrapping should be performed with k value of 10,000, which refers to the number of resamples drawn from the actual data to create bootstrap samples. By analyzing the distribution of the bootstrapped coefficients, SmartPLS can provide information about the confidence interval values and statistical significance of the original path coefficient values.

4.2.2.1 Structural Model Assessment

Evaluating a structural path in SmartPLS requires a step-by-step approach, starting with checking for collinearity among the constructs. This happens when independent constructs are highly correlated, making it onerous to isolate their individual effects. To assess collinearity, SmartPLS uses the Variance Inflation Factor (VIF). Ideally, VIF should be up to 3.33, indicating minimal influence from other constructs. Values up to 5 might be acceptable in some situations, but values exceeding 5 suggest a potential problem.

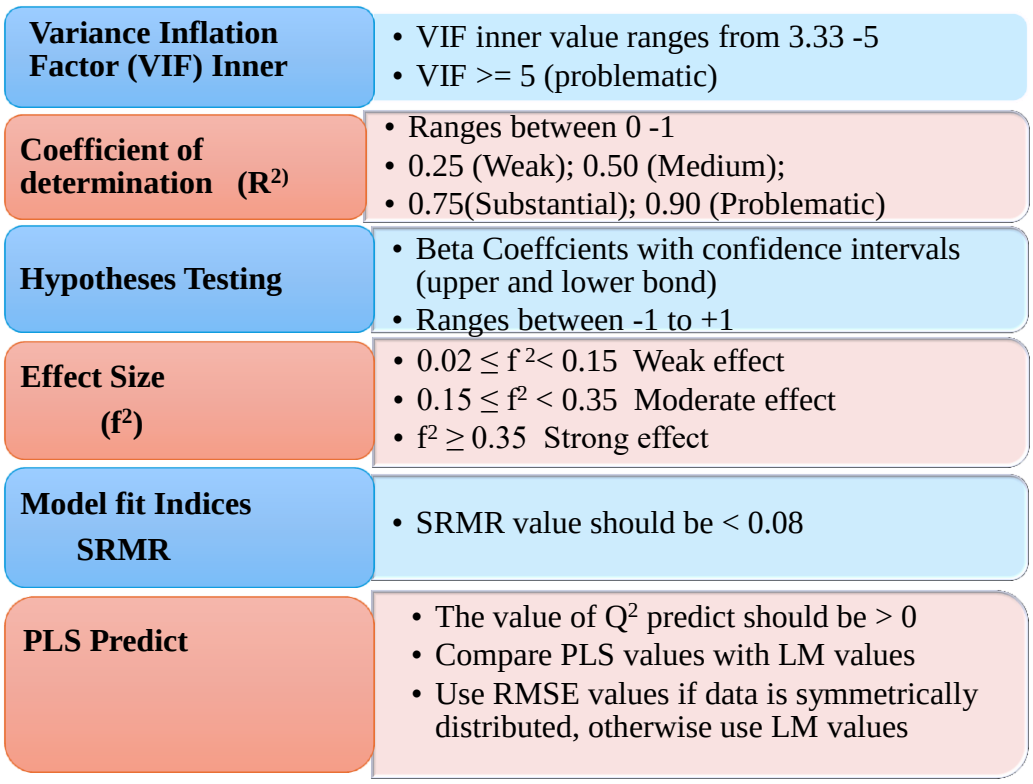


Figure 4.5 Measures of Structural Model [Source (s): Created by Researcher]

Table 4.10 shows the VIF inner values which range from 1.000 to 1.130 for all the constructs. Thus, indicating that there are no multicollinearity issues.

Table 4.10: Results of VIF Inner Values

Hypothesized Path	VIF Values
InsurTech -> Customer Satisfaction	1.000
Customer Satisfaction -> Customer Loyalty	1.001
Gender -> Customer _Loyalty	1.060
Income -> Customer Loyalty	1.130
Age -> Customer Loyalty	1.070

If high collinearity is present, creating higher-order constructs by merging correlated constructs into a single one can be a solution (Hair et al., 2019). Once collinearity is addressed, the evaluation continues with assessing the coefficient of determination (R^2).

❖ Coefficient of Determination (R^2)

In PLS-SEM analysis, R-squared (R^2) serves as a crucial metric for assessing the model's explanatory power. It reflects the proportion of variance in the dependent construct (i.e., customer loyalty) that can be described by the independent variables (i.e., InsurTech adoption, customer satisfaction) incorporated into the model. Higher R^2 values specified a stronger relationship between the variables. In this research, the R^2 value for factors influencing customer satisfaction towards InsurTech adoption is 0.730 and 0.756 for customer loyalty (See Table 4.11). The value can be interpreted as the 73% of variance in customer satisfaction is determined by independent variable InsurTech and 75.6% of variance in customer loyalty by customer satisfaction. The values of R^2 indicate substantial influence.

Table 4.11: Results of Coefficient of Determination (R-square)

Constructs	R-square	R-square adjusted
Customer Loyalty	0.756	0.752
Customer Satisfaction	0.730	0.729

However, it is significant to remember that a high value of R^2 only reflects the model's explanatory power within the specific sample that is being used. It doesn't necessarily translate to how well the model predicts outcomes in new or unseen data. To find the out-of-sample predictive power, techniques like blindfolding are recommended (Shmueli et al., 2019; Dolce et al., 2017). This involves temporarily hiding a portion of the data during model development and then checking how well the model predicts the outcomes for those hidden data points.

Therefore, R^2 is valuable for understanding the in-sample explanatory power of the conceptual model.

❖ Hypothesis Testing

Hypothesis testing plays a central role in evaluating the associations between latent variables within a structural model. This process seeks to understand the direction, resistance and statistical significance of these relationships. Path coefficients quantify the strength and direction of the connection between two constructs. A positive value of beta coefficient

indicates a reinforcing relationship, where an increase in one construct leads to an increase in the other. Conversely, a negative coefficient signifies an opposing effect, where one construct increases as the other decreases. The absolute value of the coefficient reflects the magnitude of this influence. Statistical significance, indicated by p-values, assesses the likelihood that the observed relationship could be due to random chance. Typically, a p-value lower than 0.05 suggests the relationship is statistically significant, implying it's unlikely due to chance and supports the hypothesized connection. A common threshold is p-value less than 0.05, which suggests a statistically significant relationship, meaning it is unlikely to be due to chance. For testing the hypotheses, bootstrapping is performed which generates p-value, T-statistics, providing a more reliable estimate of the probability of the observed relationships. Figure 4.6, 4.7 and Table 4.12 show the results of structural path assessment.

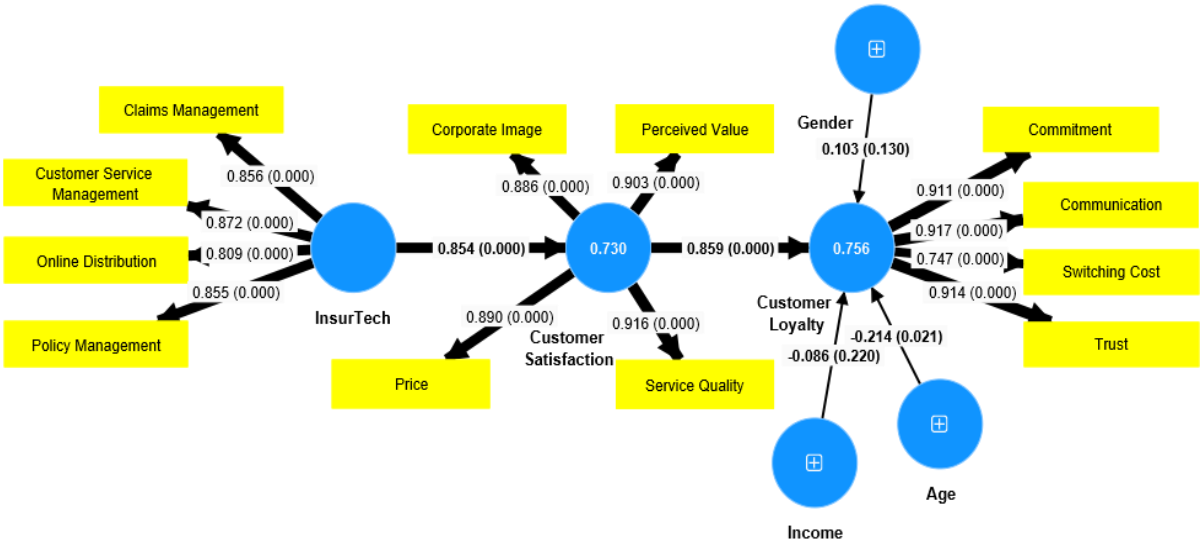


Figure 4.6: Structural Model Assessment (Model 1)

As shown in Table 4.12, the structural model assessment includes beta values, t-values associated with each path coefficient. In SEM analysis, exceeding a t-value of 1.96 (or -1.96 for negative values) generally indicates a statistically significant relationship at 95% confidence level. For this study, the hypotheses testing has been conducted using the bootstrapping method with 587 cases and 10,000 samples as per Hair et al. (2022). Figure 4.7 shows the assessment of structural model indicating t-values of inner and outer model.

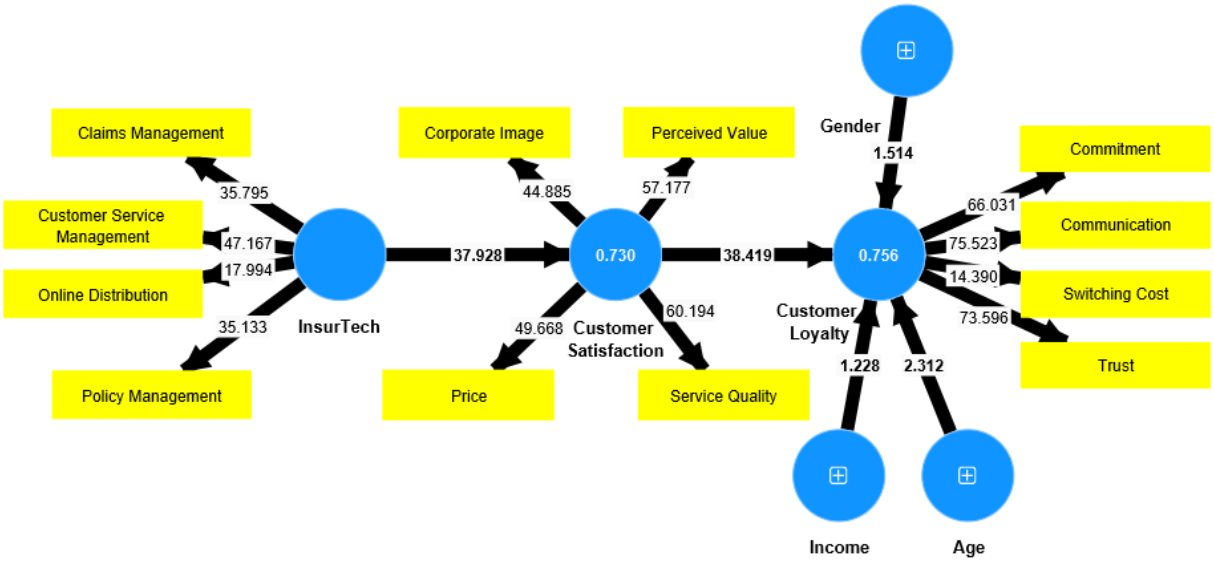


Figure 4.7: Structural Model Assessment (Model 2)

As Table 4.12 shows the outcomes of a structural model assessment, the adoption of InsurTech positively influences customer satisfaction (β = 0.854, t-value = 37.928, p = 0.000), supporting the hypothesis (H1). Customer satisfaction has a substantial positive effect on customer loyalty (β = 0.859, t-value = 38.419, p = 0.000).

Table 4.12: Results of Structural Model Assessment

Criterion Variable	**Predictor Variable**	**Hypothesized Path**	**Beta**	**$CI_{0.95}$**	**t-value**	**p-value**	**Significance (?)**
CS	IT	IT→ CS	0.854	[0.805: 0.893]	37.928	0.000	Supported
CL	CS	CS→ CL	0.859	[0.810: 0.898]	38.419	0.000	Supported
CL	CV	Gender→ CL	0.103	[-0.034: 0.232]	1.514	0.130	Not Supported
CL	CV	Age→ CL	-0.214	[-0.404: -0.041]	2.312	0.021	Supported
CL	CV	Income→ CL	-0.086	[-0.228: 0.048]	1.228	0.220	Not Supported
Source(s): Researcher's own calculations Note(s): CS= Customer Satisfaction, IT= Insurtech, CL= Customer Loyalty, $CI_{0.95}$= Confidence intervals at 95 percent, CV= Control Variable							

In the structural model, three control variables namely age, gender and income have been included. Control variables play a crucial role in research as they impact the precision of causal relationships and the outcomes of hypotheses testing (Shiau et al., 2024). Using control variables enables researchers to isolate the direct relationship between dependent and independent variables, measure this relationship while accounting for the influence of other factors, and determine the unique contribution of a variable to predicting the outcome (Carlson & Wu, 2012; Spector & Brannick, 2011). In this study Age has been coded as 0 representing the age group of 18-40 years and 1 representing the age group of 41-50 years and above. The analysis of age as a control variable reveals significant output with values (β = -0.214, t-value = 2.312, p = 0.021). In case of gender, males have been coded as 1, and females as 0. The values of output are β = 0.103, t- value = 1.514, p = 0.130), results are insignificant. Income has been coded as 0 for the income up to Rs. 30,000 and 1 for the income above Rs. 30,000. The results of this control variable have been evaluated to be insignificant with values (β = -0.086, t-value = 1.228, p = 0.220).

- **Effect Size**

SEM analysis considers both model fit and effect size (f^2). F^2, a measure of relationship strength, goes beyond significance by revealing the proportion of variance in an outcome variable (i.e., customer loyalty) depicted by a predictor variable (i.e., InsurTech adoption).

Following Cohen's (1992) criteria, this study employed f-squared (f^2) to evaluate the effect size of individual independent variables on the dependent variable. F-squared represents the proportion of variance in the dependent variable that can be attributed to a specific independent variable.

Table 4.13: Results of Effect size (f^2)

Variables	**f-square**
Age -> Customer Loyalty	0.021
Customer Satisfaction -> Customer Loyalty	3.020
Gender -> Customer Loyalty	0.010
Income -> Customer Loyalty	0.007
InsurTech -> Customer Satisfaction	2.702

According to Cohen's classification, effect sizes are categorized as small ($f^2 = 0.02$), medium ($f^2 = 0.15$), and large ($f^2 = 0.35$). In this study, the effect size of customer satisfaction on the dependent variable was found to be 3.020, which suggests a large effect. This implies that customer satisfaction explains a substantial portion of the variance in the dependent variable. Similarly, InsurTech also has a large effect size on customer satisfaction with value 2.702 (See Table 4.13).

- **Goodness of Model fit**

In SEM with SmartPLS, evaluating the goodness of model fit is crucial. It essentially gauges how well the model aligns with the data, reflecting the compatibility between theoretical framework and observed patterns. Table 4.14 shows the results of model fit. The saturated model represents a hypothetical model with no restrictions and an estimated model is the model that has been built on the theoretical framework. It balances capturing the essential relationships while maintaining an acceptable level of model complexity.

Standardized root mean square residual (SRMR) reflects the average difference between the correlations observed in the data and the correlations predicted by the model. Following the guidelines of Hu & Bentler (1999), it has been utilized as a goodness of fit index. A well-fitting model is indicated when the SRMR value is below the acceptable value of 0.08 (Hair et al., 2019).

Table 4.14: Results of Model Fitness

	Saturated model	**Estimated model**
SRMR	0.050	0.063
d_ULS	0.300	0.479
d_G	0.228	0.317
Chi-square	328.019	466.29
NFI	0.882	0.832

The estimated model's SRMR was found to be 0.063, lower than the critical threshold of 0.08 (Table 4.14). The results validate that the model is indeed a good fit (Henseler et al., 2015). The other measures such as d_ULS (Squared Euclidean distance), d_G (Geodesic distance), Chi-square ($\chi 2$) and NFI (Normed fit index) have been evaluated in SmartPLS as shown in Table 4.14. NFI compares the fit of the model to fit of a baseline model with no relationships. Values closer to 1 or more than 0.90 indicate a better fit (Lohmöller, 2013). Here the value of NFI is 0.832, slightly lower than the threshold value.

❖ Comparison of Structural Path Assessment with and without Control Variables

A comparative analysis of structural path assessment with and without incorporating control variables has been performed to gain insight into the accuracy and generalizability of the model. Table 4.15 and figure 4.8 provide a description of this comparison.

Table 4.15: Results of Comparison Between Structural Model Assessment with and without Control Variables

Criterion Variable	**Predictor Variable**	**Hypothesized Path**	**Structural Assessment with Control Variables**				**Structural Assessment without Control Variables**			
			Beta Values	T-Statistics	R Square	Model Fit (SRMR)	Beta Values	T-Statistics	R Square	Model Fit (SRMR)
CS	IT	IT→ CS	0.854	37.928	0.730	0.063	0.854	37.928	0.730	0.060
CL	CS	CS→ CL	0.859	38.419	0.756		0.862	42.818	0.743	
Note (s): CS= Customer Satisfaction, IT= Insurtech, CL= Customer Loyalty Source (s): Table by Researcher										

The path coefficient values of path IT → CS remain consistent with value 0.854 and a high t-statistic (37.928) in both models. This suggests a significant and positive relationship between InsurTech adoption and customer satisfaction. Including control variables improved the overall model fit from 0.063 to 0.060.

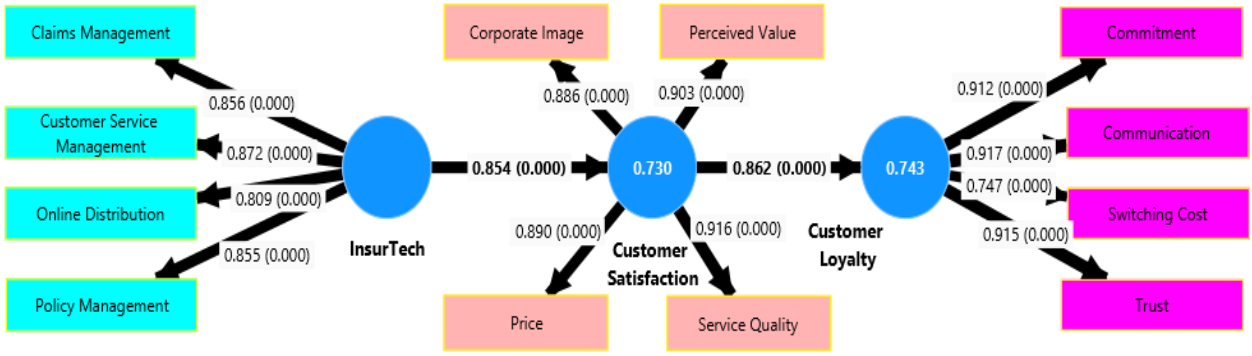


Figure 4.8: Structural Model Assessment Without Control Variables

The hypothesized path CS→ CL shows the changes in the beta coefficient from 0.859 (with control variables) to 0.862 (without control variables). The value of R square increases from 0.743 (without control variables) to 0.756 (with control variables), indicating a better explanation of variance in customer loyalty (Table 4.15) (Figure 4.8).

❖ PLS Predict

In current study, R^2 statistics have been employed to evaluate the predictive relevance of the conceptual model within the sample. The researcher has also used $PLS_{predict}$ to assess the predictive relevance for customer loyalty beyond the sample (Danks & Ray, 2018; Shmueli et al., 2019).

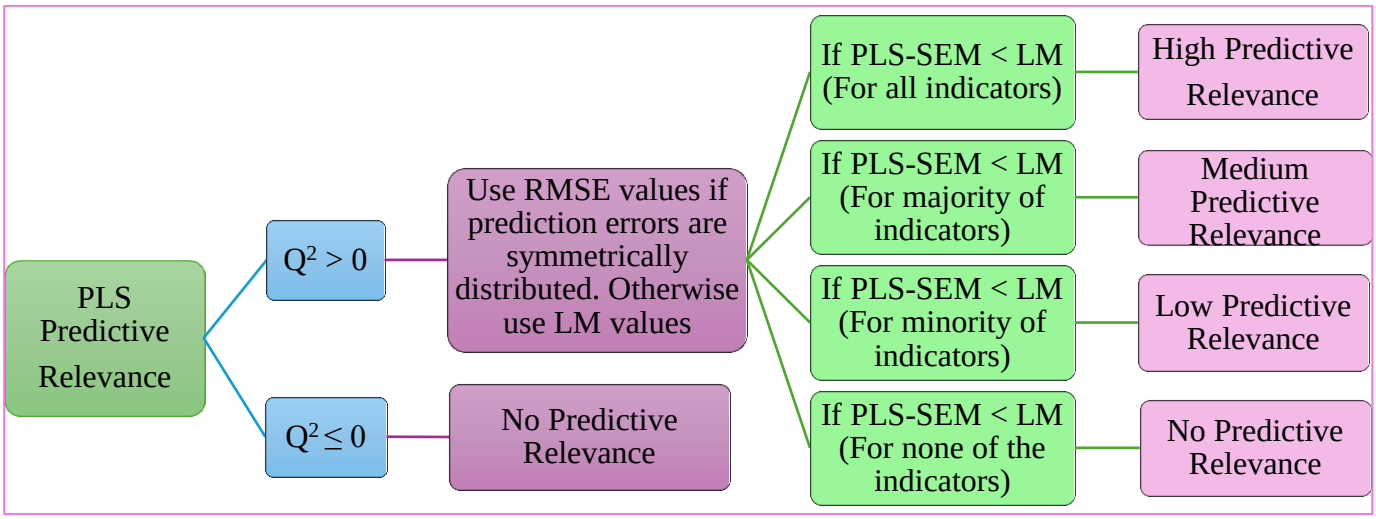


Figure 4.9: PLS Prediction Process [Source: Designed by Researcher]

The prediction process involves splitting the data into two sets: a training set used to estimate the model parameters such as beta values, outer loading values and outer weights etc. (Shmueli et al., 2019) and a holdout set used for prediction (Hair et al., 2019). The conceptual model, has been built using the training data, is then used to predict outcomes for the

variables in the holdout set. Figure 4.9 shows the process of evaluating prediction relevance of the conceptual model.

Table 4.16: Results of PLS Prediction Analysis

Indicators	Q^2 predict	PLS-SEM RMSE	LM RMSE	PLS-LM RMSE	Predictive Relevance
Corporate Image	0.510	0.703	0.686	0.017	High Predictive Power
Price	0.493	0.715	0.704	0.011	
Perceived Value	0.669	0.578	0.585	-0.007	
Service Quality	0.662	0.584	0.592	-0.008	
Commitment	0.519	0.696	0.706	-0.010	
Communication	0.530	0.688	0.696	-0.008	
Switching Cost	0.365	0.801	0.820	-0.019	
Trust	0.561	0.665	0.673	-0.008	
Source(s): Researchers' own calculations					
Note(s): LM= Linear regression model, RMSE = Root mean squared error, PLS-SEM= Partial least squares- Structural equation modeling					

The predictive relevance can be zero, low, medium or high. Two key metrics are used for this prediction evaluation. First is Q^2 predict value, this value should be positive and greater than zero, which suggests that the model performs better than a basic model with no relationships. In this study, all $Q^2_{predict}$ values range from 0.365 to 0.669. The second key metric is RMSE comparison which involves the RMSE of PLS model is compared to a simple linear regression model. The negative differences values suggest the PLS model has lower error and thus higher predictive power. In this study, all differences except one are negative (Table 4.16), indicating a high predictive relevance of the model.

4.3 Mediating Influence

In research, mediation explores how a third variable inserts itself into the relationship between two other variables. Imagine variable X affecting variable Y, but a third variable M (mediator), plays a role. Mediation analysis helps us understand if and how M explains the connection between X and Y. To assess mediation, researchers typically follow a two-step approach: First is indirect effect which reflects how much X influences Y through the mediator, M. The indirect effect measures how much of X's influence on Y is transmitted

through M. If this indirect effect isn't statistically significant, it suggests there's no mediation happening - X's impact on Y doesn't flow through M (Nitzl, 2016). The other effect, the direct effect, represents the remaining influence of X on Y after accounting for M's influence. A strong indirect effect paired with a non-significant direct effect indicates full mediation. In this case, M completely explains the relationship between X and Y.

Partial mediation can be further categorized on the direction of the effects: First is complementary partial mediation where all the influences (X → M, M → Y) either work together in the same direction (positive or negative) or have two opposite effects with a combined positive outcome. Second is Inconsistent partial mediation, in this case, all the effects work in the opposite direction (negative) or have two opposite effects with a combined negative outcome.

Figure 4.10 shows the steps of mediation approach on the recommendations of (Zhao et al., 2010; Nitzl, 2016). First, by examining the indirect effect which reveals how much the exogenous variable affects the dependent variable through the mediator. If this indirect effect is not statistically significant, it depicts that there is no mediation happening. The second step involves analyzing the direct effects where remaining influence of the independent variable on the dependent variable has been assessed.

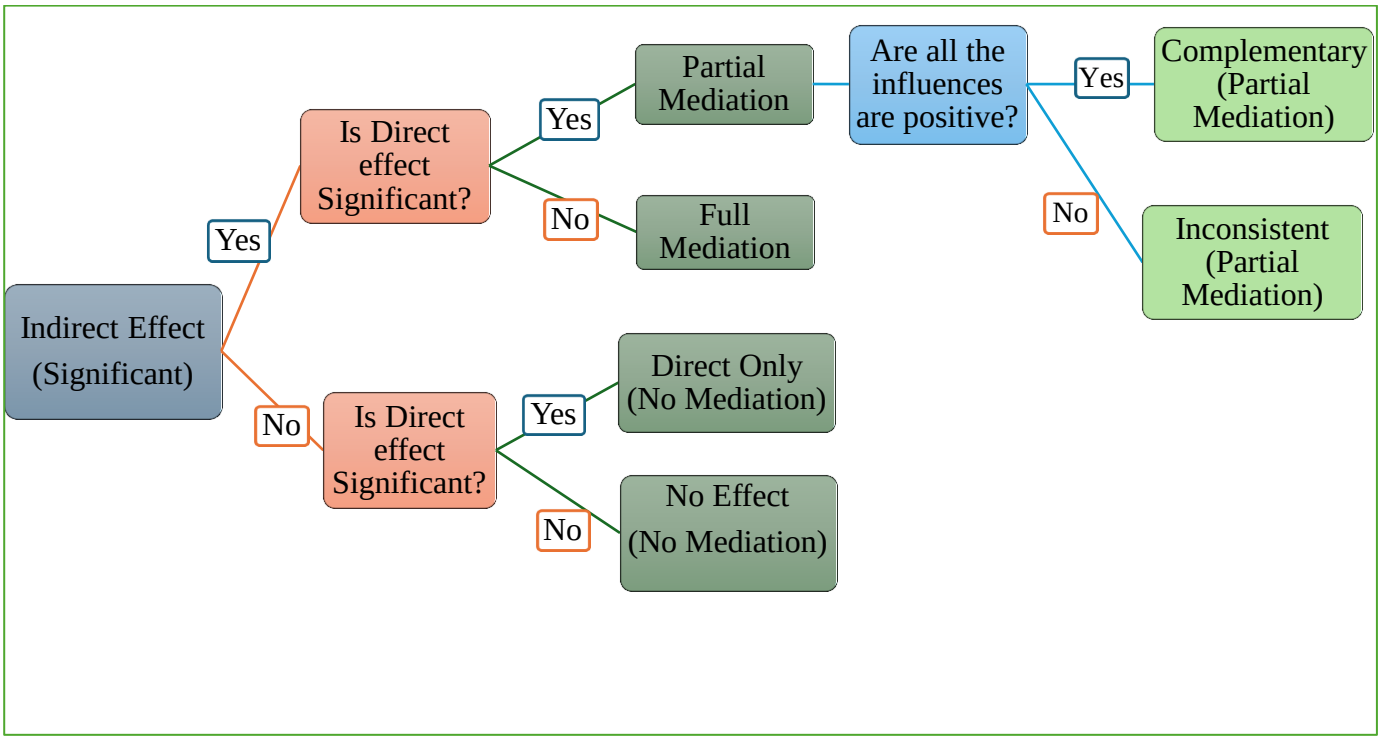


Figure 4.10: Steps of Mediation Approach

Finally, based on the findings from the first two steps, the type of mediation (if present any) can be determined. If the indirect effects are significant but the direct effects are not, then the mediator completely describes the relationship (full mediation). If both indirect and direct effects are significant, then partial mediation exists, where the mediator explains part of the connection between the variables.

4.3.1 To Analyze the Mediating Effect of Customer Satisfaction Between InsurTech Adoption and Customer Loyalty

The third objective of the study delves into the potential mediating effect of customer satisfaction in the connection between InsurTech adoption and customer loyalty. This study has employed an advanced method to assess the mediating effect in PLS-SEM, drawing on methodologies outlined by Nitzl et al. (2016); Hair et al. (2019). The analysis successfully validates the mediating role of customer satisfaction. As shown in Table 4.17, the indirect effect analysis yields a beta coefficient of 0.563, which falls within the confidence intervals and boasts a highly significant p-value of 0.000. These compelling results strongly support the study's objective and hypothesis (H2). In structural equation modeling, indirect effects capture how an independent variable's influence on a dependent variable is transmitted through intervening variables, such as customer satisfaction in this case.

Table 4.17: Results of Mediation Analysis

Indirect path	Original sample	Confidence Intervals (CI)	STDEV	t-statistics	p-value	Significance (?)
IT→CS→CL	0.563	[0.441, 0.693]	0.064	8.795	0.000	Supported
Source(s): Calculations by Researcher						
Note(s): CS= Customer Satisfaction, IT= Insurtech, CL= Customer Loyalty, CI= Confidence intervals at 95 percent, STDEV= Standard Deviation						

These indirect effects are essentially the product of multiple direct effects depicted by the series of arrows in the conceptual framework. The presence of mediation is indicated by a

Variance Accounted For (VAF) value lies between 20%- 80%, aligning with the criteria proposed by Hayes and Rockwood (2017). VAF is calculated by using the formula i.e. VAF = Indirect effect / Total effects

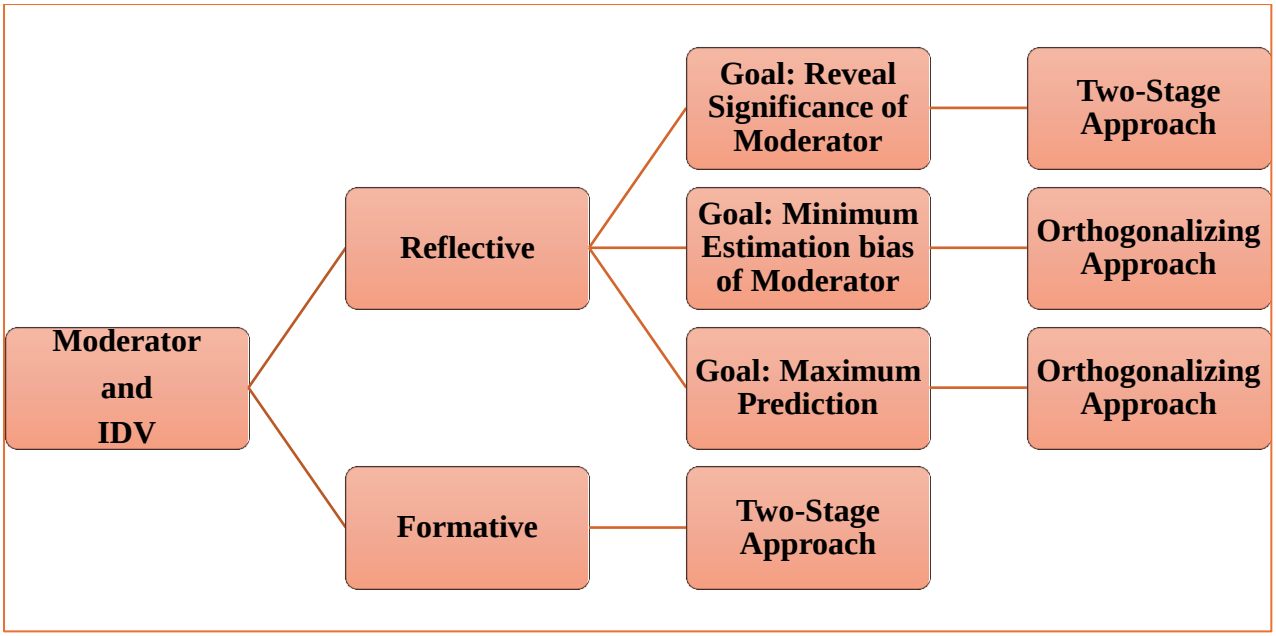
Where Total Effects = Indirect effects + Direct effects

Therefore, Calculated VAF = 1

The outcomes of Variance Accounted For (VAF) suggests that there is full mediation of customer satisfaction between the constructs InsurTech adoption and customer loyalty. The results demonstrate that a significant portion of InsurTech adoption's influence on customer loyalty is mediated by customer satisfaction. This implies that customer satisfaction acts as a crucial pathway through which InsurTech initiatives ultimately enhance customer loyalty. These findings illuminate the underlying mechanisms, highlighting the critical role of customer satisfaction in the insurance industry.

4.4 Moderation Effect

The third objective of this research is to evaluate the moderating effect of demographic variables (gender, age and income) on the association between InsurTech adoption and customer satisfaction. Moderation analysis explores how a third variable, a moderator, influences the link between an independent variable and a dependent variable. In SmartPLS, researchers can assess moderation effects to see if the moderator strengthens, weakens, or even reverses the connection between the two main variables. The first step involves examining the path coefficient between the moderator variable and interaction term (X * moderator). If this value is greater than 0.01, it suggests a potential moderation effect. The second step is bootstrapping, which is employed to determine the significance of this moderation effect i.e. t-value and p-value (Henseler & Fassott, 2010).



[Note: IDV → Independent Variable]

Figure 4.11: Moderation Flowchart

There are two options for bootstrapping: first is Standard PLS bootstrapping which is preferred for studies with similar samples to avoid variance or multicollinearity issues. Second is consistent PLS bootstrapping in which results may differ from standard bootstrapping, but they should not be consistent with the initial model without the moderator. Another important step is to check the type of moderating variable whether it is categorical moderator or continuous. For categorical moderator, two approaches exist: interaction effect with bootstrapping analyzes a specific path's interaction with the moderator, and multi-group analysis compares the entire model across moderator categories. Three methods (product indicator, orthogonalizing, and two-stage) pinpoint the moderating effect, with the two-stage approach potentially yielding the most accurate results (Becker et al., 2018). Figure 4.11 shows the step-by-step guidelines for moderation analysis.

4.4.1 Moderating Influence of Demographics (age, income and gender) on the relationship between InsurTech Adoption and Customer Satisfaction

In this study, demographic variables such as age, income and gender are considered as categorical variables for which the interaction effect is tested using PLS bootstrapping. The specific path under examination is the relationship between InsurTech adoption and customer satisfaction. This is a case of potential interaction moderation effect, where an independent

variable (InsurTech adoption) and a single dependent variable (Customer satisfaction) for the specific path. The demographic variables are grouped into two categories each: income (low or high), gender (female or male) and age (young or elder).

A two-step approach suggested by Becker et al. (2018) will be utilized for the moderation analysis. They recommended using a two-stage approach for moderation analysis, as they found that the orthogonalizing approach tends to overestimate the results, while the product indicator approach tends to underestimate them. In the first step, bootstrapping has been performed to evaluate the significance of moderators on the relationship between the variables. In the second step, then in the second step, PLS-SEM algorithm has been run to identify the slope analysis of moderators. The two-stage method was found to outperform the other two methods and was deemed the most effective approach for handling both reflective and formative constructs. Therefore, the two-stage strategy has been adopted in this study to investigate the moderating influence of demographic variables on the association between InsurTech adoption and customer satisfaction. Figure 4.12 shows the interaction moderation effect of moderating variable gender.

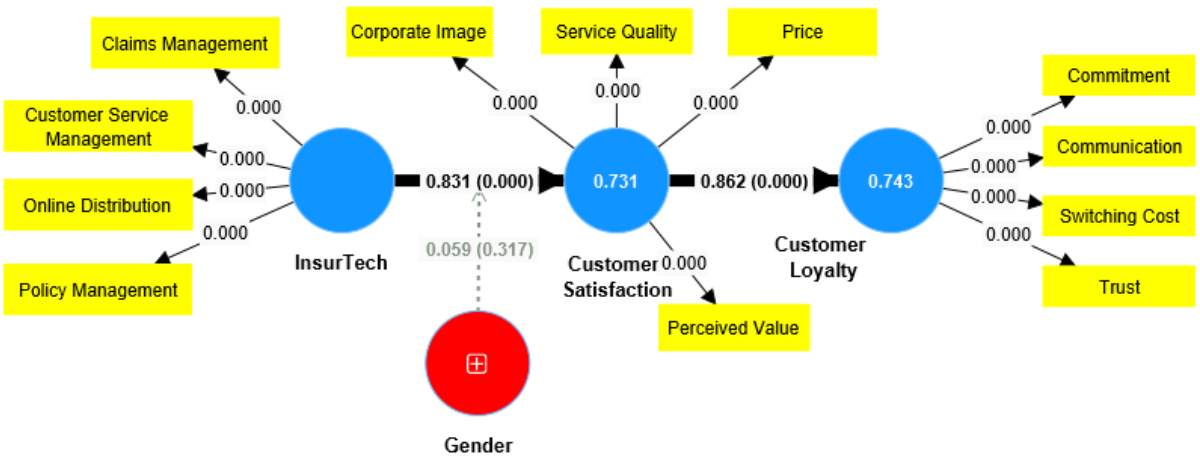


Figure 4.12: Moderating effect of Gender

The direct effect of gender as a moderator contains β value = -0.023, p value = 0.728. The effect of gender with InsurTech adoption on customer satisfaction has been found to be positive containing β value = 0.059, p value = 0.317, but insignificant (Table 4.18).

Table 4.18: Results of Moderation Analysis of Gender

Relationship Path	Original sample (O)	Sample Mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Significance (?)
Gender -> CS	-0.023	-0.023	0.067	0.348	0.728	Not Supported
Gender * IT -> CS	0.059	0.061	0.059	1.001	0.317	Not Supported
Note (s): CS → Customer Satisfaction; IT → InsurTech. Source (s): Researcher's Calculations						

The Interaction moderation influence of income has been evaluated with the bootstrapping process indicating the positive relationship through the interactive relationship determining β value = 0.022, p value = 0.722 (Figure 4.13). The direct impact of income on the customer satisfaction

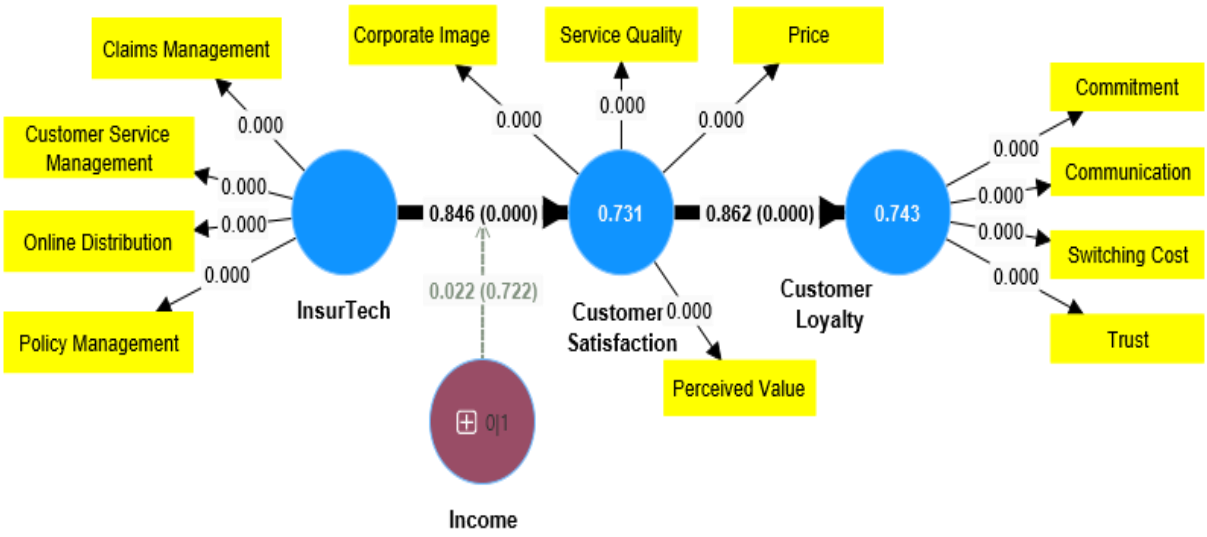


Figure 4.13: Moderating effect of Income

containing negative association β value = -0.060, p value = 0.363 and t value = 0.909 (Table 4.19). The results of this interaction effect are insignificant.

Table 4.19: Results of Moderation Analysis of Income

Relationship Path	Original sample (O)	Sample Mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Significance (?)
Income -> CS	-0.060	-0.060	0.066	0.909	0.363	Not Supported
Income * IT -> CS	0.022	0.025	0.062	0.356	0.722	Not Supported
Note (s): CS → Customer Satisfaction; IT → InsurTech. Source (s): Researcher's Calculations						

Figure 4.14 shows the moderation impact of age as a moderator. The direct association of this moderator has a negative association with the endogenous construct containing β value = -0.067, p value = 0.419. The interaction effect of age with InsurTech on customer satisfaction includes the β value = 0.033, p value = 0.644 (Table 4.20).

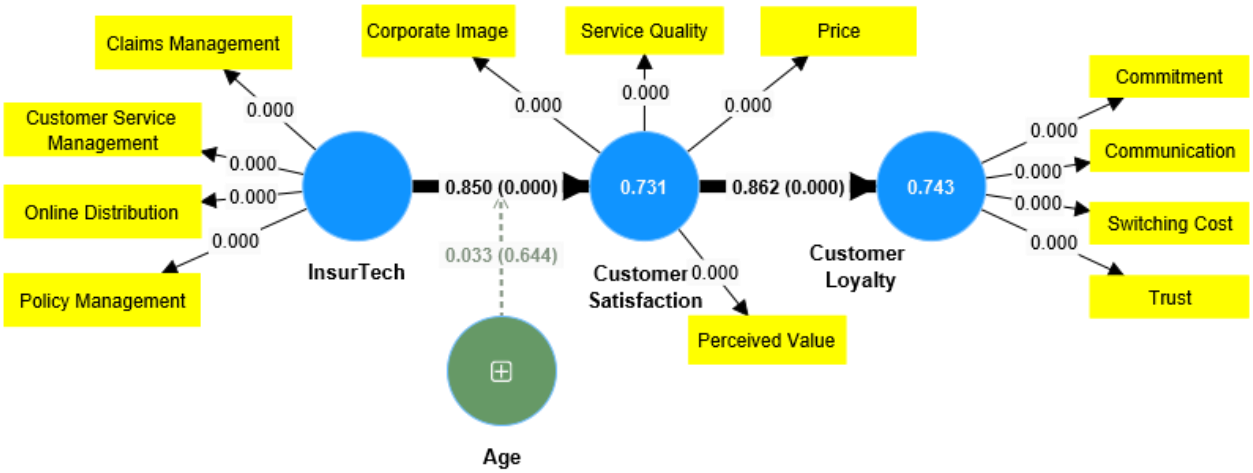


Figure 4.14: Moderating effect of Age

The result of moderating variable age including the t values of direct and interaction influence 0.809 and 0.462 respectively has been found to be insignificant.

Table 4.20: Results of Moderation Analysis of Age

Relationship Path	Original sample (O)	Sample Mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Significance (?)
Age -> CS	-0.067	-0.068	0.082	0.809	0.419	Not Supported
Age * IT -> CS	0.033	0.033	0.070	0.462	0.644	Not Supported
Note (s): CS → Customer Satisfaction; IT → InsurTech. Source (s): Researcher's Calculations						

After assessing the moderating effect of demographic variables individually, the combined influence of the moderators has been assessed. Figure 4.15 shows the moderation analysis of all the three demographics on the connection between the constructs InsurTech adoption and Customer satisfaction. Moderating analysis has been conducted to assess the moderating role of demographic variables, specifically age, income, and gender, following established literature (Hair et al., 2019; Yadav et al., 2019). The analysis proceeded in two steps. Initially, the direct impact of the moderating variable has been estimated. Subsequently, the interaction term has been incorporated into the model with the targeted variables to explore the moderating construct's potential.

As per the results of the analysis, age as a moderator depicts the direct impact β = -0.050, p value = 0.578. The interaction influence of age shares a positive link with customer satisfaction containing values β = 0.010, p value = 0.893, showing insignificant results. Gender shows a negative relationship with customer satisfaction directly with values β = -0.036, p value = 0.621. The interaction effect of gender represents positive relation but insignificant β = 0.064, p value = 0.340 (Table 4.21) (Figure 4.15).

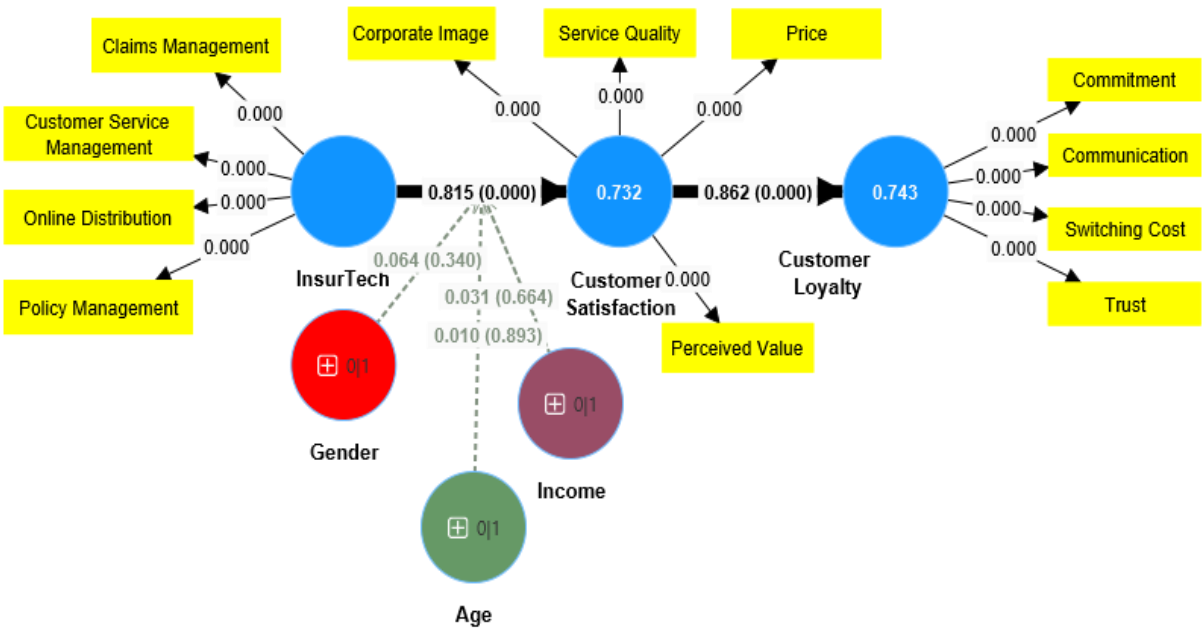


Figure 4.15: Combined Moderation Analysis (Model 1)

Income, the third demographic has shown the negative association containing values β = -0.055, p value = 0.457, the interaction moderation effect with values β value = 0.031 and p value = 0.664. These results have shown the insignificance that is all the three moderators have insignificant, rejecting the hypotheses H3a, H3b and H3c. Figure 4.15 shows the

moderation effect of demographic variables containing p-values of all latent variables, main constructs and moderators and beta value of main constructs and moderators.

Table 4.21: Results of Combined Moderation Analysis

Relationship Path	Beta	T statistics	STDEV	P value	Significance (?)
Age → CS	-0.050	0.556	0.090	0.578	Not Supported
Age * IT→ CS	0.010	0.135	0.078	0.893	Not Supported
Gender → CS	-0.036	0.494	0.072	0.621	Not Supported
Gender * IT→ CS	0.064	0.955	0.955	0.340	Not Supported
Income → CS	-0.055	0.743	0.743	0.457	Not Supported
Income * IT→ CS	0.031	0.435	0.435	0.664	Not Supported
Source (s): Researcher's calculations Note(s): CS = Customer satisfaction, IT = InsurTech, STDEV= Standard Deviation					

Figure 4.16 and Table 4.21 show the moderation effect of demographics containing the t-values of all the latent variables, main constructs and moderators. The analysis has been conducted using the boot strapping process of 10,000 samples. No significant changes have been found in R^2.

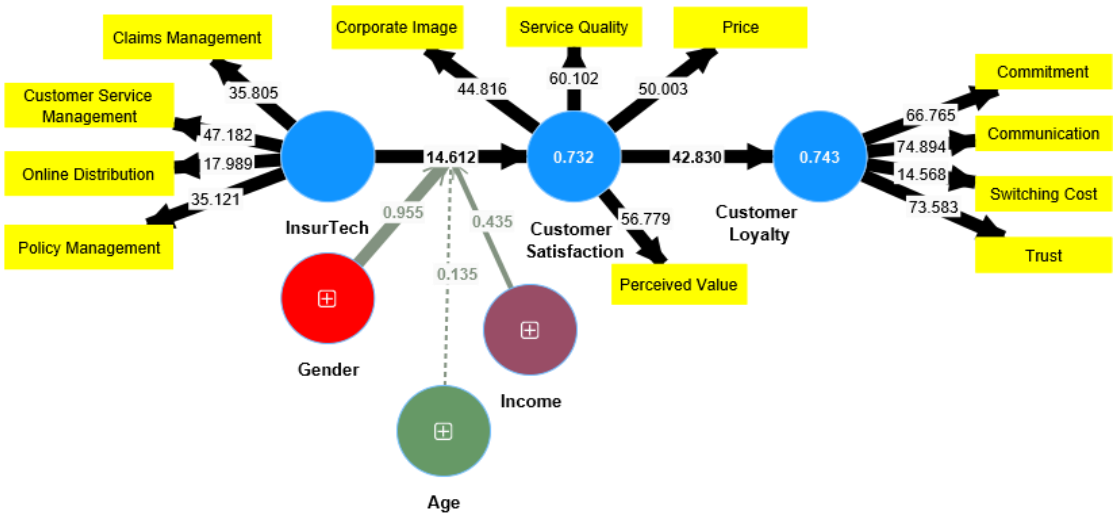


Figure 4.16: Combined Moderation Analysis (Model 2)

Table 4.22: Comparison between the Moderation Analysis of Demographics Individually and Combined

Relationship Path	**Individual Demographic Moderation**				**Combined Demographic Moderation**			
	Beta Value	T Statistics	STDEV	P Value	Beta Value	T Statistics	STDEV	P value
Age → CS	-0.067	0.809	0.082	0.419	-0.050	0.556	0.090	0.578
Age * IT→ CS	0.033	0.462	0.070	0.644	0.010	0.135	0.078	0.893
Gender → CS	-0.023	0.348	0.067	0.728	-0.036	0.494	0.072	0.621
Gender * IT→ CS	0.059	1.001	0.059	0.317	0.064	0.955	0.955	0.340
Income → CS	-0.060	0.909	0.066	0.363	-0.055	0.743	0.743	0.457
Income * IT→ CS	0.022	0.356	0.062	0.722	0.031	0.435	0.435	0.664
Source (s): Researcher's calculations Note(s): CS = Customer satisfaction, IT = InsurTech, STDEV= Standard Deviation								

Table 4.22 represents the comparison between the moderation analysis of demographic variables individually and combined. The bootstrapping process has been evaluated showing the beta values, t-statistics, standard deviation and p value. There is a difference in output values of both the analyses. Age has shown the beta value of -0.067 and t-value of 0.809 while performing individual moderation and has reported beta value -0.050 and t-value 0.556 during combined moderation analysis (Table 4.22). Although, the results are insignificant in both cases but there is difference in the values of bootstrapping measures.

The slope diagrams of all the moderators (demographic variables) have been shown in Figures 4.17, 4.18 and 4.19.

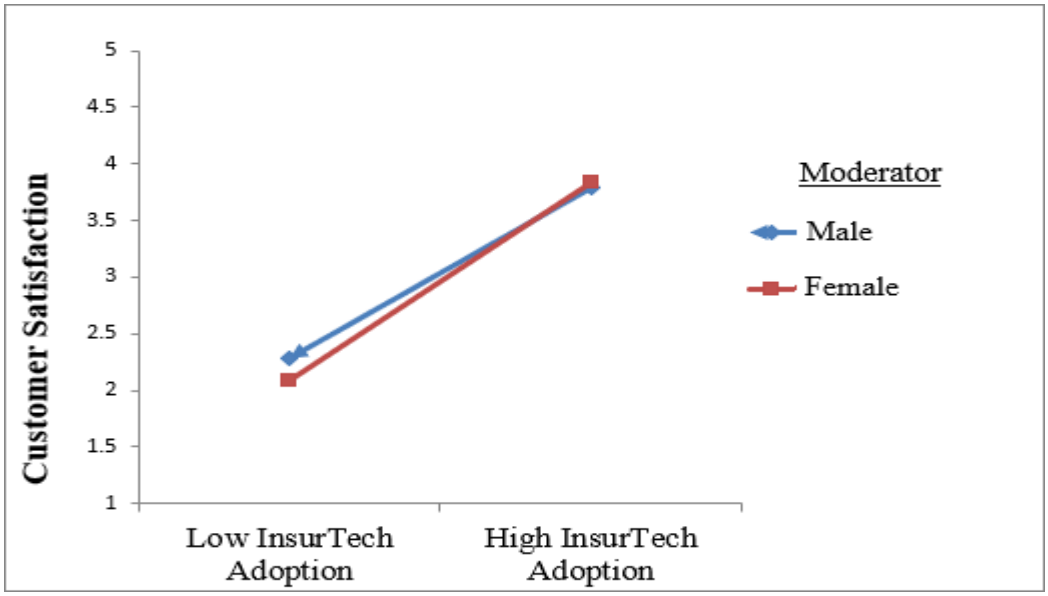


Figure 4.17: Slope analysis of Gender as a moderator

Figure 4.17 shows the slope diagram of gender being a moderator on the relationship between InsurTech adoption and Customer Satisfaction. Both the slope lines show a relationship with customer satisfaction directly as well as through interaction effect. Therefore, there is a moderation influence of gender but statistically results are insignificant.

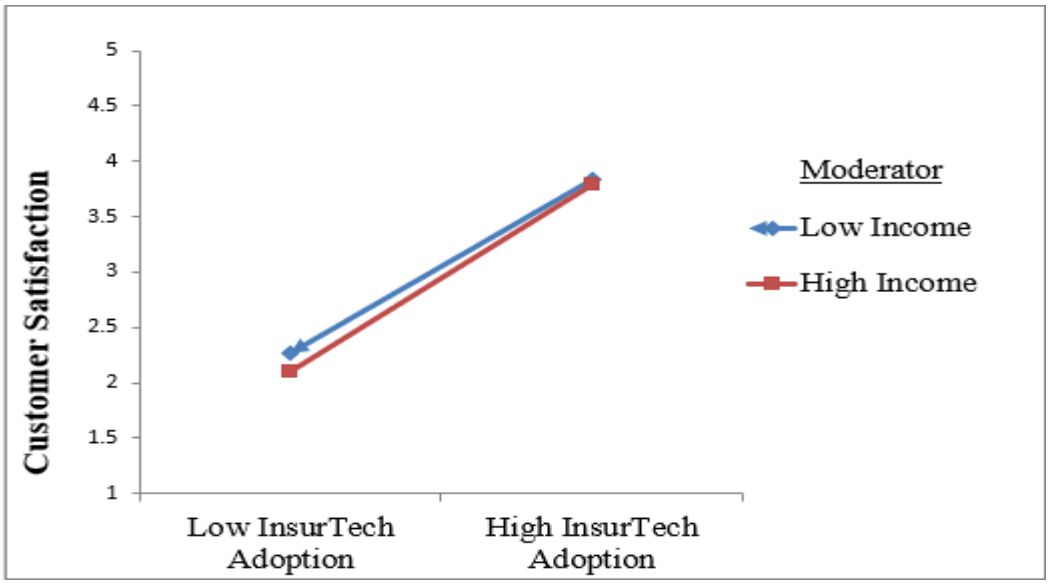


Figure 4.18: Slope analysis of Income as a moderator

Figure 4.18 shows slope diagram of income, both the lines are probably parallel across the range of InsurTech usage range. This suggests that the effect of InsurTech adoption on customer satisfaction is similar for both income groups. Since the slopes of the lines are

comparable, it has been concluded that income does not moderate the association between InsurTech adoption and customer satisfaction.

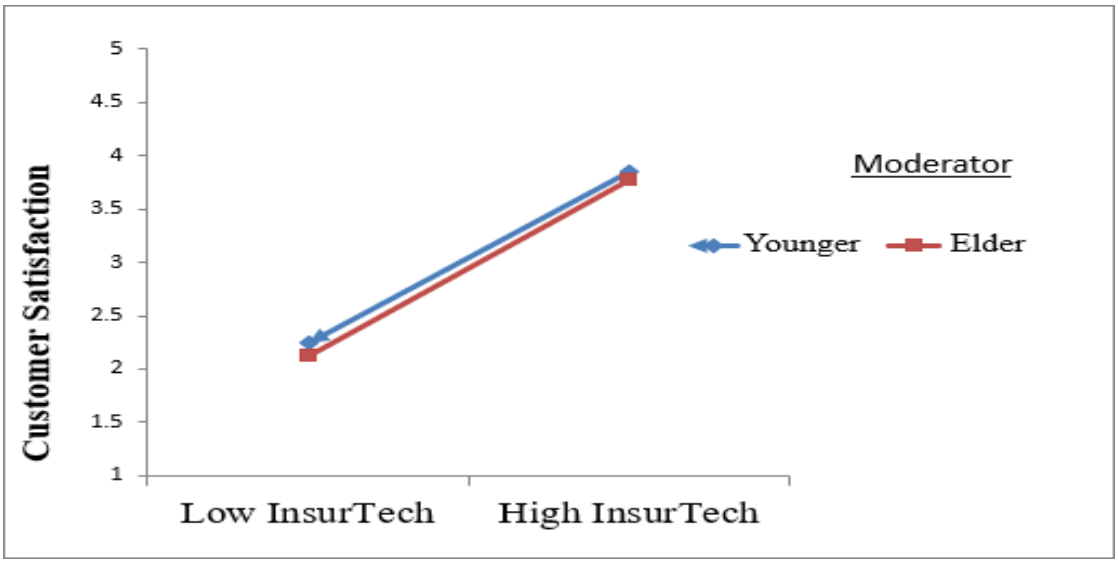


Figure 4.19: Slope analysis of Age as a moderator

Similarly, in figure 4.19, age strengthens the positive relationship of InsurTech adoption and customer satisfaction. Customer satisfaction enhances with the adoption of InsurTech services in both the age groups: young as well as elder people. But the results are not significant as per the output of analysis.

4.5 Importance Performance Map Analysis (IPMA)

IPMA offers a visually compelling approach to exploring path coefficients in PLS-SEM, combining graphical representations with practical interpretations. This technique, as described by (Hair et al., 2019), allows for comparing construct importance (predictive influence) and performance (average scores), guiding the identification of high-impact, low-performance and low-impact, high-performance relationships. The primary objective of IPMA is to investigate predecessors with higher importance but lower performance and vice versa (Hair et al., 2019). In this study, customer loyalty has been predicted by InsurTech and customer satisfaction. It is a useful tool that enables insurance companies to prioritize their efforts according to performance and importance of constructs or variables found in the study (Ringle & Sarstedt, 2016). It is also an appropriate tool technique for decision making in the presence of mediator, as it enables decision makers and researchers to thoroughly examine the indirect effects, direct effects, and total effects (Hair et al., 2017; Klarner et al., 2013). The results of IPMA analysis have been displayed in figure 4.20 and Table 4.23.

Table 4.23: IPMA Results

Constructs	**Importance (Total effects)**	**Performance**
Claims Management	0.230	71.592
Corporate Image	0.226	69.318
Customer Service Management	0.237	70.812
Online Distribution	0.189	79.985
Perceived Value	0.253	72.566
Policy Management	0.211	78.143
Price	0.231	68.221
Service Quality	0.249	72.565
Average	*0.22825*	*72.90025*
Source(s): Table by Researcher		

As per the outcomes of analysis, the construct or Perceived Value has reported the highest effect or importance (0.253). If one unit of performance of Perceived Value enhances from 72.566 to 73.556, the performance of Customer Loyalty will be increased from 70.759 to 71.012. Service Quality has reported the second highest importance. If performance of Service Quality increases by one unit from 72.565 to 73.565, the performance of Customer Loyalty will be enhanced from 70.759 to 71.008. Online Distribution has reported the highest performance indicating value 79.958, but its importance has evaluated least value (0.189).

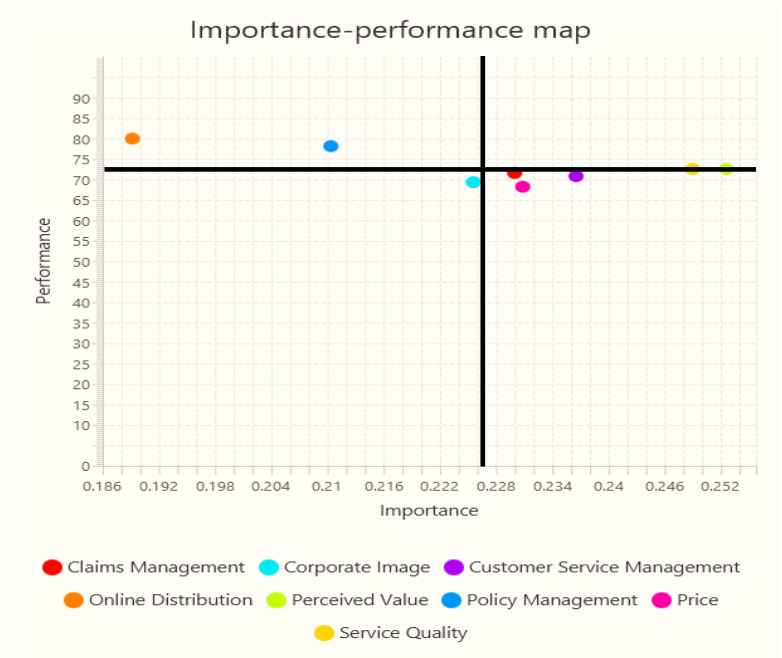


Figure 4.20: IPMA Matrix

If performance of Claims Management increases by one unit from 71.592 to 72.592, the performance of Customer Loyalty will be increased from 70.759 to 70.989. The construct of Policy Management has indicated the second highest performance value 78.143 but its importance (total effects) is second lowest value (0.211). Similarly, if the performance of Corporate Image is enhanced by one unit from 69.318 to 70.318, the performance value of Customer Loyalty will be enhanced by 70.985 (Figure 4.20) (Table 4.23).

4.6 Summary of Data Analysis

This chapter provides a thorough analysis of InsurTech adoption from the viewpoint of policyholders. The analysis reveals a positive influence of InsurTech adoption on customer satisfaction, which in turn fosters customer loyalty. Customer satisfaction plays a significant mediating role in the relationship between InsurTech adoption and loyalty which suggests that customer satisfaction is a key metric for insurance companies to achieve customer loyalty in the long run.

Table 4.24: Hypotheses Results

Hypotheses	Result
H1: There is significant influence of InsurTech adoption determinants on customer satisfaction.	Supported
H1a: There is significant influence of online distribution on customer satisfaction.	Supported
H1b: There is significant influence of policy management on customer satisfaction.	Supported
H1c: There is significant influence of claims management on customer satisfaction.	Supported
H1d: There is significant influence of customer service management on customer satisfaction.	Supported
H2: Customer satisfaction mediates the positive effect of Insurtech adoption on customer loyalty.	Supported
H3: Demographics moderate the relationship between InsurTech adoption and customer satisfaction.	Not Supported
H3a: Age moderates the relationship between InsurTech adoption and customer satisfaction.	Not Supported
H3b: Income moderates the relationship between InsurTech adoption and customer satisfaction.	Not Supported
H3c: Gender moderates the relationship between InsurTech adoption and customer satisfaction.	Not Supported

Table 4.24 shows the results of analyzed hypotheses of this study. While the moderating effect of demographics (income, gender, age) on the InsurTech-satisfaction link appears positive, these results weren't statistically significant. Among the control variables (gender, income, age) included in the model, only age demonstrated a statistically positive influence on customer loyalty.

CHAPTER FIVE

CONCLUSION, IMPLICATIONS AND FUTURE SCOPE OF THE STUDY

This chapter presents the main findings and conclusions which delves into the core of the study. In the beginning, a brief synopsis of the study has been given. Next, the research methods employed to investigate the connections between the chosen variables of the study have been discussed. Finally, the main conclusions drawn from the analysis of data have been discussed. These conclusions are based on the statistical tools employed to examine the hypotheses outlined in the previous chapter, which explored the relationship between InsurTech adoption and customer satisfaction and finally fostering their loyalty with their insurance service providers. The chapter has presented the conclusions clearly, ensuring specific findings are highlighted for each group or category in the research design. Further, the practical and theoretical implications of the findings have been elaborated, along with their contribution to existing literature in the field. This chapter concludes by acknowledging the limitations of this study and suggesting areas for future research, providing valuable insights for researchers looking to build upon this work.

5.1 Overview of the Study

The staid world of insurance is undergoing a transformation driven by technology. InsurTech, a portmanteau of “insurance” and “technology”, represents the integration of cutting-edge advancements into the traditional insurance landscape. The influence of InsurTech extends beyond risk assessment. It streamlines the entire insurance experience. InsurTech caters to the diverse needs of a dynamic society. User-friendly mobile applications and online platforms empower customers to manage their policies seamlessly. From obtaining quotes and filing claims to tracking progress and making payments, these digital tools enhance convenience and transparency.

The impact of insurance is far-reaching. For insurers, it translates to improved efficiency, reduced costs and the ability to attract new customers segments with innovative products. For customers, it signifies a more personalized, convenient and potentially more affordable insurance experience. One key aspect of InsurTech’s influence lies in the ability to personalize the insurance experience. By employing technologies like big data and analytics, InsurTech companies can create risk profiles specific to individual customers. This translates

to fairer premiums that reflect actual risk, a stark contrast to the one-size-fits-all approach often prevalent in traditional insurance. Customers perceive this as a sign of fairness and value.

In this study, the researcher identified the key determinants of InsurTech which are contributing to the enhancement of technology integration in the insurance industry. This research has investigated the impact of InsurTech on the satisfaction of customers and their loyalty towards InsurTech services.

In the **first chapter** of the thesis, an introduction to the insurance sector, its penetration globally, and a comparison between developed nations and developing nations have been discussed. Introduction to Indian insurance sector, role of insurance in economic development and then introduction to InsurTech and technologies related to InsurTech have been discussed. Additionally, this chapter explores the concept of customer satisfaction, customer loyalty and their determinants have been elaborated. Furthermore, research questions of this study have been discussed.

The **second chapter** delves into the critical analysis of existing research relevant to the current study. To organize this review effectively, the chapter breaks it down by the key variables explored in this research. Each variable has its own dedicated section examining what past research has found on the topic. These sections explore the sections namely studies related to InsurTech adoption and customer satisfaction, studies related to customer satisfaction and customer loyalty, customer satisfaction as a mediating factor, moderating influence of demographic variables namely gender, income and age and control variables employed in the study. Additionally, the chapter describes the research gap and discussed some recent studies related to insurance technologies. The conceptual model of the study has been presented in this chapter along with discussing the studies from where the variables of the study have been taken. The review of existing research on these key themes lays a strong foundation for the current study's findings and conclusions.

Chapter three describes the research methodology employed for this study. It begins by clearly defining the research problem, ensuring everyone understands the core issue being investigated. The chapter then explores the conceptual framework in detail, outlining the key variables involved in the research. Based on the previously identified research gap and the defined problem, the chapter establishes clear research objectives. Additionally, by drawing upon the reviewed literature, the chapter formulates specific hypotheses to be tested through

the research. These research objectives, which have been discussed below, provide a roadmap for the study and guide the analysis of the data. The objectives are:

1. To examine the influence of InsurTech adoption determinants on customer satisfaction.

2. To analyze the mediating effect of customer satisfaction between InsurTech adoption and customer loyalty.

3. To determine the moderating effect of demographics (Age, Income, Gender) on the relationship between InsurTech adoption determinants and customer satisfaction.

Following the establishment of research objectives, the chapter details the hypotheses formulated to address each objective. These hypotheses, derived from the reviewed literature, serve as a testable prediction about the link between the variables of the study. Further, the chapter outlines the chosen research design. Given the focus on describing and understanding the research problem, a "descriptive design" was selected. This design allows for a deep exploration of the current state of the phenomenon under investigation. After that the universe of study has been specified, sampling selection and sample size has been detailed. Furthermore, the statistical tools and the measures implemented in the study have been described. This ensures the research findings can be effectively generalized to the larger population of interest.

Chapter four describes the analysis of collected data to understand how specific aspects of InsurTech adoption influence the satisfaction of life insurance policyholders and lead to fostering their loyalty with their insurance provider. It also explores whether factors like respondents' age, gender and income play a role in these outcomes. The first section of this chapter presents descriptive statistics, giving the demographic detail of the participants. Further sections include the description of analysis performed with the software SmartPLS 4.0 which include the measurement model analysis, structural model assessment, mediating analysis, moderation analysis and importance performance analysis performed.

5.2 Conclusion

Research is a systematic process of investigation. This study has illuminated the critical role that adoption of InsurTech plays in influencing customer loyalty within the life insurance sector. The main aim of the research is to consolidate the constructs that have been validated in previous research and integrate them in a single framework to develop a model. The

developed model includes the various aspects of the constructs namely Insurtech, Customer satisfaction, and Customer loyalty. These aspects collectively impact the customer loyalty in the Indian life insurance sector.

This study demonstrates that implementing InsurTech solutions positively impacts both customer satisfaction and customer loyalty in the life insurance industry. This trend is indicative of a larger industry focus on customer-centricity, characterized by a proactive response to evolving customer demands and preferences. InsurTech systems enhance customer satisfaction customer satisfaction by expediting service delivery reducing costs.

The model's validation has been performed on the dataset of 587 respondents of life insurance policyholders. This research is the first of its kind to develop a model for assessing how InsurTech impacts customer satisfaction, customer loyalty and the mediating role of customer satisfaction in the relationship between InsurTech adoption and customer loyalty.

The predictive relevance of the developed model has been evaluated to be high. A high predictive relevance indicates that model is effective at predicting customer loyalty. This means that the identified associations between the independent variable and customer loyalty are strong and can be used to accurately forecast future customer behavior.

The application of IPMA approach not only unravels insights but also extends managerial implications crucial for the insurance sector to enhance its performance. It illuminates the imperative areas that demand focused attention to navigate the challenges inherent in the competitive digital landscape. Insurance companies may make informed decisions about technology adoption, product offerings, and customer engagement activities by identifying the elements that influence customer satisfaction. This knowledge, wielded effectively, not only impacts customer loyalty, but also has a ripple impact on the company's overall success in the dynamic landscape of the digital era.

5.3 Discussions and Theoretical Implications

The Fourth Industrial Revolution (4IR) has achieved momentum across various industries, including the insurance industry. The insurance sector has been encouraged to adapt and innovate because of 4IR, to stay relevant and cutthroat in a market that is transforming quickly (Sbindi, 2022). This study provides insights into various technologies which are associated with different working areas of the insurance sector. The insurance industry has paid some close attention to this fast-expanding trend. One of the main reasons why

InsurTech is becoming more popular is its potential to increase customer satisfaction (Mckinsey & Company, 2018). Elia et al. (2023) emphasized that the topic of InsurTech requires more focus since it varies from other businesses in terms of purpose and type of service.

This study examines the influence of adoption of InsurTech on customer satisfaction within life insurance sector. In previous studies, customer satisfaction has been discussed as a critical determinant of health insurance penetration (Ahire and Rishipathak, 2020). The current study has analyzed that adoption of InsurTech positively impacts customer satisfaction in life insurance sector. This research demonstrates a positive link between adoption of InsurTech and both customer satisfaction and loyalty within the life insurance industry. This reflects a broader trend in the insurance industry, where there is a growing emphasis on meeting the evolving demands and preferences of customers. The adoption of modern technologies and pervasive digitalization has profoundly influenced customer expectations (Pauch & Bera, 2022). and meeting these expectations is instrumental in achieving customer satisfaction. A key driver behind the growing popularity of InsurTech is its potential to enhance customer satisfaction (Catlin et al., 2018). Our results analyzed the impact of InsurTech on customer satisfaction have proved significant, thus supported H1. Vijay & Krishnaveni (2018) stated that customer satisfaction plays a crucial role by helping to understand customer needs and fostering customer loyalty. Customer loyalty is significantly influenced by customer satisfaction (Chang et al., 2017). Ruefenacht (2018) illustrated a positive link between customer satisfaction and loyalty. The findings from this research corroborate with the studies and illustrate the positive relationship between customer satisfaction and customer loyalty. Venkatesan & Jacob (2019) emphasized the imperative need of customer satisfaction to retain loyalty. Contended customers are more inclined to remain with their insurance providers and exhibit loyalty. The study emphasizes on the satisfaction of customers after adopting InsurTech services and how this satisfaction impacts the loyalty of the customers in Indian life insurance sector.

Past literature has also emphasized the mediating influence of customer satisfaction in the realm of digital banking services (Chu et al., 2012; Gunawardane, 2023). Lee (2019) demonstrated how customer satisfaction mediates the relationship between corporate social responsibilities (CSR) and customer loyalty. Previous study by (Lokesh et al., 2022) evaluated the mediating analysis of customer satisfaction between customer relationship management (CRM) and customer loyalty. The present study proved a positive and

significant role of customer satisfaction as a mediator. This finding aligns with the previous studies where the mediating role of customer satisfaction has been identified (Jamil & Akhter, 2016; Khan et al., 2022; Abdel Fattah et al; 2021), supporting H2. Furthermore, the current research also seeks to uncover the interactive role of demographic variables namely age, gender, and income. Taking gender first, there is no significant moderating influence of gender on the relationship between InsurTech adoption and customer satisfaction. This result corroborates with the previous studies by Kim (2016); Park et al., (2021); Martins & Viegas, 2015; Dalvi Esfahani et al., 2019). This study has revealed that age has no significant moderation effect in the context of insurance technology adoption. This result is in line with some previous studies Glass & Li (2010); Martins & Viegas (2015); Kaur et al. (2020). However, it contrasts with other research that found age and gender, a significant moderator, with younger individuals showing high propensity for technology adoption Chawla & Joshi (2018); Morris & Venkatesh (2000). Further, the moderating influence of income has been found to be insignificant, which aligns with some studies Park et al. (2021); Brown et al. (2006); Kaur et al. (2020). Consequently, H3a, H3b, H3c are not supported.

Previous studies have discussed the concept of InsurTech and the dimensions of InsurTech have been discussed individually. The technologies implemented in the InsurTech adoption such as AI, big data, internet of things (IoT) have been elaborated in various studies. This study covers the research gap by combining the concept of InsurTech with its vital determinants and developing a novel model contributed to the theoretical literature. The concept of customer satisfaction and its association with customer loyalty have been discussed previously, but its association with InsurTech and its determinants provides a new contribution to the theory. Furthermore, the research on InsurTech in the context of Indian life insurance is scarce. Thus, this study explores how different constructs interact to create a more user-friendly technology experience that can be effectively used to expand the InsurTech services. Another contribution to the theory is the research paper tittle “Exploring the impact of InsurTech adoption in the Indian life insurance industry: a customer satisfaction perspective” (Kaur & Singh, 2023) has been published in “The TQM Journal”.

5.4 Managerial Implications

This research is one of the initial endeavors to unveil the association among specific variables namely, InsurTech adoption, customer satisfaction, and customer loyalty, carrying several implications for insurance service providers. Insurance companies consistently aim to

encourage spontaneous decisions among users adopting InsurTech services for the best possible outcomes. Considering the positive impact of InsurTech adoption, insurance service providers should highlight the specific benefits of adopting InsurTech in their communications, emphasizing not only technology features but also the overall value it brings to the customers. This approach can stimulate the decisions of the policyholders, ultimately enhancing customer loyalty and satisfaction, and potentially expanding market share. Moreover, recognizing the strong impact of InsurTech adoption and customer satisfaction on the target variable customer loyalty, IPMA (Ringle & Sarstedt, 2016) plays its pivotal role. The IPMA approach is particularly suitable, especially in studies involving mediators as it considers both direct and indirect effects (Hair et al., 2019; Klarner et al., 2013) and moderators which includes both interaction as well as categorical moderation effects (Hair et al., 2019; Zafar et al., 2021).

The results of the IPMA analysis indicate that perceived value is the most important indicator followed by service quality. Online distribution has the highest performance value, but its importance is low as compared to other indicators of the analysis. Policy management and claims management have also performed well as per the IPMA grid. Policy management has the second highest performance value of 78.143. There are some implications for the insurance organizations to enhance the performance of claims management services to retain the loyalty of the customers. The other areas involving corporate image and management of the insurance products' prices require the need to be worked upon to retain loyalty as well as competitive advantage. It is essential to enhance the importance of policy management to retain the trust of the customers in the adoption of InsurTech services. Customer service management has good importance value but needs to enhance its performance. Online distribution is one of the key determinants of InsurTech, it is crucial to increase its importance among the InsurTech services. The quality of the services provided to the customers is one of the crucial aspects of insurance providers. The insurance companies should provide timely and accurate services to their customers which would retain the customers with the insurance provider. Furthermore, the construct of Price has a good effect, but its performance has been evaluated to be least, Insurance organizations should consider pricing an important aspect of customer satisfaction for fostering their stay with their insurance providers. Insurers can gain a competitive advantage, encourage customer loyalty, and survive in the insurance industry's fast changing digital marketplace by adopting a customer- centric approach, optimizing digital platforms, and utilizing data driven insights.

The implications of InsurTech adoption for its stakeholders are wide-reaching. For insurance companies, InsurTech improves customer experiences through more efficient and personalized services, enhancing satisfaction and loyalty. For technology provider companies, InsurTech firms have opportunities to partner with insurers and must ensure scalable and secure solutions for long-term success. Further, InsurTech boosts growth potential, making insurance companies attractive for investment, but risks like data security must be managed. There is also need to ensure data privacy, fair access to digital services, and updated regulations that support innovation while protecting consumers.

5.5 Societal Implications

The integration of technology into life insurance, or InsurTech, is having a profound effect on society, especially when it comes to how happy and committed customers feel about their insurance providers. Here's a breakdown of some potential implications:

1) Improved accessibility and convenience: Online platforms, mobile apps, and web portals allow people to explore their options, get quotes, and even purchase a policy, all without ever having to meet an agent in person. This convenience can significantly boost customer satisfaction and loyalty.

2) Personalized and tailored offerings: InsurTech platforms often provide clear and easy-to-understand information on policy details, pricing, and the claims process. Additionally, real-time updates, digital communication channels, and self-service options allow customers to actively manage their insurance, fostering trust and loyalty with their provider.

3) Enhanced transparency and customer engagement: InsurTech streamlines the claims process by utilizing automated systems. This reduces delays and significantly improves the customer experience when filing a claim. Faster settlements and clear communication during this process can have a positive impact on customer loyalty.

5.6 Limitations and Future Scope of the Study

Even the most exceptional research can benefit from critical evaluation. Openly acknowledging limitations is essential for ensuring the integrity of the research process and driving advancements in the field. By recognizing potential shortcomings, such as the generalizability of findings or the comprehensiveness of data collection methods, researchers can pave the way for future studies to build upon their work and refine understanding in the

chosen area. This continuous process of critique and improvements is vital for the ongoing process of research.

- **Generalizability:** This study's data collection was limited to the northern region of India. While this provides valuable insights into customer experiences in that specific area, it restricts the generalizability of the findings to the entire Indian life insurance market. Future research could significantly strengthen the understanding of InsurTech adoption's impact by incorporating data from a more geographically diverse sample.
- **Timeframe:** Another limitation of this study is the cross-sectional design. This approach offers a scenario of the relationships between variables at a specific time. While valuable, it cannot capture how these relationships might change over time. To achieve a deeper understanding of the long-term impact of InsurTech adoption, future research could benefit from employing a longitudinal approach.
- **Industry Specificity:** This study focused on the life insurance sector within India. For a more comprehensive understanding, future research could evolve testing the conceptual framework within the non-life insurance sector as well. By comparing and contrasting the findings across both life and non-life insurance, researchers could gain valuable insights into potential variations in customer behavior and InsurTech adoption patterns between these two segments.
- **Demographic Moderation:** In this study moderating effect of three demographic variables: gender, income and age has been explored. While these are important factors, future research could delve deeper into demographic influences by incorporating other demographic variables.

Future Research Opportunities

- **Longitudinal Studies:** By conducting a longitudinal study, researchers could track how customer satisfaction and loyalty evolve over the extended period as InsurTech adoption continues to grow within the Indian life insurance sector. This would provide valuable insights into the long-term impact of InsurTech on customer behavior.
- **Comparative Analysis:** A comparative analysis across different customer segments within the Indian life insurance market would be insightful. For example, exploring how InsurTech adoption influences customer satisfaction and loyalty among different age groups or income levels could reveal valuable variations.

- **Qualitative Research Methods:** Integrating quantitative data with qualitative research methods, such as in-depth interviews and focus groups, could yield richer insights into customer experiences and perceptions of InsurTech.

REFERENCES

Abdel Fattah, F. A. M., Dahleez, K. A., Darwazeh, R. N., & Al Alawi, A. M. M. (2021). Influence of service quality on consumer loyalty: a mediation analysis of health insurance. The TQM Journal, 33(8), 1787- 1805.

Agnihotri, S., Shiva, A., & Khan, F. N. (2023). Investigating forms of graduate capital and their relationship to perceived employability: an application of PLS predict and IPMA. *Higher Education, Skills and Work-Based Learning*, *13*(1), 179–197. https://doi.org/10.1108/HESWBL-07-2022-0146

Ahire, N., & Rishipathak, P. (2020). Assessment of Satisfaction Levels of Health Insurance Policy Holders with Claims Settlement Process in Pune, Maharashtra. Indian Journal of Forensic Medicine &Toxicology, 14(4), 7179-7183.

Ahmad Ganaie, T., & Ahmad Bhat, M. (2021). *International Journal of Management and Development Studies Switching Costs and Customer Loyalty: A Review of literature*. *10*(05), 7–14. https://www.ijmds.in/

Akram, U., Hui, P., Khan, M. K., Hashim, M., & Rasheed, S. (2016). Impact of Store Atmosphere on Impulse Buying Behaviour: Moderating Effect of Demographic Variables. *International Journal of U- and e- Service, Science and Technology*, *9*(7), 43–60. https://doi.org/10.14257/ijunesst.2016.9.7.05

Albari, A. (2019). *The Influence of Product Quality, Service Quality and Price on Customer Satisfaction and Loyalty*. https://www.researchgate.net/publication/339796640

Albrecher, H., Bommier, A., Filipović, D., Koch-Medina, P., Loisel, S., & Schmeiser, H. (2019). Insurance: models, digitalization, and data science. *European Actuarial Journal*, *9*(2), 349–360. https://doi.org/10.1007/s13385-019-00209-x

Alexopoulos, C., & Saxena, S. (2023, July). Moderating effects of gender, perceived importance and usage experience towards Open Government Data (OGD) adoption and usage. In *Proceedings of the 24th Annual International Conference on Digital Government Research* (pp. 205-213).

Ali Memon, M., Ting, H., Cheah, J.-H., Thurasamy, R., Chuah, F., & Huei Cham, T. (2020). Journal of Applied Structural Equation Modeling SAMPLE SIZE FOR SURVEY RESEARCH: REVIEW AND RECOMMENDATIONS. In *Journal of Applied Structural Equation Modeling* (Vol. 4, Issue 2).

Ali, A., & Tausif, M. R. (2018). Service quality, customers' satisfaction, and profitability: An empirical study of Saudi Arabian insurance sector. *Investment Management and Financial Innovations*, *15*(2), 232–247. https://doi.org/10.21511/imfi.15(2).2018.21

Alok, K. R., & Srivastava, M. (2013). The Antecedents of Customer Loyalty: An Empirical Investigation in Life Insurance Context. *Journal of Competitiveness*, *5*(2), 139–163. https://doi.org/10.7441/joc.2013.02.10

Andranurviza, A. Y., Mulyati, H., & Munnadar, J. M. (2022). The Impact of Digital Application Usage on Customer Experience, Satisfaction, and Loyalty in A Life Insurance Company. *Business Review and Case Studies*. https://doi.org/10.17358/brcs.3.1.1

Andreassen, T. W., & Lindestad, B. (1998). Customer loyalty and complex services. The impact of corporate image on quality, customer satisfaction and loyalty for customers with varying degrees of service expertise. *International Journal of Service Industry Management*, *9*(1), 7–23. https://doi.org/10.1108/09564239810199923

Angima, C., & Jebiwott, J. (2022). EFFECT OF CLAIMS DIGITALIZATION ON SERVICE DELIVERY BY INSURANCE COMPANIES IN KENYA. In *African Journal of Emerging Issues (AJOEI). Online ISSN* (Vol. 4, Issue 4). AJOEI.

Apergis, N., Gabrielsen, A., Payne, J., & Zagaglia, P. (2012). Testing for Convergence in the European Insurance Sector: A Non-Linear Factor Approach. *Asian Journal of Finance & Accounting*, *4*(2), 1.

Ariffin, Z. Z., Yaakop, A. Y., Isa, N., Omar, S. S., Aliman, K., & Hassan, R. A. (2018). Service Quality as Drivers of Customer Loyalty and Intention to Switch: Modeling the Mediating Effect of Customer Satisfation. In *International Journal of Engineering & Technology* (Vol. 7). www.sciencepubco.com/index.php/IJET

Arora, P., & Narula, S. (2018). Linkages between service quality, customer satisfaction and customer loyalty: A literature review. IUP Journal of Marketing Management, 17(4), 30.

Atiyah, L. A. (2017). Impact of service quality on customer satisfaction. *Australian Journal of Basic and Applied Sciences*, *11*(5), 20-28.

Baker, T. (2010). Risk, Insurance, and the Social Construction of Responsibility. *Embracing Risk: The Changing Culture of Insurance and Responsibility*, 33.

Ball, D., Simões Coelho, P., & Machás, A. (2004). The role of communication and trust in explaining customer loyalty: An extension to the ECSI model. *European Journal of Marketing*, *38*(9–10), 1272–1293. https://doi.org/10.1108/03090560410548979

Barich, H., & Kotler, P. (1991). A framework for marketing image management. *MIT Sloan Management Review*, *32*(2), 94.

Becker, J.-M., Ringle, C. M., & Sarstedt, M. (2018). Journal of Applied Structural Equation Modeling ESTIMATING MODERATING EFFECTS IN PLS-SEM AND PLSc-SEM: INTERACTION TERM GENERATION*DATA TREATMENT. In *Journal of Applied Structural Equation Modeling* (Vol. 2, Issue 2).

Becker, T. E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods*, *8*(3), 274–289. https://doi.org/10.1177/1094428105278021

Bernardo, S. E., & Rome, N. (2022). *Palgrave Studies in Financial Services Technology*. http://www.palgrave.com/gp/series/14627

Bharti, K., Agarwal, R., & Satsangi, A. K. (2024). The transformative service performance of InsurTech companies: using PLS-SEM and IPMA approach for examining the purchase behavior of InsurTech customers. Journal of Financial Services Marketing, 1-19.

Bolton, R. N., & Drew, J. H. (1991). A multistage model of customers' assessments of service quality and value. *Journal of consumer research*, *17*(4), 375-384.

Bouranta, N., Chitiris, L., & Paravantis, J. (2009). The relationship between internal and external service quality. *International Journal of Contemporary Hospitality Management*, *21*(3), 275-293.

Brady, M. K., Knight, G. A., Cronin, J. J., Tomas, G., Hult, M., & Keillor, B. D. (2005). Removing the contextual lens: A multinational, multi-setting comparison of service evaluation models. *Journal of Retailing*, *81*(3), 215–230. https://doi.org/10.1016/j.jretai.2005.07.005

Bruggmann, P., Catlin, T., Chinzewski, J., Lorenz, J., & Prymaka, S. (2018). Claims in the digital age: How insurers can get started. *McKinsey& Company, Insurance Practice*.

Budur, T., & Poturak, M. (2021). Employee performance and customer loyalty: Mediation effect of customer satisfaction. *Middle East Journal of Management*, *8*(5), 453-474.

Buehler, P., & Maas, P. (2015). *I-Society*. http://quantifiedself.com/https://www.researchgate.net/profile/Peter-Maas-3/publication/284435535_I-Society/links/5653124208ae4988a7af3dbb/I-Society.pdf

Bukhtiarova, A., Hayriyan, A., Bort, N., & Semenog, A. (2018). Modeling of FinTech market development (on the example of Ukraine). In *Innovative Marketing* (Vol. 14, Issue 4, pp. 34–45). LLC CPC Business Perspectives. https://doi.org/10.21511/im.14(4).2018.03

Brown, S. A., Venkatesh, V., & Bala, H. (2006). Household technology use: Integrating household life cycle and the model of adoption of technology in households. The Information Society, 22(4), 205-218.

Cakici, A. C., Akgunduz, Y., & Yildirim, O. (2019). The impact of perceived price justice and satisfaction on loyalty: the mediating effect of revisit intention. *Tourism Review*, *74*(3), 443-462.

Cameran, M., Moizer, P., & Pettinicchio, A. (2010). Customer satisfaction, corporate image, and service quality in professional services. *Service Industries Journal*, *30*(3), 421–435. https://doi.org/10.1080/02642060802236111

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., ... & Walker, K. (2020). Purposive sampling: complex or simple? Research case examples. Journal of research in Nursing, 25(8), 652-661.

Cao, S., Lyu, H., & Xu, X. (2020). InsurTech development: Evidence from Chinese media reports. *Technological Forecasting and Social Change*, *161*, 120277.

Cappiello, A. (2020). The Technological Disruption of Insurance Industry: A Review. *International Journal of Business and Social Science*, *11*(1). https://doi.org/10.30845/ijbss.v11n1a1

Carelse, B. (2017). *Investigating the impact of service quality and customer satisfaction on customer loyalty in life insurance in South Africa*. http://etd.uwc.ac.za/

Carlson, K. D., & Wu, J. (2012). The illusion of statistical control: Control variable practice in management research. *Organizational research methods*, *15*(3), 413-435.

Caruana, A. (2002). Service loyalty: The effects of service quality and the mediating role of customer satisfaction. *European Journal of Marketing*, *36*(7–8), 811–828. https://doi.org/10.1108/03090560210430818

Casino, F., Dasaklis, T. K., & Patsakis, C. (2019). A systematic literature review of blockchain-based applications: Current status, classification and open issues. In *Telematics and Informatics* (Vol. 36, pp. 55–81). Elsevier Ltd. https://doi.org/10.1016/j.tele.2018.11.006

Chang, H. H., Wang, Y. H., & Yang, W. Y. (2009). The impact of e-service quality, customer satisfaction and loyalty on e-marketing: Moderating effect of perceived value. *Total Quality Management and Business Excellence*, *20*(4), 423–443. https://doi.org/10.1080/14783360902781923

Chang, M., Jang, H. B., Li, Y. M., & Kim, D. (2017). The relationship between the efficiency, service quality and customer satisfaction for state-owned commercial Banks in China. *Sustainability (Switzerland)*, *9*(12). https://doi.org/10.3390/su9122163

Chaudhry, I. S., Malik, S., & Ul Hassan, A. (2009). The Impact of Socioeconomic and Demographic Variables on Poverty: A Village Study. In *The Lahore Journal of Economics* (Vol. 14, Issue 1).

Chawla, D., & Joshi, H. (2017). *Role of demographics as moderator in mobile banking adoption*.

Chawla, D., & Joshi, H. (2018). The Moderating Effect of Demographic Variables on Mobile Banking Adoption: An Empirical Investigation. *Global Business Review*, *19*(3_suppl), S90–S113. https://doi.org/10.1177/0972150918757883

Chen, T. J. (2021). The role of distribution channels in market discipline for the life insurance industry. *Geneva Papers on Risk and Insurance: Issues and Practice*, *46*(1), 107–129. https://doi.org/10.1057/s41288-020-00172-9

Cheng, C., Chua, K., Xiang Katrin, C., Sze, K., Lai, Y., Hsien Tan, M., & Pei, W. (2014). *DETERMINANTS OF CUSTOMER SATISFACTION IN CONVENTIONAL INSURANCE SERVICES: THE CASE OF MALAYSIA BACHELOR OF BUSINESS ADMINISTRATION (HONS) BANKING AND FINANCE UNIVERSITI TUNKU ABDUL RAHMAN FACULTY OF BUSINESS AND FINANCE DEPARTMENT OF FINANCE*.

Ching, K. H., Teoh, A. P., & Amran, A. (2020). A Conceptual Model of Technology Factors to InsurTech Adoption by Value Chain Activities. *2020 IEEE Conference on E-Learning,*

e-Management and e-Services, IC3e 2020, 88–92. https://doi.org/10.1109/IC3e50159.2020.9288465

Chu, P. Y., Lee, G. Y., & Chao, Y. (2012). Service quality, customer satisfaction, customer trust, and loyalty in an e-banking context. Social Behavior and Personality: an international journal, 40(8), 1271-1283.

Chung, M., Ko, E., Joung, H., & Kim, S. J. (2020). Chatbot e-service and customer satisfaction regarding luxury brands. *Journal of Business Research*, *117*, 587–595. https://doi.org/10.1016/j.jbusres.2018.10.004

Cochran, W. G. (1977). *Sampling techniques*. john wiley & sons.

Cohen, J. (1992). Statistical power analysis. Current directions in psychological science, 1(3), 98-101.

Cosma, S., & Rimo, G. (2024). Redefining insurance through technology: Achievements and perspectives in Insurtech. In Research in International Business and Finance (Vol. 70). Elsevier Ltd. https://doi.org/10.1016/j.ribaf.2024.102301

Cossío-Silva, F. J., Revilla-Camacho, M. Á., Vega-Vázquez, M., & Palacios-Florencio, B. (2016). Value co-creation and customer loyalty. *Journal of Business Research*, *69*(5), 1621–1625. https://doi.org/10.1016/j.jbusres.2015.10.028

Creswell, J. W., & Creswell, J. D. (2017). Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications.

Cretu, A. E., & Brodie, R. J. (2007). The influence of brand image and company reputation where manufacturers market to small firms: A customer value perspective. *Industrial marketing management*, *36*(2), 230-240.

Dahiyat, S. E., Akroush, M. N., & Abu-Lail, B. N. (2011). An integrated model of perceived service quality and customer loyalty: An empirical examination of the mediation effects of customer satisfaction and customer trust. *International Journal of Services and Operations Management*, *9*(4), 453–490. https://doi.org/10.1504/IJSOM.2011.041242

Dalvi-Esfahani, M., Shahbazi, H., & Nilashi, M. (2019). Moderating effects of demographics on green information system adoption. International Journal of Innovation and Technology Management, 16(01), 1950008.

Damtew Gizaw, K., & pagidimarri, D. (2014). *A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal-Included in the International Serial Directories The mediation effect of customer satisfaction on service quality-customer loyalty link in insurance sector of Ethiopia-A study A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal-Included in the International Serial Directories*. *4*(1). http://www.ijmra.us

Damtew, K., & Pagidimarri, V. (2013). The role of trust in building customer loyalty in insurance sector: A study. *IOSR journal of business and management*, *14*(4), 82-93.

Danks, N. P., & Ray, S. (2018). Predictions from partial least squares models. In *Applying Partial Least Squares in Tourism and Hospitality Research* (pp. 35–52). Emerald Group Publishing Ltd. https://doi.org/10.1108/978-1-78756-699-620181003

de Andrés-Sánchez, J., & Gené-Albesa, J. (2024). Not with the bot! The relevance of trust to explain the acceptance of chatbots by insurance customers. Humanities and Social Sciences Communications, 11(1). https://doi.org/10.1057/s41599-024-02621-5

Dechawatanapaisal, D. (2018). The moderating effects of demographic characteristics and certain psychological factors on the job embeddedness – turnover relationship among Thai health-care employees. *International Journal of Organizational Analysis*, *26*(1), 43–62. https://doi.org/10.1108/IJOA-11-2016-1082

Demianchuk, M., Kotlubai, V., & Shramko, H. (2019). The influence of globalization and integration processes on the activity of insurance organizations. *Economics. Ecology. Socium*, *3*(3), 53-64.

Deshpande, R., Farley, J. U., & Webster, F. E. (2000). Triad lessons: Generalizing results on high performance firms in five business-to-business markets. In *Intern. J. of Research in Marketing* (Vol. 17). www.elsevier.comrlocaterijresmar

Dey, S. (2022). The Importance of Health Insurance in the Various Insurance Sectors in India: A Review. *International Journal of Industrial Marketing*, *7*(1), 31. https://doi.org/10.5296/ijim.v7i1.20485

Dijkstra, T. K., & Henseler, J. (2015). Consistent Partial Least Squares Path Modeling CONSISTENT PARTIAL LEAST SQUARES PATH MODELING 1. *Source: MIS Quarterly*, *39*(2), 297–316. https://doi.org/10.2307/26628355

Dolce, P., Esposito Vinzi, V., & Lauro, C. (2017). Predictive path modeling through PLS and other component-based approaches: Methodological issues and performance evaluation. In *Partial Least Squares Path Modeling: Basic Concepts, Methodological Issues and Applications* (pp. 153–172). Springer International Publishing. https://doi.org/10.1007/978-3-319-64069-37

Drakulevski, L., & Kaftandzieva, T. (2021). Risk Assessment Providing Solid Grounds For Strategic Management In The Insurance Industry. *European Scientific Journal ESJ*, *17*(15). https://doi.org/10.19044/esj.2021.v17n15p38

Eckert, C., & Osterrieder, K. (2020). How digitalization affects insurance companies: overview and use cases of digital technologies. *Zeitschrift Fur Die Gesamte Versicherungswissenschaft*, *109*(5), 333–360. https://doi.org/10.1007/s12297-020-00475-9

Eckert, C., Eckert, J., & Zitzmann, A. (2021). The status quo of digital transformation in insurance sales: an empirical analysis of the german insurance industry. *Zeitschrift Fur Die Gesamte Versicherungswissenschaft*, *110*(2–3), 133–155. https://doi.org/10.1007/s12297-021-00507-y

Eckert, C., Neunsinger, C., & Osterrieder, K. (2022). Managing customer satisfaction: digital applications for insurance companies. *Geneva Papers on Risk and Insurance: Issues and Practice*, *47*(3), 569–602. https://doi.org/10.1057/s41288-021-00257-z

EIOPA. 2019. Big Data Analytics in Motor and Health Insurance: A Thematic Review. Retrieved 31 May 2021 from

https://register.eiopa.europa.eu/Publications/EIOPA_BigDataAnalytics_ThematicReview_April2019.pdf

El Arif, F. Z. (2020). Insurance Distribution in the Digital Age. *IOSR Journal of Economics and Finance (IOSRJEF)*, *11*(3), 31-38.

Elgarhy, S. D., & Abou-Shouk, M. (2022). The influence of co-creation and subjective norms on customer loyalty: customer satisfaction as a mediator. *Journal of Quality Assurance in Hospitality & Tourism*, 1-21.

Elia, G., Stefanelli, V., & Ferilli, G. B. (2023). Investigating the role of Fintech in the banking industry: what do we know?. European Journal of Innovation Management, 26(5), 1365-1393.

Eling, M., & Lehmann, M. (2018). The Impact of Digitalization on the Insurance Value Chain and the Insurability of Risks. *Issues and Practice*, *43*(3), 359–396. https://doi.org/10.2307/48720213

Eling, M., Nuessle, D., & Staubli, J. (2022). The impact of artificial intelligence along the insurance value chain and on the insurability of risks. *Geneva Papers on Risk and Insurance: Issues and Practice*, *47*(2), 205–241. https://doi.org/10.1057/s41288-020-00201-7

Flores, A. F., De Sousa Saldanha, E., & Vong, M. F. (2020). The Effect of Customer Satisfaction Mediation for the Relationship Between Service Quality and Customer Loyalty. In *Journal of Business and Management* (Vol. 2). https://tljbm.org/jurnal/index.php/tljbm56

Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Bryant, B. E. (1996). The American Customer Satisfaction Index: Nature, Purpose, and Findings. In *Source: Journal of Marketing* (Vol. 60, Issue 4).Fornell, C. (1992). A national customer satisfaction barometer: The Swedish experience. *Journalof marketing*, *56*(1), 6-21.

Fritzsch, S., Scharner, P., & Weiß, G. (2021). Estimating the relation between digitalization and the market value of insurers. *Journal of Risk and Insurance*, *88*(3), 529-567.

Gatzioufa, P., & Saprikis, V. (2022). A literature review on users' behavioral intention toward chatbots' adoption. In *Applied Computing and Informatics*. Emerald Group Holdings Ltd. https://doi.org/10.1108/ACI-01-2022-0021

Ghosh, A. (2013). Life insurance in India: The relationship between reforms and growth in business. *Geneva Papers on Risk and Insurance: Issues and Practice*, *38*(1), 88–112. https://doi.org/10.1057/gpp.2012.2

Glass, R., & Li, S. (2010). Social influence and instant messaging adoption. Journal of Computer Information Systems, 51(2), 24-30.

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge Management: An Organizational Capabilities Perspective. In *Source: Journal of Management Information Systems* (Vol. 18, Issue 1).

Goldstein, S. M., Johnston, R., Duffy, J., & Rao, J. (2002). The service concept: the missing link in service design research? In *Journal of Operations Management* (Vol. 20).

Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. *Journal of management information systems*, *35*(1), 220-265.

Gowanit, C., Thawesaengskulthai, N., Sophatsathit, P., & Chaiyawat, T. (2016). Mobile claim management adoption in emerging insurance markets: An exploratory study in Thailand. *International Journal of Bank Marketing*, *34*(1), 110–130. https://doi.org/10.1108/IJBM-04-2015-0063

Gray, E. R., & Balmer, J. M. T. (1998). Managing Corporate Image and Corporate Reputation. *Long Range Planning*, *31*(5), 695–702. https://doi.org/10.1016/S0024-6301(98)00074-0

Grima, S., Spiteri, J., & Romānova, I. (2020). A STEEP framework analysis of the key factors impacting the use of blockchain technology in the insurance industry. *Geneva Papers on Risk and Insurance: Issues and Practice*, *45*(3), 398–425. https://doi.org/10.1057/s41288-020-00162-x

Gunawardane, G. (2023). Enhancing customer satisfaction and experience in financial services: a survey of recent research in financial services journals. Journal of Financial Services Marketing, 28(2), 255-269.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. In *European Business Review* (Vol. 31, Issue 1, pp. 2–24). Emerald Group Publishing Ltd. https://doi.org/10.1108/EBR-11-2018-0203

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E. (2013). Multivariate Data Analysis. United Kingdom: Pearson.

Hartono, M., & Raharjo, H. (2015). Exploring the mediating role of affective and cognitive satisfaction on the effect of service quality on loyalty. *Total Quality Management and Business Excellence*, *26*(9–10), 971–985. https://doi.org/10.1080/14783363.2015.1068595

Hayes, A. F. (2017). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. Guilford publications.

He, Y., Chan, L. K., & Tse, S. K. (2008). From consumer satisfaction to repurchase intention: The role of price tolerance in a competitive service market. *Total Quality*

Management and Business Excellence, *19*(9), 949–961. https://doi.org/10.1080/14783360802224628

Helgesen, Ø. (2006). Are Loyal Customers Profitable? Customer Satisfaction, Customer (Action) Loyalty and Customer Profitability at the Individual Level. *Journal of Marketing Management*, *22*(3–4), 245–266. https://doi.org/10.1362/026725706776861226

Henseler, J., & Fassott, G. (2010). Testing moderating effects in PLS path models: An illustration of available procedures. *Handbook of partial least squares: Concepts, methods and applications*, 713-735.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Holland, C. P. (n.d.). *Artificial Intelligence (AI) and Digital Transformation in the Insurance Market: A Case Study Analysis of BGL Group*. https://hdl.handle.net/10125/79890

Hu, H. H., Kandampully, J., & Juwaheer, T. D. (2009). Relationships and impacts of service quality, perceived value, customer satisfaction, and image: an empirical study. *The service industries journal*, *29*(2), 111-125.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Humphrey, J., Mansell, R., Paré, D., & Schmitz, H. (2003). The Reality of E-Commerce with Developing Countries. A report prepared for the Department for International Development's Globalisation and Poverty Programme jointly by the London School of Economics and the Institute of Development Studies, Sussex, London/Falmer. *Sussex, London/Falmer, March available at: www. gapresearch. org/production/ecommerce. html*.

Inamdar, M. N. M. (2020). Perceptions and Preferences of Policy Holders Towards Insurance Products Offered by Select Life Insurance Companies in Vijayapur District.

International, K. (2020). *Insurance companies stay the course on innovation*.

Iyawe, O. O., & Osamwonyi, I. O. (2017). Financial Development and Life Insurance Demand in Sub-Sahara Africa. *International Journal of Financial Research*, *8*(2), 163. https://doi.org/10.5430/ijfr.v8n2p163

Jamil, H., & Akhter, W. (2016). Investigating the impact of Shari'ah perception on customer switching intentions: A study of Takāful and conventional insurance. *Cogent Business & Management*, *3*(1), 1261525.

Jnawali, G., & Jaiswal, A. (2022). Determinants of Demand for Life Insurance Policy in Kapilvastu District. *The Lumbini Journal of Business and Economics*, *10*(1-2), 20-44.

Kaigorodova, G., Mustafina, A., Pyrkova, G., Grzebyk, M., & Belinskaja, L. (2021). Digitalization of the insurance business: Systematization of net effects through the example of Russia. *Insurance Markets and Companies*, *12*(1), 32–42. https://doi.org/10.21511/INS.12(1).2021.03

Kamisah, I. ♣, Wan, J., Tin, C., & Phooi M'ng Chan, J. (2021). The Mediating Role of Customer Satisfaction in the relationship between Service Quality and Customer Loyalty. In *MANAGEMENT AND ACCOUNTING REVIEW* (Vol. 20).

Kanojia, P., & Lal, M. (2023). Moderation effect of demographic factors in adoption of electronic payments. *International Journal of Management Practice*, *16*(1), 18-37.

Kanyama, J., Nurittamont, W., & Siripipatthanakul, S. (2022). Hotel Service Quality and Its Effect on Customer Loyalty : The Case of Ubon Ratchathani, Thailand during COVID-19 Pandemic. In *Journal of Management in Business, Healthcare, and Education (JMBHE)* (Vol. 1, Issue 2).

Kar, A. K., & Navin, L. (2021). Diffusion of blockchain in insurance industry: An analysis through the review of academic and trade literature. In *Telematics and Informatics* (Vol. 58). Elsevier Ltd. https://doi.org/10.1016/j.tele.2020.101532

Kaur, A. (2022). Perceived Website Efficacy for Life Insurance Companies: Insights From a Best-Worst Method. *International Journal of Information Technology Project Management*, *13*(3). https://doi.org/10.4018/IJITPM.313631

Kaur, J., Kaur, S., Syan, A. S., & Sharma, R. R. (2020). Factors influencing the adoption of payment banks in India using an extended TAM. Asia-Pacific Journal of Management Research and Innovation, 16(4), 309-321.

Kaur, P., & Singh, M. (2023). Exploring the impact of InsurTech adoption in Indian life insurance industry: a customer satisfaction perspective. TQM Journal. https://doi.org/10.1108/TQM-06-2023-0186

Kaura, V., Prasad, C. S. D., & Sharma, S. (2015). Service quality, service convenience, price and fairness, customer loyalty, and the mediating role of customer satisfaction. *International Journal of Bank Marketing*, *33*(4), 404–422. https://doi.org/10.1108/IJBM-04-2014-0048

Kelley, K. H., Fontanetta, L. M., Heintzman, M., & Pereira, N. (2018). Artificial Intelligence: Implications for Social Inflation and Insurance. In *Risk Management and Insurance Review* (Vol. 21, Issue 3, pp. 373–387). Blackwell Publishing Ltd. https://doi.org/10.1111/rmir.12111

Kemboi, J. J. (2022). *Effect of Claims Digitalization on Service Delivery by Insurance Companies in Kenya* (Doctoral dissertation, University of Nairobi).

Kester, J. (2022). Insuring future automobility: A qualitative discussion of British and Dutch car insurer's responses to connected and automated vehicles. *Research in Transportation Business & Management*, *45*, 100903.

Kewal, T., & Saxena, C. (2023, June). Transition from Traditional Insurance Sector to InsurTech: Systematic Analysis and Future Research Directions. In International Conference on Data Analytics & Management (pp. 473-487). Singapore: Springer Nature Singapore.

Khare, A., Dixit, S., Chaudhary, R., Kochhar, P., & Mishra, S. (2012). Customer behavior toward online insurance services in India. *Journal of Database Marketing & Customer Strategy Management*, *19*, 120-133.

Khan, R. U., Salamzadeh, Y., Iqbal, Q., & Yang, S. (2022). The Impact of Customer Relationship Management and Company Reputation on Customer Loyalty: The Mediating Role of Customer Satisfaction. *Journal of Relationship Marketing,* 21(1), 1–26. https://doi.org/10.1080/15332667.2020.1840904

Khokhar, Z., Laghari, I., & Lakhani, M. Q. (2019). Factors Affecting Customer Loyalty in Banking Sector of Hyderabad, Pakistan: A Study on Conventional and Islamic Banking. *South Asian Journal of Social Studies and Economics*, 1–16. https://doi.org/10.9734/sajsse/2019/v5i330148

Kim, D. J. (2012). An investigation of the effect of online consumer trust on expectation, satisfaction, and post-expectation. *Information Systems and E-Business Management*, *10*(2), 219–240. https://doi.org/10.1007/s10257-010-0136-2

Kim, J. (2016). An extended technology acceptance model in behavioral intention toward hotel tablet apps with moderating effects of gender and age. International Journal of Contemporary Hospitality Management, 28(8), 1535-1553.

Kimberly, P., Grima, S., & Özen, E. (2022). Perceived Effectiveness of Digital Transformation and InsurTech Use in Malta: A Study in the Context of the European Union's Green Deal. In *Big Data: A Game Changer for Insurance Industry* (pp. 239-263). Emerald Publishing Limited.

Kiwanuka, A., & Sibindi, A. B. (2024). Digital Literacy, Insurtech Adoption and Insurance Inclusion in Uganda. Journal of Risk and Financial Management, 17(3). https://doi.org/10.3390/jrfm17030119

Klarner, P., Sarstedt, M., Hoeck, M., & Ringle, C. M. (2013). Disentangling the effects of team competences, team adaptability, and client communication on the performance of management consulting teams. *Long Range Planning*, *46*(3), 258–286. https://doi.org/10.1016/j.lrp.2013.03.001

Kock, N., & Hadaya, P. (2018). Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. *Information Systems Journal*, *28*(1), 227–261. https://doi.org/10.1111/isj.12131

Koju, R., Subedi, S. D., & Koju, L. (2020). Impact of Lapsed Policies in Life Insurance Industries of Nepal. *Nepalese Journal of Insurance and Social Security*, *3*(3), 64-76.

Kothari, C. R., & Creswell, J. W. (2004). Research Methodology: Research & Methods. *Jaipur: New Age International*.

Kraemer, K. L., Gibbs, J., & Dedrick, J. (2002). Impacts of globalization on e-commerce adoptionand firm performance: A cross-country investigation. *Center for Research on InformationTechnology and Organizations, University of California, Irvine*.

Kumar, A., & Telang, R. (2012). Does the web reduce customer service cost? Empirical evidence from a call center. *Information Systems Research*, *23*(3 PART 1), 721–737. https://doi.org/10.1287/isre.1110.0390

Kumar, P., Taneja, S., Mukul, & Özen, E. (2023). Digital Transformation of the Insurance Industry–A Case of the Indian Insurance Sector. *The Impact of Climate Change and Sustainability Standards on the Insurance Market*, 85-106.

Kumar, S., Sahu, N. C., & Kumar, P. (2020). Insurance consumption and economic growth in the post-liberalized India: An empirical analysis. *Asian Economic and Financial Review*, *10*(2), 218–228. https://doi.org/10.18488/journal.aefr.2020.102.218.228

Kuo, N. T., Chang, K. C., Cheng, Y. S., & Lai, C. H. (2013). How service quality affects customer loyalty in the travel agency: The effects of customer satisfaction, service recovery, and perceived value. *Asia Pacific Journal of Tourism Research*, *18*(7), 803-822.

Kuo, Y. F., Wu, C. M., & Deng, W. J. (2009). The relationships among service quality, perceivedvalue, customer satisfaction, and post-purchase intention in mobile value-addedservices. *Computers in human behavior*, *25*(4), 887-896.

Lee, C. Y. (2019). Does Corporate Social Responsibility Influence Customer Loyalty in the Taiwan Insurance Sector? The role of Corporate Image and Customer Satisfaction. *Journal of Promotion Management*, *25*(1), 43–64. https://doi.org/10.1080/10496491.2018.1427651

Lee, H. S. (2013). Major moderators influencing the relationships of service quality, customer satisfaction and customer loyalty. *Asian Social Science*, *9*(2), 1–11. https://doi.org/10.5539/ass.v9n2p1

Lee, H. S., Cheng, F. F., Nassir, A. M., & Ab Razak, N. H. (2018). Does efficiency promote competitiveness of the insurance industry?. *Journal of Business Economics and Management*, *19*(4), 566-591.

Lee, J., Lee, J., & Feick, L. (2001). The impact of switching costs on the customer satisfaction-loyalty link: Mobile phone service in France. *Journal of Services Marketing*, *15*(1), 35–48. https://doi.org/10.1108/08876040110381463

Leiria, M., Rebelo, E., & deMatos, N. (2022). Measuring the effectiveness of intermediary loyalty programmes in the motor insurance industry: loyal versus non-loyal customers. *European Journal of Management and Business Economics*, *31*(3), 305–324. https://doi.org/10.1108/EJMBE-05-2020-0103

Limna, P., & Kraiwanit, T. (2022). Service quality and its effect on customer satisfaction and customer loyalty: A qualitative study of Muang Thai Insurance Company in Krabi, Thailand. Journal for Strategy and Enterprise Competitiveness, 1(2), 1-16. https://www.researchgate.net/publication/362628452

Lin, J. S. C., & Hsieh, P. L. (2006). The role of technology readiness in customers' perception and adoption of self-service technologies. *International Journal of Service Industry Management*, *17*(5), 497–517. https://doi.org/10.1108/09564230610689795

Litvinova, I., Davydova, O., Kozub, V., Kozub, S., & Chernukha, T. (2022). FORMATION OF THE MECHANISM OF INNOVATIVE DEVELOPMENT OF INSURANCE COMPANIES IN THE MARKET ENVIRONMENT. *Eastern-European Journal of Enterprise Technologies*, *117*(13).

Liu, J., Ye, S., Zhang, Y., & Zhang, L. (2023). Research on InsurTech and the Technology Innovation Level of Insurance Enterprises. *Sustainability (Switzerland)*, *15*(11). https://doi.org/10.3390/su15118617

Lohmöller, J. B. (2013). *Latent variable path modeling with partial least squares*. Springer Science & Business Media.

Lokesh, S., Menaga., A., & Vasantha, S. (2022). Influence Of Customer Relationship Management Towards Customer Loyalty with Mediating Factor Customer Satisfaction in Insurances Sector. Quality - Access to Success, 23(187), 169–173. https://doi.org/10.47750/QAS/23.187.21

Loots, H., & Grobler, A. F. (2014). Applying marketing management and communication management theories to increase client retention in the short-term insurance industry. Public Relations Review, 40(2), 328-337.

Lovelock, C. (2001), Services Marketing, fourth edition, Prentice-Hall.

Lui, A., & Lamb, G. W. (2018). Artificial intelligence and augmented intelligence collaboration: regaining trust and confidence in the financial sector. Information & Communications Technology Law, 27(3), 267-283 http://researchonline.ljmu.ac.uk/id/eprint/8512/Articlehttp://researchonline.ljmu.ac.uk/

Luo, X., & Bhattacharya, C. B. (2006). Corporate Social Responsibility, Customer Satisfaction, and Market Value. In *Source: Journal of Marketing* (Vol. 70, Issue 4).

McFall, L., & Moor, L. (2018). Who, or what, is insurtech personalizing?: persons, prices and the historical classifications of risk. *Distinktion: journal of social theory*, *19*(2), 193-213.

Maduri, D. H., & Sen, A. (2022). A Bibliometric Analysis of Blockchain and Its Applications in the Insurance Industry. *2022 International Conference on Decision Aid Sciences and Applications, DASA 2022*, 1290–1294. https://doi.org/10.1109/DASA54658.2022.9765115

Mahadevan, K., & Joshi, S. (2022). Impact of e-service quality dimensions on customer satisfaction and loyalty in online apparel shopping in India. *Indian Journal of Marketing*, *52*(12), 20-38.

Mahāwitthayālai Thammasāt. (2011). *2011 IEEE International Conference on Quality and Reliability : 14-17 September 2011, Bangkok, Thailand*. IEEE.

Mansori, S., Safari, M., & Mohd Ismail, Z. M. (2020). An analysis of the religious, social factors and income's influence on the decision making in Islamic microfinance schemes. *Journal of Islamic Accounting and Business Research*, *11*(2), 361–376. https://doi.org/10.1108/JIABR-03-2016-0035

Mao, E., & Palvia, P. (2008). Exploring the effects of direct experience on IT use: An organizational field study. *Information and Management*, *45*(4), 249–256. https://doi.org/10.1016/j.im.2008.02.007

Martins Gonçalves, H., & Viegas, A. (2015). Explaining consumer use of renewable energy: determinants and gender and age moderator effects. Journal of Global Scholars of Marketing Science, 25(3), 198-215.

Mau, S., Cvijikj, I. P., & Wagner, J. (2015). *Understanding the Differences in Customer Portfolio Characteristics and Insurance Consumption across Distribution Channels*.

McMullan, R., & Gilmore, A. (2008). Customer loyalty: An empirical study. *European Journal of Marketing*, *42*(9–10), 1084–1094. https://doi.org/10.1108/03090560810891154

Memon, M. A., Ting, H., Cheah, J. H., Thurasamy, R., Chuah, F., & Cham, T. H. (2020). Sample size for survey research: Review and recommendations. *Journal of Applied Structural Equation Modeling*, *4*(2), 1-20.

Mohammed, A. H., & Mahmood, M. M. (2022). Quality Service, Customer Retention, and the mediating role of customer satisfaction on: an exploratory study in healthcare institutions in Mosul City. *Calitatea*, *23*(187), 87-92.

Moneta, A. (2014) The Customer-Centric Insurer in the Digital Era, Accenture, available at https://www.accenture.com/t20150523T033833__w__/sg-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Dualpub_9/Accenture-The-Customer-Centric-Insurer-In-The-Digital-Era.pdf, accessed 03 October 2016.

Monroe, K. B. (1990). Pricing: Making Profitable Decisions McGraw–Hill. *New York*.

Moorman, C., Deshpandé, R., & Zaltman, G. (1993). Factors Affecting Trust in Market Research Relationships. In *Source: Journal of Marketing* (Vol. 57, Issue 1).

Moorman, C., Zaltman, G., Deshpande, R., Churchill, G., Jaworski, B., & Smith, D. (1992). Relationships Between Providers and Users of Market Research: The Dynamics of Trust Within and Between Organizations. In *Journal of Marketing Research: Vol. XXIX*.

Morris, M. G., & Venkatesh, V. (2000). Age differences in technology adoption decisions: Implications for a changing work force. Personnel psychology, 53(2), 375-403.

Mahamad, O., & Ramayah, T. (2010). Service quality, customer satisfaction and loyalty: A test of mediation. International business research, 3(4), 72.

Muthulakshmi, P., & Muthumoni, A. (2023). Determinants of Financial Performance – A Comparative Analysis of Public Sector Non-Life Insurers in India. *SDMIMD Journal of Management*, 25–33. https://doi.org/10.18311/sdmimd/2023/32475

Nair, P. S., Shiva, A., Yadav, N., & Tandon, P. (2022). Determinants of mobile apps adoption by retail investors for online trading in emerging financial markets. *Benchmarking*. https://doi.org/10.1108/BIJ-01-2022-0019

Naujoks, H., Mueller, F., & Kotalakidis, N. (2017). *Digitalization in Insurance: The Multibillion Dollar Opportunity*.

Nepochatenko, O., Bechko, P., & Ponomarenko, O. (2023). The transformation of the insurance market under the influence of financial digital technologies. *International Science Journal of Management, Economics & Finance*, *2*(2), 48–55. https://doi.org/10.46299/j.isjmef.20230202.06

Nguyen, H. T., Nguyen, H., Nguyen, N. D., & Phan, A. C. (2018). Determinants of customer satisfaction and loyalty in Vietnamese life-insurance setting. *Sustainability (Switzerland)*, *10*(4). https://doi.org/10.3390/su10041151

Nguyen, N., & Leblanc, G. (2001). Corporate image and corporate reputation in customers' retention decisions in services. In *Journal of Retailing and Consumer Services* (Vol. 8).

Nitzl, C., Roldan, J. L., & Cepeda, G. (2016). Mediation analysis in partial least squares path modeling: Helping researchers discuss more sophisticated models. *Industrial management & data systems*, *116*(9), 1849-1864.

Njegomir, V., Demko-Rihter, J., & Bojanić, T. (2021). Disruptive technologies in the operation of insurance industry. *Tehnicki Vjesnik*, *28*(5), 1797–1805. https://doi.org/10.17559/TV-20200922132555

Nordheim, C. B., Følstad, A., & Bjørkli, C. A. (2019). An Initial Model of Trust in Chatbots for Customer Service - Findings from a Questionnaire Study. *Interacting with Computers*, *31*

Oliver, R. L. (1999). Fundamental Issues and Directions for Marketing. In *Source: Journal of Marketing* (Vol. 63).

Oluwabiyi, O. E., Asikhia, O. U., & Egwuonwu, T. K. (2022). RELATIONSHIP MARKETING AND MARKET PENETRATION OF INSURANCE IN LAGOS STATE, NIGERIA. *European Journal of Management and Marketing Studies*, *7*(4). https://doi.org/10.46827/ejmms.v7i4.1302

Parasuraman, A., Zeithaml, V. A., & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *1988*, *64*(1), 12-40.

Park, J., Hong, E., & Le, H. T. (2021). Adopting autonomous vehicles: The moderating effects of demographic variables. Journal of Retailing and Consumer Services, 63, 102687.

Park, W.-Y., Lee, S.-J., Park, C., Jung, S., & Kim*, H.-K. (2021). The Effect of Service Quality of Internet Insurance on Intention to Purchase Online. *International Journal of Smart Business and Technology*, *9*(1), 63–70. https://doi.org/10.21742/IJSBT.2021.9.1.06

Pauch, D., & Bera, A. (2022). Digitization in the insurance sector - challenges in the face of the Covid-19 pandemic. *Procedia Computer Science*, *207*, 1677–1684. https://doi.org/10.1016/j.procs.2022.09.225

Pollack, B. L. (2009). Linking the hierarchical service quality model to customer satisfaction and loyalty. *Journal of Services Marketing*, *23*(1), 42–50. https://doi.org/10.1108/08876040910933084

Porter, C. E., & Donthu, N. (2006). Using the technology acceptance model to explain how attitudes determine Internet usage: The role of perceived access barriers and demographics. *Journal of Business Research*, *59*(9), 999–1007. https://doi.org/10.1016/j.jbusres.2006.06.003

PRASILOWATI, S. L., SUYANTO, S., SAFITRI, J., & WARDANI, M. K. (2021). The Impact of Service Quality on Customer Satisfaction: The Role of Price. *Journal of Asian Finance, Economics and Business*, *8*(1), 451–455. https://doi.org/10.13106/jafeb.2021.vol8.no1.451

PWC. (2020). This is InsurTech's moment. Will insurers seize the opportunity? Retrieved from https:// www.pwc.com/us/en/industries/financial-services/library/insurtechinnovation.html

Radwan, S. M. (2019). The Impact of digital Technologies on Insurance Industry in light of digital transformation. Blom Egypt investments and Insurance Brokerage & Consultancy, 2.

Ramamoorthy, R., Gunasekaran, A., Roy, M., Rai, B. K., & Senthilkumar, S. A. (2018). Service quality and its impact on customers' behavioural intentions and satisfaction: an empirical study of the Indian life insurance sector. *Total Quality Management and Business Excellence*, *29*(7–8), 834–847. https://doi.org/10.1080/14783363.2016.1240611

Ramij, G. (2021). Factors Shaping Consumers Intention in Purchasing Life Insurance Policy in Bangladesh: A Binary Logistic Analysis. *Journal of Applied Finance & Banking*, 21–36. https://doi.org/10.47260/jafb/1162

Rashid, N., Afthanorhan, A., Yazid, A. S., Johari, R. J., Hamid, N. A., & Rasit, Z. A. (2019). The Causation of the Financial Statement Manipulation Activities. *International*

Journal of Academic Research in Business and Social Sciences, *8*(12). https://doi.org/10.6007/ijarbss/v8-i12/5264

Reddy, Dr. V. V. N., Reddy, S. M., & Naidu, P. A. (2019). Macro-Economic Determinants of Life Insurance Business – Empirical Evidence during 2000-01 to 2015-16. *International Journal of Engineering and Advanced Technology*, *9*(2), 4599–4606. https://doi.org/10.35940/ijeat.B5113.129219

Reichheld, F. F. (1993). Loyalty-based management. Harvard business review, 71(2), 64-73.

Reichheld, F. F., & Teal, T. (1996). The loyalty effect: The hidden force behind growth, profits and lasting. Harvard Business School Publications.

Riikkinen, M., Saarijärvi, H., Sarlin, P., & Lähteenmäki, I. (2018). Using artificial intelligence to create value in insurance. *International Journal of Bank Marketing*, *36*(6), 1145–1168. https://doi.org/10.1108/IJBM-01-2017-0015

Ringle, C. M., & Sarstedt, M. (2016). Gain more insight from your PLS-SEM results the importance-performance map analysis. In *Industrial Management and Data Systems* (Vol. 116, Issue 9, pp. 1865–1886). Emerald Group Publishing Ltd. https://doi.org/10.1108/IMDS-10-2015-0449

Rios, A. E. (2016). The impact of the digital revolution in the development of market and communication strategies for the luxury sector (fashion luxury). *Central European Business Review*, *5*(2), 17-36.

Riquelme, H. E., & Rios, R. E. (2010). The moderating effect of gender in the adoption of mobile banking. *International Journal of Bank Marketing*, *28*(5), 328–341. https://doi.org/10.1108/02652321011064872

Rishi, B., Mallick, D. K., & Shiva, A. (2022). Examining the dynamics leading towards credit card usage attitude: an empirical investigation using importance performance map analysis. *Journal of Financial Services Marketing*. https://doi.org/10.1057/s41264-022-00181-w

Riskinanto, A., Kelana, B., & Hilmawan, D. R. (2017). The moderation effect of age on adopting e-payment technology. *Procedia Computer Science*, *124*, 536-543.

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. Qualitative research in psychology, 11(1), 25-41.

Ruefenacht, M. (2018). The role of satisfaction and loyalty for insurers. *International Journal of Bank Marketing*, *36*(6), 1034–1054. https://doi.org/10.1108/IJBM-10-2016-0152

Ruiz-Molina, M.-E., & Gil-Saura, I. (2008). Perceived value, customer attitude and loyalty in retailing. *Journal of Retail & Leisure Property*, *7*(4), 305–314. https://doi.org/10.1057/rlp.2008.21

Saeed, M., Arshed, N., & Zhang, H. (2022). The adaptation of Internet of Things in the Indian Insurance Industry—Reviewing the challenges and potential solutions. *Electronics*, *11*(3), 419.

Sarstedt, M., Hair, J. F., Cheah, J. H., Becker, J. M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal*, *27*(3), 197–211. https://doi.org/10.1016/j.ausmj.2019.05.003

Sarstedt, M., Hair, J. F., Pick, M., Liengaard, B. D., Radomir, L., & Ringle, C. M. (2022). Progress in partial least squares structural equation modeling use in marketing research in the last decade. *Psychology and Marketing*, *39*(5), 1035–1064. https://doi.org/10.1002/mar.21640

Sarstedt, M., Henseler, J., & Ringle, C. M. (2011). Multigroup analysis in partial least squares 335. *Advances in International Marketing*, *22*, 195–218. https://doi.org/10.1108/S1474-7979(2011)0000022012

Sarstedt, M., Radomir, L., Moisescu, O. I., & Ringle, C. M. (2022). Latent class analysis in PLS-SEM: A review and recommendations for future applications. *Journal of Business Research*, *138*, 398–407. https://doi.org/10.1016/j.jbusres.2021.08.051

Satti, Z. W., Babar, S. F., & Parveen, S. (2023). Role of customer satisfaction as a mediator between sensory marketing and customer loyalty: A case of Pakistani restaurant industry. *Journal of International Food & Agribusiness Marketing*, *35*(5), 559-581.

Selamat, M. A., & Windasari, N. A. (2021). Chatbot for SMEs: Integrating customer and business owner perspectives. *Technology in Society*, *66*. https://doi.org/10.1016/j.techsoc.2021.101685

Shafique, M. N., Ahmad, N., Abbass, H., & Manzoor, R. (2015). Strengthen Outcomes of Insurance Agent: An Exploratory Study in Pakistan. *International Letters of Social and Humanistic Sciences*, *49*, 106–114. https://doi.org/10.18052/www.scipress.com/ilshs.49.106

Shamsuddin, J. N., Gan, C., & Anh, D. L. T. (2023). Bibliometric Analysis of InsurTech. *Journal of Advanced Research in Applied Sciences and Engineering Technology*, *30*(2), 103–132. https://doi.org/10.37934/araset.30.2.103132

Shetty, A., Shetty, A. D., Pai, R. Y., Rao, R. R., Bhandary, R., Shetty, J., Nayak, S., Keerthi Dinesh, T., & Dsouza, K. J. (2022). Block Chain Application in Insurance Services: A Systematic Review of the Evidence. *SAGE Open*, *12*(1). https://doi.org/10.1177/21582440221079877

Shiau, W. L., Chau, P. Y. K., Thatcher, J. B., Teng, C. I., & Dwivedi, Y. K. (2024). Have we controlled properly? Problems with and recommendations for the use of control variables in information systems research. In *International Journal of Information Management* (Vol. 74). Elsevier Ltd. https://doi.org/10.1016/j.ijinfomgt.2023.102702

Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J. H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: guidelines for using PLSpredict. *European Journal of Marketing*, *53*(11), 2322–2347. https://doi.org/10.1108/EJM-02-2019-0189

Sibindi, A. B. (2022). Information and Communication Technology Adoption and Life Insurance Market Development: Evidence from Sub-Saharan Africa. *Journal of Risk and Financial Management*, *15*(12). https://doi.org/10.3390/jrfm15120568

Singh, G., Sharma, M., Nanda, S., & Kadyan, S. (2022). Disruptive Technologies and Digitalization in Insurance: Improving the Value Chain of Insurance. *Proceedings - 2022 3rd International Conference on Computation, Automation and Knowledge Management, ICCAKM 2022*. https://doi.org/10.1109/ICCAKM54721.2022.9990452

Singh, R. K., & Deshmukh, A. A. (2022). Comparison Between Offline and Online Distribution Practices for the Insurance Industry in India. *International Journal of Asian Business and Information Management*, *13*(1), 1–19. https://doi.org/10.4018/ijabim.297852

Soa. (2021). *InsurTech: A Guide for the Actuarial Community*. https://www.soa.org/49bb46/globalassets/assets/files/resources/research-report/2021/insurtech-guide-community.pdf

Soeharso, S. Y. (2024). Customer satisfaction as a mediator between service quality to repurchase intention in online shopping. *Cogent Business & Management*, *11*(1), 2336304.

Sosa Gómez, I., & Montes Pineda, Ó. (2023). What is an InsurTech? A scientific approach for defining the term. *Risk Management and Insurance Review*.

Spector, P. E., & Brannick, M. T. (2011). Methodological urban legends: The misuse of statistical control variables. *Organizational research methods*, *14*(2), 287-305.

Spender, A., Bullen, C., Altmann-Richer, L., Cripps, J., Duffy, R., Falkous, C., Farrell, M., Horn, T., Wigzell, J., & Yeap, W. (2019). Wearables and the internet of things: considerations for the life and health insurance industry. *British Actuarial Journal*, *24*. https://doi.org/10.1017/s1357321719000072

Stoeckli, E., Dremel, C., & Uebernickel, F. (2018). Exploring characteristics and transformational capabilities of InsurTech innovations to understand insurance value creation in a digital world. *Electronic Markets*, *28*(3), 287–305. https://doi.org/10.1007/s12525-018-0304-7

Sugiharto, T. (2021). Ilomata International Journal of Tax & Accounting (IJTC) Pandemic Matter? *Ilomata International Journal of Tax & Accounting*, *2*(3). https://www.ilomata.org/index.php/

Tamrakar, M. K., & Badholia, A. (2022). Scientific Study of Technological Chatbot Adoption in Customer Service. *3rd International Conference on Electronics and Sustainable Communication Systems, ICESC 2022 - Proceedings*, 1117–1123. https://doi.org/10.1109/ICESC54411.2022.9885724

Tandon, U., Kiran, R., & Sah, A. N. (2017). Customer Satisfaction as mediator between website service quality and repurchase intention: An emerging economy case. *Service Science*, *9*(2), 106–120. https://doi.org/10.1287/serv.2016.0159

Tardieu, H., Daly, D., Esteban-Lauzán, J., Hall, J., & Miller, G. (n.d.). *Deliberately Digital Rewriting Enterprise DNA for Enduring Success Future of Business and Finance*. http://www.springer.com/series/16360

Tedjokusumo, C., & R. Murhadi, W. (2023). Customer satisfaction as a mediator between service quality and customer loyalty: a case study of Bank Central Asia. *Jurnal Siasat Bisnis*, 156–170. https://doi.org/10.20885/jsb.vol27.iss2.art3

Thamrin, G., Bernarto, I., & Kawata, Y. (2020). The influence of trust, satisfaction, value, and brand image on loyalty. *BISMA (Bisnis Dan Manajemen)*, *12*(2), 168. https://doi.org/10.26740/bisma.v12n2.p168-185

Tsvetkova, L., Yurieva, T., Orlaniuk-Malitskaia, L., & Plakhova, T. (2019). Financial intermediary and insurance companies: Assessing financial stability. *Montenegrin Journal of Economics*, *15*(3), 189–204. https://doi.org/10.14254/1800-5845/2019.15-3.14

Uzir, M. U. H., Al Halbusi, H., Thurasamy, R., Hock, R. L. T., Aljaberi, M. A., Hasan, N., & Hamid, M. (2021). The effects of service quality, perceived value and trust in home delivery service personnel on customer satisfaction: Evidence from a developing country. *Journal of Retailing and Consumer Services*, *63*, 102721.

Uma Maheswari, V., & (India), U. C. (2018). Buying Insurance Online: Are we there yet? *Indian Journal of Commerce & Management Studies*, *IX*(2), 30. https://doi.org/10.18843/ijcms/v9i2/04

Vanniarajan, T., Devi, P. P., & Shankari, L. (2008). Service quality of life insurance companies at Salem. *Global Business Review*, *2*(2), 23-31.

Venkatesan, R., & Jacob, J. (2019). Does loyalty and satisfaction support customer retention in life

insurance sector? – An empirical study. In *Int. J. Business Excellence* (Vol. 18, Issue 4).

Vijay, A., & Krishnaveni, V. (2018). A Study on Policyholders' Satisfaction of Health Insurance with Special Reference to Ernakulam District, Kerala. In *International Journal of Engineering & Technology* (Vol. 7, Issue 3). www.sciencepubco.com/index.php/IJET

Viswanathan, P., Singh, A. B., & Gupta, G. (2020). The role of social influence and e-service quality in impacting loyalty for online life insurance: a SEM-based study. In *Int. J. Business Excellence* (Vol. 20, Issue 3).

Volosovych, S., Zelenitsa, I., Kondratenko, D., Szymla, W., & Mamchur, R. (2021). Transformation of insurance technologies in the context of a pandemic. *Insurance Markets and Companies*, *12*(1), 1–13. https://doi.org/10.21511/INS.12(1).2021.01

Wantara, P., & Tambrin, M. (2019). The Effect of price and product quality towards customer satisfaction and customer loyalty on madura batik. *International Tourism and Hospitality Journal*, *2*(1), 1-9.

Wantara, P., & Suryanto, T. (2023). Examining Factors Influencing the Online Repurchase Intention. *Transnational Marketing Journal*, *11*(2), 21-39.

Wu, J. J., Khan, H. A., Chien, S. H., & Wen, C. H. (2022). Effect of customization, core self-evaluation, and information richness on trust in online insurance service: Intelligent agent as a moderating variable. *Asia Pacific Management Review*, *27*(1), 18-27.

Xu, X., & Zweifel, P. (2020). A framework for the evaluation of InsurTech. *Risk Management and Insurance Review*, *23*(4), 305-329.

Yadav, M., Rangnekar, S., & Srivastava, A. P. (2019). Demographic variables as moderators between QWL and OCB. *Industrial and Commercial Training*, *51*(7–8), 396–408. https://doi.org/10.1108/ICT-04-2018-0040

Yadav, R., Shiva, A., & Narula, S. (2022). Exploring private university attractiveness from students' perspective to ensure sustainable institutes: an empirical investigation from Indian perspective. *Asia-Pacific Journal of Business Administration*. https://doi.org/10.1108/APJBA-04-2021-0165

Yamane, Taro. (1967). Statistics, An Introductory Analysis, 2nd Ed., p. 886. New York: Harper and Row.

Yan, T. C., Schulte, P., & Lee Kuo Chuen, D. (2018). InsurTech and FinTech: Banking and Insurance Enablement. In *Handbook of Blockchain, Digital Finance, and Inclusion, Volume 1: Cryptocurrency, FinTech, InsurTech, and Regulation* (pp. 249–281). Elsevier Inc. https://doi.org/10.1016/B978-0-12-810441-5.00011-7

Yaneva, T. (2021). Digital transformation of insurance sector. Notices of the Union of Scientists-Varna. Economic Sciences Series, 10(1), 97-104.

Yang, Z., & Peterson, R. T. (2004). Customer perceived value, satisfaction, and loyalty: The role of switching costs. *Psychology and Marketing*, *21*(10), 799–822. https://doi.org/10.1002/mar.20030

YAZID, A. S. (2020). The Effect of Corporate Image on Customer Loyalty: The Mediating Effect of Customer Satisfaction. *Journal of Research on the Lepidoptera*, *51*(2), 124–138. https://doi.org/10.36872/lepi/v51i2/301083

Yu, P., & Guo, P. (2014). *An Analysis of the Synergy Degree of Insurance Innovation and Financial Development in China*.

Yusuf, F., Swanson, D. A., & Martins, J. M. (2014). Methods of demographic analysis. In *Methods of Demographic Analysis* (Vol. 9789400767843). Springer Netherlands. https://doi.org/10.1007/978-94-007-6784-3 https://www.allianz.com/en/economic_research/publications/specials_fmo/global-insurance-report.html

Zbar, S. A., & Ibrahim, H. K. (2024). The Impact of Digital Insurance in Reducing the Risks of Climate Fluctuations: In a Sample of Iraq Insurance Companies. *Journal of Information Systems Engineering and Management*, *9*(1), 25040.

Zeithaml, V., Berry, L., & Parasuraman, A. (1996). The behavioral consequences of service quality. J. Market. 60, 31–46. https://doi.org/10.2307/1251929.

Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, *37*(2), 197–206. https://doi.org/10.1086/651257

Zhong, M., Sun, Z., Lai, G., & Yu, T. (2015). Cultural influence on insurance consumption: Insights from the Chinese insurance market. *China Journal of Accounting Studies*, *3*(1), 24–48. https://doi.org/10.1080/21697213.2015.1012323

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business research methods*. Cengage learning.

https://www.ibef.org/download/1690790992_Insurance-May-2023.pdf

https://www.ibef.org/news/india-china-lead-asia-s-insurtech-industry-rise-says-report

https://www.bcg.com/publications/2022/india-insurtech-landscape-and-trends

Questionnaire

Dear Sir/Madam,

I'm Pavanpreet Kaur, a Ph.D. research scholar in the Department of Management, at Lovely Professional University, Phagwara. I am carrying out research on **"INSURTECH ADOPTION AND ITS INFLUENCE ON CUSTOMER SATISFACTION AND CUSTOMER LOYALTY IN LIFE INSURANCE"**.

The purpose of this questionnaire is to collect information regarding the impact of InsurTech adoption on the satisfaction of customers of life insurance companies.

I request you answer all the questions in the questionnaire. I assure you that the information provided by you will be kept confidential and used only for academic purposes. I shall ever remain grateful to you for your cooperation in this regard.

1. Name (Optional): _____

2. Email ID: _____

3. Gender:

1) Male ☐ 2) Female ☐

3) Transgender ☐

4. Age:

1) Between 18-30 years ☐ 2) Between 31-40 years ☐

3) Between 41-50 years ☐ 4) Above 50 years ☐

5. Income (Monthly):

1. Up to Rs. 10000 ☐ 2. Between Rs. 10,000 to 20,000 ☐

3. Between Rs. 20,000 – 30,000 ☐ 4. Above Rs. 30,000 ☐

6) Geographical Location

1) Amritsar ☐ 2) Mohali ☐

3) Ludhiana ☐ 4) Hoshiarpur ☐

5) Gurdaspur ☐ 6) Jalandhar ☐

7) For whom have you purchased the life insurance policy?

1) Yourself ☐ 2) Your Spouse ☐

3) Your Dependent ☐

8) How did you purchase your insurance policy?

1) Yourself ☐ 2) Via Broker ☐

9) How do you pay the premium?

1) Via Online Mode ☐ 2) By visiting the insurance office ☐

Please read the rating scale of responses as mentioned below:

Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)

The following statements are related to different aspects of **Online Distribution** of life insurance products. Please read the given statements carefully and tick the answer which satisfies you the most:

S. No.	Statements (Adapted from **Singh & Deshmukh, 2022**)	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1	Online distribution of insurance policies is easily accessible.					
2	It is less expensive to buy than					

	the offline version.					
3	It reduces operational costs.					
4	It removes the need for paper.					
5	Online purchasing is fast &effective.					
6	Online purchasing is environment-friendly.					
7	It saves time because it simply takes a few minutes and there is no need to stand in large queues.					
8	Online insurance renewal is a simple one-click process that includes auto-reminders.					
9	It is easy to evaluate and compare insurance products.					
10	The simplest and most secure way to get insurance.					
11	As all information is available online, it is easy to read, understand and take your own decision to purchase a policy.					
12	Online distribution of insurance saves from malpractices of selling of insurance products.					

The following statements are related to different aspects of **Policy Management** of life insurance products. Please read the given statements carefully and tick the answer which satisfies you the most:

S. No.	Statements (Adapted from **Singh & Deshmukh 2022; Inamdar, 2020**)	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1	Policy endorsement is the simplest online self-declaration that will change the policy details.					

2	The agents and customers remain updated about the new product launches in the market.					
3	A record of all policy-related information is maintained.					
4	The processing time for policy issuance, updating, and cancellation has been reduced.					
5	The underwriting process has become less time-consuming.					
6	The process of renewal of policies is smooth.					
7	The process of renewal of policies is stress-free.					

The following statements are related to different aspects of **Claims Management** of life insurance products. Please answer the following questions only if you have filed a claim previously:

S. No.	Statements (Adapted from **Pauch & Bera, 2022)**)	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1	The speed of processing claims has been improved.					
2	The cost of managing the claims has been reduced.					
3	Insurance claims-related fraud has been reduced.					
4	It is easy to get a claim and follow the procedures online.					
5	The process of calculation and pay-out of claims has become automated.					

The following statements are related to different aspects of **Customer Service Management** of life insurance products. Please read the given statements carefully and tick the answer which satisfies you the most:

S. No.	Statements **(Adapted from Trivedi, 2019); Rai & Medha, 2022)**	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1	Chatbot services provide customer support.					
2	Chatbot is easy to use.					
3	Chatbot provides accurate information.					
4	Chatbot provides the necessary information.					
5	Chatbot provides responses to the queries as per the expectation.					
6	Chatbot requires minimal mental effort.					
7	The chatbot is quite quick in response.					
8	The information provided by the chatbot is helpful regarding my questions or problems.					
9	After-sale services provided by the chatbot service are as per the expectations.					
10	The experience of using chatbot is as per my expectation.					
11	Customer care is genuine.					
12	The information available on the websites is accurate.					
13	The information available on the websites is authentic.					

The following statements are related to different aspects of **Customer Satisfaction** with life insurance products. Please read the given statements carefully and tick the answer which satisfies you the most:

S. No.	Statements	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Corporate Image ((Adapted from Rai & Medha, 2013; and Lai et al., 2014)						
1	The insurance company is concerned with the customers.					
2	The insurance company can be trusted in what it says and does.					
3	The insurance company is firmly established and stable.					
4	The company has a good reputation since it is always involved in corporate social responsibility (CSR) activities.					
Service Quality (Adapted from Rai & Medha, 2013)						
1	The insurance company provides a sufficient range of life insurance products.					
2	The service delivery process of the company is highly standardized and simple.					
3	The insurance company has the technological capability to meet the expectations of its customers.					
4	The insurance company provides access to information on products or services offered.					
5	The insurance company is always ready to respond to the requests of its customers.					
6	The confidentiality of the clients is					

	always ensured.					
Price (Statements adapted from Albari & Kartikasari, 2019)						
1	The prices for insurance products are affordable.					
2	The pricing of insurance services is uniform for all customers.					
3	The insurance services provide the worth of money.					
4	The prices are appropriate and reasonable.					
Perceived Value (Statements modified from Uzir et al., 2021; Lai et al., 2014)						
1	The service quality of online distribution of insurance is high.					
2	I feel relaxed about purchasing online insurance services.					
3	Online insurance services are as per my expectation.					
4	I feel trust and confidence in receiving insurance services through online purchases.					
5	The insurance company meets my expectations.					

The following statements are related to different aspects of **Customer Loyalty** to life insurance products. Please read the given statements carefully and tick the answer which satisfies you the most:

S. No.	Statements	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Trust (Rai & Medha, 2013; Ndubisi, 2007; Uzir et al., 2021, and Ball et al., 2004)						
1.	Insurance company points out the best alternative.					

2.	Insurance company always provides appropriate advice at critical times.					
3.	Insurance company always delivers the services that are promised.					
4.	The online insurance services of the company are well structured.					
5.	I feel insurance services are safe.					
6.	I always rely on my company for purchasing insurance.					
Commitment (Rai & Medha, 2013)						
1.	This insurance company deserves repeat purchasing and recommendations.					
2.	I feel a strong sense of belongingness to the company					
3.	I want to stay with the company because happy to be its customer					
4	This insurance company has a great deal of personal touch.					
5	Staying with the company because it provides greater benefits in comparison to other available options.					
Communication (Ball et al., 2004; Ndubisi, 2007; Rai & Medha, 2013)						
1	The insurance company provides timely and trustworthy information.					
2	Relationship with my insurance company is easy and satisfactory.					
3	The insurance company provides information when there is a new insurance service.					

4	The insurance company makes and fulfils promises.					
5	Information provided by the insurance company is always accurate.					
Switching Cost (Rai & Medha, 2013; Yang & Peterson, 2004)						
1	Comparing all life insurance providers in order to switch to a new company is important.					
2	Comparing the life insurance providers with one another takes a lot of energy and effort.					
3	In general, it would be a hassle to switch to another company.					
4	It costs me too much to switch to another insurance company.					

Thanks for giving your valuable time to fill up this questionnaire.