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UNDERSTANDING FACTORS FACILITATING
THE DIFFUSION OF FINANCIAL TECHNOLOGY
(FINTECH)

A CASE STUDY OF THE GULF COOPERATION
COUNCIL

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DBA

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Understanding Factors Facilitating the Diffusion of Financial Technology (FinTech)

A Case Study of the Gulf Cooperation Council

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Abstract

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Understanding Factors Facilitating the Diffusion of Financial Technology (FinTech)
A Case Study of the Gulf Cooperation Council

Keywords: Diffusion of Technology, Financial Technology (FinTech), Digital Transformation, Financial Institutions, Technology Policy, Institutional Isomorphism, Qualitative Research, Thematic Analysis

This study focuses on the factors influencing the diffusion of FinTech in the Gulf Cooperation Council countries, analysing both financial institutions and technology companies. The research acknowledges the challenges associated with the spread of FinTech and aims to address these issues. The research employs Institutional Theory.

To achieve comprehensive insights, a qualitative technique is employed. The initial phase involves an extensive literature review to understand FinTech and identify gaps in academic research. Subsequently, the impact of PESTEL factors is highlighted based on the literature. In the third stage, semi-structured interviews are conducted with 25 participants, representing three to four individuals per country. The Thematic Analysis approach is employed to analyse the interview data.

The study's findings reveal that several factors significantly influence the adoption of FinTech services as a preferred transaction method. Perceived utility, security, and social impact concerns are identified as drivers of behavioural intentions. Additionally, the technical attributes and ease of use of digital tools impact behavioural patterns. Furthermore, the innovation and technical features embedded within FinTech products and services contribute to their diffusion and acceptance.

The research has practical implications for both academia and practitioners in the FinTech industry. It assists financial service providers and institutions in designing user-centric FinTech products and services. Enhancing security and usability is crucial to improving the user experience and consumer confidence. By considering technological and behavioural characteristics and analysing the impact of PESTEL elements, this study contributes to the existing literature on technology diffusion, providing valuable insights to academics and practitioners.

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ * الْحَمْدُ لِلَّهِ رَبِّ الْعَالَمِينَ

In the Name of Allah, the Most Beneficent, the Most Merciful

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Dedication

In loving memory of my late father, Dr Mohammed El Fatih Hamadien, MD, FRCSI, whose untimely departure from this world left a void that can never be filled. This doctoral dissertation and my entire academic journey are a tribute to his loving memory.

I offer my deepest gratitude to my dear mother, whose unwavering presence and support have been the cornerstone of my life and education. Your love and dedication have shaped me into the person I am today.

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Table of Contents

Abstract	i
Acknowledgements	iii
Dedication	v
Table of Contents	vi
List of Figures	x
List of Tables	xi
List of Abbreviations	xii
Chapter 1	1
Introduction	1
1.1 Introduction	1
1.2 Research Background.....	2
1.3 Motivation for the Study.....	4
1.4 Problem Statement.....	5
1.5 Research Questions	6
1.6 Research Aim and Objectives.....	6
1.7 Explanation and Clarification of the Objectives	7
1.8 Scope and Significance of the Study	14
1.8.1 <i>Theoretical Significance</i>	15
1.8.2 <i>Practical Significance</i>	15
1.8.3 <i>Methodological Contribution</i>	16
1.9 Structure of the Thesis.....	16
Chapter 2	18
Literature Review	18
2.1 Introduction.....	18
2.2 Financial Technology (FinTech).....	19
2.2.1 <i>Opportunities</i>	19
2.2.2 <i>Challenges</i>	21
2.3 The FinTech Ecosystem.....	22
2.3.1 <i>FinTech Companies</i>	24
2.3.2 <i>Technology Innovators</i>	25

2.3.3 Governments.....	26
2.3.4 Traditional Financial Institutions.....	27
2.3.5 Financial Services Customers.....	28
2.4 Drivers of the FinTech Ecosystem.....	28
2.4.1 Open Banking.....	28
2.4.2 Blockchain Technology.....	31
2.4.3 Digital Currencies.....	34
2.5 Overview of the Research on FinTech Diffusion.....	35
2.6 Diffusion of Technology.....	36
2.7 Diffusion of FinTech.....	39
2.8 Gulf Cooperation Council (GCC).....	41
2.9 FinTech in GCC Countries.....	43
2.9.1 FinTech in Saudi Arabia.....	47
2.9.2 Fintech in UAE.....	50
2.9.3 FinTech in Kuwait.....	56
2.9.4 FinTech in Bahrain.....	62
2.9.5 FinTech in Oman.....	64
2.10 Theoretical Framework.....	65
2.11 The Dynamics of Institutional Theories: A Comparative Analysis.....	68
2.12 Gaps in Literature.....	70
2.13 Chapter Conclusion.....	72
Chapter 3.....	76
Research Methodology and Design.....	76
3.1 Introduction.....	76
3.2 Research Questions.....	77
3.3 Research Philosophy.....	78
3.4 Qualitative Research.....	79
3.4.1 Research Approach.....	80
3.5 Sampling in Qualitative Research.....	81
3.5.1 Sampling Technique.....	82
3.5.2 Sample Size.....	82
3.6 Data Collection.....	88
3.6.1 Questionnaire Development Process.....	88
3.6.2 Identification of Subjective Conceptual Indicators.....	90
3.6.3 Articulating the Statements for the Questionnaire.....	92

3.6.4 <i>Typology of Questions</i>	93
3.7 Data Collection Process.....	95
3.7.1 <i>Data Collection Strategy</i>	96
3.7.2 <i>Interviewing Format</i>	97
3.7.3 <i>The Interview Process</i>	98
3.8 Quality Assurance.....	100
3.8.1 <i>Validity and Reliability</i>	102
3.8.2 <i>Ethics</i>	109
Chapter 4	111
Data Analysis and Findings	111
4.1 Introduction.....	111
4.2 PESTEL Analysis.....	112
4.2.1 <i>Political</i>	113
4.2.2 <i>Economical</i>	114
4.2.3 <i>Social Factors</i>	116
4.2.4 <i>Technological Factors</i>	121
4.2.5 <i>Environmental Factors</i>	122
4.2.6 <i>Legal Factors</i>	124
4.3 Technological Attributes.....	129
4.4 External Factors.....	141
4.5 Framework for the diffusion of FinTech in GCC.....	142
4.6 Chapter Conclusion.....	151
Chapter 5	154
Discussion and Contributions	154
5.1 Introduction.....	154
5.2 Discussion of Findings.....	154
5.4 Overall Summary of the Thesis.....	159
5.5 Limitations of the Study.....	162
5.6 Areas of Further Research.....	162
5.7 Implications for Digital Transformation and Financial Inclusion.....	164
5.7.1 <i>Digital Transformation</i>	164
5.7.2 <i>Financial Inclusion</i>	165
5.8 Final Reflections.....	166
6: Annexures	168

6.1 Annexure 1	168
6.2 Annexure 2	170
7: References	172

List of Figures

Figure 1: FinTech Ecosystem

Figure 2: VC Investments in FinTech

Figure 3: Open Banking

Figure 4: Embedded Finance

Figure 5: Banking-as-a-Service

Figure 6: Distributed Ledgers

Figure 7: Defib Financial Systems

Figure 8: FinTech Hubs in the Middle East and North Africa

Figure 9: FinTech in Saudi Arabia

Figure 10: FinTech Landscape in the UAE

Figure 11: Isomorphism

Figure 12: Institutional Isomorphism Mechanics and Pressures

Figure 13: Recommended Sample Size

Figure 14: Institutional Theory Actors in Fintech Ecosystem

Figure 15: Graphical Representation of the theme-building processes

Figure 16: FinTech Diffusion Framework

List of Tables

Table 1: Roles and Responsibilities of FinTech Stakeholders

Table 2: Overview of Reviewed Sources

Table 3: Questionnaire Strategy

Table 4: Validity and Reliability

Table 5: Credibility Parameters of Qualitative Research

Table 6: PESTEL Analysis

Table 7: Illustrative quotes showing the challenges and complexities facing the diffusion of FinTech in GCC.

List of Abbreviations

Abbreviation	Definition
FinTech	Financial Technology
4G	Fourth Generation Wireless Network
AI	Artificial Intelligence
ATM	Automated Teller Machine
BaaS	Banking-as-a-Service
CBDC	Central Bank Digital Currency
Crypto	Cryptocurrency
DeFi	Decentralised Finance
DMCC	Dubai Multi Commodities Centre
E-Commerce	Electronic Commerce
FCA	Financial Conduct Authority
FI	Financial Institution
FSDP	Financial Sector Development Program
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GFC	Global Financial Crisis
ICT	Information and Communication Technology
IFC	International Finance Corporation
InsurTech	Insurance Technology
IoT	Internet of Things
ISSA	Information Systems Security Association
KSA	Kingdom of Saudi Arabia
LTE	Long-Term Evolution

ML	Machine Learning
NDU	National Digital Transformation Unit
NFC	Near Field Communication
P2P	Person-to-Person
PESTEL	Political, Economic, Social, Technological, Environmental, and Legal
POS	Point of Sale
PSD2	Payment Service Directive 2
R&D	Research and Development
RegTech	Regulatory Technology
SAMA	Saudi Arabia Monetary Authority
SAR	Saudi Arabia Riyal
SDG	Sustainable Development Goals
SME	Small and Medium Enterprises
TAM	Technology Acceptance Model
TPP	Third-Party Provider
UAE	United Arab Emirates
UK	The United Kingdom
UN	The United Nations
USA	The United States of America
USD	United States Dollar
WHO	World Health Organization

Chapter 1

Introduction

1.1 Introduction

The emergence of financial technology (FinTech) has significantly transformed the financial sector, particularly in the Gulf Cooperation Council (GCC) region. This doctoral thesis aims to comprehensively understand the determinants that influence the diffusion of FinTech within the GCC and shed light on the factors that facilitate or hinder its adoption and dissemination. A theoretical framework based on innovation adoption, technology diffusion, and institutional factors will serve as the study's compass as it explores the complex interplay between technological, market, consumer, and regulatory determinants impacting FinTech proliferation in the GCC.

The study will employ qualitative research methods, interviews, and literature reviews to establish a theoretical framework and research hypotheses. Primary data will be collected from key stakeholders in the GCC FinTech ecosystem through interviews and case studies. Thematic and PESTEL analysis will be used to analyse the data, uncovering patterns and insights.

The study aims to contribute significantly to the scholarly discourse on FinTech diffusion, providing a comprehensive understanding of the unique contextual factors influencing the GCC region. It will offer academics, technology professionals, and government officials valuable perspectives, empowering them to make informed decisions on regulatory frameworks, supportive systems, and strategies for effective FinTech diffusion.

This study seeks to promote sustainable growth and advancement of the FinTech ecosystem in the GCC by addressing knowledge gaps. The findings will serve as a foundation for evidence-based policymaking, strategic development, and further

exploration of FinTech proliferation within the Gulf Cooperation Council. Ultimately, the study aims to enhance financial inclusion, reshape the delivery of financial services, and drive the GCC region towards a digitally transformed financial landscape.

1.2 Research Background

The expansion of globalisation and the development of Information and Communication Technologies (ICT) have revolutionised how individuals interact, learn, and conduct business, expanding our experiences in social interactions, travel, commerce, health, and education, among other domains. The globalisation paradigm gained prominence in the 1990s and has since experienced continuous growth (Flew 2020). The dissolution of the Soviet Union and the conclusion of the Cold War triggered an upsurge in international trade, leading to the establishment of numerous international treaties, laws, and agreements (Flew 2020). These trade agreements have played a pivotal role in promoting the movement of people and goods across borders by diminishing trade barriers and facilitating cross-border commerce. "Globalisation" refers to the growing interconnectedness among the world's economies, populations, and cultures through international trade (Steger and James 2019). Cross-border transactions enable the free flow of data, people, technologies, products, and services, leading to knowledge exchange, experience, innovation, and industrialisation. Lang and Tavares (2018) highlight that numerous countries have embraced globalisation, resulting in a remarkable surge in the cross-border movement of goods and capital, contributing to increased Gross Domestic Product (GDP), employment rates, and poverty reduction.

Moreover, it is essential to recognise that the development of ICTs facilitates and revolutionises globalisation (Antràs 2020; Audi et al. 2022; Maskus and Reichman 2004). Globalisation, in turn, promotes technological development and diffusion. Allen (2021) argues that countries and individuals gain increased access to knowledge from various nations through globalisation, and international competition encourages firms and institutions to implement and innovate foreign technologies.

ICTs have contributed to expanding digital marketing and e-commerce platforms, enabling businesses to advertise and market their products internationally and sell directly or indirectly to consumers through e-commerce platforms. Ullrich (2019) emphasises that lower barriers allow for greater economic mobility between nations, and the unimpeded movement of capital across borders fosters economic growth and development (Steger and James 2019).

The relationship between globalisation and financial technology (FinTech) holds significant importance, as FinTech transactions are prevalent worldwide through the Internet and other digital channels (Allen 2021). FinTech is crucial in facilitating financial and banking services and is indispensable for attaining financial inclusion. ICT technologies and FinTech contribute to economic growth, employment expansion, and poverty reduction, aligning with Sustainable Development Goal 8, which aims to promote decent work and economic growth (Frey 2017). However, technology diffusion introduces complexities and challenges that necessitate careful consideration.

In recent years, governments, firms, and individuals in the six Gulf Cooperation Council (GCC) member states have increasingly embraced FinTech, leading to the rise of FinTech start-ups and transactions in the Middle East (Naz et al. 2022). These FinTech firms bridge the gap between service providers and consumers, promoting financial inclusion. While the expansion of FinTech companies in the region has increased interconnection, there is a need for greater consistency. The proliferation of these technologies raises a unique set of legal, moral, and ethical concerns, including data security and global protection. A study conducted in Bahrain in 2020 aimed to investigate the propensity of Bahraini bankers to utilise FinTech (Razzaque et al. 2020). The study observed that investors in Bahrain perceived high financial risk when using FinTech technologies. While FinTech provides users with convenience by enabling faster transactions and eliminating delays, significant challenges remain in establishing trustworthiness, security, and convenience. In light of these considerations, this research employs a case study of the GCC to examine the factors that facilitate the diffusion of financial technology.

1.3 Motivation for the Study

The exponential growth and far-reaching global impact of FinTech have sparked considerable scholarly interest in comprehending the multifaceted factors influencing its diffusion. This academic discourse fosters research endeavours centred on the diffusion of FinTech within the Gulf Cooperation Council (GCC) region, emphasising the utmost significance of this subject matter and advocating for further investigation in this specific context. Given the potential for transformative and disruptive ramifications on conventional financial systems, it is imperative to scrutinise the driving forces and impediments that shape the dissemination of FinTech, considering the regulatory, economic, and socio-cultural dynamics unique to the GCC region. Such an exploration holds great significance, as Haddad et al. (2019) and Chen et al. (2018) highlight.

According to Abusitta and Eshlaghy (2020), the spread of financial technology (FinTech) within the Gulf Cooperation Council (GCC) assumes exceptional significance in light of the significant economic expansion and the pervasive digital revolution across various industries. The GCC region holds a strategic position within the global financial landscape, characterised by abundant hydrocarbon reserves, flourishing economies, and aspirations for economic diversification, as Grassa and Gazdar (2014) noted. As GCC states actively foster digital transformation, a comprehensive understanding of the determinants shaping the diffusion of FinTech becomes imperative. Zehri et al. (2020) further highlight that the GCC region offers a distinctive context characterised by distinct regulatory frameworks, consumer behaviours, and market dynamics. Consequently, acquiring a profound comprehension of FinTech diffusion in this region can furnish valuable insights for policymakers, financial institutions, and technology firms, enabling them to formulate optimal strategies that harness the potential of FinTech to stimulate economic development and enhance the provision of financial services.

Despite numerous studies delving into the diffusion of financial technology (FinTech) across diverse contexts, a notable knowledge gap exists regarding the intricate factors shaping FinTech diffusion within the GCC region. This research seeks to address this gap by contributing region-specific insights from an in-depth exploration of the GCC context. As Mensi et al. (2017) emphasised, these invaluable insights hold practical significance for regulators, policymakers, and industry practitioners, empowering them to craft well-informed strategies and policies that foster the effective implementation of innovative financial solutions in the GCC region.

In summary, this study aims to contribute to the existing body of knowledge by offering insights tailored to the GCC context. These insights will be of immense practical value to decision-makers in the public and private sectors and entrepreneurs, providing them with practical strategies to foster the adoption and diffusion of FinTech solutions in the GCC region.

1.4 Problem Statement

Thakor (2020) argues that financial technology (FinTech) effectively addresses the issue of "specialisation-induced fragmentation in the financial services industry by leveraging ICT to enable specialised players who offer greater product customisation to cater to customer preferences." The expanding presence of FinTech exerts a significant impact on the economy by providing consumers with simplified access to a diverse array of financial products through digital platforms. However, the adoption rate of FinTech in the market necessitates acceleration, considering various risks and the market's perception of FinTech products and services. Hence, it becomes crucial to critically evaluate the existing literature concerning FinTech product adoption, delving into the associated challenges and complexities. Moreover, it is essential to identify the factors that promote FinTech adoption from the perspectives of adopters, consumers, and innovators.

While global use cases of FinTech have demonstrated promise in enhancing financial inclusion within emerging economies, there is still a need for a deeper

understanding of the challenges that hinder financial institutions and companies' effective utilisation of this technology. Additionally, it is imperative to identify and prioritise the factors that facilitate these institutions' diffusion and adoption of FinTech (Thakor 2020). Furthermore, the presence of political, economic, and cultural elements, alongside the need for a comprehensive national strategy, constitutes crucial factors that impede the diffusion of FinTech and hinder the entry of innovative financial technologies into the financial ecosystem of the Gulf Cooperation Council (Singh and Gal 2020).

1.5 Research Questions

This DBA research study aims to address the following research questions:

- 1- What are the challenges and complexities of diffusing FinTech?
- 2- What are the critical issues faced by FIs and technology companies when rolling out FinTech products and services?
- 3- What institutional, policy, and societal guidelines could there be for increased diffusion of FinTech?

1.6 Research Aim and Objectives

This DBA research aims to understand the challenges impeding the diffusion of FinTech in the GCC and design, develop, and evaluate a knowledge-based FinTech diffusion framework for financial institutions and technology companies.

The following research objectives further support this aim:

1. Develop an understanding of FinTech and its impact on financial inclusion.
2. Develop an understanding of the role of FinTech in driving digital transformation in the financial sector.

3. Explore the challenges and complexities of diffusing FinTech through a systematic literature review.
4. Identify and evaluate critical issues faced by financial institutions (FIs) and technology companies when rolling out FinTech products and services.
5. Formulate a framework to capture institutional, policy, and societal guidelines for increased diffusion of FinTech based on gathered data.

1.7 Explanation and Clarification of the Objectives

Objective 1:

Develop an understanding of FinTech and its impact on financial inclusion.

Objective 1 aims to cultivate a profound understanding of financial technology (FinTech) and its profound influence on financial inclusion. This section aims to elucidate the research objective, explain the significance of comprehending FinTech and its impact on the financial sector, and outline the study's scope. The objective is to investigate how FinTech innovations can engender equitable economic growth by addressing the gaps in access to financial services.

Financial inclusion involves providing and ensuring the accessibility of financial services to individuals and businesses, particularly those historically underserved or excluded from the formal financial sector, as Demirguc-Kunt et al. (2018) emphasised. It is pivotal in poverty reduction, economic growth, and social justice. In contrast, FinTech combines technology and finance to facilitate the delivery of innovative financial products and services.

For several reasons, understanding FinTech and its impact on financial inclusion holds substantial importance. Firstly, the proliferation of digital technologies and mobile connectivity has created fresh opportunities to offer financial services to individuals with limited access. FinTech solutions such as mobile banking, digital

wallets, and peer-to-peer lending platforms can augment financial access, particularly in remote and underserved areas.

Secondly, by comprehending the ramifications of FinTech on financial inclusion, policymakers, regulators, and financial institutions can make well-informed decisions and craft interventions that promote inclusive finance. Awotunde et al. (2021) underscore the significance of establishing an enabling environment for developing and adopting FinTech solutions, ensuring they align with the preferences and needs of underserved populations. Furthermore, researchers and practitioners can identify best practices, innovative approaches, and scalable frameworks by gaining insights into the potential benefits and challenges associated with FinTech and financial inclusion. These insights can contribute to the design of effective financial inclusion policies, regulatory frameworks, and business strategies.

We conducted a comprehensive literature review to gather existing knowledge and insights, entailing an extensive analysis of academic journals, industry reports, and policy documents. The review explored conceptual frameworks, theoretical perspectives, and empirical studies examining the intersection of FinTech and financial inclusion.

Understanding the impact of FinTech on financial inclusion represents a key research objective for addressing gaps in the existing literature. This research endeavour will contribute to the broader discourse on financial inclusion, informing evidence-based policy formulation and strategy development by investigating the opportunities and challenges associated with FinTech in promoting financial inclusion. This understanding will pave the way for harnessing the full potential of FinTech to cultivate a more inclusive and equitable financial ecosystem.

Objective 2:

Develop an understanding of the role of FinTech in driving digital transformation in the financial sector.

This research objective aims to comprehensively understand the role of FinTech in driving digital transformation in the financial sector. The objective is to investigate

how technology can reshape traditional financial services and systems and the implications of this transformation for different stakeholders. This section aims to clarify the significance and scope of the research objective within the context of a DBA research study.

Digital transformation refers to significant shifts when digital technologies are seamlessly integrated into various aspects of an organisation, resulting in substantial changes in business models, processes, and customer interactions, as described by Zaki (2019). Within the financial sector, FinTech has emerged as a pivotal driver of digital transformation, leveraging technological advancements to foster the development of innovative financial products, services, and operational procedures.

For several reasons, understanding the role of FinTech in promoting digital transformation in the financial sector holds great importance. The rapid adoption of digital technologies has disrupted traditional financial practices and introduced new business models. By comprehending the mechanisms through which FinTech drives this transformation, researchers and practitioners can gain insights into the opportunities and challenges arising from these changes. Additionally, this research objective facilitates a deeper understanding of FinTech's impact on various stakeholders in the financial ecosystem. This article examines how FinTech is reshaping consumer experiences, transforming the operations of financial institutions, influencing regulatory frameworks, and fostering competition and collaboration among industry participants. Gomber et al. (2018) argue that such insights are valuable for policymakers, regulators, financial institutions, and technology companies as they adjust their strategies and operations to thrive in the digital age.

To achieve this objective, a thorough literature review will be conducted to identify critical theoretical frameworks, concepts, and empirical studies related to the role of FinTech in promoting digital transformation. This review will encompass academic journals, industry reports, case studies, and relevant industry publications. In addition to reviewing the existing literature, qualitative research methods will be

employed to collect data. This process will involve interviewing industry professionals and examining trends in FinTech diffusion.

Combining the insights from the literature review and qualitative research, this research methodology will provide a comprehensive understanding of the practical applications and implications of FinTech-driven digital transformation. The aim is to inform practitioners, policymakers, and researchers about the transformative potential of FinTech and guide them in adjusting their strategies and operations to thrive in the digital era.

Objective 3:

Explore the challenges and complexities of diffusing FinTech through a systematic literature review.

This DBA research project utilises a systematic literature review to examine the obstacles and complexities that hinder the diffusion of FinTech. The objective is to identify and analyse the constraints, issues, and obstacles that impede the widespread adoption and implementation of FinTech solutions across various industries. This section highlights the importance and scope of this DBA research study while providing clarity on the research objective. The emergence of FinTech as a disruptive catalyst has fundamentally transformed traditional financial systems and practices through technological innovation. However, numerous obstacles and complexities hinder the seamless implementation of FinTech, impeding its diffusion. These challenges include regulatory impediments, cultural resistance, technical limitations, and cybersecurity risks. Comprehensively understanding and addressing these hindrances are crucial to cultivating an environment conducive to the widespread adoption and diffusion of FinTech. Examining the challenges and intricacies surrounding the diffusion of FinTech holds significant importance on multiple fronts. Firstly, it facilitates understanding the barriers that hinder implementing FinTech solutions, benefiting researchers and practitioners in this domain (Kavuri and Milne 2019). This understanding serves as a foundation for developing strategies and frameworks that can effectively address and overcome the difficulties and complexities associated with FinTech diffusion. Secondly, this

research objective aims to provide a holistic perspective on the landscape of FinTech diffusion. It sheds light on the diverse challenges faced by various stakeholders, including financial institutions, regulators, consumers, and technology providers. Such an understanding enables the identification of familiar patterns, emerging trends, and best practices, guiding future research endeavours and interventions to promote the efficient diffusion of FinTech. We will conduct a systematic literature review using rigorous research methodologies to accomplish this objective. This review entails identifying, selecting, and analysing a wide range of scholarly articles, research papers, industry reports and publications, and case studies that address the difficulties and complexities of FinTech diffusion. The selection criteria will be based on the sources' relevance, credibility, and quality. We will systematically evaluate the literature to identify and categorise the various difficulties and complexities associated with FinTech diffusion. By identifying themes and patterns, we will comprehensively understand the challenges of successfully adopting and implementing FinTech solutions. We will synthesise and analyse the findings to derive insightful conclusions and implications for future research and practice in this field. An essential objective of this DBA research study is to examine the difficulties and complexities of FinTech diffusion through a systematic literature review. By comprehensively investigating the barriers and constraints, this study contributes to the body of knowledge on FinTech diffusion, informs decision-making processes, and guides the development of strategies to address the challenges and complexities faced by various stakeholders. This understanding will advance FinTech solutions, foster innovation, and promote positive change in the financial landscape.

Objective 4:

Identify and evaluate critical issues faced by financial institutions (FIs) and technology companies when rolling out FinTech products and services.

This DBA research study aims to identify and evaluate the salient challenges financial institutions and technology companies encounter during FinTech products and services launches. The primary objective is to investigate the difficulties,

obstacles, and concerns that arise during the implementation and integration of FinTech solutions into the operational frameworks of these organisations. This section comprehensively explicates the research objective while highlighting its significance and scope. The rapid proliferation of FinTech has presented both opportunities and challenges for financial institutions and technology companies. As these organisations strive to adopt innovative digital solutions, they often need help successfully implementing FinTech products and services. Important issues include regulatory compliance, data privacy, cybersecurity, legacy system integration, customer trust, and strategic decision-making (Ng and Kwok 2017). This analysis seeks to deeply comprehend the obstacles these organisations face in implementing FinTech solutions. Identifying these challenges will enable researchers and practitioners to develop strategies and frameworks to overcome these barriers, thereby facilitating the effective diffusion of FinTech.

Furthermore, this research objective enables a comprehensive evaluation of the implications of these critical issues on various aspects of organisational performance, consumer experiences, and industry dynamics. The objective investigates the impact of these challenges on the operational efficiency, profitability, and competitiveness of financial institutions, as well as on the product development, market penetration, and business sustainability of technology companies. Identifying and evaluating the crucial challenges faced by financial institutions and technology firms during the deployment of FinTech holds paramount importance in achieving the successful implementation of FinTech use cases, fostering wider adoption of FinTech, and contributing to enhanced financial inclusion.

Objective 5:

Formulate a framework to capture institutional, policy, and societal guidelines for increased diffusion of FinTech based on the gathered data.

The primary aim of this DBA research study is to construct a comprehensive framework that encompasses institutional, policy, and societal guidelines for enhancing the diffusion of FinTech. The objective is to establish a structured

approach that integrates the insights derived from gathered data to facilitate the adoption and diffusion of FinTech solutions across various industries. This section aims to elucidate the significance and scope of the research objective in detail.

In the evolving financial landscape, the transformative influence of FinTech necessitates establishing a comprehensive framework that delineates institutional, policy, and societal guidelines to facilitate its broad diffusion. This framework serves as a guiding tool for various stakeholders, including financial institutions, policymakers, regulators, and technology firms, to navigate the intricacies associated with the diffusion of FinTech. Key elements addressed within the framework encompass regulatory compliance, consumer protection, ethical implications, and technological integration. The formulation of such a framework assumes paramount significance as it furnishes stakeholders with a structured methodology to adopt and implement FinTech effectively. By documenting institutional, policy, and consumer trends, this framework ensures that the diffusion process aligns with the diverse interests of stakeholders and duly acknowledges the broader societal impact of FinTech adoption.

The overarching research objective aims to cultivate an environment conducive to the proliferation of FinTech. The framework fosters coordination, collaboration, and standardisation by promoting synergies between entities. It encourages policymakers to design regulatory frameworks that support FinTech innovation, financial institutions to embrace innovative business models, and technology companies to develop solutions that align with consumer expectations and societal needs.

The framework's development, validation, and refinement will occur iteratively, incorporating insights from experts and stakeholder participation. The initial stage involves data collection through semi-structured interviews employing qualitative research techniques. Through the analysis of primary data obtained from key stakeholders such as regulators, incubators, and C-level executives of financial institutions, technology companies, and central banks, recurring themes, patterns, and gaps will be identified. This analysis will inform the development of the

framework, ensuring its integration of essential guidelines and considerations necessary for the successful diffusion of FinTech.

1.8 Scope and Significance of the Study

The primary aim of this DBA research study is to construct a comprehensive framework that encompasses institutional, policy, and societal guidelines for enhancing the diffusion of FinTech. The objective is to establish a structured approach that integrates the insights derived from gathered data to facilitate the adoption and diffusion of FinTech solutions across various industries. This section provides a detailed elucidation of the significance and scope of the research objective. In the evolving financial landscape, the transformative influence of FinTech necessitates establishing a comprehensive framework that delineates institutional, policy, and societal guidelines to facilitate its broad diffusion. This framework serves as a guiding tool for various stakeholders, including financial institutions, policymakers, regulators, and technology firms, to navigate the intricacies associated with the diffusion of FinTech. Key elements addressed within the framework encompass regulatory compliance, consumer protection, ethical implications, and technological integration. The formulation of such a framework assumes paramount significance as it furnishes stakeholders with a structured methodology to adopt and implement FinTech effectively. By documenting institutional, policy, and consumer trends, this framework ensures that the diffusion process aligns with the diverse interests of stakeholders and duly acknowledges the broader societal impact of FinTech adoption. The overarching research objective aims to cultivate an environment conducive to the proliferation of FinTech. The framework fosters coordination, collaboration, and standardisation by promoting synergies between entities. It encourages policymakers to design regulatory frameworks that support FinTech innovation, financial institutions to embrace innovative business models, and technology companies to develop solutions that align with consumer expectations and societal needs. The framework's development, validation, and refinement will occur iteratively, incorporating insights

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The research is theoretically, practically, and methodologically significant. The significance of this study is discussed in detail below.

1.8.1 Theoretical Significance

This research holds substantial theoretical significance as it contributes to the existing body of knowledge in FinTech. Given the emerging nature of the FinTech industry and its relevance in contemporary times, the study makes a valuable contribution by identifying the factors that impede and present challenges in the diffusion of FinTech. Consequently, the current research addresses a significant gap in the literature. Moreover, this study provides insights into the macro-level factors and critical issues faced by FinTech companies and financial institutions while diffusing FinTech products and services. By employing the PESTEL analysis framework, the research successfully identifies the most significant challenges financial institutions and FinTech companies face.

1.8.2 Practical Significance

This research makes a remarkable practical contribution by proficiently identifying and scrutinising the challenges, pivotal issues, and intricate nature encountered by FinTech companies and financial institutions while disseminating FinTech products and services. The recommendations in this study are significant for these organisations, as they provide tangible insights to effectively address the negative ramifications stemming from barriers that impede the diffusion of FinTech. Consequently, the present study offers valuable practical implications by furnishing

guidance and strategic orientation to financial institutions and FinTech companies operating in this realm.

1.8.3 Methodological Contribution

Methodologically, this study makes a significant contribution by employing Thematic and PESTEL Analysis techniques to analyse the relevant literature. By adopting these rigorous analytical approaches, this research offers valuable insights to both academics and practitioners. The study presents a comprehensive framework that aids in effectively addressing the barriers encountered in the diffusion of FinTech. This framework is a valuable resource for academics seeking to advance their understanding of the subject matter and practitioners seeking practical strategies to overcome obstacles and promote the successful diffusion of FinTech.

1.9 Structure of the Thesis

The overall structure of this thesis depicts the integration of the dual academic and practitioner perspectives inherent in this DBA research.

Following this introductory chapter, Chapter 2, titled "Literature Review," undertakes a systematic and critical analysis of existing scholarly works. It synthesises and analyses relevant literature, identifying key themes, trends, and gaps in current knowledge. This comprehensive review establishes the theoretical foundation for the study, contextualises the research problem, and contributes to the advancement of existing knowledge. Chapter 2 sets the scene for the research and forms the link to practitioner relevance. Next, in Chapter 3, titled "Research Methodology and Design," we delve into this study's research philosophy. It establishes the purpose and direction for this challenging investigation, providing guidance and articulating the theoretical framework that underpins the study.

Moreover, it presents the broader academic and theoretical context of the research. This chapter also outlines the research approach, sampling technique, and data collection procedures employed in the study. The chapter ensures a comprehensive understanding of the research methodology and design by delving into these

aspects. Chapter 4, "Data Analysis and Findings," explores this study's research design and methodology. It outlines the chosen research approach, including data collection and analysis techniques: Thematic Analysis and PESTEL Analysis.

Furthermore, it provides crucial details regarding the population under study, sample size determination, sampling technique employed, and the rigorous data collection process. This chapter ensures transparency and rigour in the research methodology, enhancing the reliability and validity of the findings. It also presents the research findings and results, offering a detailed analysis and interpretation of the collected data. The empirical evidence gathered through the research methodology addresses the research questions and sheds ample light on the diffusion of FinTech. The final chapter, "Discussion and Conclusions," highlights the challenges, influential factors, and strategies identified for overcoming obstacles and promoting the adoption of FinTech in the GCC region. This research study provides valuable insights into the industry dynamics, consumer behaviour, and policy reforms in the FinTech sector in the GCC. The chapter serves as a platform for comprehensive discussion and draws meaningful conclusions based on the findings, offering future research and practice recommendations.

Chapter 2

Literature Review

2.1 Introduction

Financial technology (FinTech) emerged as a disruptive force that has significantly transformed the financial sector in numerous countries over the past decade (Carbo-Valverde et al. 2022). This technology enables innovators within the financial industry to reshape the design, provision, and accessibility of financial products for consumers (McWaters and Galaski 2017) and leverage technological advancements to enhance financial services such as payments, insurance, and loans (Roeder et al. 2018). Mueller (2017) posits that the primary functionality of FinTech lies in empowering consumers and businesses to manage their financial transactions and operations using sophisticated software tools and algorithms. This ongoing wave of financial technology innovations has disrupted and enhanced various industry dimensions (Tapscott 2020).

Technologies such as artificial intelligence (AI), Blockchain, big data analytics, the Internet of Things (IoT), cryptography, and cloud computing have become integral components of the continuously evolving financial sector. FinTech encompasses the utilisation of the Internet of Things (IoT), artificial intelligence (AI), Machine Learning (ML), Blockchain technology, and cryptocurrencies (Sharma et al. 2021). Additionally, more conventional applications of FinTech include mobile banking, mobile payments, crowdfunding, and peer-to-peer lending (Hill, 2021). These use cases indicate that FinTech is rapidly becoming essential to the financial industry's offerings to consumers and businesses. According to Hendershott et al. (2021), FinTech has a transformative impact on the financial industry. Many financial institutions are adopting tokenisation of their core products and services, enabling them to provide more intelligent and customer-centric solutions. The adoption rates for new financial services, such as decentralised finance, insurance

technology (InsurTech), regulatory technology (RegTech), and digital currencies, are expanding in many countries and are poised to become commonplace financial products in the near future (Voshmgir 2019).

Initially, FinTech found its use cases primarily in the back-end systems of financial institutions. However, there has been a notable shift towards consumer-oriented services in recent years (Mueller 2017). Technology integration has become prevalent across various industries, including education, finance, and retail, indicating the broader adoption of FinTech solutions (Kitsios et al. 2021). Buckley et al. (2020) state that FinTech has become integral to many financial services, revolutionising the industry.

Regulators and policymakers have recognised the importance of supporting the FinTech ecosystem and have established testing environments and sandboxes to facilitate its diffusion in both developed and emerging economies. This supportive environment has contributed to the widespread adoption of FinTech, with nearly one-third of global consumers now utilising FinTech in some capacity (Hill 2021).

The convergence between technology and finance continues to create synergies, leading to disruptive and incremental innovations that fundamentally transform how corporations and individuals interact with financial products (Schueffel 2016). This ongoing transformation drives the exploration of new possibilities and enhances the overall experience of financial services.

2.2 Financial Technology (FinTech)

2.2.1 Opportunities

FinTech, as an innovative technology, has emerged to automate and enhance the delivery of financial services. Its adoption by businesses and institutions worldwide showcases the utilisation of digital technology to improve financial efficiency. FinTech has found applications in various domains, such as education, retail finance, and investment management, contributing to developing and utilising cryptocurrencies like Bitcoin (Luo et al. 2021). FinTech encompasses diverse

applications, including payment and cryptocurrency applications and Robo-advisors, which are pivotal in streamlining financial operations. The integration of FinTech offers numerous opportunities for organisations and contributes significantly to achieving the United Nations' Sustainable Development Goals (SDGs) over time.

One such opportunity lies in the competitive advantage it can provide to businesses. FinTech enables the analysis of vast amounts of data, offering remarkable benefits regarding consumer insights, product customisation, and demand forecasting (Ashta and Herrmann 2021). By leveraging these capabilities, businesses can enhance productivity and maximise profits. This aligns with SDG 8, which aims to foster global economic development and growth, as business expansion creates employment opportunities and reduces poverty. Furthermore, FinTech's ability to gather valuable data, facilitated by technologies like Artificial Intelligence (AI), empowers organisations to make informed management decisions. Fortune 500 companies have reported high-efficiency rates due to increased automation in financial markets, indicating the profitability associated with investing in FinTech (Wang et al. 2020).

In the healthcare sector, FinTech companies have developed promising applications that reduce healthcare costs and improve access to medical services. By expanding access, reducing cumbersome procedures, and facilitating cost-effective transactions, FinTech addresses the issue of healthcare affordability (Meiling et al. 2021). It promotes healthcare lending and funding, alleviating the burden of high treatment costs and enhancing access to medical care for all. This objective is closely aligned with SDG 3, which recognises all individuals' health and well-being rights. By lowering healthcare costs, FinTech contributes to poverty reduction and supports SDG 8's sustainable measures against poverty. FinTech's multifaceted applications and potential to drive financial innovation have significant implications for attaining sustainable development objectives, promoting economic growth, reducing poverty, and enhancing access to essential services such as healthcare.

2.2.2 Challenges

FinTech has emerged as an innovative technology that automates and improves the delivery of financial services. Its widespread adoption by businesses and institutions exemplifies the use of digital technology to enhance financial efficiency. FinTech has found applications in diverse domains, including education, retail finance, and investment management, thereby contributing to developing and utilising cryptocurrencies such as Bitcoin (Luo et al. 2021). FinTech incorporates a variety of applications, such as cryptocurrency applications and Robo-advisors, and it plays a crucial role in streamlining financial operations. The integration of FinTech provides organisations with numerous opportunities and contributes substantially to achieving the Sustainable Development Goals (SDGs) of the United Nations over time.

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2.3 The FinTech Ecosystem

FinTech, as an innovative technology, emerged to automate and enhance the delivery of financial services. Its adoption by businesses and institutions worldwide showcases the utilisation of digital technology to improve financial efficiency. FinTech has found applications in various domains, such as education, retail finance, and investment management, contributing to developing and utilising cryptocurrencies like Bitcoin (Luo et al. 2021). FinTech encompasses diverse applications, including payment and cryptocurrency applications and Robo-advisors. Integration of FinTech offers numerous opportunities for organisations and contributes significantly to achieving the United Nations' Sustainable Development Goals (SDGs) over time.

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The traditional FinTech ecosystem comprises predominantly five major components:

1. FinTech companies and start-ups
2. Technology innovators
3. Government agencies
4. Consumers, and
5. Financial institutions (Castro et al. 2020).

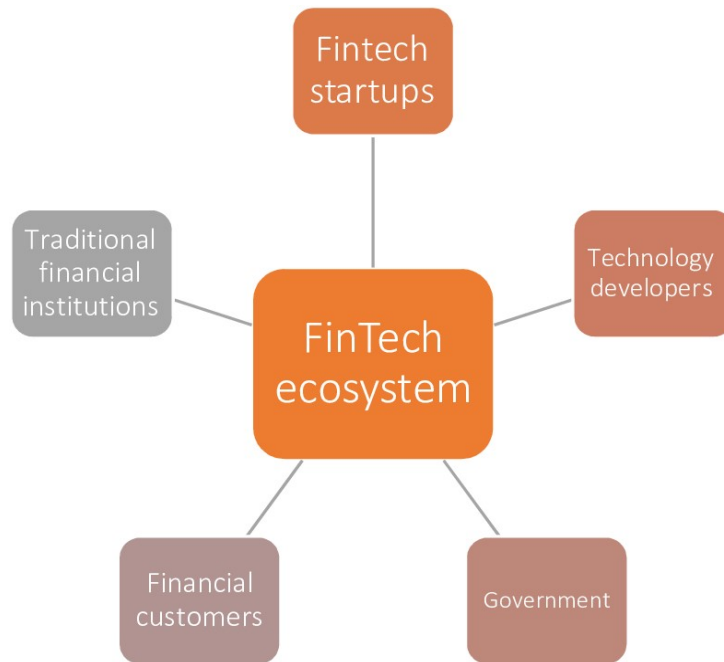


Figure 1: FinTech Ecosystem- Lee and Shin (2018)

2.3.1 FinTech Companies

As highlighted by Dealroom.co (2022), FinTech companies, technology developers, and start-ups utilise unconventional business models driven by entrepreneurial initiatives, and they have the potential to secure funding from angel investors and institutional sources. In 2021 alone, the FinTech start-up sector obtained a remarkable USD 125 billion in funding.

2021 broke every record for fintech VC investments with \$125B raised globally, up 2.8x since 2020.

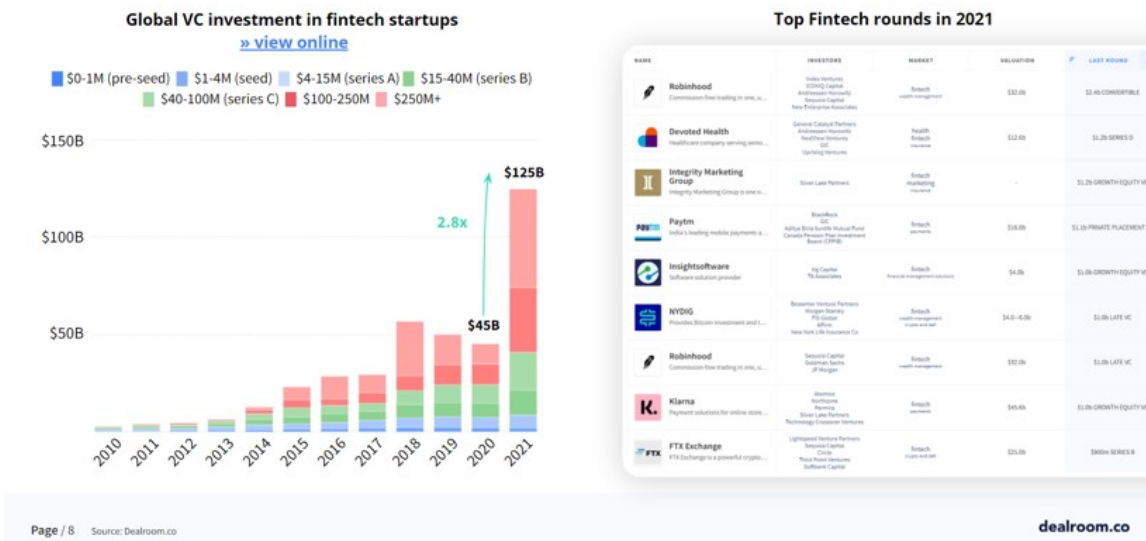


Figure 2: VC Investments in FinTech- Dealroom. co (2022)

These enterprises are leading the way in peer-to-peer remittances, crowdfunding, microfinance, microinsurance, and wealth management advancements. The success of FinTech can be attributed to its business model, which primarily relies on offering low-cost, personalised, and specialised products. By unbundling financial services and allowing consumers to access only the specific services they desire, FinTech can cater to a broader range of customers (Bartolacci et al. 2022).

2.3.2 Technology Innovators

Technology innovators play a crucial role in creating a conducive environment for successfully introducing FinTech products and services into the market. Their efforts focus on expediting the implementation of innovative financial services (Lee and Lee 2020). Integrating big data analytics technologies empowers enterprises to provide customised services to individual consumers. When combined with cloud computing, these technologies enable the establishment of web-based cloud services at a lower cost than traditional on-premises deployments.

2.3.3 Governments

Governments worldwide have actively promoted the growth and expansion of the FinTech ecosystem by implementing supportive policies and regulations tailored to their respective monetary and economic frameworks (Ahern 2021). As highlighted by Lee and Megargel (2021), Singapore stands out as an early adopter, implementing progressive regulations that relax payment restrictions to attract start-ups and investors and foster innovation and growth in the payment technology sector. Similarly, the Financial Conduct Authority (FCA) in the United Kingdom established regulatory sandboxes in 2016, a concept that has since been embraced in various regions, including Asia, the Middle East, and North America. As of 2020, over sixty financial regulatory sandboxes are worldwide (Buckley et al. 2020). Goo and Heo (2020) emphasise the influential role of FinTech regulatory sandboxes in facilitating innovation by allowing start-ups to lead and attract the necessary investments to sustain their value propositions. Nayak et al. (2021) further argue that the collaboration between government institutions and the FinTech industry is crucial, as it ensures a conducive business environment, access to markets, government and regulatory support, access to capital, and financial expertise, all of which are vital elements in the design and successful implementation of FinTech solutions.

Role	Responsibilities
Regulator	Sets rules and regulations for the ecosystem. Administers government services (e.g., residencies). Sets licensing requirements. Implements the regulations.
Policy setting	Sets the economic objectives and overall policies for the ecosystem (typically a government entity handling the general economic or sector development/planning).

Land Owner	Own the land of the ecosystem. Assigns land development rights to developers. Invests in infrastructure/services to support property development.
Developer	Defines business accelerators and offerings
	Sets service standards/promote the ecosystem
	Sets the operating model and contracts operators
	Installs, manage and maintains infrastructure
Operator	Handles part, or all, of real estate and services management responsibilities for developers
	Operates a one-stop-shop service for the tenants
Service provider	Supplies-specific services can be divided into three categories:
	Superstructure: offices, warehouses, and supplier units
	Utilities: power, gas, water, sewage, water treatment, telecom
	Value-added services: logistics, housing, labour recruitment, labour training, export support, customs clearance, legal/business advice, financing support

Table 1: Roles and Responsibilities of FinTech Stakeholders
(Diemers et al. 2015)

2.3.4 Traditional Financial Institutions

Traditional financial institutions have recognised the disruptive potential of FinTech and its implications for their market share and future growth, prompting them to incorporate FinTech into their product offerings and adapt their business models accordingly (Vasiljeva and Lukanova 2016). To embrace this technology and foster innovation, traditional financial institutions have engaged with disruptive FinTech companies through various means such as funding, partnerships, and acquisitions (Yang 2015).

Regulators, seeking to avoid the 2008 financial crisis recurrence, have imposed stricter oversight on traditional financial institutions (Bell and Hinsmoor 2018). As a result, regulatory restrictions on FinTech firms have been relaxed, allowing them to reconfigure their business models and provide personalised and accessible financial products to a broader market segment (Fan 2018). However, FinTech start-ups in many countries face the challenge of navigating the regulatory landscape to understand the potential impact of regulations on their business plans and strategies (Bromberg et al. 2017).

2.3.5 Financial Services Customers

The primary revenue for FinTech companies stems from consumers of financial services, including individual consumers, end users, and small and medium-sized enterprises (SMEs). Most FinTech revenue is generated by adopters of FinTech products and services aged 18 to 35. This demographic is known for its technological proficiency and willingness to embrace new technologies, making them a crucial target market for future iterations of FinTech services (Carbo-Valverde et al. 2022).

2.4 Drivers of the FinTech Ecosystem

The FinTech ecosystem is witnessing significant changes that are primarily driven by three essential phenomena (Giungato et al. 2017):

- a. Open Banking
- b. Blockchain technologies, and
- c. Digital Currencies

2.4.1 Open Banking

Open Banking is based on sharing consumers' financial data among financial institutions (Brodsky and Oakes 2017).

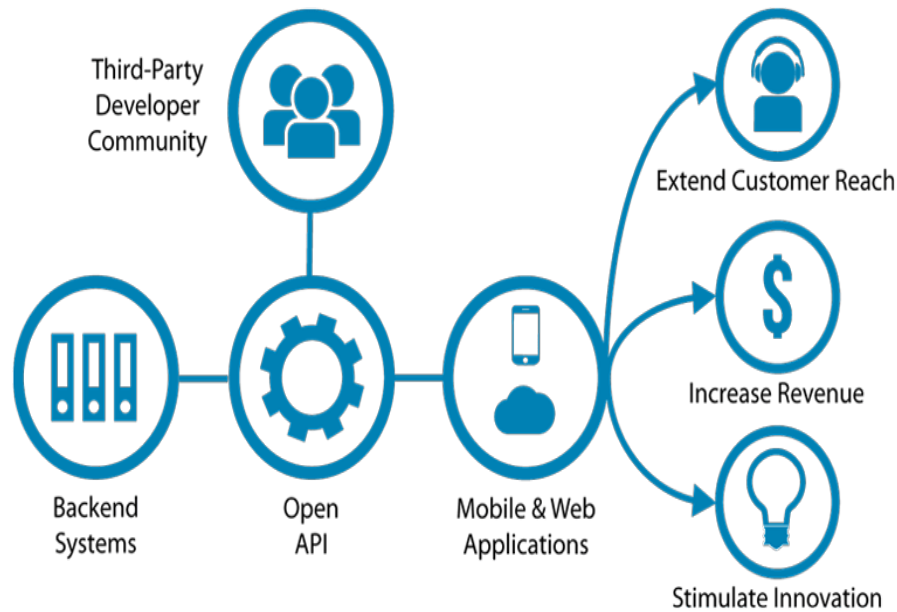


Figure 3: Open Banking- FinTech Futures (2021)

Open Banking is an innovative approach that facilitates the practical implementation of the General Data Protection Regulations (GDPR) and Payment Service Directive 2 (PSD2) within the European Union. It enables consumers to establish direct relationships with their preferred financial institutions, eliminating intermediaries and reducing standard financial transaction fees. By granting control over account information to banking consumers, Open Banking empowers them to share specific information with chosen financial service providers selectively.

Financial institutions incentivise consumers to share their account information, including transactional data, with other providers to gain access to new accounts and compare available products. Through the rapid aggregation of transaction history from various providers, consumers enhance their bargaining power and negotiate better terms for existing and new services. This concept is encapsulated within the term "Embedded Finance."

In 2015, the EU mandated the adoption of Open Banking by financial institutions, recognising its potential to significantly benefit consumers by facilitating online shopping and enabling new services for bank account management. Non-banking technology companies leverage Open Banking to offer financial services such as digital wallets, payments, and lending instruments, aiming to retain customers and establish robust retention mechanisms.

Technology verticals, including telecommunications, software, insurance, and logistics, are introducing embedded financial services targeting businesses and consumers. Small and medium-sized enterprises can establish bank accounts through their internal accounting and finance software, resulting in substantial time and cost savings. To meet the growing demand for embedded Finance, financial institutions are increasingly offering Banking-as-a-Service (BaaS) solutions that non-financial institutions can use to serve their clients (Fourie and Bennett 2022).



Figure 4: Embedded Finance- Townsend (2022)

The participation of Third-Party Providers (TPPs) is an integral part of the culmination of Open Banking. Yang et al. (2020) attribute the emergence of TPPs

to pioneering companies like Alipay and WeChat in China. These mobile wallet platforms form close collaborations with financial institutions and depend heavily on the existing banking infrastructure. Customers can conveniently access their bank accounts and financial instruments through the Alipay application, facilitating payments at a vast network of merchants. Although initially introduced in China, these services have successfully expanded to various countries, transcending national boundaries.

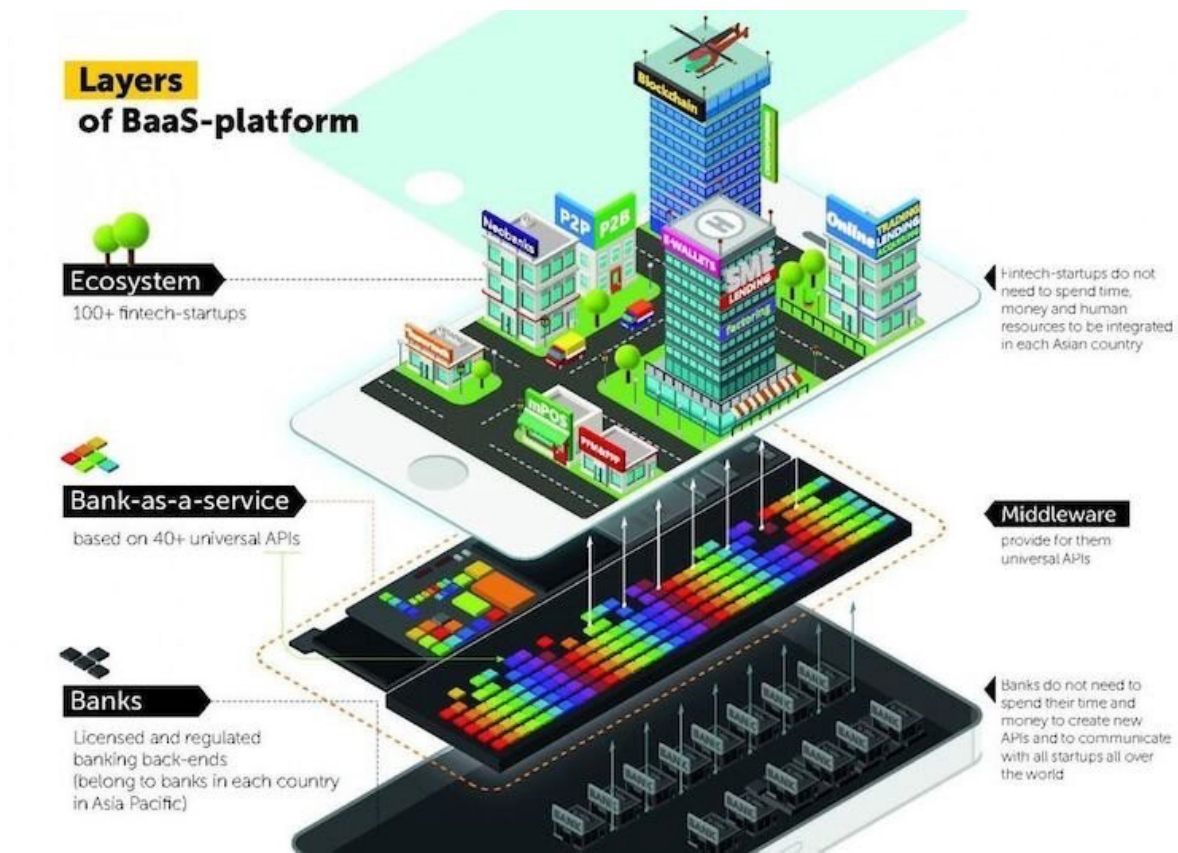


Figure 5: Banking-as-a-Service (BaaS) - Morales (2020)

2.4.2 Blockchain Technology

Blockchain technology has gained significant prominence recently and has become a crucial disruptor in the FinTech industry. Distributed Ledger Technology (DLT) is a fundamental element of Blockchain technology, featuring a decentralised

database that multiple parties manage. Each entry represents a collection of transactions within the ledger, and whenever a new transaction occurs within the Blockchain, all pertinent ledgers are updated accordingly. This mechanism establishes Blockchain technology as a distributed ledger system, ensuring immutability and employing cryptographic signatures, such as hashes, to swiftly identify potential attempts to modify records (Tapscott and Tapscott 2017).

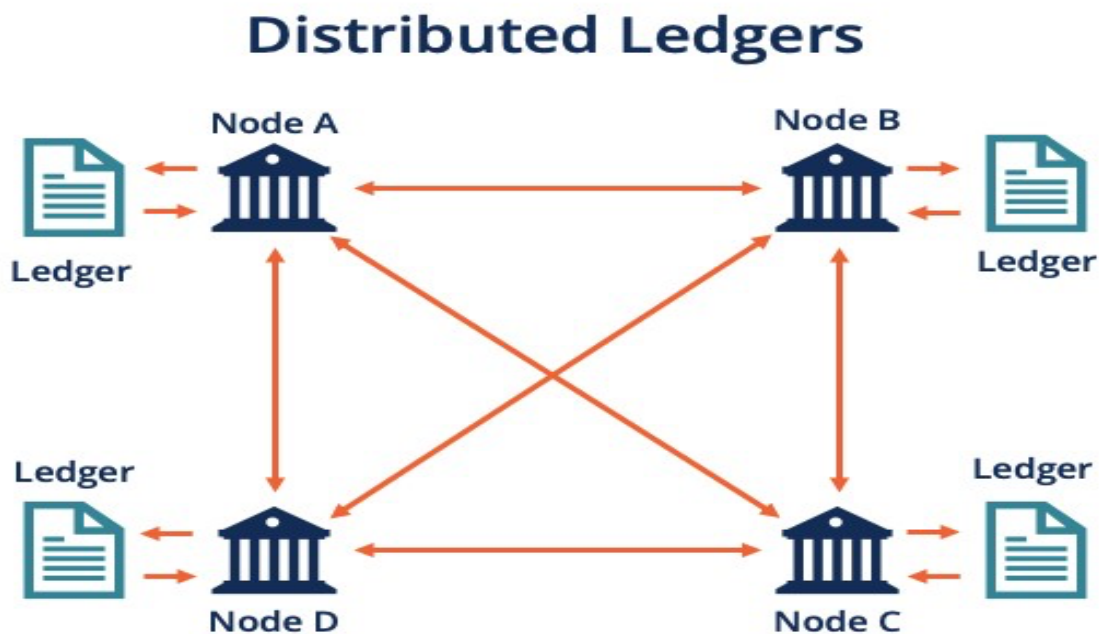


Figure 6: Distributed Ledgers - CFI (2022)

The study conducted by Perdana et al. (2021) provides evidence that distributed ledger technology (DLT), commonly known as blockchain, is a revolutionary technological innovation that has the potential to transform the financial services industry. The practical application of this technology extends to various fields, including asset trading, monetary transactions, logistical networks, asset enrollment, and stock control. Similarly, Zetzsche et al. (2020) emphasise the significance of Decentralised Finance (DeFi) as a crucial concept intertwined with blockchain. DeFi involves providing financial instruments through a cohesive integration of technical infrastructure, streamlined technological processes, and

application systems. This framework aims to facilitate financial services by involving multiple participants and end-users, transcending geographical boundaries, and enabling seamless interactions.

How Decentralised Finance Works

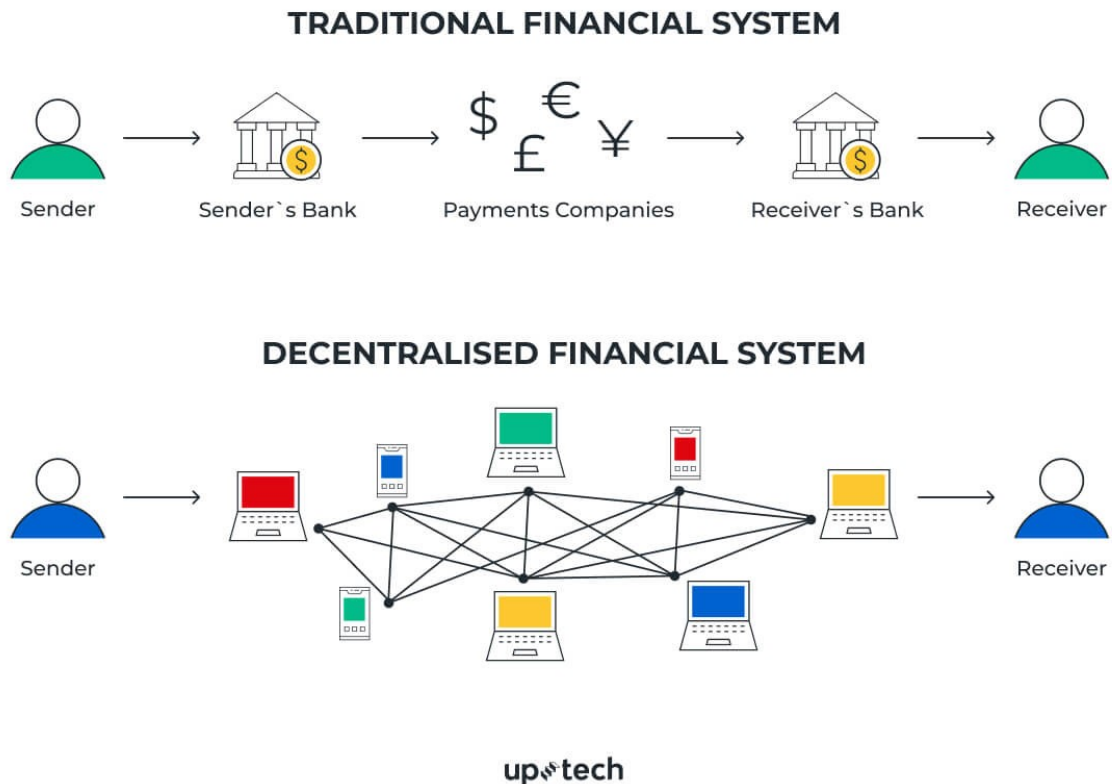


Figure 7: DeFi Financial Systems - Uptech (2022)

In addition to the advancements mentioned above, blockchain technology is closely intertwined with an innovation focused on cryptographic assets called Non-Fungible Tokens (NFTs). NFTs are cryptographic assets that possess unique properties, making them non-interchangeable with other assets. As Dowling (2022) explains, NFTs are blockchain-based tokens representing ownership rights over various digital assets, including images, videos, music, and even virtual world regions.

Notably, many non-fungible tokens are predominantly associated with the Ethereum blockchain (Clark 2021). However, it is worth acknowledging that the existing scholarly and industry literature on NFTs could be more extensive due to the observed low transaction volume. Nonetheless, the technology is expected to continue evolving and expanding in the coming years (Groby 2021).

2.4.3 Digital Currencies

Digital currencies, including Stablecoins and Central Bank Digital Currency (CBDC), constitute the final essential element of Blockchain technology. CBDC is positioned at the forefront of the next phase in financial systems. These currencies harness the fundamental tenets of Blockchain technology, a disruptive innovation that has revolutionised various industries. Forecasts suggest an astonishing surge in global demand for digital currencies, with projections estimating an unprecedented figure of \$5 billion by 2030 (Jun and Yeo 2021; Lipton et al. 2020; Berentsen and Schar 2019; Lai and Bautista 2021). These findings from multiple scholarly sources underscore the growing significance and potential of digital currencies in shaping the future of financial systems. Cryptocurrencies are digital currencies that function as decentralised peer-to-peer electronic systems, enabling direct online transactions between parties without intermediaries such as financial institutions. Distinguishing themselves from traditional financial assets, cryptocurrencies lack affiliation with monetary authorities and lack a physical representation. Instead, their value is derived from algorithms that meticulously track each transaction involving a specific crypto asset. Cryptocurrencies' valuation is independent of tangible assets, economies, and particular businesses (Corbet et al. 2019). The increasing popularity of cryptocurrencies can be attributed to their low transaction costs, direct peer-to-peer mechanism, and absence of government-imposed transaction fees. Since its inception in 2009, Bitcoin has established dominance in the cryptocurrency market, harnessing the power of Blockchain technology as its underlying foundation (Lacity 2022).

Stablecoins represent a category of cryptocurrencies pegged to stable currencies or assets, such as the United States dollar, to facilitate cryptocurrency trading and

provide stability akin to traditional fiat currencies. The International Monetary Fund (IMF 2019) defines Stablecoins as "*currencies that are fully secured or collateralised by fiat currency; a concept referred to as 'digital fiat currency'.*" In recent years, several central banks worldwide have ventured into the issuance of Central Bank Digital Currencies (CBDCs). A CBDC can be described as a centralised, bank-issued digital currency that combines the features of cryptocurrencies with the characteristics of conventional fiat money. Only a select number of countries, including Cambodia, Bahamas, Singapore, China, Uruguay, and Caribbean nations, have implemented this innovative and hybrid form of currency issuance. However, numerous other central banks, such as the Federal Reserve (FED) and the European Central Bank (ECB), have expressed their intention to introduce CBDCs in the foreseeable future (Mazzorana-Kremer 2022). CBDCs represent reliable units of currency backed by central banks and share similarities with other cryptocurrencies by enabling nearly costless and real-time transactions. They offer a progressive array of new monetary policies by establishing a direct link between consumers and central banks. Moreover, CBDCs facilitate transaction tracing, which has the potential to foster innovative business practices. However, it is crucial to acknowledge that CBDCs also present governments with a powerful tool for regulating individuals' finances, including the ability to directly withdraw or block funds based on various criteria, including social or discriminatory factors (Wang and Gao 2021).

2.5 Overview of the Research on FinTech Diffusion

Current scholarly research in FinTech diffusion primarily focuses on start-ups and the innovation of products and services (Suryono et al. 2020; Zavolokina et al. 2016; Gomber et al. 2017). Suryono et al. (2020) underscore the importance of FinTech frameworks, adoption models, and policy and regulatory factors in the research conducted thus far. However, there is still a dearth of research exploring the implications of FinTech on issues related to consumer data protection, financial ethics, financial and technology literacy, and the role of ICT infrastructure in

facilitating the diffusion of FinTech (Kumari and Sharma 2017; Anugerah and Indriani 2017; Hatammimi and Krisnawati 2018; Suryono et al. 2020). Moreover, there is a need for studies that approach FinTech diffusion from an Institutional Theory perspective, as this perspective can shed light on additional gaps in the current academic research on FinTech diffusion (Du et al. 2019).

There needs to be more scholarly literature regarding FinTech research in the Gulf Cooperation Council (GCC) region and the factors contributing to its diffusion. The existing body of research on the adoption of FinTech in emerging economies predominantly concentrates on peer-to-peer payment aspects, overlooking the broader institutional-level diffusion of FinTech (Batista and Vicente 2020). Coffie et al. (2020) argue that this emphasis on the dissemination of FinTech, rather than the diffusion of other technologies and use cases in emerging economies, is attributed to the relatively low rates of financial inclusion and the necessity for robust technological infrastructure in many of these countries.

2.6 Diffusion of Technology

Technology diffusion encompasses the process by which innovations proliferate globally, reflecting the rate at which a population embraces and adopts new technologies. Various factors contribute to promoting and expanding novel ideas within different contexts (Chandra and Kumar 2018; Vargo et al. 2020; Mallinson 2021). One such factor is the presence of underserved markets, which has played a significant role in driving the adoption and advancement of FinTech. Following the emergence of FinTech, one of its primary objectives has been to penetrate and cater to underserved markets, exemplified by the diffusion of technology from Europe to the United States. This example vividly highlights the imperative for FinTech to address the needs of these previously overlooked markets.

The surging demand for contactless payments has emerged as a pivotal driver fuelling the diffusion of financial technology (FinTech) globally. The rapid advancements within the FinTech sector have paved the way for substituting

traditional transaction methods with more sophisticated and user-friendly alternatives. This transformative shift has played a significant role in fostering the growth of e-commerce, a prevalent online transaction modality that offers remarkable advantages over conventional approaches. E-commerce transactions have garnered acclaim for their heightened trustworthiness and reliability, enhancing the overall customer experience.

Moreover, the intensified competition across industries has exerted substantial pressure on businesses to embrace FinTech solutions to cater to their discerning clientele's evolving needs and preferences. Notably, the amalgamation of cutting-edge technologies such as Machine Learning (ML), Cloud Computing, and Artificial Intelligence (AI) has been closely associated with enhanced industrial efficiency, prompting numerous enterprises to adopt and invest in FinTech to augment their operational effectiveness and gain a competitive edge (Chandra and Kumar 2018). Consequently, these noteworthy developments have paved the way for the widespread adoption of digital technology, revolutionising various sectors on a global scale. Multiple factors can influence the diffusion of new technologies across different regions. In certain developing countries, limited financial resources present a challenge for investing in technology. Adopting digital technology entails substantial financial investments, posing a barrier for businesses operating with limited funds (Andrews et al. 2018; Kelly et al. 2021).

Furthermore, technological innovation is characterised by its unpredictability and probabilistic nature. Investments in technology can yield diverse outcomes, including positive returns and potential losses. The inherent risk of investing in digital technology may deter businesses from embracing new technological advancements (Andrews et al. 2018; Kelly et al. 2021).

Some businesses may encounter challenges in adopting or implementing novel technologies, particularly when perceived as complex. Certain technologies may demand a high level of skill or expertise, making it necessary for businesses to acquire and develop the necessary human capital to operate such complex technologies effectively. Moreover, successfully adopting new technologies may

require companies and nations to possess an innovative workforce. In this regard, these businesses may need to bridge the gap in technological innovation by enhancing their workforce's technical capabilities (Andrews et al. 2018; Kelly et al. 2021).

The concept of diffusion originated in economics and social sciences, and it was later adopted by the field of marketing in the 1950s (Katz et al. 1963). The literature on technology diffusion draws from multiple disciplines, including technology, communications, marketing, and medicine (Jaiswal and Zane 2021). Rogers (1995) emphasises that the study of technology diffusion centres around comprehending the characteristics and functionalities of the technology, along with how its various features contribute to the well-being of individuals and societies. New technologies and innovations have the potential to transcend specific use cases and geographic boundaries (Stokey 2021) and contribute significantly to what is known as "social shaping," a concept that evaluates the effectiveness of innovation based on its adoption by businesses and consumers (MacKenzie and Wajcman 1999). Rogers (1995) argues that for the diffusion of innovation to be successful, it must be communicated through specific channels and over a predetermined period to a particular subset of individuals within the ecosystem.

Public policies play a significant role in either facilitating or hindering the adoption of specific technologies within specific geographical regions, directly influencing the technology diffusion process (Parmentola et al. 2020; Valente 1993). Policymakers closely monitor the rate of technology diffusion to assess its impact on businesses and end consumers. Caiazza (2016) argues that the absence of diffusion would have no economic or social implications. They suggest that technology diffusion enables widespread access to technology, leading to increased profitability, efficiency, and sustainability for firms, which are closely monitored by policymakers, particularly in the financial sector. The OECD (2011) assert that governments and policymakers intervene in technology diffusion through three main approaches. The first intervention aims to ensure the dynamic functioning of markets and the presence of adequate competition policies. The second intervention focuses on providing appropriate incentives for innovation. Peter et al. (2013) contend that the

third government intervention, as a key stakeholder, is critical as it seeks to address significant social challenges through technology diffusion.

2.7 Diffusion of FinTech

As highlighted in the UK Alternative Finance Industry Report (2014), alternative finance encompasses a range of innovative financing models that operate independently from the conventional financial framework. These use online schemes or websites to connect pledge campaigns with funders and financial supporters directly; they employ digital innovation to transport financial services. These models include digital scheduling and frameworks, crowdfunding, shared (P2P) buyer lending, distributed business lending, and receipt trading. Alternative financing impacts the buyer, and the terms of private company loans rapidly alter the purchaser's likelihood of financial inclusion.

The emergence of digital financing models is driven by the need to address the inherent information asymmetry issues associated with traditional financing options. These models effectively mitigate the information asymmetry problem by directly connecting funders and fundraising campaigns, thereby reducing information disparities among market participants. Additionally, financial innovations have led to significant reductions in operational costs. Technological advancements have facilitated efficient coordination, administration, and data utilisation, reducing operating expenses. These advancements have played a crucial role in fostering the adoption and diffusion of financial innovations in transactions (Makina 2019), supported by the operational cost creative hypothesis (Niehaus 1983).

The Technology Acceptance Model (TAM), developed by Davis (1989), provides insights into the factors influencing individuals' actual use of innovations, directly and indirectly. These factors include the user's social objectives, attitude towards using the innovation, perceived usefulness, and perceived convenience. TAM offers a framework for understanding how external factors influence individuals' beliefs, behaviours, and intentions to adopt innovations. Two key psychological concepts

underpin TAM, namely perceived utility, and usability. The recent transformation of technologies such as blockchain, the Internet of Things (IoT), and Artificial Intelligence (AI) has been remarkable. The convergence of these numerous technological advancements sets the current financial landscape apart from previous ones. FinTech innovations promise a more efficient, accessible, and robust financial system. While some FinTech firms form partnerships or alliances with traditional banks, others operate as independent financial services entities. The provision of financial services now extends beyond the confines of the regulated economic sector. FinTech's ability to address information disparities and reduce currency exchange fees is a powerful tool for advancing financial inclusion.

The development of Information and Communication Technology (ICT) has played a pivotal role in introducing and disseminating various financial technologies that have transformed the financial sector (Kanga et al. 2021). The significance of these new financial technologies lies in their broad reach across diverse consumer segments, applications, and geographic regions. The diffusion of economic and technological advancements within nations and across international boundaries is crucial for long-term development (Nancy et al. 2020). ICT platforms have facilitated the proliferation of several financial technologies, commonly referred to as FinTech, which encompasses a wide range of innovations such as automated teller machines (ATMs) and associated digital networks, mobile wallets, mobile payment systems, automated credit scoring techniques, online banking, Robo Advisers, and Blockchain technologies. The diffusion of FinTech has brought about transformative changes and reshaped the financial sector, leading to an extensive body of literature exploring its implications for financial inclusion and societal well-being.

Both policymakers and profit-driven private businesses have recognised the opportunities presented by these technologies. Among the various FinTech products, crowdfunding and mobile money have had the most profound impact on promoting financial inclusion (Kanga et al. 2021). Mobile technology has enabled the proliferation of mobile money services, providing millions of previously unbanked individuals access to formal financial accounts and a crucial entry point into the traditional financial system. Surprisingly, the World Bank reveals that mobile money

accounts outnumber traditional bank accounts. Furthermore, the utilisation of Web 2.0 technologies enables crowdfunding, which has the potential to enhance financial access for small businesses facing financial challenges.

Overall, the advancements in FinTech and their diffusion have brought about significant changes in the financial landscape, with profound implications for financial inclusion and economic development. As the International Financial Corporation (IFC) reported, the FinTech industry experienced remarkable growth between 2014 and 2016, attracting a substantial investment of \$19 billion from various investors. FinTech firms have three noticeable impacts on the financial industry (IFC 2017). Inadvertently, they provide the versatility necessary to provide inexpensive and manageable products and services unavailable in traditional banks and financial institutions. Thirdly, they provide bank-like services that are not regulated in the same manner as conventional institutions (Makina 2019).

The introduction of mobile money, associated ATM networks, digital networks, and payment systems directly and indirectly, affects FinTech diffusion. The innovation of forming non-proprietary digital networks with financial services can increase efficiency and productivity in the financial services sector (Scott et al., 2017), where the positive linkage of externalities is anticipated to have a significant impact (Hall and Khan. 2003). Financial technologies such as digital currency, mobile phones, and payment systems may also "enable" developing nations to transition to more intelligent and contemporary economic systems. (Lashitew et al. 2019) promoting international cooperation.

2.8 Gulf Cooperation Council (GCC)

The Gulf Cooperation Council (GCC) is a pivotal regional organisation steadfastly committed to fostering comprehensive economic, social, and political cooperation among its esteemed member states. Since its inception on the auspicious date of 4th February 1981, the GCC has consistently convened annual summits, serving as

reputable forums to deliberatively address and confront pressing regional challenges and matters of utmost significance (Shaya and Sun 2019).

Comprising six distinguished member states, namely Saudi Arabia, Bahrain, Oman, Kuwait, Qatar, and the United Arab Emirates, the GCC stands tall as an embodiment of a well-structured and robust regional cooperation framework, firmly grounded in the principles of mutual understanding, shared goals, and collective prosperity (Shaya and Sun 2019). This noble organisation serves as a beacon of unity, playing a vital role in advancing its esteemed member states' collective interests and aspirations while concurrently nurturing and fortifying the bonds of solidarity and camaraderie that underpin their enduring partnership.

As the GCC navigates the complex terrain of regional dynamics, its unwavering commitment to harmonious collaboration and pursuing common objectives is poised to foster an environment conducive to growth, stability, and enhanced regional integration. Through its visionary leadership and concerted efforts, the GCC sets a commendable example for other regional organisations, serving as a testament to the transformative power of unified action and collective resolve.

The member states share similarities in terms of social and economic conditions, as well as regulatory practices. For instance, all member states rely heavily on petroleum and natural gas resources as the mainstay of their economies, forming a common foundation for regional cooperation within the GCC. The GCC plays a crucial role in facilitating communication, coordination, policymaking, and conflict resolution among its member nations, ultimately contributing to the economic growth and development of the region. Hanieh (2018) highlighted that state and private Gulf investors currently possess trillions of global assets. The organisational structure of the GCC encompasses three central entities. The Supreme Council, headed by the heads of state, is the highest authority within the GCC (Hanieh 2018). The Ministerial Council comprises foreign ministers and designated ministers representing member states (Shaya and Sun 2019). The Secretariat General includes a secretary general, assistant secretary generals, and supporting staff (Shaya and Sun 2019). These

three entities oversee the council's operations and facilitate coordination among member states.

2.9 FinTech in GCC Countries

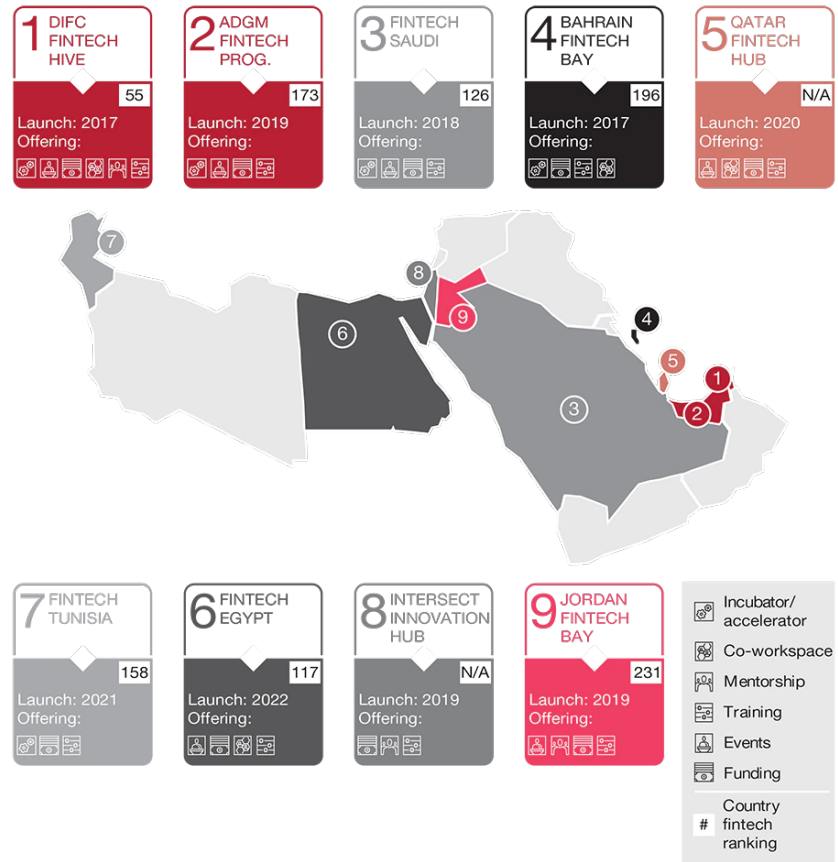
Oman, Bahrain, Qatar, Kuwait, Saudi Arabia, and the United Arab Emirates rely substantially on oil and gas production and exports. However, many nations actively invest in new technologies and embrace digital transformation to diversify their economies. Due to their shared interests, proximity, similar political systems based on Islamic values, and sense of shared destiny, these states formed the Gulf Cooperation Council (GCC) on May 25, 1981, in Riyadh. The GCC member nations recognise the need to invest in corporate and government digital technology industries, with significant efforts such as the UAE's Al Amal (Hope) Mars mission to raise the region's technological prominence. Furthermore, governments and businesses in the GCC region use realistic education and technology development approaches to benefit all inhabitants and encourage long-term progress (Rosenberg 2021).

Abdeldayem and Dulaimi (2020) underline the importance of increased FinTech research, education, and professional training within the Gulf Cooperation Council (GCC). Regardless of the presence of finance departments and research centres, GCC colleges should aspire for top rankings in FinTech education in the Middle East. Professional training for the FinTech industry should be in line with industry requirements. However, the instructional strategy and methodology are based on traditional practices, and more innovation in financial technology and digital transformation is required. The report emphasises the need for greater consistency to keep pace with the global tech race. However, the survey shows a significant increase in e-education within the GCC since the global financial crisis, echoing trends in other nations. Furthermore, the research indicates that Master and Doctoral programmes frequently lack good planning, appropriate direction for professional growth in the FinTech industry, practical expertise, and effective

coordination between academic institutions and industry partners. Furthermore, the lack of simulation studies, the absorption of new practises and procedures, and educational institutions' engagement of emerging technologies all contribute to the misalignment of FinTech academic standards.

The significant investment in developing FinTech education in the Gulf Cooperation Council (GCC) region is regarded as a promising aspect of the FinTech business. The rise and development of the GCC FinTech industry can be attributed to various factors, including implementing fatwa limits in Islamic banking, initiatives undertaken by the Saudi central bank, advancements in Blockchain products, and research focused on emerging technologies like cryptocurrency (Barberis et al. 2019).

Strategy& (2022) highlight the establishment of numerous FinTech centres in different Gulf Cooperation Council (GCC) member nations. These GCC FinTech accelerators and incubators have significantly contributed to supporting and nurturing entrepreneurs in their efforts to establish and expand diverse FinTech firms. A prominent illustration of this is the FinTech Hive, launched in 2017 as an integral part of the UAE's Dubai International Financial Centre (DIFC).



Source: Richie Santosdiaz, "Overview of Key Fintech Hubs Across the Middle East and Africa," *The Fintech Times*, October 30, 2021 (<https://thefintechtimes.com/overview-of-key-fintech-hubs-across-the-middle-east-and-africa/>); Findxable 2021 Fintech hub rankings (https://findxable.com/wp-content/uploads/2021/06/Global-Fintech-Rankings-2021-v1.2_30_June.pdf)

Figure 8: FinTech Hubs in the Middle East and North Africa Strategy& (2022)

Drawing on the comprehensive insights offered by the esteemed S&P Global Ratings Report (2019), it becomes abundantly clear that the discerning customers residing within the Gulf Cooperation Council (GCC) countries have undeniably developed an escalating inclination towards embracing digital financial solutions. This profound preference, characterised by an ardent pursuit of seamless technological experiences, has exerted considerable influence in shaping the trajectory of public policies, instigating strategic reforms, and fostering an environment conducive to enhanced capital accessibility for the burgeoning FinTech sector.

The transformative power of FinTech, in its most simple yet impactful form, has played an instrumental role in fortifying the robustness of remittance and payment systems, reinforcing their foundations through the judicious integration of cutting-edge technological innovations. As a direct consequence, the efficacy and effectiveness of monitoring frameworks governing these important financial transactions have been bolstered, signifying a pivotal stride towards ensuring heightened transparency, accountability, and regulatory compliance.

Such forward-thinking initiatives, underpinned by the GCC countries' resolute commitment to progress and innovation, resonate as vivid testament to their steadfast dedication to harnessing the immense potential of FinTech to revolutionise the financial landscape. As the GCC region remains poised at the forefront of digital transformation, this dynamic confluence of digital financial solutions and prudent policy frameworks propels economic growth and stability. It sets a compelling precedent for other nations and regions to emulate in their quest for a prosperous and technologically empowered future.

The substantial contribution of remittances made possible by a sizable expatriate population is responsible for the significant increase in FinTech activity throughout the Gulf Cooperation Council (GCC) region, particularly in the United Arab Emirates (UAE). Notably, the UAE and other GCC governments have taken proactive measures to bolster the FinTech industry and promote financial innovation. These measures encompass incentives for entrepreneurs and start-ups, formulating new policies and strategies, and garnering support from key stakeholders (Alam and Nazim 2021).

Projections by MENA Research Partners indicate a remarkable upsurge in the number of FinTech start-ups in the MENA region, including the GCC bloc. The count is expected to reach 465 by 2020, representing a substantial increase from the 96 recorded in 2019. Furthermore, capital investment in FinTech is projected to reach USD 2.28 billion by 2022, demonstrating a significant rise from USD 287 million in 2019 (Allen 2021). MENA Research Partners, a renowned research firm in the region, underscores that the FinTech sector in the MENA region, spearheaded by Saudi

Arabia and the UAE, will undergo a transformative phase and experience considerable growth (Alam and Nazim 2021).

2.9.1 FinTech in Saudi Arabia

Fostering a vibrant economy that embraces future-oriented investments is a critical goal in line with Saudi Arabia's Vision 2030, which acts as a strategic blueprint to diversify the country's economy and minimise reliance on the energy sector. To that end, the Financial Sector Development Programme (FSDP) encourages the participation of new actors, particularly FinTech start-ups, to boost global economic rivalry, inspire innovation, and propel overall development. Essential techniques for growing FinTech and gaining funding, as mentioned in the FSDP (2020) document, include establishing and facilitating venture capital (VC), crowdfunding, and equity financing. Furthermore, entrepreneurship is encouraged, as is developing a helpful start-up ecosystem. Moreover, the document emphasises the importance of assessing the satisfaction index of the Saudi FinTech ecosystem to analyse its effectiveness and impact (FSDP 2020).

Establishing the National Digital Transformation Unit (NDU) falls within the purview of Saudi Vision 2030 and operates under the auspices of a high-level council. The primary objective of this programme is to position Saudi Arabia as a leading digital government agency, fostering a sustainable digital economy anchored in innovation and efficient digital capabilities (NDU 2020). The NDU places utmost importance on effecting a transition to a digital society by creating digital platforms that actively and meaningfully engage the community, thus enhancing the experiences of citizens, tourists, residents, and investors within the Kingdom (NDU 2020). The Kingdom of Saudi Arabia has garnered international acclaim for its robust e-government programme, which has contributed to the growth of its economy. Notably, it has achieved commendable scores across various indices, including the E-Participation Index (EPI), the Online Service Index (OSI), and the UN E-Government surveys, thereby affirming the existence of a conducive infrastructure for nurturing FinTech ecosystems (UN 2018).

For the financial technology sector to grow, Muthukannan et al. (2021) emphasise the need for a stable, strong, autonomous, collaborative, and synergistic ecosystem. Based on the findings of Diemers et al. (2015), the authors argue that the government, entrepreneurs, and financial institutions are crucial components and actors in a FinTech ecosystem. Furthermore, Lee and Shin (2018) identified five influential groups in the FinTech ecosystem: 1) new businesses in the financial technology sector, 2) customers in the financial industry, 3) traditional financial institutions, 4) governments, and 5) technologists who drive the development of new technologies.

The Saudi Monetary Authority (SAMA) has taken proactive measures by launching FinTech Saudi, an initiative to nurture and expand the Kingdom of Saudi Arabia's financial technology (FinTech) sector. This initiative aims to catalyse the growth of financial services, facilitate the kingdom's transformation into a global hub for FinTech and technology industries, promote the development of small and medium enterprises (SMEs), and create job opportunities. Furthermore, it aims to diversify the local economy, encourages domestic banks, improve citizens' knowledge and abilities, make the initial edition of the Kingdom's FinTech ecosystem, and attract international FinTech companies to participate actively.

The Saudi government has set a lofty goal of transitioning the payment system to a cashless environment by 2013, increasing the kingdom's digital payment volume to 70% from 18% in 2017. This ambitious aim is a noteworthy milestone that displays a solid commitment to financial inclusion ideals. Notably, in June 2019, the installation of point-of-sale terminals in the bank accounts of many medium-sized businesses and micro dealers aided this changeover. Near Field Communication (NFC) technology penetration has been critical in the Saudi industry, accounting for 53% of all purchases in 2017 and 12% in 2018. NFC and contactless payments have emerged as the preferred payment techniques in Saudi Arabian retail outlets. This trend is demonstrated by over 94% of the country's point-of-sale terminals are open to innovation. The overall value of transactions made through these terminals hit an all-time high of 232.3 billion Saudi Riyals in 2018, topping 1.032 million transactions by year's end, indicating a significant rise over the 708 million

transactions recorded in 2017. Almuhammadi (2020) reports 100 million monthly and 4 million daily transactions from the point-of-sale system. Saudi Arabia has a booming FinTech industry with a wide range of applications.

The FinTech Saudi 2020-2021 Annual Report reveals a remarkable surge in investments in financial technology start-ups, reaching an astounding 157.2 million USD. This figure represents a substantial growth of 150 million USD compared to the previous year (The Fintech Times 2022). Because of the extensive use of cell phones, notably the iPhone, services such as Apple Pay are now available at practically every store and establishment in the country. Based on data produced by Visa in 2021, it is evident that Saudi Arabia exhibits the highest percentage of customers in the region who utilize contactless payment methods. This data highlights a growing trend of cashless transactions among a significant segment of the population in the country. These developments align with the Saudi Arabian Monetary Authority's (SAMA) Vision 2030 strategy plan, which intends to expand electronic payments by 70% by 2025. Notably, the efforts have exhibited resilience, even in the face of the COVID-19 epidemic, as highlighted by Marmore MENA Intelligence (2021).



Figure 9:: FinTechs in Saudi Arabia
(Fintech Saudi 2020-21 Annual Report)

2.9.2 Fintech in UAE

Dubai, a prominent economic and commercial hub in the United Arab Emirates (UAE) and the broader Middle East has garnered significant attention as the UAE's primary centre for economic activities (Schilir 2021). The emirate's commitment to market liberalism and financial transparency has established it as an attractive destination for global trade and investment (Schilir 2021). Implementing policies fostering economic growth in 2017 has paved the way for a surge in financial technology companies in the Gulf region (Mishrif and Kapetanovic 2018). Dubai's remarkable economic development can be primarily attributed to its open and well-integrated economy, which remains intricately connected to the global economic and financial system (Mishrif and Kapetanovic 2018). Furthermore, the United Arab Emirates offers a conducive environment that nurtures and encourages innovation

across various sectors, including banking and technology, contributing to the country's diverse economic landscape.

In addition to its broader economic endeavours, Dubai has also demonstrated a growing focus on blockchain technology by establishing the Global Blockchain Council. Led by the Dubai Future Foundation under the auspices of the UAE government, this initiative brings together 46 influential members who actively contribute to developing the blockchain market (Alam and Nazim 2021). The council encompasses various participants, including government agencies, foreign enterprises, prominent UAE banks, free zones, and leading blockchain technology companies such as Microsoft, Du, SAP, IBM, and Cisco (Alam and Nazim 2021). This collective effort underscores Dubai's steadfast commitment to exploring and leveraging blockchain technology's potential across diverse sectors, reflecting its proactive stance in embracing technological advancements.

Zarrouk et al. (2021) highlight three key characteristics that contribute to the United Arab Emirates (UAE) digital ecosystem, positioning it as a favourable choice for establishing the leading FinTech centre in the Middle East and North Africa (MENA) region:

1. The UAE's ecosystem exhibits responsiveness, acceptance, and support for new financial alternatives.
2. There is a solid commitment to continuous initiatives within the ecosystem.
3. The government is central in driving innovation, aligning with a broader vision.
4. The implementation of open policies aims to attract and welcome international talent.

As a result, FinTech start-ups concentrate their efforts primarily on remittances, online loans, and digital payment systems, thereby revolutionising financial systems by introducing novel platforms and investment prospects (Dubai Future Foundation 2020).

The emergence of cryptocurrencies and digital tokens has disrupted the FinTech landscape, particularly in the realm of digital payments. Despite the inherent price volatility and uncertainty associated with cryptocurrencies, their acceptance and growth have experienced a remarkable upsurge globally, including in the United Arab Emirates, particularly considering the COVID-19 pandemic. In May 2021, the Dubai Multi Commodities Centre (DMCC) unveiled the DMCC Crypto Centre, an integrated platform catering to businesses operating in the blockchain and crypto sectors. Establishing such a centre underscores the critical significance of cultivating an ecosystem that offers crypto entrepreneurs access to resources, funding, and opportunities to sustain and augment global trade (Schilir 2021).

Zarrouk et al. (2021) shed light on three key attributes that contribute to the United Arab Emirates (UAE) emerging as the predominant epicentre for financial technology (FinTech) start-ups in the Middle East and North Africa (MENA) region, experiencing remarkable growth and advancement. MAGNiTT and ADGM (2019) and Magdy Rezk et al. (2022) emphasise that the UAE commands the most sizeable portion of FinTech start-ups in the MENA region, constituting 46% of the total. Moreover, in 2019, the UAE accounted for half (47%) of all FinTech service agreements and a substantial majority (69%) of all regional investments. As a result, the UAE houses approximately one-third of all FinTech start-ups in the MENA region.

This rapid growth in the UAE's FinTech industry can be attributed to several factors:

1. The establishment of economic free zones has provided an enabling environment for FinTech companies to thrive.
2. The national vision, actions, and policies of supportive government entities have fostered the industry's growth.
3. The expansion of the Information and Communication Technology (ICT) ecosystem, led by the government, has contributed to the flourishing FinTech landscape.

The comprehensive endeavours encompass a multitude of strategic initiatives, including accelerator programmes, regulatory sandboxes, synergistic collaborations between the private sector and FinTech start-ups, the establishment of investment funds, and the presence of a tech-savvy and receptive young population in the United Arab Emirates (UAE) and the broader region (FinTechnews Middle East 2021). These multifaceted efforts collectively form a robust framework that fosters the growth and development of the FinTech sector, propelling innovation, nurturing entrepreneurship, and cultivating an environment conducive to advancing financial technology.

A meticulous examination of the FinTech ecosystem in the United Arab Emirates (UAE) in 2021, as documented by FinTechnews Middle East (2021), presents a comprehensive panorama characterised by the active presence of 134 vibrant and dynamic FinTech enterprises. These companies are at the forefront of diverse FinTech use cases, encompassing a broad spectrum of cutting-edge innovations such as cryptocurrencies, e-wallets, blockchain technology, lending platforms, digital banking, international remittances, open banking, artificial intelligence, Insurtech, payment solutions, and wealth management technology. This rich tapestry of FinTech initiatives illustrates the thriving landscape and the multidimensional nature of FinTech entrepreneurship within the UAE.

The FinTech milieu in the United Arab Emirates (UAE) epitomises a resilient and interdependent ecosystem fostered by a network of diverse institutions that fortify its foundation. Within this dynamic landscape, FinTech companies and financial institutions catering to a wide array of use cases are subject to regulatory oversight by two distinct divisions operating autonomously within the central bank. Notably, the Dubai Financial Services Authority (DFSA) supervises and regulates 400 FinTech enterprises alongside 48 commercial banks and 37 money exchange establishments. At the same time, the Financial Services Regulatory Authority (FSRA) likewise exercises regulatory authority over these entities, ensuring compliance with pertinent regulations and standards. Such a meticulous regulatory framework underscores the UAE's commitment to fostering a secure and well-governed FinTech ecosystem.

In a concerted effort to bolster and cultivate the burgeoning FinTech sector in the UAE, the government has taken a proactive stride by instituting the UAE FinTech Office, a specialised department entrusted with critical responsibilities encompassing cutting-edge research, nurturing global alliances, and enticing exceptional talent to contribute to the nation's flourishing FinTech landscape. As elucidated by the authoritative source of FinTech Middle East (2021), the UAE indisputably commands a prominent stature as the domicile for an astounding 50% of all FinTech enterprises in the Middle East and North Africa (MENA) region, thereby reaffirming its preeminent status as the unrivalled epicentre of FinTech innovation and progress in the region.

The formidable existence of regulatory authorities, namely the Dubai Financial Services Authority (DFSA) and the Financial Services Regulatory Authority (FSRA), combined with the establishment of the UAE FinTech Office, unequivocally demonstrates the unwavering dedication of the UAE government towards cultivating a dynamic milieu that fosters unfettered growth and ingenious breakthroughs within the realm of financial technology (FinTech). These concerted endeavours ardently pursue the overarching objectives of effectuating vigilant supervision, enabling collaborative synergies, and harnessing the vast reservoir of talent and untapped potential inherent in the burgeoning FinTech sector of the UAE.



Figure 10: FinTech Landscape in the UAE (FinTech Middle East 2021)

The United Arab Emirates (UAE) distinguishes itself as an exemplar among its Gulf Cooperation Council (GCC) counterparts through its extraordinary pace of embracing and integrating Information and Communication Technology (ICT). An insightful study by the World Economic Forum (2019) establishes that the UAE has undeniably attained global leadership in ICT adoption rates. The UAE's population, characterised by vibrancy, expansion, and technological savvy, serves as a crucial driver for the country's growth in financial technology (FinTech). Furthermore, the extensive use of mobile devices, which deeply permeates the lives of UAE residents, exerts a profound and transformative influence on disseminating and adopting innovative FinTech solutions (Zarrouk et al. 2021).

The empirical findings of the study reveal a significant increase in the proportion of individuals who have access to mobile Internet and broadband connections. This percentage surged to an astounding 250% in 2018, representing a substantial escalation from the recorded 208.5% in 2000. Furthermore, ground-breaking

research by McKinsey in the US unequivocally demonstrates that the UAE's mobile payments industry is expanding at an impressive rate of 30% annually. By 2018, nearly 98.5% of the UAE population had achieved Internet accessibility. Projections for the future indicate a compelling trajectory for the mobile payment landscape in the Middle East and North Africa (MENA) region, with a projected compound annual growth rate of 17.8% by 2025. This growth is estimated to reach a staggering value of US\$434.5 billion (Zarrouk et al. 2021).

The United Arab Emirates (UAE) boasts a resilient information and communication technology (ICT) infrastructure, characterised by its formidable internet penetration rate and the surging adoption of mobile payment solutions. These factors collectively position the UAE as a highly promising and conducive ecosystem for the proliferation and evolution of financial technology (FinTech). Furthermore, the projected trajectory of mobile payments' growth within the broader Middle East and North Africa (MENA) region signifies digital financial services' escalating significance and untapped potential in the UAE and its surrounding areas.

2.9.3 FinTech in Kuwait

Kuwait distinguishes itself from its regional counterparts through its robust commercial sector, thriving economy, technological advancements, impressive educational achievements, and well-developed physical infrastructure. The population of Kuwait showcases a remarkable level of education and proficiency in modern technologies. Recent observations underscore a significant shift among Kuwaiti residents towards embracing digital goods and services, as Rabaa'i et al. (2022) emphasised. The populace is receptive to digital offerings, expressing satisfaction with services and products encompassing loyalty programmes, enticing discounts, attractive incentives, reliable mobile payment solutions, streamlined account creation processes, and innovative savings plans (NBKCapital 2019; The Times Kuwait 2019). These digital offerings effectively cater to their needs and preferences for online shopping experiences.

Moreover, electronic banking is experiencing a remarkable surge in its adoption rates within the Kuwaiti context. Empirical investigations conducted by KFAS (2019)

shed light on the tremendous success of e-banking and m-wallet services in Kuwait, boasting an impressive adoption rate of 146.6% for mobile services. This figure surpasses the global average of 64.5% observed in other developed nations. Notably, Kuwait exhibits an exceptionally high smartphone ownership rate, with an astonishing 99.7% of households equipped with these handheld devices. Furthermore, Kuwait's inhabited regions benefit from extensive mobile network coverage, with 4G LTE services spanning 97% of the nation's territory.

Kuwait acknowledges its heavy reliance on the oil industry, in line with its GCC counterparts. It seeks to diversify its economic foundation to reduce dependence on this sector, as outlined in Kuwait Vision 2035. The transformative objectives of this vision are highlighted by The Times Kuwait (2019), emphasising critical sectors prioritised for development, including technology, culture and tourism, commercial and financial services, and other associated domains. Kuwait recognises the imperative of addressing intensifying competition, evolving customer expectations, and the vast opportunities presented by digital financial services to remain abreast of global advancements and compete on par with industrialised nations.

Despite its relatively modest size, Kuwait boasts extraordinary technology adoption rates and exhibits the highest income per user for technology enterprises, as Global Finance (2020) reported. Consequently, Kuwaiti banks have proactively embraced technological innovations and are swiftly adapting to these transformative shifts, as documented by The Times Kuwait (2019) and KFAS (2019). Notably, recent developments, such as Apple's collaboration with all commercial banks to introduce its flagship payment system in Kuwait, are expected to propel the adoption of financial technology to even greater heights. Arab Time, a prominent Kuwaiti daily, estimates that approximately 90% of iPhone users will utilise Apple Pay for their financial transactions (Arab Time 2022). These advancements signify Kuwait's determination to remain at the forefront of digital financial services and technology integration.

Alam and Nazim (2021) highlight a notable surge in start-ups specialising in electronic payments within the Kuwaiti market. These emerging enterprises continuously innovate and introduce novel use cases, contributing to Kuwait's dynamic landscape of electronic payment solutions.

2.9.4 FinTech in Qatar

While Qatar has been perceived as lagging its GCC counterparts in terms of financial technology (FinTech) development, recent endeavours by the Qatari government have indicated a renewed and substantial emphasis on this sector. This signifies a clear commitment to fostering the digital transformation of the financial industry within the nation (Amanulla and Sherif 2022).

Recognising the growing significance of FinTech in reshaping global financial landscapes, Qatar has taken proactive measures to bridge the gap and enhance its position in this evolving ecosystem. The government's renewed focus on FinTech is driven by a strong realisation of its potential benefits, such as increased efficiency, accessibility, and innovation in financial services. This perspective shift aligns with Qatar's broader economic diversification and technological advancement vision.

To effectively facilitate the financial industry's digital transformation, Qatar has been actively creating an enabling environment for FinTech growth. The government has been fostering collaboration between regulatory bodies, financial institutions, and tech entrepreneurs to spur innovation and develop a vibrant FinTech ecosystem. Initiatives such as regulatory sandboxes, innovation hubs, and FinTech incubators have been established to support and nurture emerging FinTech start-ups and ideas.

Moreover, Qatar's commitment to FinTech is evident through its investment in research and development and financial and non-financial support to promising FinTech ventures. The Qatari government recognises nurturing and supporting local talent is crucial for sustainable FinTech growth. Efforts have been made to provide training, mentorship, and funding opportunities to individuals and start-ups within the FinTech space.

While Qatar's FinTech journey may still be in its early stages compared to other GCC countries, the nation is well-positioned to leverage its strategic location, robust infrastructure, and educated workforce to drive FinTech innovation and adoption. Qatar's aspiration to become a leading hub for FinTech in the region is supported by a solid commitment to technological advancement, economic diversification, and international collaboration.

In conclusion, while Qatar may have initially lagged behind its GCC counterparts in FinTech development, recent endeavours by the Qatari government signify a significant shift in focus and commitment to driving the financial industry's digital transformation. With a conducive ecosystem and supportive measures, Qatar is poised to accelerate its FinTech growth, positioning itself as a competitive player in the global FinTech landscape.

The adoption and integration of blockchain technologies in Qatar, particularly within the trade finance sector, have witnessed a surge in momentum owing to their widespread acceptance and inherent characteristics. The Qatari officials, perceiving the burgeoning potential of the FinTech industry, have strategically designated it for development and advancement within the country (Ben Hassen 2022).

To facilitate the growth and innovation of FinTech in Qatar's private sector, the Qatar Development Bank (QDB) has taken a proactive step by establishing the "Qatar FinTech Hub" (QFH) as a central nucleus. The QFH catalyses promoting the adoption and implementation of FinTech concepts and operations across various financial and non-financial domains within the Qatari market. Its objective is to nurture and support businesses by providing them with the necessary resources, guidance, and collaborative opportunities to thrive in the FinTech landscape.

Moreover, the Qatar National Research Fund (QNRF), the primary research funding organisation in the country, has demonstrated a keen interest in FinTech and has made substantial investments in academic research and support in this domain. This commitment from the QNRF further solidifies Qatar's emerging reputation as an intellectual hub for FinTech advancements originating from esteemed educational institutions (Dahdal et al. 2020).

Through establishing the QFH and supporting the QNRF, Qatar showcases its dedication to fostering an ecosystem that embraces FinTech innovation and research. This strategic focus on developing the FinTech sector facilitates economic diversification and positions Qatar as a regional leader in adopting and utilising cutting-edge financial technologies.

In conclusion, Qatar's recognition of the transformative potential of blockchain technologies and the FinTech industry has led to strategic initiatives aimed at its development and growth. The establishment of the Qatar FinTech Hub by the Qatar Development Bank serves as a focal point for promoting and supporting FinTech advancements in the private sector. Additionally, the Qatar National Research Fund's investments in academic research highlight the country's commitment to becoming an intellectual hub for FinTech innovation. These efforts solidify Qatar's position as an emerging player in the global FinTech landscape and underline its commitment to driving economic diversification through technology-driven advancements.

The Qatar Financial Centre Authority (QFCA) has taken proactive measures to foster the growth and development of the FinTech industry by introducing the FinTech Circle program. This program is a valuable resource for companies licensed under the Qatar Financial Centre (QFC), offering them office space in Doha and comprehensive support in market entry and product development. The QFCA's initiative underscores the commitment to nurturing a thriving FinTech ecosystem within Qatar (Dahdal et al. 2020).

In recognition of the transformative potential of FinTech, the QFCA also made significant policy updates in 2019. These updates include the introduction of a new category called "FinTech Service Provider," which encompasses technology-enabled innovations in the financial services sector. This category covers many advancements, including new business models, processes, applications, and products. The introduction of this new category reflects the QFCA's proactive approach to fostering innovation that has the potential to profoundly impact financial markets, institutions, and service provision (Dahdal et al. 2020).

By launching the FinTech Circle program and embracing the concept of a FinTech Service Provider, the QFCA showcases its commitment to driving the growth and innovation of FinTech within Qatar. These initiatives provide practical support and resources to QFC-licensed companies and position Qatar as a forward-thinking and technology-driven hub for FinTech advancements. The QFCA's emphasis on technology-enabled innovation demonstrates a strategic vision to capitalise on the transformative power of FinTech and its potential to shape the future of the financial services landscape in Qatar.

Intending to catalyse the growth and global influence of the FinTech industry, the establishment of the Qatar FinTech Centre stands as a testament to Qatar's commitment to becoming a prominent hub for financial technology. Positioned as a global nexus, the centre serves as a dynamic platform for fostering collaborations and partnerships between local and international stakeholders, thereby advancing the collective vision for the future of FinTech. Through its multifaceted approach, the centre facilitates a vibrant ecosystem where key players can converge, synergise, and collectively drive innovation in FinTech (Alam and Nazim 2021).

Recognising the pivotal role of the Qatar Central Bank (QCB) in orchestrating the nation's FinTech agenda, concerted efforts are underway to formulate a comprehensive FinTech strategy that aligns with Qatar's long-term aspirations. This strategic initiative aims to provide a robust framework for nurturing and expanding the FinTech landscape within the country, establishing Qatar as a critical player in the global FinTech arena. The Qatar Development Bank (QDB), in harmony with its FinTech objectives and vision, initiated the Qatar FinTech Hub in 2018. This pivotal step underscores the QDB's commitment to fostering innovation and entrepreneurship in FinTech, ensuring that Qatar remains at the forefront of cutting-edge financial technology advancements.

Furthermore, to glean insights and best practices from leading FinTech ecosystems, representatives from the Qatar Central Bank (QCB) and the Qatar Development Bank (QDB) embarked on an exploratory visit to Stockholm in late 2018. This visit was an invaluable opportunity to engage with distinguished representatives from

various FinTech organisations in Sweden, with the goal of establishing the esteemed Doha FinTech Hub. By leveraging international expertise and embracing cross-border collaborations, Qatar demonstrates its initiative-taking approach to knowledge exchange, innovation, and the cultivation of an ecosystem that propels FinTech forward.

Universal access to digital financial services is a paramount objective for Qatar, driven by the aspiration to empower all segments of society, including the vast majority comprising low-income employees and domestic workers who form 95% of the nation's labour force, to participate in the financial ecosystem actively. In pursuit of this goal, Qatar is actively developing innovative technologies that facilitate the inclusion of these individuals into the formal financial system. Notably, merchants' widespread adoption of Point of Sale (POS) systems is increasingly becoming customary, propelling the FinTech industry's remarkable growth trajectory. Concurrently, Qatar is meticulously formulating strategic plans to nurture the online retail sector and establish alternative avenues and solutions for those within the population who currently lack access to traditional banking services (Amanulla and Sherif 2022).

By employing a multifaceted approach, Qatar endeavours to bridge the digital divide and create an inclusive financial landscape that caters to the diverse needs of its population. This concerted effort aims to ensure that even the most marginalised segments of society can partake in the advantages and opportunities of the digital economy. By leveraging technological advancements and innovative solutions, Qatar is forging a path towards financial inclusivity, empowering individuals to overcome barriers and engage in financial activities with greater convenience, security, and efficiency. Through these endeavours, Qatar is positioning itself as a pioneer in fostering a digitally inclusive society where no one is left behind in the transformative journey of financial technology.

2.9.4 FinTech in Bahrain

Bahrain and its fellow Gulf Cooperation Council (GCC) nations are fully immersed in the transformative race to revolutionise its economy and propel its digital financial

sector forward. The Central Bank of Bahrain has recently unveiled its strategic shift towards digital banking, underlining the imperative to diminish dependence on physical currency in financial transactions. This strategic move is expected to catalyse the widespread adoption of electronic wallets as a pivotal component of the payment landscape. Bahrain has introduced four distinct digital wallets, namely BenefitPay, bWallet, MaxWallet, and VIVA Cash, each offering unique features and being supported by different payment providers. Among these options, BenefitPay has emerged as the clear frontrunner, commanding a staggering 87.2% of the total subscriber base within the country. Over the past few years, consumers in Bahrain have become increasingly acquainted with digital wallets, with nearly half of them utilising their wallets daily or weekly, exemplifying a strong inclination towards digital payment solutions (Ahmed et al. 2020).

Recognising the importance of fostering innovation and driving the growth of technology-based products and services, the Central Bank of Bahrain has taken a proactive approach by establishing the "FinTech regulatory sandbox." This regulatory sandbox serves as a facilitative platform for domestic and international start-ups and financial institutions to conduct pilot testing of their technology-driven offerings. The application process for the sandbox is open to existing licensees of the Central Bank of Bahrain, as well as other companies operating in the financial, technology, and telecommunications sectors that seek to test and refine their innovative solutions. In collaboration with financial institutions and other applicants deemed eligible by the Central Bank of Bahrain, professional service firms play a vital role in this dynamic ecosystem (Alam and Nazim 2021).

Bahrain Fintech Bay is at the forefront of promoting the Financial Technology industry in Bahrain, an influential organisation that collaborates closely with the Central Bank of Bahrain. Shaikh et al. (2022) elucidated that Bahrain Fintech Bay is pivotal in formulating progressive policies and steering the nation towards a cashless society. Functioning as an institutional pillar, Bahrain Fintech Bay drives the ongoing growth and sustainability of the country's economy. It is a vibrant hub

for fostering collaboration, innovation, and knowledge exchange within the dynamic FinTech landscape.

2.9.5 FinTech in Oman

In alignment with its Gulf Cooperation Council (GCC) counterparts, Oman actively implements comprehensive economic reforms to foster economic growth and development by diversifying revenue sources beyond oil. Echchabi and Azouzi (2017) emphasised that other GCC nations share this strategic direction towards economic diversification. Notably, Oman positions itself at the vanguard of the financial technology (FinTech) revolution within the Arab world, proactively advocating for the widespread adoption of innovative FinTech solutions across the Sultanate. Technological advancements, governmental support, and escalating customer demands are attributed to the remarkable expansion of the FinTech industry in Oman, as stated by Dabrowska et al. (2022). The Omani government plays a pivotal role in facilitating or impeding the progress of the FinTech initiative by implementing relevant regulations and policies.

Despite the pressing need to address the regulatory landscape surrounding FinTech in the Sultanate of Oman, public announcements have yet to be made regarding the closure of regulatory gaps. Recognising the significance of FinTech, the Omani government incorporates this transformative technology into its vision for 2040, allocating substantial attention to its development. Oman has emerged as a trailblazer in the Gulf region, launching a ground-breaking Blockchain-based platform on June 29, 2019. This platform aims to streamline crowdsourcing for Waqf charitable donations and Sharia-compliant investments, ushering in a new era of technological innovation in the philanthropic and investment sectors (Hamida 2020).

The Central Bank of Oman (CBO), as highlighted by Li et al. (2017), adopts proactive measures to nurture the growth and utilisation of FinTech in the Sultanate. The CBO establishes a dedicated task group to address the specific needs of the unbanked population or those with limited access to banking services. In alignment with this initiative, Bank Muscat, Oman's primary financial services provider, obtains approval from the Central Bank of Oman to implement an extensive state-wide

FinTech investment program. With a substantial budget of approximately 38.5 million OMR (equivalent to around one hundred million dollars), this strategic program aims to expand and enrich the FinTech ecosystem throughout the Sultanate, fostering innovation and providing greater financial inclusivity (Gulrez 2021).

2.10 Theoretical Framework

In academic discourse, Institutional Theory is a valuable framework for gaining profound insights into the intricate factors that influence the diffusion and adoption of specific practices within a defined context. This influential theory posits that organisations, driven by external pressures from their environment, often adopt innovative approaches. Faced with these pressures, organisations strive to maintain the stability of their existing conventions, necessitating assistance in navigating this delicate balance. Consequently, organisations may either embrace novel practices to respond to external pressures or resist their introduction to preserve well-established norms and customs (Weerakkody et al. 2016). This dynamic signifies organisations' persistent efforts to regain lost equilibrium and restore harmony within their operational frameworks.

DiMaggio and Powell (1983) characterise this phenomenon as Institutional Isomorphism, wherein organisational practices and structures converge within a specific environment. The convergence arises due to the three distinct forms of Isomorphism elucidated by Greenwood and Meyer (2008): Normative Isomorphism, Coercive Isomorphism, and Mimetic Isomorphism. These interconnected processes contribute collectively to the overarching phenomenon of Isomorphism, shaping the organisational landscape by aligning practices and structures in response to external pressures and shared influences within a given institutional setting.

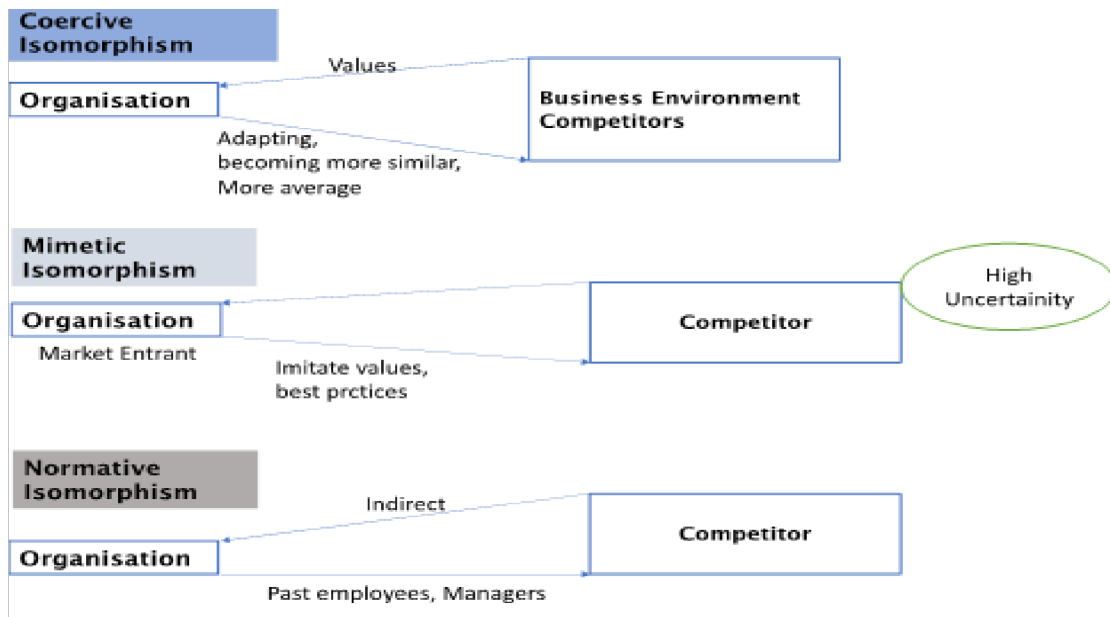


Figure 11: Isomorphism- (Greenwood and Meyer 2008)

Mimetic Isomorphism emerges as a response to the inherent uncertainty surrounding an organisation's vision and objectives, which prompts stakeholders such as employees, investors, and regulators to seek increased understanding and confidence (DiMaggio and Powell 1983). Conversely, Coercive Isomorphism manifests when organisations confront direct or indirect pressures exerted by external entities within their ecosystem and the broader social context in which they operate (DiMaggio and Powell 1983). These pressures often drive businesses, particularly smaller ones, to advocate for more favourable laws and regulations, especially when aiming to enter sectors traditionally dominated by established banks, as observed in the entry of nonbanks into the financial services industry. The transformation of financial institutions in developed countries, driven by external trends and regulatory constraints, necessitates heightened creativity and consumer-centric approaches (Groeneveld 2009). These isomorphic forces, particularly digitising payments through electronic transactions, disrupt the payments sector, influencing service distribution methods and business models (Meyer 2018).

Conventional banks and financial institutions encounter challenges in effecting changes that enable them to respond to and address normative isomorphic pressures within reasonable timeframes (Martinez-Ferrero and Garcia-Sanchez 2017; Sarta et al. 2021; DiMaggio and Powell 1983; Zajac et al. 2000). Gallego-Alvarez and Pucheta-Martinez (2020) underscore that normative isomorphism transcends industries, including the financial sector, and is pivotal in shaping organisational cultures, values, and norms. This concept is relevant for addressing cultural values and norms within organisations, exerting a profound influence on their functioning and development.

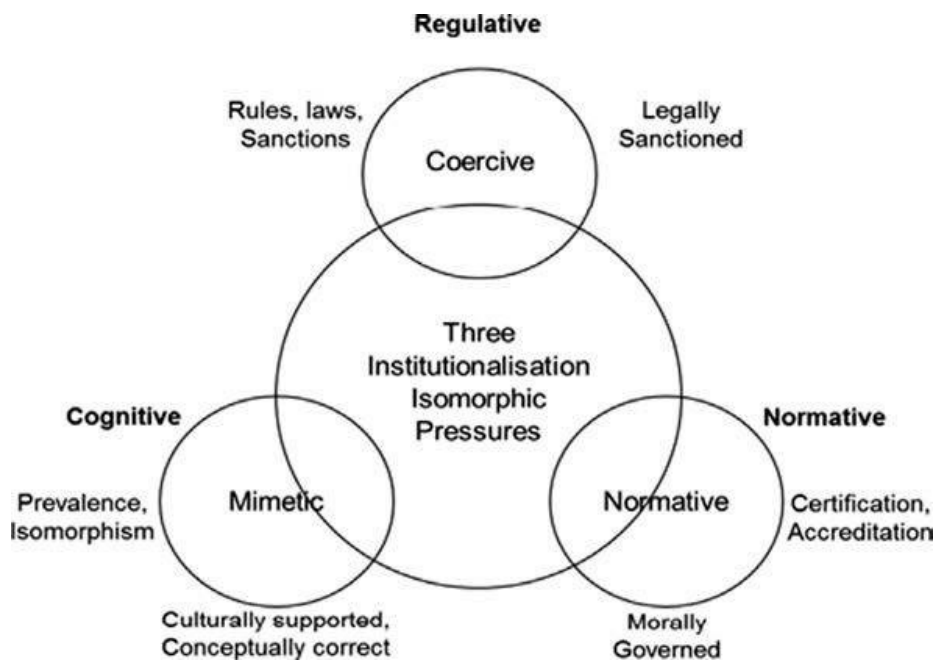


Figure 12: Institutional Isomorphism Mechanics and Pressures - Saman (2015)

Hendrikse et al. (2018) posit that FinTech, as the amalgamation of finance and technology, brings about Institutional Isomorphism, wherein traditional financial institutions emulate pioneering technological advancements. Encumbered by a sluggish adaptation to new technology and plagued by uncertainties surrounding

the benefits of digital transformation, incumbent financial institutions can draw valuable insights from other industries that have successfully integrated technology into their operations, thereby fortifying the longevity of their businesses (DiMaggio and Powell 1983). The researcher aims to unveil the factors contributing to the widespread adoption of FinTech as a mainstream service in the Gulf Cooperation Council (GCC). This knowledge holds profound significance for consumers, financial institutions, start-ups, and policymakers. The research endeavours to shed light on the distinctive characteristics that foster the widespread acceptance of FinTech in the GCC. Numerous enterprises, including those affiliated with the researcher's previous employers, are committing substantial resources to create, strategise, and implement innovative digital services, primarily focusing on digital financial services, to enter the FinTech industry, attract new clientele, and retain existing customers.

2.11 The Dynamics of Institutional Theories: A Comparative Analysis

This qualitative research study within the Doctor of Business Administration (DBA) programme extensively employs Institutional Theory as the foundational theoretical framework. While diffusion serves as a critical focal point of this investigation, it is imperative to discern the divergences between Institutional Theory and Diffusion Theory and explicate the reasons behind selecting Institutional Theory as the more suitable framework for this research inquiry.

In social science, Diffusion Theory and Institutional Theory are two distinct theoretical frameworks employed to explore and elucidate phenomena. Although both theories, pioneered by Rogers (2003) and Guy Peters and Pierre (2004), respectively, revolve around disseminating ideas, practices, or innovations, they diverge in their objectives and perspectives.

Diffusion Theory primarily scrutinises the adoption, dissemination, and diffusion of novel ideas or inventions within a social system. This research delves into the

factors influencing the speed and extent of adoption, encompassing communication channels, individual characteristics, and perceived benefits or risks (Chan et al., 2023; Firmansyah et al. 2023; Rout et al. 2022). Conversely, Institutional Theory focuses on the broader social, cultural, and organisational contexts that underpin practices and behaviours. Originating in the 1970s, Institutional Theory investigates how institutions, including formal and informal norms and structures, shape and impact behaviour and the diffusion of practices (Filatotchev et al. 2022).

As Rocca et al. (2022) discussed, Diffusion Theory primarily focuses on analysing the diffusion process at the individual or micro-level, studying the traits and behaviours of adopters, opinion leaders, and social networks. It seeks to comprehend the factors influencing individuals or groups in accepting or rejecting innovations and how adoption choices propagate through interpersonal interactions. The theory emphasises the features of innovations (such as relative advantage, compatibility, and complexity), communication routes, and characteristics of social systems (such as social networks and opinion leaders) when delineating the diffusion process (Kurt 2022). Park and Choi (2019) further highlight that Diffusion Theory primarily focuses on adopting and disseminating innovations over time, including examining the pace, pattern, and variables facilitating or hindering diffusion.

In contrast, Institutional Theory emphasises the effects of new practices, exploring how cultural concepts, institutional standards, and regulations influence the behaviours of individuals, organisations, and society. The theory aims to understand the emergence and evolution of institutions, the institutionalisation or deinstitutionalisation of practices, and how institutions shape behaviour and societal change (Filatotchev et al. 2022). This research study aligns with these objectives by investigating how institutional factors, including legislation, norms, and cultural ideas, impact the diffusion of fintech. Fintech is a technological advancement and a socio-technical phenomenon influenced by institutional elements. Institutional Theory enables a deeper exploration of how these institutional components affect the diffusion process and interact with other contextual factors (Rabaa'i 2022).

Institutions and regulatory frameworks are vital in setting the stage for fintech adoption. It is crucial to comprehend the institutional environment to understand fintech's spread within the Gulf Cooperation Council comprehensively. Furthermore, Institutional Theory allows researchers to examine the broader structures and processes that influence behaviour at the macro level, particularly how institutional constraints and norms shape the adoption and dissemination of practices within organisations or communities (Fogaca et al. 2022). This research study employs Institutional Theory to understand better the policy implications for promoting fintech diffusion in the region.

By considering institutional dynamics and power relations and incorporating the perspectives and interests of various stakeholders, this research aims to provide nuanced insights into the institutional dynamics that impact the diffusion of technology, including FinTech.

2.12 Gaps in Literature

This research study comprehensively explores the crucial factors influencing the adoption and diffusion of Financial Technology (FinTech) within the Gulf Cooperation Council (GCC) region. To establish a robust foundation for investigation, a thorough review of scholarly and industry sources is conducted, encompassing academic journals, industry reports, conference papers, and organisational reports. This critical examination of the existing literature aims to evaluate the research's strengths, weaknesses, and potential gaps. The doctoral dissertation in business administration is poised to undertake an ambitious endeavour, embarking on an all-encompassing expedition that delves deep into scholarly and industry literature. This rigorous scholarly pursuit seeks to unravel the multifaceted intricacies surrounding disseminating Financial Technology (FinTech) within the esteemed Gulf Cooperation Council (GCC) nations.

With unwavering dedication, the dissertation aspires to traverse the expansive landscape of knowledge, meticulously examining a wealth of academic insights and

invaluable industry wisdom. This painstaking examination aims to unearth hidden gems of wisdom, shining a radiant light on the nuanced dimensions underpinning the diffusion of FinTech within the GCC region.

Drawing on the rich tapestry of scholarly discourse and harnessing the dynamic perspectives offered by industry luminaries, this academic opus strives to synthesise a comprehensive understanding of the challenges, opportunities, and critical factors shaping the dissemination of FinTech within the GCC nations. This profound analysis, fortified by a robust theoretical framework, paves the way for novel insights and ground-breaking recommendations that can foster the seamless integration of FinTech solutions into the economic fabric of the GCC nations.

In its quest for academic excellence, this doctoral dissertation aims to significantly contribute to the burgeoning field of business administration by illuminating the path towards a more comprehensive comprehension of FinTech dissemination within the GCC nations. By bridging the gap between theory and practice, it aspires to offer pragmatic strategies and actionable recommendations that can empower stakeholders, policymakers, and industry leaders to navigate the intricate landscape of FinTech diffusion, thereby ushering in a new era of technological advancement and financial prosperity within the GCC region.

While the literature review summarises critical concepts, ideas, and empirical studies about the topic, incorporating a more comprehensive theoretical framework would strengthen the arguments made in the thesis. Specifically, applying Diffusion Theory and Institutional Theory to the unique context of the GCC countries would be advantageous, given their recurrent mention throughout the paper. Additionally, including other relevant theoretical perspectives, such as Institutional Theory, can provide a more holistic understanding of the dissemination process. However, it is challenging to identify such specific details within the existing academic literature, indicating a notable gap that requires further research.

The literature evaluation for this DBA research study extensively relies on secondary sources, including academic journals, industry papers, and government publications. While these sources offer valuable insights into the current state of

FinTech in the GCC, incorporating primary data through interviews would enhance the analysis. Utilising primary data allows for a deeper investigation of the factors influencing the diffusion of FinTech in the GCC, offering fresh insights not adequately covered in previous research. The unique regional context of the GCC nations is crucial in examining social, regulatory, and economic variables specific to the region. Future investigations could explore the impact of Islamic finance principles, regulatory frameworks, and cultural attitudes on technology diffusion, as these areas require revision in the current literature.

Although this Doctor of Business Administration thesis significantly contributes to the existing knowledge base, it is essential to acknowledge and address certain limitations in subsequent publications. These limitations include challenges in data collection, the dynamic nature of FinTech, and the potential for biases in participants' perspectives. Future studies should acknowledge and highlight these inherent difficulties to comprehensively understand the subject.

This Doctor of Business Administration (DBA) thesis comprehensively explores the existing literature, encompassing relevant concepts, theories, and empirical studies. It is a strong foundation for future research to advance the understanding of FinTech diffusion in the GCC region, providing valuable insights for policymakers and practitioners. To make a more substantial contribution, it is recommended to incorporate scholarly literature incorporating primary data collection methods and contextualising the findings within the specific GCC context. By doing so, the constraints commonly observed in comparable studies can be mitigated, leading to a more comprehensive examination of the subject matter.

2.13 Chapter Conclusion

In summary, the financial industry is undergoing a profound and far-reaching transformation propelled by rapid technological advancements. These advancements have revolutionised the technologies employed within the financial sector, not only on a local scale but also across the globe. Over the past decade,

Financial Technology's (FinTech) rise has notably democratised access to financial services for retail clients, significantly enhancing their overall experience. Simultaneously, integrating cutting-edge technologies such as Artificial Intelligence (AI), cloud services, and Distributed Ledger Technology (DLT) in wholesale markets has had profound implications across various sectors, including financial market trading and regulatory and supervisory technologies.

Recognising the imperative nature of digital transformation as a strategic pursuit, established financial institutions have witnessed the emergence of numerous new enterprises that leverage innovative technologies to meet the ever-evolving demands of customers. Through advancements in mobile technology and data analytics, exclusive high-end financial services that were once limited to a select few have now become readily accessible to the broader population. Computer-managed funds have become a significant force in trading publicly listed shares, while governments are actively digitising their public finance systems. Financial technology encompasses various players, including traditional financial institutions, online marketplaces, social networks, search engines, and different emerging businesses driven by FinTech innovations.

Prominent financial institutions are rapidly addressing gaps in their digitalisation efforts and client offerings to effectively compete with FinTech companies and large technology firms, often referred to as "big techs," that have made inroads into the financial industry. The primary objective is to enhance their competitive positioning vis-à-vis FinTech companies. These advancements foster diversity, competition, efficiency, and inclusivity, exerting both positive and negative impacts on market concentration. Innovation is pivotal in bolstering competitiveness and broadening participation, particularly in developing nations and emerging markets with less-developed financial infrastructure. FinTech companies have successfully established themselves in economies with limited financial infrastructure. However, the dynamics of intermediation and technological advancements may also lead to consolidation among existing and emerging financial service providers.

Furthermore, considerable scrutiny is being directed toward big digital platforms that engage in monopolistic or anticompetitive practices.

The table below summarises key literature from reputable academic journals.

Carbo-Valverde, S., Cuadros-Sols, P.J.	2022	Entrepreneurial, Institutional, and Financial Strategies for FinTech Profitability	Financial Innovation	With the emergence of FinTech startups in the financial services industry, most of these companies face significant difficulties in breaking even and surviving. This study examines the main managerial, institutional, and financial drivers of FinTech profitability and with the emergence of FinTech startups in the financial services industry, most of these companies face significant difficulties in breaking even and surviving. This study examines the main managerial, institutional, and financial drivers of FinTech profitability and the time it takes for these firms to break even.
Podoplelova, E., Shapovalov, G., Tselykh, A. and Tselykh, A.	2021	Sustainable smart cities: convergence of artificial intelligence and blockchain	Sustainability	Artificial intelligence (AI) is implemented in various fields of advanced technologies like decentralised AI, blockchain, the intelligence of things, machine automation and many others. The integration of artificial intelligence and IoT creates benefits in a way for collecting a maximum number of information and its analysis.
Kistos, Kitsios, F. and Kamariotou, M.	2021	Artificial intelligence and business strategy towards digital transformation: A research agenda	Sustainability,	Current literature and businesses have drawn attention to Artificial Intelligence (AI) tools, particularly the advances in machine learning techniques. Nevertheless, while AI technology offers great potential to solve difficulties, challenges remain implicated in practical implementation and lack expertise in the strategic usage of AI to create business value.

Luo, D., Mishra, T., Yarovaya, L. and Zhang, Z.	2021	Investing during a Fintech Revolution: Ambiguity and return risk in cryptocurrencies	Journal of International Financial Markets, Institutions and Money	As the leading cryptocurrency, Bitcoin continues to draw high attention from investors, entrepreneurs, regulators, and the public. Many of the recent public discussions on Bitcoin, triggered by the substantial changes in their prices (Garcia-Monleon et al., 2021), claim that the market for Bitcoin is a bubble without any fundamental value, and concerns about evasion of regulatory and legal oversight.
Wang, R., Mirza, N., Vasbieva, D.G., Abbas, Q. and Xiong, D.	2020	he nexus of carbon emissions, financial development, renewable energy consumption, and technological innovation: what should be the priorities in light of COP 21 Agreements?	Journal of Environmental Management	The role of financial development, agriculture value-added, and natural resources in the relationship between economic globalisation and CO2 emissions.
Clinton, K.	2023	Fixing American Cybersecurity: Creating a Strategic Public- Private Partnership	Georgetown Press	Incentivising Cybersecurity goes beyond books that simply describe cybersecurity technology or law to provide a coherent and comprehensive explanation of why we are making so little progress in addressing the threat, and it lays out a specific path to address the threat in a new, more effective fashion.
Barbu, C.M., Florea, D.L., Dabija, D.C. and Barbu, M.C.R.	2021	Customer experience in fintech	Journal of Theoretical and Applied Electronic Commerce Research	Fintech is a dynamic and innovative field that fully benefits from advances in information and communication technology. The concept of customer experience is multidimensional, and encompasses different industries

Table 2: Overview of Reviewed Sources

Chapter 3

Research Methodology and Design

3.1 Introduction

This chapter offers an in-depth and comprehensive exposition of this study's research methodology and design. It begins by elucidating the research philosophy that serves as the fundamental underpinning of the investigation, providing clarity on the theoretical perspectives and guiding principles that inform and shape the study's trajectory. Meticulously, the research objectives are explicitly delineated, establishing a solid and coherent foundation for this detailed inquiry.

Following establishing the research objectives, a strategic approach is meticulously outlined to position the study within the broader academic and theoretical landscape, effectively highlighting its significance and relevance to the field. This positioning ensures that the study contributes meaningfully to the existing body of knowledge, bridging gaps and advancing scholarly understanding.

The chapter culminates in presenting a comprehensive outline of the research methodology. It meticulously details the procedures undertaken for sample selection, providing a rigorous and transparent account of the criteria employed in identifying the participants or data sources that form the study's core. It also provides a detailed account of the data collection methods, ensuring methodological rigour and reliability. This detailed account of the research methodology allows for transparency, facilitating the replication and validation of the study's findings.

This chapter is a robust and dependable guide, offering a clear roadmap of this study's research methodology and design. Its systematic and meticulous presentation instils confidence in the study's scientific rigour, facilitating a comprehensive understanding of the research process.

3.2 Research Questions

Financial technology (FinTech) continues to disrupt the global financial sector significantly. In this Doctor of Business Administration (DBA) research, the central focus lies in comprehending the factors that shape the diffusion of FinTech within the Gulf Cooperation Council (GCC) and addressing the following critical inquiries:

- What are the key determinants influencing the diffusion of FinTech?
- How can challenges be overcome and the diffusion of FinTech be facilitated?
- What policy, regulatory, and socio-economic reforms are necessary to incentivise banks and technology companies to further drive the diffusion of FinTech?

The primary aim of this Doctor of Business Administration (DBA) study is to unveil the intricate interplay between micro and macro policies, technological advancements, and institutional variables that significantly influence the diffusion of Financial Technology (FinTech). This research delves into the multifaceted dynamics that unfold when policies, individuals, and organisations synergistically align and keep abreast of technological breakthroughs that form the very bedrock of the FinTech landscape. Gaining a comprehensive understanding of the relevant policies and adeptly aligning business strategies and plans enables FinTech practitioners in the Gulf Cooperation Council (GCC) to navigate the myriad factors that bolster and hinder the introduction of their products and services. This research not only bestows practical benefits upon industry practitioners but also enriches the scholarly realm by deepening our comprehension of the intricate market, policy, and technological dynamics that shape the FinTech landscape. Furthermore, it fills a notable research lacuna about FinTech in the GCC region, which has received relatively scant scholarly attention, as evidenced by the scholarly works (Ahmed et al. 2020; Almuhammadi 2020; Schilir 2021; Alhammadi 2022; Rabaa'i 2022; Albarrak and Alokley 2021).

3.3 Research Philosophy

Saunders et al. (2012) assert the indispensable role of research philosophy in academic inquiry, emphasising its establishment based on the researcher's stance for advancing knowledge in their respective field of research. However, exploring the extensive adoption of Financial Technology (FinTech) in the Gulf Cooperation Council (GCC) countries presents thought-provoking challenges on several fronts. The epistemological foundation of this research study revolves around the fundamental question of what novel knowledge will be generated through the gathering and analysis of diverse ideas and perspectives. Engaging professionals and consumers to divulge information about their organisations, personal finances, and experiences with financial service providers can prove challenging, necessitating careful reassurance to elicit candid responses.

Moreover, successfully navigating the intricate regulatory and business landscape of FinTech in the GCC is imperative to undertake this critical ontological endeavour. In today's rapidly evolving technological landscape, the imperative to stay at the forefront of technology is further amplified by the accessibility to cutting-edge FinTech solutions and the pursuit of financial inclusion by commercialising and delivering these technologies to end-users. International Banker (2022) reported that financial institutions face mounting difficulties in maintaining shareholder value and preserving their market share in GCC markets amidst stiff competition from FinTech start-ups. This heightened competition, coupled with the pressure to collaborate with FinTech entities, ushers in a new market dynamic that may reshape the positioning of technology companies in the financial sector as they seek to expand their reach to consumers who seek more extensive access to financial products and services unencumbered by traditional constraints imposed by brick-and-mortar banks.

It is crucial to acknowledge that the factors driving FinTech's proliferation define how the technology reaches consumers and the benefits it can provide them. As highlighted in the study by Jin et al. (2019), attributes such as perceived ease of use, perceived risks, and perceived costs all contribute to consumers' adoption of

FinTech products. Moreover, the hypothesis posits that individuals' level of education, financial resources, and access to technology all influence the relative importance of these factors (Yunus 2014).

Saunders et al. (2012) emphasise that research philosophy encompasses a set of assumptions and beliefs about knowledge creation. In line with this, Kaushik and Walsh (2019) define pragmatism as "an epistemology grounded in practical approaches, experiences, and advancements in the business realm". The researchers' profound interest in and pragmatic viewpoints on the diffusion of technology, particularly FinTech, coupled with their professional expertise working with regional and global service providers and Information and Communication Technology (ICT) companies, align closely with the philosophical underpinnings of this research study.

3.4 Qualitative Research

Bordens and Abbott (2002) highlighted that selecting an appropriate and suitable research design is critical in ensuring the quality and success of research outcomes. Several factors must be carefully considered when determining relevant and effective strategies for a study. The foremost consideration is the nature of the research problem, or the issue being investigated (Creswell 2009; Ghauri 2004; Clough and Nutbrown 2002; Leedy and Ormrod 2005; Ekanem 2007; Moore 2006; Dawson 2006; Yin 2003). Another factor is the level of control over the behavioural events, which depends on whether the study focuses on historical or contemporary aspects (Yin 2003), as well as the researcher's funding availability and expertise.

It is important to note that there is no singular approach to research, as qualitative research, for instance, encompasses a range of distinct approaches (Patten 2016). Denzin and Lincoln (2005) identified nine qualitative research approaches: critical ethnography, case studies, performance studies, life history, public ethnography, interpretive practices, participatory action research, narrative inquiry, grounded theory, and clinical research. Similarly, Creswell (2007) categorised qualitative

research into five approaches: case study, phenomenology, narrative analysis, ethnography, and grounded theory.

Kaplan and Maxwell (2005) emphasise three strengths of qualitative research: the inductive approach, the focus on individuals in specific contexts, and the descriptive nature of the study rather than relying on numerical data. Qualitative research explores experiences, behaviours, and attitudes (Dawson 2006) through collecting and analysing qualitative data. This approach is commonly used to gain an in-depth and nuanced understanding of a phenomenon or problem from the perspective of users or participants (Leedy and Ormrod 2005). It situates the researcher within the world where the phenomenon or problem exists, ensuring that the results are contextualised and linked to the social issues or phenomena being examined. Researchers strive to understand the social phenomenon, its underlying causes, and the problem comprehensively and precisely (Valente and Saunders 1997; Denzin and Lincoln 2005).

Qualitative data collection relies on observations and is recorded in written form. This data is then analysed, identifying themes, categories, patterns, and tentative hypotheses or theories (Merriam 1998). The analysis aims to generate detailed, integrative, and concrete insights to draw meaningful conclusions from the collected data.

3.4.1 Research Approach

A qualitative case study is a robust research method that examines a phenomenon within a specific context by employing diverse data sources, often by analysing individual cases. This approach embraces multiple perspectives to illuminate various facets of the phenomena under investigation (Baxter and Jack 2008). Case studies can adopt a narrow or broad orientation, encompassing a range of subjects such as an entire program, a group or individual, a specific entity and activity, a particular circumstance, or even a whole community (Creswell 2007; Berg 2001; Litchman 2006). The focal point of a case study is the subject or topic being examined, which could be a distinct group, event, person, or social situation.

Soy (1997) highlights the primary advantage of employing the case study method, as it allows researchers to gather information through various means and sources, including interviews, surveys, observations, and document reviews. This comprehensive data-collection approach enables researchers to understand how a particular phenomenon or concept operates by accumulating information on a specific individual, event, group, or social setting (Berg 2001).

In investigating the factors driving technology diffusion and the adoption of FinTech in GCC nations, in-depth interviews were imperative to gain a robust representation of professional experiences. This approach was particularly relevant considering the perspective mentioned above. Drawing from Morgan (2014), the researcher's engagement in interviews and discussions facilitated the acquisition of contextual insights, especially regarding the policy and regulatory implications of emerging technologies like FinTech. The primary objective of this research was to identify all potential contributing factors and comprehend the contextual dynamics that influence the increased utilisation of FinTech. Grey (2015) elucidated various theoretical approaches and perspectives of qualitative research, including case studies, interviews, and focus groups, each offering a unique set of characteristics.

For this Doctor of Business Administration research study, semi-structured interviews were conducted as they represent the most employed approach for gathering interview data (Cassell and Symon 2004). Given the researcher's goal of gaining insights into the factors facilitating the diffusion of FinTech, semi-structured interviews proved to be an appropriate method to achieve this objective. This approach facilitated in-depth conversations with study participants, enabling the researcher to acquire nuanced academic insights about the subject matter under investigation.

3.5 Sampling in Qualitative Research

Moser and Kortjens (2018) advocate implementing a robust sampling plan in qualitative research. This essential step must be undertaken to ensure the

methodical and rigorous execution of the study. The sampling strategy, encompassing the selection criteria, sampling method and procedure, and the determination of the appropriate sample size, forms the framework and blueprint for this investigation. By meticulously establishing a comprehensive sampling plan, the study can effectively identify and recruit participants with the necessary insights and experiences relevant to the research objectives, thereby enhancing the credibility and validity of the findings.

3.5.1 Sampling Technique

A deliberate and non-random sampling technique, purposive sampling, was employed to ensure the research's trustworthiness. As outlined by Guest et al. (2006) and Saunders et al. (2012), this approach facilitates the identification and selection of individuals who possess specific characteristics or meet predetermined criteria. By intentionally selecting participants with relevant positions and varying degrees of expertise within each financial organisation, the study gains access to valuable insights aligned with its objectives. Additionally, the snowball sampling method was employed at certain stages of the process, allowing participants to refer the researcher to other potential individuals who fulfil the research requirements and possess the desired traits. It is important to note that all participants in this study were carefully chosen from the Gulf Cooperation Council (GCC) countries, ensuring a regional focus and context.

3.5.2 Sample Size

Various approaches can be employed when designing qualitative research studies. Sandelowski (1995) emphasises that selecting sampling procedures and research methodologies relies on the researcher's expertise and ability to exercise sound judgement. While a universal consensus on the minimum number of sample units for every study is yet to be reached, Marshall (1996) asserts that any sample size is acceptable for qualitative studies if it effectively addresses the research question(s) and yields sufficient data to uncover meaningful insights. However, considering the research approach and methodology employed in qualitative studies, several scholars have recommended appropriate sample sizes. Despite the common

association of qualitative designs with small sample sizes, scholars advocate for acceptable parameters based on the research approach and methodologies employed. This study targeted a sample size of 25, averaging three to four participants per Gulf Cooperation Council (GCC) country, to establish a robust foundation for understanding the factors facilitating FinTech diffusion in the GCC. The determination of this sample size and research design drew upon the work of Syanda et al. (2021), as well as the qualitative case study research conducted by Yin (2011) and Marshall et al. (2015).

The selection of participants was guided by their roles, technological familiarity, and knowledge of alternative means of accessing financial instruments. Saturation, as defined by Syanda et al. (2021), was achieved after the eighteenth participant, signifying the point at which enough high-quality data had been gathered. The sample size is the gold standard for determining sample adequacy in qualitative designs (Sykes et al. 2018; Morse 2015), offering a directive norm for selecting the most suitable sample size (Hennink et al. 2016). Additionally, the sample size in qualitative designs signifies the excellence and appropriateness of the sample (Mandal 2018).

Table 1. Recommended Sample Size based on Research Strategy.

Strategy	Author	Type of data	Number
Narrative research	Creswell (2002)	Interviews	2 or 3
Case atudy research	Stake (2006)	Single case	4–10
	Yin (2011)	Single case	25–50
	Marshall et al. (2013)	Single case	15–30
	Creswell (2014)	Cases	4–5
Grounded theory studies	Morse (1994)	Interviews/observations	30–50
	Creswell (2002)	Interviews	15–20
	Marshall et al. (2013)	Interviews	20–30
	Charmaz (2014)	Interviews	25
	Corbin and Strauss (2008)	Interviews	5
Ethnographic studies	Morse (1994)	Interviews/observations	30–50
	Bernard (2000)	Interviews	30–60
Ethnoscience	Morse (1994)	Interviews	30–50
	Bernard (2000)	Interviews	30–60
Phenomenological studies	Colaizzi (1978)	Interviews	12
	Dukes (1984)	Interviews	3–10
	Morse (1994)	Interviews	6
	Ray (1994)	Interviews	8–12
	Creswell (2002)	Interviews	5–25
	Smith et al. (2009)	Interviews	3–10

Figure 13: Recommended Sample Size – (Syanda et al. 2021)

Through meticulous examination and analysis, the researcher delved into the intricate realm of data collection, exploring the participation of 25 individuals from six distinct countries within the esteemed Gulf Cooperation Council (GCC). The immersive interview process unfolded as an enlightening journey, unearthing profound insights, and unveiling the essence of each participant's lived experiences.

Astoundingly, the researcher's astute observations and discerning analysis unveiled a remarkable revelation: the saturation point, that pivotal juncture where data collection transcended mere redundancy and reached a state of profound completeness, was achieved with excellent efficiency. Remarkably, a mere three participants from each country proved sufficient to attain this remarkable level of data saturation, lending unparalleled depth and richness to the research findings.

In tandem with the saturation phenomenon, the researcher astutely identified and defined the concept of sufficiency, drawing inspiration from the seminal work of Seidman (2006). Within the profound scholarly landscape shaped by Seidman's pioneering work, sufficiency emerges as a crucial compass, guiding researchers to ascertain the adequacy and comprehensiveness of their data collection endeavours.

Nestled within the scholarly tapestry woven by Seidman (2006), the notions of sufficiency and saturation intertwine, forming the bedrock upon which the researcher's investigation stands. These conceptual pillars offer a framework to evaluate the depth, breadth, and richness of the data collected, ensuring that the research venture attains a level of comprehensiveness and robustness that resonates with the demands of rigorous academic enquiry.

As this scholarly exploration unfolds, the researcher remains steadfast in their commitment to unravelling the complexities of data collection, guided by the interplay between sufficiency and saturation. By meticulously applying these conceptual lenses, the researcher endeavours to shed light on the nuanced intricacies of the participants' narratives, capturing the essence of their experiences and illuminating the research landscape with unprecedented depth and clarity.

Sufficiency pertains to selecting a substantial number of individuals or respondents for observation or interviews, representing a sample that closely aligns with the entire population's knowledge, opinions, and experiences. In other words, sufficiency implies selecting sufficient individuals for observation or interviews. Saturation, however, refers to a stage in data collection where participants begin providing redundant information and reach a point where no new insights emerge. Furthermore, (Jette et al. 2003) identified the researcher's familiarity with the study area as one of the factors influencing sample size, alongside saturation. Other scholars have also emphasised additional factors affecting sample size, including the researcher's experience, the quality of collected information, the researcher's subjective judgment (Sandelowski 1995), the study's aims and objectives (Charmaz 2006), the chosen sampling technique (Mason 2010; Hagaman and Wutich 2017; Morse 1991; Marshall 1996), the analysis technique (Fugard and Potts 2015), and the research strategy (Creswell 2014; Bernard 2000; Morse 2000).

The prevalence of modern communication technology has significantly increased. Potential participants were initially identified through personal connections and social media platforms, particularly LinkedIn. The initial step involved sending an email to inquire about their availability and willingness to participate in the study. Along with the email, the research objectives and background information were provided. Once the applications for participation were reviewed and accepted, a formal email was sent to schedule interviews, followed by the distribution of consent forms and interview guides from the University of Bradford. Upon confirmation that the targeted individuals agreed to participate at the mutually agreed-upon time, meetings and interviews were conducted virtually using secure conferencing tools such as Zoom. Before each interview, participants were given concise and clear notice regarding the research objectives and procedures for data preservation and disposal. The researcher obtained the consent of every participant, which was duly recorded. To address any ethical or legal concerns, prior consent was sought from interviewees to determine their agreement with the video recording of the interviews, as advised by Bryman and Bell (2011).

Furthermore, the recorded material was promptly erased once the relevant data and materials were extracted and transcribed for subsequent phases of the research project. The chosen qualitative approach in this study involved online interviews to facilitate a comprehensive exploration and obtaining in-depth insights into the research topic. Ensuring the validity and reliability of semi-structured interviews necessitates a comprehensive and systematic process encompassing data collection, analysis, and interpretation methods, as highlighted by Van den Berg and Struwig (2017).

The researcher deduced that online interviews would offer practical advantages regarding accessibility and convenience for the researcher and the study participants. As Grey et al. (2020) asserted, using Internet-based interviews enables the inclusion of participants from diverse geographic regions, expanding the breadth of perspectives and enhancing the richness of the findings. Moreover, they argue that the flexibility inherent in online interviews creates an environment where participants feel more comfortable expressing their thoughts freely. This reasoning is relevant to the research inquiry across a geographical expanse encompassing six distinct countries.

The primary objective of this DBA research is not to achieve statistical representativeness but rather to delve into the underlying variables that propel the diffusion of FinTech across the Member States of the GCC. Specifically, the study will concentrate on Saudi Arabia, Kuwait, Qatar, and the United Arab Emirates. The selection of these 25 accomplished individuals for participation in the research study was not a product of chance; instead, it was a deliberate choice made after carefully considering the study objectives and the researcher's extensive knowledge and prior experience in the GCC region. The modest sample size allowed the researcher to allocate more time and attention to each participant, engaging them in in-depth conversations that facilitated a profound understanding of their experiences and perspectives on the investigated aspects.

Considering extensive factors, a meticulous selection process was employed to choose four to five highly qualified individuals from each country. The aim was to

balance gathering diverse perspectives efficiently while effectively managing the limited resources, particularly time. By conducting interviews with representatives from various GCC nations, the study sought to gain valuable insights into variations in institutional frameworks, professional contexts, and commercial environments. As emphasised by Mthuli et al. (2022), this approach allows for a thorough analysis of the research topic while considering the time constraints of both participants and the researcher. Purposive sampling, a technique utilised to select interviewees, facilitated a thoughtful selection of individuals possessing the necessary expertise, substantial practical experience, and insights into FinTech markets in the GCC region. This method ensured that the sample comprised experts who could effectively contribute to the DBA study's objectives and provide essential insights (Nugraha et al. 2022).

As previously mentioned, the researcher employed a semi-structured interviewing technique throughout this investigation. This approach struck a balance between providing a predefined set of questions to guide the interview while allowing flexibility for participants to express their thoughts organically. A set of pre-prepared questions guided the discussions. Conducting all interviews online via the Zoom video conferencing program allowed the researcher to capture visual cues and other non-verbal communications throughout each interview's 40–60-minute duration. The study's primary objective was to understand the underlying motivations, perspectives, and behaviours of institutions, professionals, and users of FinTech products and services in the GCC. In qualitative research, the focus is on obtaining in-depth insights into specific participants' experiences and viewpoints (Kellam et al., 1999), even with the awareness that the sample in this study may not represent the entire population. This approach prevented the researcher from making sweeping generalisations about the findings and applying them universally to all participants in the FinTech ecosystem. Instead, the researcher maintained a contextual focus on the specific setting of the study. The researcher deliberately recruited individuals from all GCC nations and diverse professional backgrounds to enhance the diversity and depth of findings in this DBA study.

The qualitative research approach of online interviews was deliberately chosen due to its accessibility, convenience, efficiency, and ability to capture diverse perspectives on the factors influencing the diffusion of FinTech across the six nations under investigation. This methodological choice was justified by its inherent advantages in terms of accessibility, convenience, efficiency, and capacity. The sample size of 25 professionals, including three to four individuals from each country, yielded valuable insights that serve as the foundation for the findings presented in the subsequent chapter of this DBA thesis. By employing this sample size, the research refrained from seeking generalizability that could have been achieved through a larger sample from the target population. Instead, the focus was on obtaining rich insights that form the cornerstone of the findings documented in the forthcoming chapter of this DBA thesis.

3.6 Data Collection

3.6.1 Questionnaire Development Process

Constructing a well-designed questionnaire for qualitative research entails meticulous preparation, critical evaluation, reflective analysis, and effective organisational strategies, as emphasised by a broad range of scholarly works (Flowerdew and Martin 2005; de Vaus 2013; Bryman and Bell 2012; Christian et al. 2007; Gillham 2008; Hoggart 2002; Lumsden and Morgan 2005; Babbie and Benaquisto 2001; Sarankatos 2012; Clifford and Valentine 2003). This stage demands a substantial contribution of expertise from the researcher, serving as a crucial determinant of the reliability of the obtained data. The questionnaire's excellence stems from the researcher's meticulous inclusion of pertinent information, ensuring accurate documentation of participants' time and effort. As Hoggart (2002) posits, developing a questionnaire to collect "original" data on the research topic would be inadequate. The decision to utilise a questionnaire should be accompanied by careful consideration of the comprehensive research objectives, ethical considerations, and an exploration of existing and alternative sources of

information that align with the socio-cultural context of the study. Considering these factors, the researcher made an informed choice to utilise a questionnaire as the preferred research instrument.

The questionnaire's content must establish strong connections with the overarching research topic, showcasing a profound understanding and exploration of pertinent concepts, processes, and interconnections. As a diligent researcher, it was imperative to thoroughly engage with the existing domestic and international literature about the research subject. This endeavour acquainted the researcher with relevant scholarship and clarified the study objectives, identifying an appropriate participant cohort and formulating insightful and contextually significant questions. Each question had to be purposefully designed, considering its intended purpose, the target respondent, and the analytical approach for interpreting the responses. Moreover, awareness of the boundaries of disclosure individuals might observe was essential, recognising that these boundaries may vary across diverse social and cultural groups in different settings. This conscientiousness was imperative, as the questionnaire aimed to elicit valuable information while respecting the participants' comfort levels and ensuring a conducive environment for open sharing.

Sarantakos (2005) elucidates the methodology for formulating questions within a questionnaire, delineating a systematic progression that involves translating the critical themes of the study into variables, subsequently transforming these variables into indicators, and ultimately converting the indicators into well-crafted questions—consequently, the construction strategy of the questionnaire comprised two distinct yet interconnected components.

Identification of subjective conceptual elements/indicators based on Institutional Theory (Five elements in the questionnaire of this study, See Annexure - 2)

- a) The scientific process and procedure adopted to develop the items' statements and suitable typology of the items. Since this study covers the Financial as well as

- b) In technological Industries, it was imperative to accustom through the lens of Institutional Theory postulates to study both industries' transformation.

3.6.2 Identification of Subjective Conceptual Indicators

In the late 1970s, John Meyer and Brian Rowan introduced Institutional Theory as a conceptual framework to explore how organisations align with, interact with, and are shaped by the social, governmental, national, and global contexts in which they operate. Teigland et al. (2018) have recently presented Institutional Theory as a valuable lens to comprehend and analyse the transformative dynamics occurring in the financial services industry during the past decade. Their research reveals that various waves of institutional theory have captivated the attention of scholars and practitioners alike.

The first school of institutional theorists initially advocated that rational bureaucracies assume responsibility for organisational tasks and economical operations. These rational bureaucracies, acting as rational actors, purportedly arrived at uniform conclusions regarding the management and operational principles guiding firms (Kalberg 1978; Selznick 1996). Subsequently, the second wave of institutional theorists, neo-institutional theorists, adopted a fresh perspective by examining institutionalisation through a cognitive lens. This lens emphasised the influence of micro-, meso-, and macro-level norms on individuals and organisations (DiMaggio and Powell 1983). The new institutional theorists highlighted three influential factors that shape and transform institutionalised activities: fundamental rules, cognition, and behavioural norms.

Furthermore, these theorists emphasised the pivotal roles played by various actors in instigating changes within institutional contexts. Previous studies have suggested that peripheral actors influence the most in driving change within an institutional domain (Battilana et al. 2009). However, more recent research has demonstrated that incumbent actors, particularly those involved in economic activities, can initiate change (Greenwood and Suddaby 2006; Smets et al. 2012). To comprehensively comprehend and explore the dynamics of institutional shifts and industry

transformations, one can consider four fundamental forces: regulations, cognition, norms, and external and internal actors. These forces collectively shape and reshape the institutional landscape, leading to the evolution of industries and the institutionalisation of new practices.

Teigland et al. (2018) have presented research demonstrating how these four types of influence may be seen operating within financial institutions. In this investigation, five components have been obtained from the four sources mentioned above:

- Digital Transformation – Driving Source is (Cognition) Legitimacy and changing beliefs.
- Technology Policy – Driving Source is (Regulations) Explicit and Implicit Drivers of Change.
- Financial Institutions – Driving Source is (A view of Actors) Endogenous Forces.
- Technology Diffusion – Driving Source is (A view of Actors) Exogenous Forces.
- FinTech – Driving Source is (New Norms) enabled by new technologies and standards.

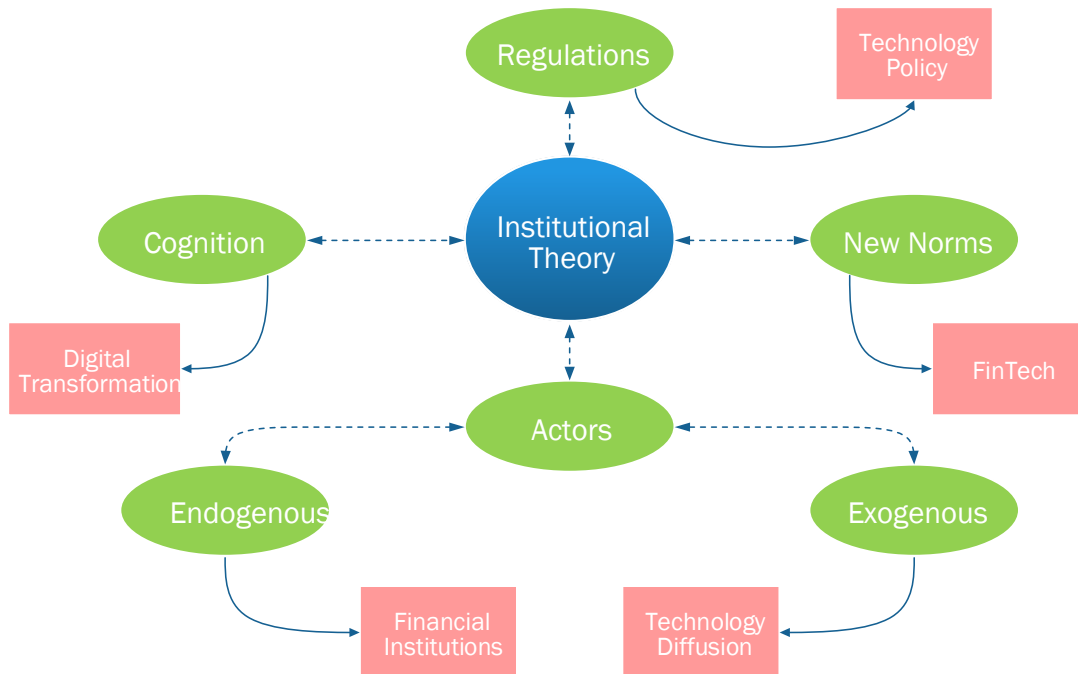


Figure 14: Institutional Theory Actors in FinTech Ecosystem – The Researcher

3.6.3 Articulating the Statements for the Questionnaire

Thorough attention was given to effectively addressing the different facets of the critical ideas under investigation, ensuring the wide recognition of the key concepts under scrutiny. Subsequently, indicators for each dimension were carefully identified and employed as valuable resources to guide the formulation of purposeful questions. Through this meticulous process, we ensured that each question served a specific purpose and was directly linked to one or more areas of our study. As de Vaus (2013) emphasises, it is crucial to consider four distinct types of inquiries: attribute questions, which seek to elicit information about respondents' characteristics such as age, income bracket, dwelling occupancy status, and citizenship status. These attribute-based questions play a vital role in capturing essential demographic and socioeconomic information to understand the research context comprehensively.

1. **Behaviour:** Behaviour questions aim at discovering what people do (for example, recreation habits, the extent of public transport use, and food consumption habits).
2. **Attitudes:** Questions about attitudes seek to discover what people think is desirable or undesirable (for example, judgment on integrating social housing with owner-occupied housing, willingness to pay higher taxes to fund enhanced social welfare services).
3. **Beliefs:** Questions about beliefs aim to establish what people believe to be accurate, false, or preferred (for example, beliefs on the importance of environmental protection and the desirability of social equity).

Sarandakos (2005) emphasises the significance of considering the indicator's nature, derived from the Institutional Theory (Teigland et al. 2018), during question development. The questions were developed based on a prior study, which formed the basis for this research. Out of the total of 16 questions, nine were classified under the "Attitudes" category, while the remaining seven fell within the "Beliefs" category (see Annexure - 2). These questions primarily address the two critical dimensions de Vaus (2013) highlighted: attitude and belief. It is important to note that the questionnaire does not include the last two categories, namely "Attributes" and "Behaviours." This exclusion is due to the respondents' focus on expressing their opinions on current or projected events without disclosing personal intentions or involvement. Additionally, given the qualitative nature of the survey and the participants' C-Level or senior management positions, the need for attribution is considered unnecessary. As Lumsden and Morgan (2005) highlighted, participants are not required to reveal any personal identification within the questionnaire.

3.6.4 Typology of Questions

The present study employed open-ended questions as the primary mode of inquiry. Babbie and Benaquisto (2001) emphasise the importance of comprehensible question types to the participant group and aligning with their background

knowledge. As highlighted by McGuirk and O'Neill (2016), open-ended questions provide respondents with a flexible framework for their responses, enabling them to express their understandings, experiences, and opinions in a less structured manner. By eliciting more nuanced and detailed responses, open-ended inquiries effectively support the qualitative research objective of uncovering the interconnections between interpretation, processes, and practices. These questions can unearth valuable information, often unexpected and unanticipated when a comprehensive study is a primary focus or when face-to-face interactions are impractical, open-ended questions open exciting avenues for in-depth investigation (Cloke et al. 2004). In this scholarly pursuit, the strategic use of open-ended questions emerges as an instrumental tool, deftly addressing the fundamental concerns astutely emphasised in qualitative research. These concerns, rooted in the multifaceted nature of human experience and the intricate dynamics of social structures, have propelled researchers to seek deeper comprehension and meaningful insights.

This research venture embarks on a transformative journey by harnessing the power of open-ended questions, unearthing the rich tapestry of diverse perspectives that individuals inherently harbour across various contexts and temporal dimensions. The flexibility offered by open-ended questions unveils a remarkable depth, allowing for an exploration that transcends the boundaries of conventional inquiry and delves into the essence of human existence.

Through the artful interplay of open-ended questions, this scholarly endeavour elevates qualitative research to new paradigms, embracing the multifaceted nature of human experience and the dynamic interplay of social forces. Within this fertile ground, the research voyage transcends mere inquiry, offering a transformative lens through which social structures' emergence, evolution, and intricate nuances can be unravelled, illuminating the path to profound understanding and insightful revelation.

3.7 Data Collection Process

The data collection phase of this investigation serves as the "How" component, as Punch (2014) highlighted. The methods and procedures employed to gather data are crucial to a thriving research study. In qualitative research, data is obtained to provide evidence and substantiate the experiences under investigation. In this case, the evidence is derived from the testimonies of individuals who have undergone the relevant experiences. The researcher meticulously reviewed this evidence and synthesised a comprehensive summary of the collective experiences. As Polkinghorne (2005) emphasised, the study's findings are built upon the factual foundation that served as the bedrock for the investigation.

The researcher used a primary data collection technique for this study. Interviews were conducted with experts from the technical and financial industries who deeply understand FinTech and regularly utilise various FinTech services within their respective organisations. As Hox and Boeije (2005) noted, interviews are a critical method for gathering data, enabling a deeper comprehension of the facts, perspectives, and insights related to the research topic. The deliberate selection of these experts from the relevant industries ensures that the data collected is authentic, reliable, and veracious, thereby enhancing the credibility of the findings.

The present study employed secondary data as a valuable resource to evaluate the existing literature extensively. Savin-Baden and Major (2013) assert that secondary data refers to information obtained from authoritative sources such as published materials, scholarly journals, official websites of companies and government entities, and other reputable published works. By utilising secondary data collection techniques, as Bryman and Bell (2015) advocated, the study benefits from various advantages, including cost-effectiveness and the avoidance of extensive time commitments associated with primary data gathering.

In qualitative research, data is primarily derived from spoken or written language rather than statistical figures. These qualitative data are often transcribed into written form for subsequent analysis. One potential source of such data in this study

was interviews conducted with relevant participants. To ensure a purposeful and iterative selection process for interviewees, Polkinghorne (2005) recommended that appropriate techniques were employed to identify and engage individuals who could contribute valuable insights to the research.

3.7.1 Data Collection Strategy

The effectiveness of data-gathering techniques plays a pivotal role in the data-collection process, as underscored by McGuirk and O'Neill (2016), who emphasise practical and rational approaches to enhance response rates. Their study reveals that response rates of questionnaires are influenced not only by the distribution method but also by factors such as the research subject, sample characteristics, and the quality and appropriateness of questionnaire design. In qualitative research, which often employs a purposive sample (McGuirk and O'Neill 2016), where substantial interest in the study topic exists, questionnaire response rates tend to be higher. The actions taken to bolster the survey response rate are outlined in Table 4, highlighting the strategies employed.

Notably, Lumsden and Morgan (2005) present compelling evidence suggesting that response rates for online questionnaires significantly surpass those for paper-based counterparts. This disparity can be attributed to several factors: online questionnaires are typically shorter, requiring at most forty minutes to complete; they are straightforward to comprehend; they possess user-friendly designs; and, importantly, they do not necessitate participants to disclose their identities. Additionally, as Dillman et al. (2007) and Bryman (2012) highlighted, response rates can be increased through various pre-distribution and follow-up techniques, irrespective of the distribution method employed (Dillman et al. 2007; Bryman 2012). Table 3 succinctly summarises the approaches employed throughout this research to enhance questionnaire response rates using diverse communication channels.

Strategy	Face-to-Face	Phone	Mail	Online
Ensure the mode of distribution is appropriate to the targeted population and research topic			X	
Send notification letter (or e-mail pre-notification) introducing the research and alerting to the questionnaire's arrival (or posting online)			X	
Ensure the questionnaire is concise.			X	X
Ensure the appropriate location of the approach			X	
Ensure appropriate time of approach.			X	
Vary time if no contact is made initially.			X	
Pre-arrange time/location for the conduct of questionnaire, if appropriate			X	
Send follow-up postcard/e-mail thanking early respondents and reminding others (about one week after initial receipt)			X	
Send a follow-up letter/e-mail and an additional copy of the questionnaire (two to three weeks after initial receipt)			X	
Avoid abrasive manner			X	X

Table 3: Questionnaire Strategy – (McGuirk and O'Neill 2016)

3.7.2 Interviewing Format

Qualitative data collection often relies on interviews as the predominant method, as it allows for generating rich and insightful information. Potter (1996) defines

interviews as the technique through which data is obtained by posing questions to individuals and eliciting verbal responses. The objective of interviewing a key informant was to get a comprehensive and in-depth account of the researched event. As Kyale (1996) suggests, such interviews aim to obtain detailed descriptions of participants' lives and interpret the meaning of the phenomena under investigation. As highlighted by Polkinghorne (2005), it is worth noting that guiding participants in providing such accounts is a skilful endeavour.

Qualitative interviews typically involve one-on-one or group discussions, with focus groups occasionally utilised in research settings (Morgan 2002). In the current study, both online and face-to-face one-on-one interviews were conducted. Unlike the structured questionnaires and formal diagnostic interviews, these interviews were primarily unstructured. However, better understanding the participants' experiences, the researcher could shape and direct the interview by strategically framing the questions or prompts. The interview was conducted as a "professional conversation" (Kyale 1996) to explore the research topic's relevance, significance, and salience. The dialogue unfolded as an interactive exchange, with the interviewer following the conversational threads initiated by the interviewee to obtain a comprehensive account of the researched event. These dynamic exchanges created a more profound, nuanced, experiential understanding of the subject matter.

3.7.3 The Interview Process

The primary method employed for data collection in this study entailed conducting online interviews. A semi-structured questionnaire with open-ended questions was utilised to ensure a comprehensive understanding of the respondents' perspectives, experiences, and insights. This approach facilitated a deeper exploration of the subject matter, allowing the researcher to extract crucial information from its original context. Video interviews were conducted using Zoom, enabling a semblance of face-to-face interaction, and providing the interviewer with valuable feedback, including the visual cues of the respondents' body language and facial expressions. The decision to conduct online interviews was driven by the geographical dispersion of the participants across six different nations in the GCC region, which posed a

substantial logistical challenge in terms of physical proximity. Opting for online interviews was deemed the most viable strategy to overcome cost and time constraints while ensuring meaningful engagement with the participants. By employing this approach, the researcher was able to mitigate the impact of geographic distance and streamline the data collection process.

While limitations exist in the qualitative data that questionnaires can gather, they possess numerous strengths (McGuirk and O'Neill 2016):

1. They can provide insights into social trends, processes, values, attitudes, and interpretations.
2. They are one of the more practical research tools in that they can be cost-effective, enabling extensive research over a large or geographically dispersed population. This is particularly true for online questionnaire surveys, where printing and distribution costs can be minimised (Sue and Ritter, 2012).
3. They are highly flexible.

Integrating questionnaires with complementary qualitative research techniques, such as interviews and focus groups, offers comprehensive insights into social processes and contexts. Although more costly, conducting in-person qualitative research through questionnaires often yields highly favourable outcomes. One notable advantage of this approach is the ability to pose complex questions facilitated by the presence of an interviewer. Furthermore, the interviewer can capture the interview context and interpret respondents' non-verbal cues, enriching the collected data (Cloke et al. 2004; May 2011).

The researcher interviewed a diverse range of individuals, including business banking experts, technology-savvy users, technology entrepreneurs, and consumers of financial services. This selection was based on their professional roles, familiarity with technology, and knowledge of alternative approaches to accessing various financial instruments. Partially structured interviews were employed as the method for data collection.

The pervasive use of technology for communication has experienced a remarkable surge. A comprehensive list of potential participants was initially curated by leveraging personal connections and networking platforms, particularly LinkedIn. To initiate the process, these individuals were emailed inquiring about their availability and willingness to participate in the study. This communication included a detailed explanation of the research objectives and pertinent background information. Following the evaluation and acceptance of participant applications, an official email was dispatched specifying the interview date and accompanied by the University of Bradford's consent form and interview guide. Once confirmation was received, ensuring the participant agreed to engage in the interview at the agreed-upon time and schedule, virtual meetings and interviews were conducted using a secure conferencing platform such as Zoom.

Before each interview, the researcher provided participants with a concise and transparent notification, explicitly delineating the researcher's objectives and outlining the data retention and disposal protocol. Crucially, every participant in the study has provided their informed consent duly recorded by the researcher. As advised by Bryman and Bell (2011), interviewees were expressly asked for their permission regarding the video recording of the interview to address any ethical or legal concerns. Furthermore, these recordings will be expunged once the relevant data and materials have been extracted and transcribed in preparation for subsequent stages of the research project.

3.8 Quality Assurance

Qualitative research findings have faced persistent criticism regarding their perceived lack of scientific rigour, stemming from inadequate justifications of adopted methods, insufficient transparency in analytical procedures, and the notion that the findings merely constitute a personal assortment of personal opinions susceptible to researcher bias (Noble and Smith 2015). This critique has recurrently targeted qualitative research methodologies. In response, the present study

implemented a comprehensive quality assurance framework characterised by a meticulous approach towards ensuring validity, reliability, generalisability, and ethical considerations inherent in conducting robust empirical research. Embracing the guidance of seasoned researchers and drawing from esteemed scholarly works, every reasonable measure was meticulously undertaken to safeguard the scientific rigour of the study.

Multiple authors emphasise the importance of immersing oneself in the research environment before embarking on data collection in qualitative studies. This immersion enables the researcher to develop a heightened understanding of the context while facilitating the participants' familiarity with the researcher's presence (Field and Morse 1985; Le Compte and Goetz 1992; Miles and Huberman 1984). Both outcomes hold significant value (Field and Morse, 1985; Le Compte and Goetz, 1992; Miles and Huberman 1984). Leininger (1991) advocates for ongoing evaluation of the researcher's interactions with the study subjects, aiming to transition from a stranger or distrusted individual to a trusted and affable presence within the research setting. To facilitate this process, Leininger proposes applying a field model, which has been developed and refined through extensive testing over several years. This model serves as an evaluative and reflective guide for the researcher, fostering a conscious awareness of their actions, emotions, and responses to the behaviour and experiences of the participants while also providing an opportunity to validate truths. Ultimately, the model is a tool for self-assessment and introspection throughout the research journey.

Multiple scholarly investigations have identified many factors that, when intertwined, present formidable obstacles to the validity and reliability of research outcomes. These elements, if left unchecked, have the potential to introduce biases. Consequently, it becomes imperative to exercise meticulous control over all conceivable factors. Hence, the researcher has undertaken rigorous efforts to acquire indispensable knowledge and diligently concentrated on unearthing effective strategies and methodologies to mitigate and forestall the abovementioned risks.

3.8.1 Validity and Reliability

Ongoing debates persist regarding the suitability of terms like validity, reliability, and generalisability when assessing qualitative research, as highlighted by scholars such as Long and Johnson (2000) and Rolfe (2006). It is acknowledged that the tests and measures employed to establish validity and reliability in quantitative research cannot be directly transferred to the qualitative domain. Validity pertains to the integrity and appropriateness of the methods used, ensuring that the findings faithfully reflect the data, while reliability denotes consistency in the analytical procedures utilised (Rolfe, 2006). Although these terms have broad applicability, it is imperative to recognise that qualitative approaches diverge from quantitative methods regarding philosophical perspectives and research objectives, necessitating alternative frameworks to ascertain rigour (Pounder 1993).

Brink (1993) has discussed the potential causes of denting or violating validity criteria. Based on the findings of his research, the following four categories emerge as possible causes and origins of inaccuracy, emphasising the need to avoid them:

- a. The researcher
- b. The subjects participating in the project
- c. The situation or social context
- d. The methods of data collection and analysis.

To mitigate and avoid the above sources of error, the points to consider ensuring validity proposed by (Brink 1993) have been considered, and possible actions performed thereagainst have been appended in the table below.

Sr. No.	Points to consider to ensure validity	How it has been achieved
1.	Making sure that informants are very clear on the nature of the research, e.g., why the researcher is there, what he is studying, how he will collect data and what he will do with it	By sharing the consent form, Interview questionnaire and Request for participation. Before starting the interview, a briefing is given to the interviewee about the topic and reason for conducting the study
2.	By first building a trusting relationship with the subjects and staying in that setting for a long period of time	The researcher's biography discloses and satisfies the stated clause
3.	By interviewing the same informant on several occasions and making observations more than once and over time	Since the interviewees were selected from top positions, therefore time was a big constraint. However, the recording of the interview has been viewed multiple times to get a deeper understanding of the consent
4.	By comparing the results obtained with other evidence	It will be done once the study is complete
5.	By confirming findings and analysis with the informant (the danger with this technique is that subjects may become sensitised to the researcher's inferences and provide the answer that supports the researcher's point)	Will be shared once the study is complete

6.	By keeping accurate and detailed field notes to note the variations in responses over the course of time	During the online interviews, notes were taken, reviewing the recording and a re-confirmation exercise was carried out
7.	By showing field notes to a second outside researcher. Another researcher is often much quicker to see where or how a fieldworker is being misled.	In this case, the second researcher is the supervisor of the study since a single researcher is involved in the study.

Table 4: Validity and Reliability - (Brink 1993)

Lincoln and Guba (1985) have proposed alternative criteria to establish rigour in qualitative research, encompassing truth value, consistency, neutrality, and applicability. The following discussion elucidates how these alternative criteria have been upheld in this study.

The researcher's biography and profile comprehensively outline their expertise and position within the industry. Recognising the multiple realities, perspectives, and expectations inherent in the research topic, the researcher is cognizant of the potential impact of preconceived notions and existing knowledge on the study. As highlighted by Noble and Smith (2015), evaluating and incorporating pre-existing realities and opinions can alter the essence of the research and introduce biases into the process. Given the qualitative nature of the study, the risk of such misconduct is significant, and the researcher has taken utmost care to mitigate it. Consequently, in line with Lincoln and Guba (1985) research, the term "validity" has been adopted to replace the notion of truth value in this investigation.

To ensure consistency, the research procedures, including data collection and analysis methods, have been meticulously documented and adhered to throughout the study. The researcher has strived to maintain transparency and traceability in the decision-making process, allowing for scrutiny and validation by others.

Neutrality has been upheld through a reflexive approach, whereby the researcher acknowledges their biases, assumptions, and values. Reflexivity allows for introspection and self-awareness, enabling the researcher to recognise and mitigate any potential influences that may impact the research process and findings.

Lastly, applicability has been addressed by considering the practical implications of the research findings. The researcher has explored how the study's outcomes can be transferred and applied in relevant contexts, ensuring that the research has tangible implications beyond academic discourse.

By adhering to these alternative criteria proposed by Lincoln and Guba (1985), this study aims to establish rigour in its qualitative research methodology, providing a solid foundation for the validity and trustworthiness of its findings.

During the data collection process through interviews, meticulous attention was given to ensuring that the perspectives and concerns of the respondents were thoroughly considered. A comprehensive review determined that the researcher should maintain strict neutrality, refraining from expressing any personal position or suggestion that could influence the respondents' answers to their inquiries. It is assumed that the participants, drawn from top middle management, top management, or C-Level positions, deeply understand the terminologies, vocabulary, practices, perspectives, norms, progressiveness, and realities relevant to the investigated issue within their respective disciplines and contexts.

Just as quantitative research evaluation relies on the accurate reflection of data to determine validity, the validity of this study depends on the precise reflection of data in its findings. Furthermore, a rigorous pursuit of investigating the actual value of the same phenomena has been undertaken.

This study strives to ensure the integrity and trustworthiness of its qualitative research process and findings by upholding these principles, providing a solid foundation for evaluating and interpreting the collected data.

As Lincoln and Guba (1985) highlight, ensuring consistency in qualitative research is just as crucial as establishing dependability in quantitative research. To safeguard

against any inconsistencies, the research methods have been meticulously prepared and applied. Great care has been taken to avoid biases or judgments that could potentially mislead the respondents, referred to as interviewees hereafter, to obtain accurate and insightful information of profound significance and expertise.

Given that the research study was conducted within the GCC region, a data collection approach comprising online interviews with 25 experts was employed following a detailed derivation of the questionnaire and interview questions. In line with the principles outlined by Lincoln and Guba (1985), consistency is paramount, ensuring that if independent researchers were to replicate the study, their findings should either align closely or be comparable to the results obtained in this study. Achieving this outcome necessitates the researcher adhering strictly to the prescribed guidelines and setting aside personal preferences, biases, inclinations, or perspectives while conducting the investigation.

By maintaining such rigorous standards of consistency, this study aims to enhance its qualitative research's reliability and credibility, ensuring the findings' validity and robustness.

Quantitative research terminology and application to qualitative research	Alternative terminology associated with the credibility of qualitative research
<p><u>Validity</u></p> <p>The precision in which the findings accurately reflect the data.</p>	<p><u>Truth value</u></p> <p>Recognises that multiple realities exist; the researchers outline personal experiences and viewpoints that may have resulted in methodological bias; clearly and accurately present participants' perspectives.</p>

Reliability

The consistency of the analytical procedures, including accounting for personal and research method biases that may have influenced the findings.

Consistency

This relates to the 'trustworthiness' by which the methods have been undertaken and is dependent on the researcher maintaining a 'decision trail'; the researcher's decisions are clear and transparent. Ultimately an independent researcher should be able to arrive at similar or comparable findings.

Neutrality (or Confirmability)

Achieved when truth value, consistency and applicability have been addressed. Centres on acknowledging the complexity of prolonged engagement with participants and that the methods undertaken, and findings are intrinsically linked to the researcher's philosophical position, experiences, and perspectives. These should be accounted for and differentiated from participants' accounts.

<u>Generalisability</u>	<u>Applicability</u>
The transferability of the findings to other settings and applicability in other contexts.	Consideration is given to whether findings can be applied to other contexts, settings, or groups.

Table 5: Credibility Parameters of Qualitative Research
(Lincoln and Guba 1985)

Maintaining neutrality is a fundamental principle that must be diligently followed to ensure the high quality of the study. Objectivity entails acknowledging the intricate dynamics that arise from prolonged engagement with participants and recognising that the researcher's philosophical stance, personal experiences, and perspectives are intertwined with the methods employed and the findings generated. Discerning and separating these factors from the participants' accounts is imperative. Consequently, the researcher must establish and maintain relationships with the participants throughout the study while being cognizant of the potential influence that participants' viewpoints may exert. This influence can impact the selection of techniques, the interpretation of data, and the analytical process itself. Preserving the integrity of the underlying concept and objective is crucial to ensure that it does not interfere with the natural unfolding of insights and discoveries.

Furthermore, impartiality is achieved by carefully considering truth value, consistency, and applicability, as Lincoln and Guba (1985) advocated. Applicability is attained when the research findings can be extrapolated and applied to other contexts, settings, or groups beyond the immediate study sample. This study aspires to contribute to the broader field by proposing its findings as potentially relevant to other groups or populations, thereby enhancing the generalisability of the research.

This study ensures that the research outcomes are impartial, reliable, and transferable to other relevant domains by upholding the principle of neutrality and addressing truth value, consistency, and applicability concerns. This commitment to

neutrality guarantees the integrity and validity of the study, facilitating its broader impact and applicability.

3.8.2 Ethics

The researcher meticulously adhered to the formal procedures mandated by the University of Bradford and followed the recommendations provided by the School of Management, Law, and Social Sciences. Before commencing the fieldwork for this research endeavour, the researcher conscientiously observed the ethical norms prescribed by the institution and sought formal authorisation from the relevant authorities.

Given the seniority of the study sample professionals, the utmost emphasis was placed on safeguarding the confidentiality of all acquired data before and throughout the research process. Particularly considering the involvement of medium to large institutions within the target population, ensuring the anonymity and confidentiality of the collected data became an absolute imperative. To achieve this, stringent measures were implemented to conceal the identities of the participants, their employers, and any information that could reveal their identities in verbal and written interactions.

During the qualitative phase of the study, participants were provided with an authorised consent form from the University of Bradford, which they carefully read and signed. This document explicitly outlined the rights of the participants and granted them the autonomy to decide whether to participate in or withdraw from the study. Furthermore, participants were informed that their data and any responses they provided would be securely stored at the University of Bradford, with access limited exclusively to the researcher and their supervisors after anonymisation.

Before sharing any data with the participants, a comprehensive cover letter was sent, elucidating the background, objectives, and participants' rights in the study. Maintaining data confidentiality was underscored, emphasising participants' prerogative to withdraw from the exercise at any point during the process.

Throughout the analysis phase, meticulous care and caution were exercised to ensure that only the researcher could access the study data. Strict adherence to ethical standards was maintained, and no personal or professional connections were established during the data analysis process. Discussions or sharing of participants' input occurred solely between the researcher and the participants' academic supervisors at various stages of the research.

By meticulously following the established ethical procedures and ensuring the confidentiality and rights of the participants, this study upholds the highest standards of research integrity and ethical conduct. The stringent measures employed throughout the research process instil confidence in the confidentiality and security of the collected data, ultimately fostering trust and credibility in the study's findings.

Chapter 4

Data Analysis and Findings

4.1 Introduction

The primary objective of this chapter is to delve into two critical research areas that hold significant importance. The initial segment focuses on applying PESTEL analysis in the adoption of FinTech by financial institutions and technology enterprises. Drawing upon an extensive review of relevant literature, this analysis provides a comprehensive understanding of the essential factors that must be present in the macro environment of GCC nations to facilitate the successful adoption of FinTech products and services.

The researcher conducted twenty-five semi-structured interviews with professionals from technology and financial organisations to gain further insights into the challenges and concerns of implementing FinTech solutions. The information gathered from these interviews serves as a basis for the subsequent section of this chapter, which aims to identify and analyse the most significant obstacles that traditional financial institutions and modern technology corporations must overcome to launch FinTech products and services effectively. In pursuit of this objective, a Thematic Analysis approach was employed, enabling the development of a model that encapsulates the key themes and challenges.

Mahroof et al. (2018) have emphasised that Thematic Analysis provides researchers with a versatile and all-encompassing method that facilitates the examination and comprehension of intricate concepts, thereby providing valuable perspectives that can be applied to diverse settings. This method is deemed reliable and suitable for comprehensively understanding qualitative research data. Thus, it was considered appropriate for achieving the goals outlined in this chapter.

As the chapter draws to a close, a comprehensive discussion and review of the findings from the preceding sections are presented. This synthesis of the research outcomes reinforces the significance of the identified challenges. It provides valuable insights and recommendations for successfully implementing FinTech solutions in the financial and technological landscape. By presenting a cohesive and informative narrative, this chapter contributes to the existing body of knowledge and opens avenues for further exploration in this evolving field.

4.2 PESTEL Analysis

PESTEL Analysis is a widely employed method for thoroughly examining the macro-environmental factors that influence a business's competitive position. These factors encompass internal and external variables beyond an organisation's direct control. Despite their uncontrollable nature, it is imperative to scrutinise these elements to align the corporate strategy effectively. Moreover, these factors are delicate and can significantly impact an organisation's standing within the competitive landscape. Consequently, strategists strive to analyse and comprehend these external forces, seeking insights into how business models must adapt to their unique macro environments.

The primary objective of these analysts is to minimise the adverse effects of macro-environmental factors through proactive measures while also capitalising on potential opportunities that may arise. By employing preventive tactics and leveraging advantageous circumstances, planners aim to navigate the complexities of the macro-environment and safeguard the organisation's competitive position. Understanding and effectively responding to the intricate interplay of these external influences is essential for businesses' sustainable growth and success in dynamic and ever-evolving market landscapes.

The following is a list with the specifics of each factor:

1. Political
2. Economical

3. Social
4. Technological
5. Environmental
6. Legal

Odey (2021) posits that while the PESTEL model successfully captures the external factors that impact companies and organisations, it needs to consider the technical intricacies of its operations. Instead, the model examines the external forces influencing these firms' market entry and positioning. PESTEL Analysis serves as a valuable tool within scenario analysis, identifying critical macro-environmental factors that potentially shape the operations of institutions or organisations. In the case of this study, it applies to FinTech service providers or enterprises engaged in offering FinTech solutions for financial transactions.

By employing PESTEL Analysis as a situation analysis tool, the research endeavours to identify prevailing macro-level obstacles impeding the widespread adoption of FinTech and to explore whether these obstacles hold the potential to transform into opportunities in the future. Although specific circumstances may yield opportunities, these macro-environmental forces often pose risks or hurdles. The primary aim of this investigation is to discern the existing macro-level barriers affecting the dissemination of FinTech and assess their potential for transformation into facilitative opportunities. The subsequent paragraphs delve into the specific details of each factor.

4.2.1 Political

Political variables significantly influence the proliferation of financial technology (FinTech) goods and services. These variables encompass a range of crucial aspects, including the regulatory and supervisory landscape, privacy and security challenges, opportunities for innovation, infrastructure, and government support. Each factor plays a pivotal role in shaping the landscape of FinTech dissemination within the GCC, contributing significantly to its overall development.

One fundamental strategic direction for fostering the widespread adoption of FinTech goods and services is establishing a robust and conducive regulatory and

policy ecosystem. Fortunately, several GCC nations have made remarkable strides in this regard, boasting comprehensive regulatory frameworks and effective supervisory processes that facilitate the adoption and advancement of FinTech use cases. With a keen recognition of the immense potential for technological progress and economic expansion, GCC states such as Saudi Arabia and the United Arab Emirates have actively supported the proliferation of financial technology.

The significance of political factors as drivers of FinTech's growth and acceptance cannot be overstated. The efforts of GCC nations to construct favourable regulatory frameworks, address security concerns, provide avenues for innovation, enhance infrastructure, and extend governmental support have fostered an environment conducive to the flourishing of FinTech. However, maintaining a vigilant stance and adaptability to address emerging challenges is essential to ensuring the sustained expansion of FinTech across the GCC region. By capitalising on political variables and overcoming potential constraints, GCC nations can further solidify their position as leaders in the global FinTech ecosystem, fuel additional economic growth, and promote diversification. Achieving this outcome necessitates leveraging the power of political factors.

4.2.2 Economical

The diffusion of financial technology (FinTech) goods and services throughout an economy is intricately linked to various economic factors, including government subsidies, investment, and industrial fragmentation. These factors significantly influence the profitability and attractiveness of the market or sector. Let us explore each of these aspects in detail:

Firstly, government subsidies play a crucial role in supporting the development and introduction of innovative technologies, particularly in their early stages. By providing financial assistance, contributions facilitate the initial launch and effective dissemination of new products. While GCC nations currently do not offer financial aid through subsidies for FinTech, it is worth noting that subsidies have proven instrumental in supporting the growth and successful implementation of new technologies. By easing the entry of new FinTech goods and services into the

market and promoting their widespread adoption, subsidies indirectly but significantly impact the market's or industry's profitability and attractiveness. Various critical economic factors, including government subsidies, investment, and industrial fragmentation, influence the dynamics of FinTech dissemination.

Secondly, given the continuous growth of FinTech, substantial investments are essential to drive technological advancements, raise awareness, and encourage customer acceptance of innovative offerings. Technological corporations and financial institutions are responsible for allocating resources to safeguard customer privacy and ensure the security of financial transactions. Investment regulations and frameworks are crucial for effectively implementing new technologies, further contributing to the successful diffusion of FinTech goods and services. Within the GCC framework, investments in FinTech products and services steadily expand, facilitating their comprehensive rollout and dissemination throughout the economy.

Additionally, the degree of industrial fragmentation within the FinTech industry significantly shapes its spread. Industrial fragmentation refers to competition and diversity among FinTech companies and service providers. In a highly fragmented market, many participants and a wide array of offerings exist, fostering an environment that encourages innovation and nurtures healthy competition. This fragmentation enhances the diffusion of FinTech by providing customers with diverse options and stimulating ongoing developments in the FinTech industry across the GCC. Such market conditions promote the adoption and dissemination of FinTech by offering consumers a range of choices.

Considering the infancy of FinTech, substantial investments in technology and cultivating knowledge and interest among potential customers are crucial. The need for continuous investment in the sector and the developing FinTech-related products and services remains constant. Within the GCC, progressive investments in FinTech goods and services are being made, bolstering their rollout and diffusion throughout the economy. Financial institutions and technology businesses must also allocate resources to secure transactions and protect consumer privacy.

The diffusion of financial technology goods and services throughout an economy is intricately tied to various economic factors. By considering and addressing the economic factors, governments can create an environment that fosters the widespread adoption and dissemination of FinTech. This, in turn, drives both economic growth and technological advancement, positioning the GCC and its constituents as critical contributors in these domains.

4.2.3 Social Factors

Various social variables, including social interactions, interpersonal networks, and demographic heterogeneity, profoundly influence the introduction of new financial technology goods and services. These variables significantly impact work patterns, consumer preferences, attitudes, and adoption preferences, ultimately shaping the diffusion of financial technology products and services. Let us explore each of these aspects in greater detail:

The variability of the population gives rise to distinct choice criteria and a social topology that significantly mould perceptions and expectations. In the context of GCC nations, which boast a remarkable population diversity, the distribution of financial technology goods and services encounters complexities. Consequently, demographic factors play a crucial role in determining the spread of new technologies. In homogeneous populations, subsequent generations tend to follow the same patterns. However, in contrast, the GCC region serves as a melting pot of individuals from diverse backgrounds, leading everyone to adapt their preferences to reflect the cultural diversity prevalent in their surroundings.

To comprehend intricate substitution patterns and mitigate the risk of market misinterpretation, a comprehensive model that encompasses social interactions proves invaluable. Furthermore, the likelihood of customers sharing their experiences with FinTech solutions increases proportionally with the frequency of social interactions. Given the substantial diversity within the populations of GCC nations, a wide range of social interactions is observed. While encounters among individuals of different ethnicities may be less frequent than those of the same

ethnicity, conversations about experiences with various FinTech goods and services still occur.

The structure of interpersonal networks reveals how the relevance and trustworthiness of information influence the dynamics of critical mass adoption, thus impacting the diffusion of technology. Interpersonal networks play a pivotal role in disseminating financial technology as individuals within these networks exchange information. Consequently, the prevalence of FinTech within GCC nations is shaped by the nature of interpersonal networks and their dynamics.

In summary, various social variables, including social interactions, interpersonal networks, and demographic heterogeneity, wield substantial influence over the introduction and diffusion of financial technology goods and services. These variables shape work patterns, consumer preferences, attitudes, and adoption preferences not only generally but also significantly impact the spread of products and services related to financial technology. Understanding and considering these social factors are essential for comprehending the complexities of FinTech diffusion and fostering its widespread acceptance within the GCC region.

The intricate structure of interpersonal networks serves as a revealing lens through which we can understand how the pertinence and trustworthiness of information exert influence on the dynamics of critical mass technology adoption. These dynamics, in turn, are shaped by the impact of interpersonal networks. As individuals within these social circles communicate information through these networks, they play a vital role in disseminating financial technology. Consequently, the prevalence of FinTech within GCC nations is inherently influenced by the nature of interpersonal networks and their dynamics.

Various social variables, including social interactions, interpersonal networks, and demographic heterogeneity, significantly influence the introduction of new financial technology goods and services. Social variables consistently determine work patterns, consumer preferences, attitudes, and the propensity to adopt specific products and services. Social factors hold similar sway over the diffusion of products

and services associated with financial technology. We will delve into their intricacies to comprehensively shed light on each of these aspects.

The inherent variability within populations gives rise to distinct choice criteria and shapes the social topology, thus wielding substantial influence over the formation of perceptions and expectations. The distribution of financial technology goods and services encounters complex challenges in the context of GCC nations, where a significantly diverse population exists. Consequently, demographic factors play an influential role in driving the diffusion of novel technologies. Unlike homogeneous populations, which tend to perpetuate the same patterns across subsequent generations, the GCC encompasses individuals from various parts of the world, leading to an adaptation of preferences in alignment with the local population.

To gain a comprehensive understanding of intricate substitution patterns and mitigate the perils of misinterpreting the market, a robust model that encompasses social interactions provides an invaluable framework. Furthermore, as the frequency of social interactions grows, so does the likelihood of customers sharing their experiences with FinTech solutions. The diversity of populations within the GCC nations fosters a rich tapestry of social interactions, encompassing a broad spectrum beyond ethnic boundaries. While encounters among individuals of different ethnicities may be less frequent when factors other than ethnicity are considered, there are circumstances where individuals of the same ethnicity engage in more frequent interactions. Nevertheless, customers actively engage in conversations about their encounters with FinTech goods and services, transcending the boundaries of diversity.

The intricate framework of interpersonal networks unveils the profound impact of information relevance and trustworthiness on the critical mass dynamics of technology adoption. It also elucidates how the very nature of interpersonal networks influences these dynamics. As individuals within these social circles serve as conduits for information exchange, they play a pivotal role in disseminating financial technology. Consequently, the prevalence of FinTech within GCC nations

is significantly shaped by the characteristics and dynamics of interpersonal networks.

These networks act as powerful conduits for the flow of information, facilitating the diffusion of knowledge and promoting the adoption of innovative financial technology solutions. The structure, composition, and connectivity of interpersonal networks profoundly influence the spread and acceptance of FinTech within the GCC. Individuals within these networks are disseminators, sharing information, experiences, and recommendations regarding FinTech products and services. The level of trust and credibility within these networks dramatically impacts the adoption and diffusion of financial technology solutions.

Moreover, the nature of GCC nations' interpersonal networks has unique characteristics and intricacies. These networks may vary in size, density, diversity, and communication patterns. The degree of interconnectedness, the strength of ties, and the accessibility of information within these networks all contribute to the dissemination of FinTech. Individuals with strong ties and close relationships within these networks are more likely to influence the attitudes and behaviours of others toward adopting FinTech solutions.

Therefore, an in-depth understanding of the structure and dynamics of interpersonal networks is crucial for comprehending the diffusion patterns of FinTech within the GCC. By harnessing the power of interpersonal networks and leveraging their inherent strengths, stakeholders can effectively promote the widespread adoption and utilisation of financial technology solutions, thus shaping the future landscape of financial services in the region.

Consumer adoption decisions regarding novel technologies are profoundly shaped by the intricate fabric of their social and cultural systems. The notion of contagion brings to the forefront the significant impact of individuals' social networks on their choices, as they are influenced by the actions and decisions of those within their immediate social circles. This influence is further modulated by the prevailing cultural elements pervasive throughout the GCC region.

Individuals tend to embrace innovative and ground-breaking technologies within nations with a more independent cultural orientation. This stands in contrast to several GCC countries where such a culture of independence is less prevalent. Conversely, consumers in nations with a more interconnected cultural ethos, akin to those in the GCC, tend to be more receptive to incremental changes that align with existing norms and values.

The cultural context shapes consumers' attitudes and behaviours towards technological advancements. It acts as a lens through which they evaluate and assimilate new technologies into their lives. Cultural values, social norms, and shared beliefs within the GCC area significantly influence consumers' acceptance of new technological innovations. Understanding and recognising these cultural dynamics are essential for effectively promoting and facilitating the adoption of financial technology solutions within the GCC region.

By acknowledging the cultural nuances and sensitivities within the GCC, stakeholders can develop tailored strategies that resonate with the prevailing cultural and social contexts. This approach enables them to bridge the gap between technological advancements and consumers' cultural predispositions, fostering a more seamless integration of FinTech solutions into the everyday lives of GCC consumers.

Moreover, various societal factors can influence customers' decision-making when acquiring specific goods or services. The imperative to conform to prevailing social norms, the unyielding pursuit of social acceptance, and the innate desire to align oneself with distinct social groups all impact the intricate fabric of decision-making. Within this complex tapestry, social variables such as referrals from trusted friends and family, the pervasive influence of internet reviews, and the persuasive power of prominent individuals hold immense sway over consumer behaviour.

To facilitate the widespread adoption and proliferation of new and innovative FinTech solutions within the GCC region, businesses, particularly those operating within the FinTech sector, must astutely recognise and incorporate these societal factors into their meticulously crafted marketing strategies. By comprehending the

profound influence of social dynamics on consumer decision-making, businesses can tailor their approaches to align with the prevailing social norms, harness the power of word-of-mouth recommendations, leverage the reach and impact of online reviews, and engage influential individuals to endorse and advocate for their FinTech offerings. Effectively incorporating these societal factors into marketing endeavours will elevate the success of promotional initiatives and foster the desired acceptance and uptake of FinTech solutions within the GCC area.

The social and cultural fabric underscores the pivotal role of contagion in shaping customers' inclination to embrace novel products. Consumers are more likely to embrace pioneering innovations in cultures that exalt individualism. Conversely, consumers readily embrace incremental changes that align with existing norms and values within interconnected cultures. Moreover, customers' adoption decisions can be profoundly swayed by the social attributes of a given product or service.

4.2.4 Technological Factors

The nexus between technological elements and the prevailing technological landscape within a country is paramount. Numerous technical factors influence the diffusion of financial technology goods and services. These underlying causes encompass investments in research and development, technological advancements, and intensifying competition among enterprises specialising in technical innovation. The ensuing enumeration delves into the intricate details of each factor:

Investments in research and development form an instrumental catalyst for the augmentation of financial technology products and services, rendering them more dependable and cutting-edge. In the GCC nations, financial institutions and technology firms diligently allocate resources towards research and development endeavours concerning FinTech goods and services. This strategic investment aims to furnish clients with technologically sophisticated and trustworthy solutions. Furthermore, the substantial financial prowess wielded by prominent financial institutions perpetually bolsters the enhanced quality of FinTech products and services, engendering a consistent growth trajectory.

In the contemporary era of rapid technological progress, advancements and developments have far outpaced those of previous epochs. The relentless march of technical capabilities permeates every facet of human endeavour, forging ahead with rigorous momentum day by day. This relentless march is equally valid for FinTech products and services, which are gaining traction and making remarkable strides within the GCC nations. The vibrant landscape of technical innovations within this context propels the region towards unprecedented frontiers, setting the stage for transformative advancements in FinTech.

Financial institutions and technology firms are steadfastly dedicated to enhancing functionality and rectifying any shortcomings in their FinTech offerings. This relentless pursuit of excellence is propelled by the escalating competition within the industry, resulting in a notable upswing in the efficacy of financial technology goods and services. Consequently, the intensifying rivalry among FinTech service providers proves advantageous, as it fosters an environment of continuous performance enhancement, paving the way for unprecedented advancements in financial technology.

4.2.5 Environmental Factors

Green environmental challenges, encompassing pollution, waste management, and climate change, pose distinctive environmental variables that demand attention. While environmental regulations may incur additional costs, such as those associated with implementing pollution control measures, they can also serve as catalysts for new opportunities, exemplified by the emergence of enterprises focused on mobile phone recycling. In financial technology, the proliferation of innovative solutions is poised to exert a significant influence on the environment, primarily by mitigating pollution and minimising waste generation. The dissemination of FinTech goods and services is subject to various environmental regulations, and its expansion yields a tangible reduction in overall pollution levels. This is attributable to the diminishing reliance on transportation and other resources, as the increased utilisation of technology-driven offerings curtails the volume of financial transactions necessitating physical movement.

Consequently, the widespread adoption of FinTech engenders a concomitant reduction in pollution across GCC countries. Additionally, the proliferation of FinTech engenders a significant decline in waste production. The transition from paper-based documentation to digital methods, facilitated by FinTech, substantially curtails resource wastage. FinTech actively contributes to waste reduction by enabling streamlined and efficient processes, ultimately fostering environmental preservation.

In the contemporary era, environmental issues such as pollution, waste, and climate change have emerged as formidable global challenges that demand urgent attention. While these concerns present daunting obstacles, they also serve as catalysts for innovation and progress. Despite potentially imposing increased costs on businesses, environmental regulations possess the transformative power to drive the emergence of new sectors and foster the adoption of environmentally responsible practices. Historically, discussions surrounding environmental considerations focused on businesses directly engaged in environmentally conscious activities. However, recognising the far-reaching implications of environmental problems is crucial. The proliferation of financial technology, known as FinTech, exemplifies how external factors are reshaping the corporate landscape. The advent and widespread adoption of FinTech have precipitated significant transformations in financial transaction practices, exerting an indirect yet substantial impact on the environment.

The proliferation of financial technology holds significant promise for environmental sustainability, particularly concerning pollution reduction. Technology-driven financial products and services have dramatically reduced the need for physical transportation and associated resources to complete transactions. In the past, extensive paperwork was inherent in financial processes, leading to substantial resource consumption and waste generation. Fortunately, this practice has been primarily replaced by FinTech, which eliminates the reliance on paper documents in favour of digital methods. This transition has resulted in decreased resource waste and, consequently, a tangible reduction in pollution.

Moreover, maximising the impact of environmental regulations on disseminating financial technology goods and services is crucial. Governments and regulatory bodies have recognised the potential of financial technology in advancing sustainability goals, leading to the formulation of legislation promoting environmentally friendly practices. Similarly, these laws have influenced the development of ecologically conscious sectors and have fostered the adoption of sustainable practices within the financial technology industry.

The Gulf Cooperation Council (GCC) region is a compelling example of how FinTech can be pivotal in reducing pollution and enhancing waste management practices. As the adoption of FinTech gains momentum, the GCC countries are making significant strides towards their environmental preservation objectives. FinTech is a vital enabler in facilitating the GCC's commitment to environmental stewardship by diminishing reliance on physical transportation and curtailing the wastage of valuable resources. The increased utilisation of technologically advanced financial products and services has resulted in a remarkable reduction in resource consumption, transportation needs, and reliance on cumbersome paperwork. Consequently, this reduction has substantially decreased pollution and waste generation. Furthermore, as environmental regulations continue to shape business practices, incorporating sustainable principles and FinTech becomes an increasingly imperative priority for both private enterprises and the governing bodies overseeing them. By embracing and embracing the technological revolution, the GCC nations hold the potential to forge a more sustainable future while capitalising on the transformative opportunities it presents.

4.2.6 Legal Factors

Legal factors play a significant role in shaping the landscape of financial technology, exerting both positive and negative influences on its proliferation. The impact of legal considerations encompasses a range of legislative and regulatory factors that can either constrain or facilitate the diffusion of financial technology. Changes in the legal framework can impose restrictions on corporate mergers and acquisitions while introducing new tax regulations for overseas operations. However, legal

reforms can also present opportunities for innovation and expansion within the industry. In the context of the GCC nations, the distribution of financial technology remains primarily limited to large corporations with established reputations and extensive track records. Local policies must be recalibrated to provide a conducive environment for start-up companies to obtain licenses and swiftly introduce their FinTech products and services. The current scenario often necessitates prolonged waiting periods for smaller firms, impeding their ability to enter the market expeditiously. Consequently, this situation adversely impacts the widespread adoption and dissemination of FinTech goods and services in the region.

Stringent legal frameworks governing the operation and management of FinTech products and services pose significant barriers to their rapid and seamless dissemination. Within the GCC nations, the presence of stringent Anti-Money Laundering (AML) and financial crimes legislation results in rigorous regulations that govern the establishment and operation of FinTech products and services. These requirements are characterised by their strictness and severity, creating significant hurdles for small and medium-sized enterprises seeking to enter the FinTech market. Moreover, the recent advancements in industry digitalisation necessitate the adoption of enhanced authentication methods, secure access tools, and the utilisation of biometric data. It is crucial to highlight that in the GCC countries, strict adherence to norms and regulations regarding the authenticity and security of FinTech products and services is enforced. This ensures that customers can trust and rely on the safety of FinTech applications, thereby instilling confidence in their usage.

Legal considerations are critical in shaping the FinTech trajectory and can positively and negatively influence the industry's growth. Legislative and regulatory factors, such as alterations to regulations governing firm mergers and acquisitions, or revisions in tax policies on offshore earnings, can profoundly impact the FinTech sector's landscape. These legal dimensions possess the potential to shape the direction and scope of FinTech expansion in significant ways, highlighting the intricate interplay between the regulatory framework and the dynamism of the industry.

The restricted availability of licenses for new businesses in certain regions, particularly within the Gulf Cooperation Council (GCC), substantially impedes the broader adoption of financial technology (FinTech). Local regulations and rules create a challenging environment for smaller firms seeking to penetrate the FinTech sector, necessitating prompt support and assistance obtaining licenses. Consequently, the delayed entry of start-up companies into the market significantly hampers the overall diffusion of innovative FinTech goods and services. This constraint underscores the need for regulatory reforms that facilitate a more inclusive and accessible ecosystem, enabling more significant innovation and propelling the expansion of the FinTech industry.

The stringent and inflexible legal regulations governing the operation and management of financial technology (FinTech) goods and services present a significant impediment: the need for more talent within the industry. In the Gulf Cooperation Council (GCC) nations, enacting Anti-Money Laundering (AML) and Financial Crimes Acts has established comprehensive and forward-thinking regulatory frameworks. While these regulations are crucial for ensuring compliance and safeguarding against illicit activities, they also have the potential to create barriers that hinder and complicate the widespread adoption of FinTech products and services. The strict standards imposed by these laws severely limit the opportunities available, particularly for small and medium-sized enterprises (SMEs), to actively participate in the FinTech sector. This scarcity of talent and restricted access to the industry impedes the growth and innovation necessary for advancing the FinTech ecosystem within the GCC nations.

The financial technology (FinTech) industry is undergoing a rapid digital transformation, necessitating the implementation of advanced authentication protocols and secure access solutions. Recognising the paramount importance of customer confidence and data security, the Gulf Cooperation Council (GCC) nations have enacted stringent laws and regulations addressing the authentication and security aspects of FinTech products and services. These measures aim to instil trust in users by assuring the reliability and safety of offerings from FinTech companies.

By demonstrating dependability and safety, these actions seek to engender consumer trust in FinTech applications and promote the adoption and utilisation of FinTech products and services across individual enterprises. This is achieved by cultivating a sense of security within the financial technology ecosystem. While stringent regulations may pose challenges, they encourage compliance and foster trust.

Financial authorities, through the implementation of robust regulatory measures such as data protection legislation, strive to safeguard user data in FinTech operations. This compliance-driven approach enhances user confidence in the sector, creating a safer and more trustworthy environment for the widespread adoption and dissemination of FinTech.

Legal considerations significantly influence the diffusion of financial technology, encompassing a spectrum of possibilities and challenges. While stringent laws and licensing requirements may impede the growth of smaller firms and hinder the rapid proliferation of FinTech, they also serve to ensure compliance, enhance security measures, and foster user trust. Establishing a delicate balance between promoting innovation and addressing regulatory concerns is essential for establishing a sustainable and inclusive FinTech ecosystem.

To cultivate an environment that nurtures the diverse participation of stakeholders, policymakers must adapt regulatory frameworks to align with the dynamic nature of the FinTech industry. Such adjustments will foster economic growth, drive technological advancements, and safeguard consumers against potential risks while promoting consumer protection.

By reconciling the need for innovation with the imperative of regulatory oversight, policymakers can create an environment that supports the flourishing of the FinTech sector, positioning it as a catalyst for economic prosperity and technical breakthroughs.

Political	Economical	Social
<ul style="list-style-type: none"> • Regulatory and supervisory ecosystem • Security and privacy issues • Innovation opportunities, infrastructure, and state support 	<ul style="list-style-type: none"> • Government subsidies • Investment 	<ul style="list-style-type: none"> • Population heterogeneity • Social interactions • Interpersonal networks
Technological	Environmental	Legal
<ul style="list-style-type: none"> • Investments in research and development • Technological development is faster • Increasing competition and technological 	<ul style="list-style-type: none"> • Control of pollution • Reduction of wastage 	<ul style="list-style-type: none"> • Local policy • Tightening regulation • Advanced authentication

Table 6: PESTEL Analysis-The Researcher

Identify and evaluate critical issues faced by FIs and technology companies when rolling out FinTech products and services.

A qualitative research approach employing Thematic Analysis was used to uncover the key challenges financial institutions and technology companies face in implementing FinTech products and services. In-depth, semi-structured interviews were conducted with industry experts from financial institutions and technology firms, constituting the foundation of the study as mentioned above. Following the completion of the interviews, meticulous transcriptions were generated, serving as valuable data for subsequent analysis. The following section presents the outcomes derived from the comprehensive data analysis.

4.3 Technological Attributes

When putting out FinTech goods and services, technological qualities were regarded as the first barrier and the most crucial issue faced by financial institutions and technology businesses. These characteristics were further broken down into two distinct variables, which are as follows:

When launching new financial technology goods and services, financial institutions (FIs) and technology businesses confront the most significant obstacle and fundamental problem in the form of security concerns. When utilising products and services the FinTech industry provides, fraud and security breaches are risky. Consequently, ensuring the safety and protection of financial transactions is one of the most challenging issues. For instance, the respondent divulged the following information throughout the interview:

“Our customers feel that using FinTech products and services is unsafe. Furthermore, we used to hear several complaints from customers who got scammed and fraud because of using FinTech products. So, there is a need to make transactions secure.” (RES-05).

Another respondent also shared the same:

“One of my friends had a unanimous telephone call in which the caller introduced him as the bank representative. He asked several questions regarding their bank account for verification. After an hour, the total amount available in his account was debited. Due to this, I avoid using FinTech service.” (RES-08).

Another technical attribute relating to adopting FinTech products and services is responsiveness to the companies offering FinTech products and services. Responsiveness (to something) is the ability to react quickly and positively to something. Sometimes, it has been observed that technology companies need to be more responsive when approached by users. This is one of the challenges and critical issues faced by FIs and technology companies when rolling out FinTech products and services. For example, one of the respondents shared the following:

“There are several issues with mobile applications when making payments. Sometimes, the application gets crashed, or it is not working properly.” (RES-02).

Therefore, there is a need for applications, and FinTech products and services should be responsive according to environmental demands and conditions.

The Innovator’s standpoint is related to FinTech products and service providers’ competencies and characteristics in offering FinTech products and services. Two innovator-related features emerged from the data collected: i) the Innovator’s internal focus and ii) the Innovator’s external focus.

This presents how a service provider is offering its FinTech products and services. The innovator’s internal focus concerns the service provider’s knowledge, skills, and abilities in offering FinTech products. The following critical issues were identified by FIs and technology companies when rolling out FinTech products and services:

Product orientation and innovation are a firm’s competencies and abilities to deliver a novel product to meet market demands. A product-oriented firm can innovate and lead the organisation to success. However, a firm could deliver a good innovation relative to other products through internal R&D. However, it has been observed that some of the applications are not user-friendly or lack robustness, because of which FinTech products and services have low acceptance rates. For example, one of the respondents shared the following:

“Our users of FinTech products request robust and technologically advanced payment mechanisms. We always try to improve products and services, yet users still want the applications to be more innovative and easier to use.” (RES-07).

Financial institutions and technology companies should continuously invest in research, development, and innovative technologies to make their products safer, attractive, and user-friendly. In the case of GCC countries, financial institutions need more investment in R&D and technology in FinTech products and services. So, there is a need for heavy investment in the R&D of FinTech products and services to improve their performance and end-user experience. For example, one of the respondents shared the following:

<p><i>“Our users of FinTech products request robust and technologically advance mechanism for payments. We always keep trying on improving of products and services, yet users still want the applications to be more innovative as well as easy to use” (RES-07)</i></p> <p><i>“Our organisation should invest in research and development to adopt new technologies. Customers ask us for the improvement in FinTech products. They give us examples of the products of other companies which are more robust and easier to use, especially the safety of usage. But frankly speaking, our</i></p>	<p>Product orientation and innovation</p> <p>Investment in R&D and technology</p>	<p>Internal focus</p>	

<p><i>company is investing very less in product research and development.” (RES-17)</i></p> <p><i>“I would suggest that financial companies should extend their learning beyond traditional way of learning new technologies. They need to be proactive in learning the new mechanisms rather than be reactive.” (RES-12)</i></p>	<p>Continuous learning</p>		<p>Innovator's Standpoint</p>
<p><i>“Our organisation is successful in capturing big market share because our organisation is much aggressively taking actions to market the FinTech products and service. Further, our application is also better with respect to features embedded in it. So, in my point of view, it is competitiveness of our firm which is helpful of sustaining large market share” (RES-11)</i></p> <p><i>“Our organisation is less market oriented. The company is not spending much is generating marketing demand because of which adoption rate of our product is not as much high as of the product attributes. In my point of view, the company should market our product more as of currently its doing.” (RES-14)</i></p> <p><i>“I would like to say that building strategic alliances with organisations that are expert in their specialised field is mandatory. This will improve the quality of the product and will</i></p>	<p>Competitive action</p> <p>Market orientation and innovation</p>	<p>External focus</p>	

<p><i>bring perfection to FinTech products and services. Therefore, it is one of the important elements of improvement and critical to the success of FinTech adoption.” (RES-02)</i></p> <p><i>“The FinTech product of the (Name of the competitors’ FinTech product) was successful in market because the customer finds their FinTech product better as compared the competitors. It is because (Name of the competitors’ FinTech product) has collaboration with market leading technology companies only to market FinTech products.” (RES-09)</i></p>	<p>Strategic Cooperation</p>		
<p><i>“When customers come to us, they have queries related to using products and their various features. Most of the customers don’t know what features are available in our product. We make them understand that how they can use various features of payment application.” (RES-14)</i></p> <p><i>“FinTech products and services should be simple and easy to use. The products which will be easy to use will have more user acceptance and it will be also easy for us to roll out the products.” (RES-16)</i></p> <p><i>“It is normally better that we make consumers realise about the usefulness of the FinTech products and services. Even today, most people even don’t know about the usefulness of the FinTech products and services. They even don’t know about the benefit they can</i></p>	<p>Perceived Ease of Use</p> <p>Perceived usefulness</p>	<p>Internal focus</p>	<p>User’s Attribute</p>

<p>have by using FinTech products and service.” (RES-9)</p>	<p>Perceived safety</p>		
<p>“We received few complaints from the customers that certain amount was debited from their account based on a fake call from a number like bank’s official helpline number. I think financial institutions should focus on the improvement of safety of their FinTech product and service otherwise, financial institutions will not be able to successfully roll out their products and services.” (RES-17)</p>	<p>Perceived privacy</p>		
<p>“Consumers of financial institutions services perceive that FinTech products violate their privacy. Information can be misused by someone else. So, it is necessary that financial institutions need to brief the consumers that privacy will be ensured in FinTech product and service.” (RES-18)</p>	<p>Adopter’s motivation</p>		
<p>“We frequently visit our consumers. It is very difficult to make them ready to use and adopt a FinTech product even they realize that it is useful, but still, they are not ready to adopt the product or service.” (RES-06)</p>	<p>Believe</p>		
<p>“I asked a consumer whether he was using a mobile payment application. He straight away refused that once his friend had a fraud through digital banking application. So, he made his believe that it is not safe to use FinTech product and services.” (RES-09)</p>			

<p><i>“Several of our customers are reluctant to use the FinTech products and services because they are lacking technical competencies. They are not ready to learn new technologies because of their traditional mindset. It is one of the biggest challenges to roll out FinTech products and services.” (RES-13)</i></p>	<p>Technology competency</p>		
<p><i>“Government policies greatly influence the use of FinTech by the consumers. For example, Government is offering rebate if taxes are paid using digital online media. In the same way, such discounts and tax exemptions are offered on various products and services in which payment is made through digital media. therefore, I think the biggest contributor towards diffusion of FinTech is government policies and regulation.” (RES-18)</i></p> <p><i>“In some societies or cultures, we have witnessed a great trend of adopting new technology yet in some societies, we faced difficulties when introducing our products. In the same way, educated people are more used to using FinTech products as compared to less qualified people. So, we can say that society and culture greatly influence the diffusion of FinTech products and services.” (RES-14)</i></p>	<p>Policies and Regulations</p> <p>Sociocultural Aspects</p>	<p>External Focus</p>	

Table 7: Illustrative quotes showing the challenges and complexities of implementing FinTech in GCC- The Researcher.

Continuous learning is the next major challenge that financial institutions (FIs) and technology businesses confront while rolling out FinTech products and services. This issue pertains to the internal focus of the company. Financial institutions (FIs) and technology firms that continue improving their FinTech goods and services can survive. Despite this, businesses that fail to learn from their mistakes and make improvements fall more and further behind their rivals. As a result of this, financial institutions and technology businesses must engage in ongoing education on emerging technologies, the preferences of customers, and the conditions of the market.

The term "external focus" refers to aspects of a situation outside the financial institutions and technological corporations' spheres of influence. Even while these forces do not directly control financial institutions and technology businesses, they can devise strategies to combat the effects of these external influences. The following sections will go into further depth about these factors:

When targeting the market, competitive activities involve an aggressiveness that allows competitively active businesses to preserve their competitive advantages. These benefits include greater market adoptions and a more exceptional market share. In addition, the timing of competitive activity is critically important to increase market acceptance. By acting more quickly, the company can manoeuvre more effectively and slow down its competitors, ultimately leading to solid product dispersion in the market.

The above response shows that the firm's competitiveness significantly impacts the acceptance and rolling out of FinTech products and services.

An organisation's market orientation can considerably influence consumers' acceptability of its products and services, ultimately leading to the adoption of FinTech goods and services due to the organisation's increased efforts to understand its customers and rivals. Market orientation of financial technology goods and services also gives in-depth market knowledge, such as consumer wants and profiles. With this knowledge, financial institutions and technology firms can

boost market acceptance through consumer targeting and product customisation. In addition, to achieve a high rolling-out ratio of FinTech goods and services, financial institutions and technology firms should alter the marketing approach they use in accordance with the market they are targeting. The reverse is also true. Organisations with a marketing orientation to better perceive the market's demands will function better.

Therefore, financial institutions and technology businesses must concentrate on marketing tactics and attempt to access the consumer market efficiently and successfully. It is going to be appropriate for launching FinTech goods and services.

The strategic collaboration is a multilateral agreement the organisation has made with other organisations. This arrangement may involve supply-chain cooperation to outsource the products' manufacture, distribution, and advertising. The company must form strategic alliances with other companies that are experts in their respective fields and provide products or services that are complementary to one another. Therefore, to improve product features and manufacture FinTech products and services, technology businesses and financial institutions may interact strategically and form partnerships with other organisations. When there are significant network externalities in an industry, companies collaborate. As a result, there will be greater demand for FinTech products and services due to the complementarity of the products. Managing the elements that motivate customers to accept a product should be the primary focus of businesses to increase product adoption.

To give just one illustration, one of the responders mentioned, *"I would like to say that building strategic alliances with organisations that are experts in their specialised field is mandatory. This will improve the quality of the product and will bring perfection to FinTech products and services. Therefore, it is one of the important elements of improvement and critical to the success of FinTech adoption."* (RES-02).

This is connected to the characteristics of people who utilise financial technology goods and services. Sometimes, even after the most outstanding services and

product qualities, customers must still be willing to use and acquire FinTech goods. This may be frustrating for everyone involved. There might be several reasons for this, including their characteristics, their impressions of the goods offered by FinTech companies, and the sociocultural variables at play. These user characteristics are further classified into two subgroups: internal factors and external factors. The following is a rundown of the particulars of each:

Internal variables are those connected to the user's perceptions of the product qualities and the personal or organisational traits. Internal factors can also include environmental aspects. These elements are internal to the consumers of the FinTech products and services; for instance, their perspective is connected to numerous elements associated with FinTech products and services and to the financial institutions and technology companies that supply FinTech products and services. The managers of financial institutions and technology businesses that offer FinTech goods and services were interviewed using a semi-structured interview format, which allowed for identifying these aspects. These considerations are discussed in further depth below:

The managers of financial institutions and technology firms that offer FinTech products and services disclosed, throughout semi-structured interviews, that consumers prefer the convenience of use offered by FinTech products and services. These financial institutions and technology companies provide FinTech. This is true not only for FinTech goods but also for all other technology products, which customers almost universally choose because of their convenience. Considering this, respondents stated that items need to be simple to comprehend and employ.

Besides ease of use, it is also necessary that the product must be helpful. The marketing department's responsible for developing the consumers' perception of the usefulness of FinTech products and services. If products and services are not helpful, the acceptance will be low. Therefore, consumers must develop a perception of the usefulness of FinTech products and services.

One of the essential factors for rolling out the FinTech product is the consumer's perception of the safety of the FinTech products and services. In today's world,

several incidents related to FinTech products and services, such as hacking in online payments and fake confirmation calls. Therefore, users of FinTech products are reluctant to use FinTech products and services just because of their reservations and fear of using financial technology products and services. Therefore, financial institutions and technology companies should invest in making their products and services safe and secure for their users.

Perception of privacy is also another issue for the adoption of FinTech products and services by consumers. Consumers always prefer a product or service with the best and most controlled privacy feature. Nevertheless, due to low privacy features in FinTech, consumers are reluctant to adopt FinTech products and services. Therefore, there is a need that privacy must be considered and made known to the consumers.

Sometimes, irrespective of the FinTech products and services features, consumers are not motivated to use and adopt a particular technology product or service. This may be due to their internal characteristics or personality attribute that they are not encouraged to adopt a new technology product. This low motivation or interest in technology product adoption leads to difficulties in rolling out a FinTech product or service. In such a scenario, consumers are unwilling to adopt or accept a product which causes a low acceptance rate. So, there is a need to properly guide and motivate consumers about the importance and usage of FinTech products or services.

Just like low motivation, another similar issue identified is the consumer's belief about FinTech products and services. This belief happens because of a bad event in the past with consumers or their acquaintances. Because of this, their confidence gets stronger that FinTech products are unsafe for use.

Technology competency is also mandatory for the adoption of FinTech products and services. The adoption rate will be low if consumers need more technology competency. However, if technology competency is high, there are great chances that consumers will adopt and use FinTech products and services.

4.4 External Factors

At the organisational level, industry-specific laws and regulations profoundly influence the decision to implement innovative solutions for customers. Political pressure compels companies to adhere to regulatory standards, thus influencing the adoption of new technologies. For instance, when a government requires FinTech businesses to implement e-signatures in fintech, all firms must comply with this regulation. Conformity to such standards signifies the company's ability to meet industry expectations, thus impacting the introduction of financial technology products and services.

Industrial policies and regulations play a critical role in shaping the pace of technological adoption at the organisational level as they significantly influence consumer choices. The extent to which governments exert pressure through regulatory requirements directly affects the adoption rate of new solutions. In the context of the financial technology industry in the GCC area, the government's introduction of a rule mandating the use of electronic signatures by FinTech companies illustrates how organisations are compelled to align with these standards. Non-compliant firms are perceived as unable to meet industry regulations, negatively impacting their reputation and competitive position within the GCC market or the wider region.

Consequently, such regulatory practices have far-reaching implications for implementing FinTech products and services, fundamentally shaping the industry's landscape.

Figure 14 below presents the graphical representation of the theme-building processes of this study.

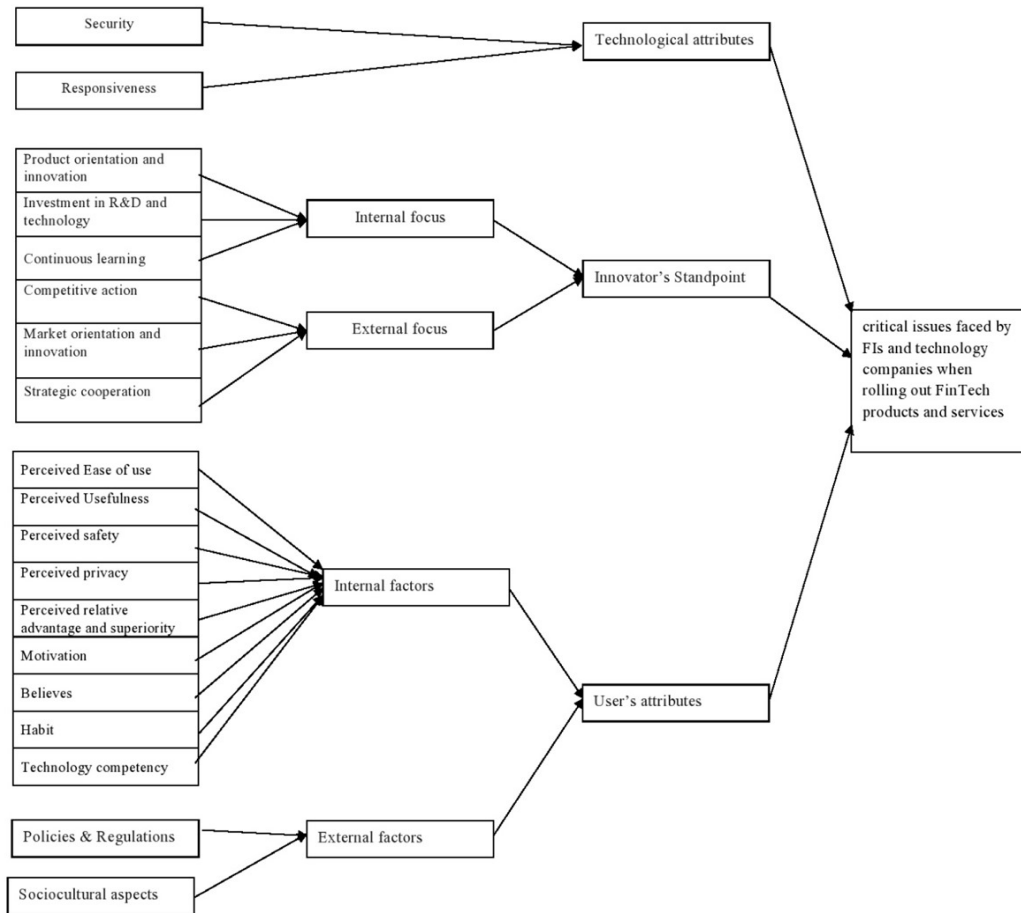


Figure 15: Graphical representation of theme-building processes-
The Researcher

4.5 Framework for the diffusion of FinTech in GCC

In recent years, the Gulf Cooperation Council (GCC) region has experienced remarkable growth and progress in financial technology (FinTech). As highlighted by Kanga et al. (2022), FinTech has the potential to revolutionise the financial services industry, drive economic advancement, and expand access to financial services for a broader population. In this scholarly pursuit, the strategic utilisation of open-ended questions emerges as an instrumental tool, deftly addressing the fundamental concerns Sayer (2010) astutely emphasised within qualitative research. These concerns, rooted in the multifaceted nature of human experience

and the intricate dynamics of social structures, have propelled researchers to seek deeper comprehension and meaningful insights.

This research venture embarks on a transformative journey by harnessing the power of open-ended questions, unearthing the rich tapestry of diverse perspectives that individuals inherently harbour across various contexts and temporal dimensions. The flexibility offered by open-ended questions unveils a remarkable depth, allowing for an exploration that transcends the boundaries of conventional inquiry and delves into the essence of human existence.

With unwavering focus, the researcher embraces the profound implications of Sayer's (2010) insights, centring the investigation on social structures' emergence, maintenance, and contestation. By venturing beyond the confines of predetermined categories and rigid frameworks, the research endeavour emerges as an enlightening exploration, unveiling the intricate interplay between individuals and the complex web of social constructs that shape their lives.

Through the artful interplay of open-ended questions, this scholarly endeavour elevates qualitative research to unprecedented heights, embracing the multifaceted nature of human experience and the dynamic interplay of social forces. Within this fertile ground, the research voyage transcends mere inquiry, offering a transformative lens through which social structures' emergence, evolution, and intricate nuances can be unravelled, illuminating the path to profound understanding and insightful revelation.

The regulatory landscape within the GCC holds significant influence in either facilitating or hindering the growth of financial technology. Regulators must adopt a proactive and adaptable strategy that fosters innovation while safeguarding consumer preferences and rights. The proposed framework places particular emphasis on the establishment of clear and comprehensive regulations for FinTech firms and technology companies in general. These regulations include licensing requirements, data protection and privacy measures, cybersecurity protocols, and anti-money laundering (AML) provisions. Furthermore, the regulatory environment should encourage the creation of regulatory sandboxes and innovation laboratories,

allowing emerging FinTech companies to test their products in a safe and secure environment.

Moreover, the framework underscores the importance of coordination between financial regulators in the GCC and international regulatory organisations. This collaboration aims to harmonise regulatory frameworks and facilitate cross-border FinTech activities, such as international money transfers (Dahdal et al. 2021). By fostering regulatory alignment and cooperation, the framework seeks to streamline and facilitate the expansion of FinTech operations across borders.

In conclusion, developing and implementing an encompassing framework for FinTech in the GCC region is imperative to overcome existing barriers and leverage the transformative potential of financial technology. By establishing clear regulations, promoting innovation, and facilitating cross-border cooperation, the framework strives to create a conducive environment that enables the growth and widespread adoption of FinTech in the GCC.

The widespread adoption and diffusion of financial technology (FinTech) necessitate establishing a robust infrastructure and cultivating advanced technological capabilities. A comprehensive framework should address various critical aspects, ensuring a conducive FinTech development and dissemination environment. The framework should encompass the following key elements:

Firstly, it is essential to focus on developing and upgrading digital infrastructure. This includes initiatives aimed at enhancing high-speed internet connectivity and ensuring the availability of reliable payment systems. The advancement of digital infrastructure will provide the foundation to support the innovation and diffusion of FinTech solutions effectively.

Secondly, the framework should emphasise utilising cutting-edge technologies such as Cloud Computing, Data Analytics, Artificial Intelligence (AI), and Blockchain. These technologies play a crucial role in enhancing the efficiency, security, and effectiveness of FinTech solutions. By leveraging these tools, FinTech companies can optimise operations, provide seamless user experiences, and ensure robust data protection and privacy.

Furthermore, the framework should foster collaboration among FinTech companies, traditional financial institutions (FIs), and technology companies. Technological synergies can be harnessed by encouraging partnerships and alliances, promoting knowledge exchange and innovation. Collaboration between these entities enables the integrating of traditional financial services with innovative FinTech solutions, leading to improved customer experiences and enhanced service offerings.

In conclusion, a comprehensive framework should be established to facilitate the successful diffusion of FinTech. This framework should encompass the development of digital infrastructure, adopting of advanced technologies, and promoting collaboration among FinTech companies, traditional financial institutions, and technology companies. By addressing these critical aspects, the framework will provide a solid foundation for the growth and widespread adoption of FinTech, contributing to the advancement and transformation of the financial industry.

The ability of FinTech start-ups to access investors plays a pivotal role in their ability to develop and scale their innovative solutions (Goo et al. 2020).

To facilitate this process, the proposed framework emphasises the following key areas:

Firstly, it focuses on streamlining access to funding for FinTech start-ups. This involves creating avenues for venture capital funds, angel investors, and crowdfunding platforms specifically dedicated to supporting and financing FinTech ventures. By facilitating these channels, start-ups can secure the necessary capital to fuel their growth and drive innovation.

Secondly, the framework encourages traditional financial institutions to invest in and forge partnerships with FinTech companies actively. This collaborative approach promotes knowledge exchange and fosters a symbiotic relationship between established financial institutions and innovative start-ups. By joining forces, both parties can leverage their respective strengths and expertise to drive the development and adoption of transformative FinTech solutions.

Furthermore, the framework advocates for establishing public-private partnerships and FinTech innovation funds. These collaborative initiatives support research and development efforts within the FinTech sector. They also facilitate the creation of incubation programs that nurture promising start-ups and skill-building initiatives that equip individuals with the necessary expertise to thrive in the FinTech industry.

In conclusion, the proposed framework seeks to enhance access to investors for FinTech start-ups, recognising its crucial role in their development and growth. By facilitating funding opportunities through various channels, fostering collaboration between traditional financial institutions and FinTech companies, and establishing partnerships and innovation funds, the framework aims to create an enabling environment for FinTech innovation. Through these initiatives, start-ups can receive the necessary financial resources, support, and expertise to realise their potential and contribute to advancing the FinTech ecosystem.

The successful dissemination of FinTech necessitates the presence of a skilled workforce equipped with expertise in technology and finance (Ashta et al. 2021). To address this crucial aspect, the proposed framework incorporates the following measures:

Firstly, it emphasises the need to collaborate closely with educational institutions to develop FinTech-focused curricula and training programs. These initiatives should be tailored to meet the specific requirements of the FinTech industry within the GCC region. By aligning education with industry demands, future professionals will acquire the necessary knowledge and skills to excel in this rapidly evolving field.

Secondly, the framework advocates for fostering partnerships between FinTech companies and academic institutions. Such collaborations can facilitate the provision of internships, apprenticeships, and practical training opportunities for students. This practical exposure enables aspiring FinTech professionals to gain valuable industry experience and develop their skills in real-world settings.

Furthermore, the framework recognises the importance of attracting and retaining FinTech talent by offering competitive incentives. This becomes particularly crucial in countries like Qatar and the UAE, where the local pool of skilled talent may be

limited. The framework aims to incentivise talented individuals to pursue careers in the FinTech sector and remain engaged in the industry by providing attractive packages, including competitive salaries, benefits, and career advancement opportunities.

In summary, the proposed framework acknowledges the significance of a skilled workforce in driving the successful implementation of FinTech. Through collaborative efforts with educational institutions, fostering partnerships between industry and academia, and offering compelling incentives, the framework seeks to cultivate a pool of talented professionals capable of meeting the unique demands of the FinTech industry in the GCC region. By investing in human capital development, the framework supports the growth and sustainability of the FinTech ecosystem in the long term.

Establishing consumer awareness and trust is a pivotal element in ensuring the widespread adoption of FinTech. In response to this imperative, the researcher has introduced a comprehensive framework that addresses the following key aspects:

Firstly, the framework proposes the implementation of targeted public awareness campaigns. These campaigns aim to educate consumers and end users about the benefits and risks associated with FinTech technology while promoting responsible usage. Individuals can confidently make informed decisions and navigate FinTech by enhancing consumer knowledge and understanding.

Secondly, the framework highlights the importance of strengthening consumer protection regulations and mechanisms. This entails ensuring transparency, fairness, and accountability in FinTech services. By establishing robust regulations, consumers are safeguarded against potential risks, fraudulent activities, and unethical practices. This fosters trust and confidence in FinTech, encouraging broader adoption and usage.

The diffusion of FinTech within the Gulf Cooperation Council (GCC) region holds immense potential for transforming the financial landscape, driving innovation, and stimulating sustainable and diversified economic growth (Delimatsis 2021). The proposed framework serves as a roadmap for policymakers, regulators, industry

stakeholders, and entrepreneurs, guiding them through the complexities and challenges associated with implementing FinTech in the GCC.

Through a meticulous examination of pivotal elements, including the regulatory milieu, infrastructure advancement, financial accessibility, human capital cultivation, and consumer enlightenment, the paradigmatic framework endeavours to forge an all-encompassing ecosystem. This visionary ecosystem serves as a fertile breeding ground for unparalleled innovation, catalysing the exponential growth of FinTech and propelling the GCC into an unrivalled position of eminence within the global FinTech panorama.

Within the annals of this comprehensive framework, the intricate interplay of regulatory dynamics assumes a paramount role, delineating the contours of a conducive environment that nurtures FinTech innovation. Embracing a harmonious fusion of progressive policies, stringent oversight, and agile adaptability, the regulatory landscape becomes a springboard for transformative change, safeguarding stakeholders' interests while fostering an environment ripe for experimentation and disruptive advancements.

In parallel, the framework dedicates unwavering attention to developing a cutting-edge infrastructure, bolstering the foundations upon which FinTech thrives. By cultivating robust digital networks, fortifying cybersecurity protocols, and harnessing the transformative power of emerging technologies, the GCC propels itself into the vanguard of global FinTech hubs, where seamless connectivity and unparalleled efficiency pave the way for ground-breaking achievements.

Moreover, the framework ardently addresses the imperative of unhindered access to finance, recognising it as an indispensable catalyst for the proliferation of FinTech. Through the cultivation of a diverse and inclusive financial landscape characterised by innovative funding mechanisms, streamlined processes, and equitable opportunities, the GCC galvanises its financial ecosystem, propelling the ascent of FinTech start-ups, nurturing entrepreneurial endeavours, and attracting visionary investors who recognise the region's unrivalled potential.

In tandem, the framework stands as a staunch advocate for cultivating human capital, acknowledging that the nurturing of talent lies at the heart of FinTech's transformative power. By fostering a culture of continuous learning, empowering individuals with specialised skills, and facilitating collaboration between academia, industry, and government, the GCC embarks on a transformative journey towards becoming a breeding ground for exceptional FinTech expertise, driving innovation, and thought leadership globally.

Lastly, the framework conscientiously attends to the imperative of consumer awareness, recognising that an enlightened populace is a bedrock upon which the success of FinTech rests. Through comprehensive educational campaigns, targeted outreach initiatives, and the seamless integration of FinTech into everyday life, the GCC empowers its citizens, ensuring they embrace the vast possibilities that FinTech presents while navigating the complexities with astute judgment and unwavering confidence.

These pivotal components coalesce within the transformative framework, orchestrating a symphony of progress and prosperity. The GCC forges an unparalleled ecosystem by meticulously addressing the regulatory landscape, bolstering infrastructure, facilitating access to finance, nurturing talent, and enlightening consumers, propelling the region into an esteemed position as a leading global hub for FinTech innovation and driving the future trajectory.

Overall, the framework offers a comprehensive approach to overcoming barriers, cultivating trust, and maximising the potential of FinTech in the GCC. Its multifaceted strategies aim to establish an environment that nurtures innovation, fosters collaboration, and solidifies the region's standing as a prominent player in the global FinTech ecosystem.

1. Regulatory Environment

| *Clear and Comprehensive Regulations* | *Regulatory Sandboxes and Innovation Labs* |

| *Collaboration with International Regulatory Bodies* |



2. Infrastructure and Technology

| *Digital Infrastructure* | *Cloud Computing Infrastructure* | *Collaboration with Institutions* |

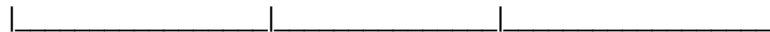
| *Reliable Payment Systems* | *Data Analytics AI and Blockchain and Technology Providers* |



3. Access to Finance and Investment

| *Funding Opportunities (Crowdfunding)* | *Collaboration with Institutions* |

| *Public-Private Partnerships* |



4. Talent Development and Skills Enhancement

| *Fintech-focused Education and Training Programmes* | *Collaboration with Institutions* |

| *Incentives and Support for Entrepreneurship* |



5. Consumer Awareness and Trust

| *Public Awareness Campaigns* | *Consumer Protection Regulations* |

| *Data Protection and Privacy* |



Figure 17: FinTech Diffusion Framework- The Researcher

4.6 Chapter Conclusion

The Gulf Cooperation Council (GCC) region has witnessed a remarkable surge in the adoption and proliferation of financial technology (FinTech) in recent years, owing to the proactive involvement of the GCC in fostering the growth of this transformative industry. This synthesis aims to compare the findings of the present research study with other existing studies conducted in the field, shedding light on the evolving landscape of FinTech in the region by examining the driving factors behind its expansion, the challenges encountered, and the implications for various stakeholders.

While research on FinTech within the GCC context is still in its early stages, this synthesis provides valuable insights into the dynamic nature of FinTech in the region. Sidaoui et al. (2022) underscored that the GCC countries have enthusiastically embraced FinTech to diversify their economies, promote financial inclusion, and drive innovation. Additionally, Hassan et al. (2022) highlight the region's favourable conditions for the development of FinTech, including high smartphone penetration rates, a youthful population, a thriving entrepreneurial ecosystem, and supportive regulatory frameworks. Alchuban et al. (2022) also identify several contributing factors to the proliferation of FinTech in the GCC, such as the emergence of digital transformation and the increasing demand for accessible and user-friendly financial services.

By examining these diverse perspectives, this synthesis offers a comprehensive understanding of the current state of FinTech in the GCC, underscoring the region's commitment to leveraging technology for economic growth, improved financial services, and innovation. However, further research is needed to delve into the nuanced intricacies of the FinTech landscape within the GCC context.

Overall, this synthesis contributes to the growing body of knowledge on FinTech in the GCC region, shedding light on its evolving trajectory and highlighting the key factors driving its expansion. As the region continues to embrace FinTech, it has the

potential to become a leading hub for innovation and technological advancement in the global financial ecosystem.

Furthermore, government initiatives and regulatory transformations aimed at fostering innovation, such as implementing sandboxes and favourable legislation for the FinTech industry, have played a pivotal role in creating an environment conducive to the growth of FinTech start-ups and established players (Andrea 2022). The research by Khan et al. (2023) sheds light on the expanding sub-sectors within the GCC's FinTech landscape, showcasing its diversity and encompassing various domains. Mirzaei (2022) emphasises significant regional developments, including the expansion of Robo-Advisory services, the utilisation of Blockchain technology, and the emergence of Insurtech. Additionally, alternative financing platforms like peer-to-peer lending and crowdfunding have gained traction as viable means for individuals and businesses. The popularity of mobile payments and digital wallets has soared, catering to the tech-savvy population of the region with a range of mobile payment services.

Despite the untapped potential for FinTech in the GCC area, several challenges must be addressed (Kunhibava 2023). As hypothesised by the study, these obstacles include concerns over data privacy, the need for robust cybersecurity measures, legislative uncertainties, and shortages of skilled professionals. However, Nelaturu et al. (2022) argue that these challenges are also present collaboration, innovation, and capacity-building opportunities to meet the evolving demands of the GCC's FinTech ecosystem. The proliferation of FinTech in the GCC area has significant implications for various stakeholders. Traditional financial institutions must collaborate with FinTech firms and adopt digital transformation strategies to maintain their market position (Ediaghonya and Tioluwani 2023). Governments and regulators play a vital role in fostering innovation, ensuring consumer protection, and maintaining financial stability (Patwardhan 2018). Positive consumer outcomes are enhanced user experiences, improved access to affordable financial services, and financial inclusion (Patwardhan 2018). Khan et al. (2023) express optimism about the future of FinTech in the GCC, anticipating increased

investments in FinTech companies, introducing technologies like artificial intelligence and open banking, and enhancing collaboration between FinTech firms and traditional financial institutions. Regulatory frameworks are expected to adapt to the dynamic nature of FinTech while addressing emerging concerns (Jovic and Nikolic 2022).

Numerous other studies aligned with this research underscore how the proliferation of FinTech in the GCC has transformed the financial services landscape, presenting both opportunities and challenges for various stakeholders. Collaborative efforts between the public and private sectors, investments in infrastructure and talent development, and robust regulatory frameworks will be crucial in fostering innovation, driving financial inclusion, and maximising the benefits of FinTech for the economies and societies of the GCC as it positions itself as a leading FinTech hub.

Chapter 5

Discussion and Contributions

5.1 Introduction

The present chapter elucidates the principal findings of this qualitative research enquiry. It delineates how crucial factors impact the diffusion of FinTech in the GCC. Furthermore, the present study delineates the noteworthy contributions of the results to theory, industry policy, and practice within the FinTech ecosystem. The epistemological revelations procured via the systematic enquiry process expounded upon a robust empirical foundation and bear ramifications for subsequent scholarly Enquiry, policy formulation, and practical implementation within the realm of FinTech in the GCC and other parts of the world. The present chapter elucidates the constraints of the study and posits recommendations for future investigations. Ultimately, the researcher engages in introspection regarding the path that has culminated in this Doctorate in Business Administration thesis.

5.2 Discussion of Findings

The preceding chapter conducted extensive data analysis, encompassing Thematic and PESTEL analyses. A cohort of twenty-five distinguished and seasoned individuals affiliated with financial and technical organisations spanning six GCC nations was diligently interviewed to procure the requisite data. Employing the Zoom conferencing online platform, the interviews were skilfully administered, adhering to a meticulously designed semi-structured questionnaire guide. The selection of participants was methodically executed, considering their affiliations with pertinent companies, thereby assuring their profound expertise and invaluable insights.

Before commencing the interviews' analysis and transcription, explicit consent was duly obtained from all participants.

The ensuing years witnessed an increased interest from academics, industry practitioners, and organisations, public and private sectors, in the topic of FinTech diffusion, following the announcement of the Sustainable Developing Goals and the rapid advances in digital financial technologies (Caiazza 2016).

Building on and extending extant theory, more specifically, Institutional Theory on the impact of organisational dynamics on technology adoption in general and FinTech in particular, this thesis explored several factors that contribute to the facilitation of the FinTech diffusion (Greenwood and Meyer 2008; Saman 2015; DiMaggio and Powell 1983; Rogers 2003). Furthermore, the findings from the previous chapter will be comprehensively analysed. The PESTEL Analysis and Thematic analysis will be thoroughly examined, scrutinising these findings in relation to the extensive literature review conducted in Chapter 2 and the primary research questions that specifically address the influential factors driving the diffusion of FinTech. Moreover, a holistic perspective will be pursued to contextualise the research outcomes, thereby facilitating the identification and illumination of the academic contributions derived from this DBA study.

During the data collection stage of the research, notable senior executives from the banking and technology industries in the GCC region were interviewed. These professionals, possessing significant industry experience, offered insightful perspectives on various topics pertaining to FinTech. These topics encompassed technology diffusion, the operational landscape of financial institutions, internal and external factors influencing financial and technological organisations, the extent of digital transformation in FinTech products and services, consumer and end-user responsiveness, the effects of government policies, obstacles to implementing innovative ideas, and the proponents of these initiatives. The remarks provided by the interview participants were meticulously recorded and transcribed. Through these interactions, a set of crucial components emerged as significant catalysts for the overall functioning of the sector in the GCC region. To address the initial

research inquiry, two fundamental aspects must be undertaken: firstly, the identification of constituent elements, and secondly, the comprehension of the implications associated with these factors (Harris 2021; Saunders et al. 2012; Kaplan and Maxwell 2005).

Thematic Analysis was conducted to identify overarching themes from the transcribed data. These themes clarify the factors that can impact the diffusion and adoption of FinTech in the GCC. Primary themes were identified through coding and categorising the data references, including ease of technology utilisation, efficacy, security, confidentiality, comparative advantage, superiority, impetus, conviction, routine, and co-occurrence (Kiger and Varpio 2020).

Security concerns were acknowledged by participants, encompassing theft, hacking, unauthorised access, and the possibility of financial loss. Participants expressed more unease about financial losses due to cyber-attacks or inadequate security measures than the theft of personal information. To address these challenges, technology providers and financial institutions must consider end-users perceptions and create reliable solutions that mitigate their apprehensions.

Responsiveness ranked the second most crucial factor after safety. Participants highlighted the need to enhance the quality of post-adoption support and amenities. Users emphasised the necessity of improving assistance and providing easily accessible support channels. Lack of responsiveness erodes trust and assurance, particularly for users with limited technical expertise (De Filippi et al., 2020).

Internal and external organisational factors significantly impact user conduct, inclinations, product integration, and approval. Comprehending product orientation and providing practical assistance and post-adoption services are crucial for technology industry experts (Utami et al., 2021). User-friendly interfaces and product innovation tailored to customers' digital financial requirements are essential for improved adoption of FinTech (Gomber et al., 2018).

To drive FinTech diffusion, resources should be allocated to research and development, creating secure, appealing, and user-centric offerings. Market orientation and ongoing learning strategies are crucial for firms to improve their

offerings and align them with customer demands. Collaborative alliances between financial institutions and technology firms promote the adoption of FinTech. Regulatory bodies also play a significant role in encouraging innovation and adherence to industry standards (Allen et al. 2021; Zalan and Toufaily 2017; Chirulli 2021).

Adopter categories such as early adopters, late adopters, and laggards influence the diffusion of new concepts and amenities. Early adopters shape societal attitudes and acceptance of innovations, while late adopters and laggards adopt new technologies out of necessity or resist change. Understanding these adopter categories is critical for organisations navigating the diffusion process effectively (Guttentag and Smith 2022).

The perceived user-friendliness of a product or service plays a crucial role in adoption and diffusion (Taherdoost 2018). Usability attributes increase adoption rates, including responsive mechanisms, user-friendly interfaces, and simplified operations. Prioritising usability and designing accessible products is essential, even for users with limited technical knowledge (Heim et al. 2022).

Kocak et al. (2017) posit that the competitive performance of organisations is susceptible to the impact of multiple factors. Among these factors, customer attrition poses a persistent concern for enterprises operating in the financial and technological domains. Consequently, implementing ongoing learning strategies is vital in continuously enhancing offerings and aligning them with evolving customer demands. Effectively navigating market dynamics, possessing appropriate strategic direction, and developing a comprehensive understanding of consumer needs collectively influence consumer perception and acceptance of new products or services. Furthermore, establishing collaborative alliances and cooperative partnerships between financial institutions and technology firms catalyses the proliferation and adoption of FinTech offerings and solutions. Regulatory bodies also exert significant influence by facilitating the dissemination of technological goods and services by formulating and implementing policies encouraging innovation and

adherence to industry standards (Curley and Salmelin 2017; Kliman et al. 2020; Mishra 2015).

This research endeavours to comprehensively understand the diverse factors influencing the dissemination of FinTech offerings in the Gulf Cooperation Council (GCC) region. Morita-Lou (2019) posits that by using PESTEL Analysis and Thematic Analysis methodologies, an extensive range of micro and macro factors can be systematically categorised into secondary dimensions. These dimensions encompass internal and external emphases, technological qualities, innovator perspectives, and user attributes. The present research offers an in-depth analysis of the drivers of FinTech product diffusion in the GCC. It provides an overview of relevant theoretical frameworks pertaining to product adoption in the region. The findings from the Thematic Analysis shed light on significant factors, including security, responsiveness, product orientation, innovation, research and development (R&D) investment, continuous learning, and innovation.

The research findings underscore the importance of adopting a holistic and multifaceted strategy to address customer engagement's internal and external dimensions during commercial enterprises' launch of new FinTech products and services (Buratti et al. 2018). These dimensions, as Amit and Zott (2020) highlight, encompass a myriad of components that contribute to the efforts of innovators in stimulating market adoption and influencing consumer choices concerning the adoption of FinTech products and services. Ultimately, these underlying factors support the adoption of FinTech products and services.

Moreover, the research highlights the crucial significance of businesses in prioritising and nurturing enhanced relationships with stakeholders, which include consumers, internal customers within the organisation, governmental agencies, and strategic partners. Obrenovic et al. (2020) emphasise that establishing effective and consistent communication channels with stakeholders enables businesses to acquire valuable insights and information, consequently formulating practical strategies and enhancing product adoption with heightened efficiency.

The study results shed light on the critical importance for enterprises to adopt a comprehensive approach to development and strategy, effectively managing both internal and external focus strategies. Maintaining a strategic balance is vital to account for the diverse factors influencing consumers' decision-making when adopting new products and services. Thus, these facets embody the essence of adopting financial technology (FinTech) products and services.

Furthermore, the study emphasises the crucial significance of businesses in cultivating solid and meaningful relationships with diverse stakeholders, including customers, internal clients, government bodies, and strategic partners. By prioritising proactive and consistent stakeholder engagement, businesses can acquire substantial knowledge and understanding, allowing for the developing of more effective strategies. Consequently, enterprises can leverage this enhanced understanding to foster an environment that promotes increased adoption and acceptance of products, thereby driving the dissemination of FinTech goods and services in the market (Ghobakhloo et al. 2021; Ellinger and Ellinger 2013; Rivas and Zhao 2023).

In conclusion, this research highlights the importance of understanding the regulatory landscape governing the FinTech sector in the Gulf Cooperation Council (GCC) region. It accentuates the inherent challenges associated with licensing, the criticality of authentication and security measures, and the imperative for policymakers and FinTech companies to diligently address these intricacies. Stelling (2023) argues that by optimising licensing procedures and establishing an ecosystem that fosters trust and confidence, the diffusion of FinTech solutions can be expedited, consequently catalysing innovation and propelling economic growth within the region.

5.4 Overall Summary of the Thesis

This DBA thesis presents a comprehensive investigation into the multifaceted factors contributing to the adoption and proliferation of FinTech in the GCC region.

Through qualitative research methodologies, including interviews and thematic analysis, this study explores the intricate landscape of the FinTech ecosystem in the GCC countries.

Prominent stakeholders from various domains, including industry specialists, policymakers, financial regulators, and representatives from FinTech enterprises, provide diverse perspectives and opinions on the factors shaping the diffusion of FinTech in the region through semi-structured interviews. These interviews serve as a valuable source of direct knowledge, shedding light on the industry's intricacies and revealing critical insights.

Thematic analysis is then applied to the collected data, rigorously examining recurring themes and patterns. This analytical framework comprehensively explains the facilitators and barriers to FinTech proliferation in the GCC region, providing valuable insights contributing to the broader discourse on the diffusion of financial technology.

The thesis uncovers various factors significantly impacting the expansion of FinTech in the GCC countries, particularly statutory and regulatory constraints. For example, stringent financial regulations, such as AML, present challenges for businesses operating in the FinTech industry in the region. These regulations impact new market entrants and potentially result in unhealthy competition.

The study highlights how these regulations hinder small-scale enterprises, impeding their agility and ability to penetrate the market and establish successful FinTech ventures. Compliance with complex regulatory requirements becomes time-consuming and diverts attention from enhancing operational capacities.

Overcoming these challenges requires innovative approaches and enhanced capabilities within the FinTech industry. The study underscores the necessity for newly established and developing enterprises to proactively meet regulatory requirements, simplify procedures, and foster adaptability to thrive in the ever-evolving GCC FinTech industry.

Another significant finding pertains to the difficulties faced by FinTech start-ups in obtaining licenses. The thesis reveals the complexities of provincial statutes and guidelines that complicate the licensing process, posing substantial barriers for small enterprises and hindering the widespread dissemination of FinTech advancements in the region.

Furthermore, the study emphasises incorporating authentication and security measures in FinTech implementation. Robust legal and regulatory frameworks implemented by GCC countries play a pivotal role in safeguarding the verification and protection of FinTech offerings, fostering consumer confidence and trust. Implementing FinTech solutions with stringent security protocols is essential in this regard.

In summary, this research underscores the significance of comprehensively understanding the regulatory landscape surrounding FinTech in the GCC region. It highlights the challenges related to licensing, emphasises the importance of authentication and security, and calls for policymakers and FinTech companies to address these complexities. By optimizing licensing procedures and cultivating an ecosystem that inspires trust and confidence, the diffusion of FinTech solutions can be accelerated, ultimately promoting innovation and driving economic growth in the region.

This DBA study thoroughly analyses the complex relationship among regulatory frameworks, licensing procedures, and security measures that influence FinTech proliferation in the GCC countries, providing valuable insights into the existing literature. It emphasises the need for a well-rounded approach that ensures consumer protection, addresses regulatory obstacles, and promotes innovation. By bridging the knowledge gap and considering the GCC region's unique sociocultural and regulatory context, this thesis enhances our understanding of FinTech proliferation and its implications.

5.5 Limitations of the Study

While this study provides valuable insights into the factors influencing FinTech diffusion in the GCC region, certain limitations should be acknowledged:

1. To further enhance the depth and breadth of the study, future research endeavours should incorporate a more diverse range of individuals and increase the number of interviews conducted to broaden the participant demographics. By expanding the participant demographics to include age, gender, occupation, and socioeconomic background, researchers can ensure that the findings are representative and generalisable to the broader population (Newman et al. 2021).
2. Augmenting the sample size will yield a larger dataset, enhancing the study's analytical power and enabling more robust analysis (Antony et al. 2022).
3. Future research should also consider including face-to-face and virtual interviews. Johnson et al. (2021) posit that in-person interviews allow researchers to observe participants' non-verbal cues, body language, and facial expressions, providing valuable insights into their attitudes, emotions, and levels of engagement. Non-verbal communication enriches the depth of the collected data, conveying information beyond verbal responses alone.
4. Face-to-face interactions foster rapport and trust between the interviewer and interviewee, facilitating a more open and candid exchange of information.

5.6 Areas of Further Research

In addition to the limitations mentioned above, several areas warrant further research in the field of FinTech in the GCC region. Firstly, future research should

investigate effective communication strategies and methods that can facilitate enhanced relationship administration among stakeholders in the FinTech industry. Effective communication includes optimising information sharing, trust-building, and collaboration among diverse stakeholders by examining the variables that facilitate successful communication (Faisal and Talib 2016). A comprehensive understanding of the dynamics and intricacies of stakeholder relationships is also essential (Boutilier 2017). Zandvliet and Anderson (2017) emphasise that businesses must adeptly manage their relationships with internal and external stakeholders to navigate the FinTech landscape successfully. This necessitates a profound comprehension of stakeholders' various needs, expectations, and concerns and the developing of strategies to foster mutual understanding and cooperation. Further research can illuminate the optimal approaches for businesses to effectively navigate these relationships, enabling them to make informed decisions and implement policies that align with stakeholder interests.

Moreover, future research endeavours should embrace a holistic and multidisciplinary approach to understand the FinTech landscape in the GCC region comprehensively. This may involve collaborations between finance, technology, sociology, and psychology researchers. By integrating diverse perspectives and expertise, researchers can better understand the factors influencing FinTech adoption and proliferation in the GCC region. Additionally, it is crucial to monitor and analyse the continuously evolving nature of the FinTech industry. As technology advances and market dynamics change, new opportunities and challenges emerge. Therefore, future research should conduct longitudinal studies that track the evolution of FinTech adoption and evaluate the effectiveness of strategies implemented by businesses and policymakers over time.

Furthermore, it is imperative to consider the broader implications of the research findings for policymakers, businesses, and society. The insights generated from future research endeavours can inform the development of regulatory frameworks that balance innovation and consumer protection, foster stakeholder collaboration, and facilitate the FinTech industry's growth. Additionally, businesses can leverage

these insights to refine their strategies, enhance customer experiences, and drive innovation.

In conclusion, future research endeavours in GCC FinTech should strive to expand participant demographics, increase the sample size, and incorporate face-to-face interviews to capture a more comprehensive range of perspectives and non-verbal cues. Furthermore, exploring effective communication strategies and methods and understanding stakeholder relationships will yield valuable insights for businesses and policymakers to navigate the complexities of the FinTech landscape successfully. By adopting a multidisciplinary approach and remaining attuned to the evolving nature of the industry, researchers can contribute to advancing knowledge in the field and driving positive change in the GCC region's FinTech ecosystem.

5.7 Implications for Digital Transformation and Financial Inclusion

The findings of this research have significant implications for digital transformation and financial inclusion in the GCC region. Ediagbonya and Tioluwani (2023) posit that the rapid growth of FinTech presents opportunities to bridge the financial inclusion gap and promote digital transformation in the region's financial sector. The following sections discuss the implications of this study for digital transformation and financial inclusion.

5.7.1 Digital Transformation

Digital transformation integrates digital technologies into various business operations to drive efficiency, innovation, and customer-centricity (Breidbach et al. 2020). This research's findings highlight several factors crucial for successful digital transformation in the FinTech sector.

The research emphasises the importance of user-friendly interfaces and product innovation tailored to customers' digital financial requirements. The adoption and diffusion of FinTech offerings are contingent upon the perceived user-friendliness

of the products or services. Therefore, financial institutions and technology firms should prioritise usability and design accessible products that cater to users with limited technical knowledge. By focusing on user-centric design and enhancing the customer experience, businesses can accelerate the adoption of FinTech solutions and drive digital transformation in the GCC financial sector.

Furthermore, collaborative alliances between financial institutions and technology firms foster innovation and promote the adoption of FinTech. These strategic partnerships enable the integration of diverse expertise and resources, driving digital transformation in the financial sector.

Finally, regulatory bodies play a critical role in facilitating digital transformation. By formulating and implementing policies encouraging innovation and adherence to industry standards, regulatory bodies can create an enabling environment for disseminating technological goods and services. Clear and supportive regulations help businesses navigate the regulatory landscape, ensuring compliance while promoting innovation and competition.

5.7.2 Financial Inclusion

Financial inclusion aims to provide individuals and businesses with access to affordable and appropriate financial products and services (Donovan 2012). The findings of this research have implications for enhancing financial inclusion in the GCC region through the adoption and diffusion of FinTech.

Furthermore, the research emphasises the need to enhance the quality of post-adoption support and amenities. Users, particularly those with limited technical expertise, require easily accessible support channels and responsive mechanisms. Improving assistance and addressing users' needs after adopting FinTech solutions is crucial for maintaining trust and ensuring a positive user experience (He et al. 2017).

Additionally, understanding adopter categories and their attitudes toward innovation is essential for driving financial inclusion. Early adopters are crucial in shaping societal attitudes and acceptance of new technologies. By targeting early adopters and addressing their needs, businesses can create a ripple effect that

influences wider adoption and promotes financial inclusion. Moreover, addressing the concerns of late adopters and laggards, such as resistance to change or limited access to technology, is crucial for expanding financial inclusion efforts. Tailored approaches and targeted interventions can help overcome barriers and enable the adoption of FinTech solutions by a broader range of individuals and businesses.

5.8 Final Reflections

The researcher's journey throughout their DBA studies has been a profoundly transformative and humbling experience, representing a significant transition from their 25-year tenure in various roles within the ICT industry. Navigating the intricate landscape of doctoral research demanded unwavering focus, perseverance, and an insatiable thirst for learning and unlearning. The culmination of the DBA studies, however, is merely a stepping stone into the expansive realm of academic research and its practical applications in the real world.

Motivated by an unwavering passion for democratising financial services, particularly among marginalised population segments in numerous countries, the researcher's drive to conduct further research and innovate new models remains steadfast. Their overarching vision of "Financial Access for All" is a guiding light, inspiring them to push the boundaries of knowledge and devise novel solutions to address the profound challenge of ensuring universal financial inclusion.

Completing the DBA studies marks not an endpoint but rather a new beginning in their scholarly pursuits. Armed with a comprehensive understanding of the intricacies of research methodologies, theoretical frameworks, and empirical analysis, the researcher is eager to forge ahead, leveraging their expertise to bridge the gap between academia and practice. By applying their insights to real-world scenarios, they seek to enact tangible change and impact the lives of individuals who have long been excluded from the financial mainstream.

Recognising the power of collaboration, the researcher actively seeks opportunities to engage with like-minded professionals, policymakers, and industry

leaders. By fostering a collective effort, they aim to foster an ecosystem that supports their vision, amplifies their research findings, and facilitates the implementation of innovative financial inclusion strategies on a global scale. Through these collaborative endeavours, the researcher envisions a future where financial access barriers crumble, empowering individuals and communities to realise their full economic potential.

As they conclude this chapter of their academic journey, the researcher is grateful for the knowledge gained, the challenges overcome, and the support received. They stand at the precipice of a vast landscape of possibilities, ready to embark on a new phase of research, discovery, and societal impact. With unwavering determination and an unyielding commitment to their vision, the researcher is poised to contribute significantly to the field, advancing the frontiers of financial inclusion and harnessing technology to shape a more equitable and inclusive future for all.

"In the pursuit of knowledge and its application, true transformation is achieved when passion meets perseverance and when humbleness guides the way. It is through this remarkable journey that we unlock the door to innovation and create a world where opportunities flourish for all." -Nelson Mandela

6: Annexures

6.1 Annexure 1

Guidelines for Designing Questionnaires (McGuirk and O'Neill 2016)

- Ensure questions are relevant, querying the issues, practices, and understandings you are investigating.
- Keep the wording concise (about 20 words maximum), simple, and appropriate to the targeted group's vernacular.
- Ensure that questions and instructions are easily distinguishable in format and font.
- Avoid double-barrelled questions (for example, 'Do you agree that the Department of Housing should cease building public housing estates and pursue a social mix policy?').
- Avoid confusing wording (for example, 'Why would you rather not use public transport?') and be alert to alternative uses of words (for example, for some people, 'dinner' implies an evening meal, while for others, it implies a cooked meal, even if eaten at midday).
- Avoid leading questions (for example, 'Why do you think recycling is crucial to the health of future generations?'), and avoid loaded words (for example, 'democratic', 'free', 'natural', 'modern').
- Avoid questions that are likely to raise as many questions as they answer (for example, 'Are you in favour of regional sustainability?' raises questions of what sustainability means, how a region is defined, and how different dimensions of sustainability might be prioritised).
- Order questions in a coherent and logical sequence.
- Ensure the questionnaire takes no more time than participants are willing to spend. This will depend on the questionnaire context (for example, whether it is conducted by telephone, face-to-face, or online). Generally, 20 to 30 minutes will be the maximum, although

longer times (45 minutes) can be sustained if the appropriate combination of context and research topic.

- Ensure an uncluttered layout with plentiful space for written responses to open questions.
- Use continuity statements to link questionnaire sections (for example, 'The next section deals with community members' responses to perceived threats to their neighbourhood.').
- Begin with simple questions, and place complex, reflexive questions or those dealing with personal information or sensitive or threatening topics later in the questionnaire.

6.2 Annexure 2



Candidate: Ammar Hamadien

Project Title:

Understanding Challenges Impeding the Diffusion of Financial Technology (FinTech): A Case Study of the Gulf Cooperation Council

Interview Questions

GCC Country Name:

Keywords: Diffusion of Technology, Financial Technology (FinTech), Digital Transformation, Financial Institutions, Technology Policy, Institutional Isomorphism, Qualitative Research, Thematic Analysis

[Digital Transformation] – Legitimacy and changing beliefs.

Q1: How is the national digital transformation strategy affecting the financial sector? (*Attitude*)

Q2: Do you think the GCC Country Name's financial sector needs digital transformation?

(*Attitude*)

Q3: What level do you think DT is at in the financial sector? (*Belief*)

Q4: How do you see the future of digital transformation in **GCC Country Name** concerning the financial sector? (*Belief*)

[Technology Diffusion]

Q5: How could FinTech enhance technology diffusion in the financial sector? (*Attitude*)

Q6: What are some of the challenges and issues the financial sector could face with FinTech regarding the costs associated with financial transactions? (**Attitude**)

Q7: Could the cost of technology go down soon? (**Attitude**)

[FinTech]

Q8: How could FinTech enhance the record keeping of financial transactions? (**Attitude**)

Q9: Could FinTech decrease financial transaction costs? (**Belief**)

Q10: What FinTech use cases can help adopt the technology on a large scale? (**Attitude**)

[Financial Institutions] – A View of Actors

Q11: How likely will the financial sector implement FinTech concerning Digital ID, Data Privacy, or transaction costs? (**Belief**)

Q12: Can you consider any use cases for FinTech regarding personal finance and B2B transactions? (**Belief**)

Q13: What is the likelihood of FinTech replacing the current operations of financial institutions?

(**Belief**)

[Technology Policy] – New Regulations

Q14: Are there any regulatory aspects to watch out for concerning FinTech and digital financial transactions? (**Attitude**)

Q15: Do the current regulatory policies enable financial institutions to develop sound business models for FinTech services? (**Attitude**)

Q16: Do you see any regulatory risks that may slow the adoption of FinTech? (**Belief**)

7: References

- Abdeldayem, M. M. and Al Dulaimi, S. H. A. (2020). Trends of Global FinTech Education Practices and the GCC Perspective. *International Journal of Advanced Science and Technology* 29(3), 7150-7163.
- Ahern, D. (2021). Regulatory Lag, Regulatory Friction and Regulatory Transition as FinTech Disenablers: Calibrating an EU. Response to the Regulatory Sandbox Phenomenon. *European Business Organisation Law Review* 22, 395-432.
- Ahmed, A.S., Kumar, M. and Ali, M.A.M. (2020). 'Adoption of FinTech and Future Perspective: An Empirical Evidence from Bahrain on Digital Wallets'. In *2020 International Conference on Decision Aid Sciences and Application (DASA)*, pp. 751-755. Bahrain, 8-9 November 2020. IEEE.
- Alam, N. and Nazim, S. (2021). *FinTech, Digital Currency and Future of Islamic Finance*. Cambridge: Springer International Publishing.
- Albarrak, M.S. and Alokley, S.A. (2021). FinTech: Ecosystem, Opportunities and Challenges in Saudi Arabia. *Journal of Risk and Financial Management* 14(10), 460-473.
- Alchuban, M., Hamdan, A. and Fadhul, S.M. (2022). The Usage of Financial Technology Payments During the Pandemic of Covid-19. *Future of Organisations and Work After the 4th Industrial Revolution: The Role of Artificial Intelligence, Big Data, Automation, and Robotics*, pp.427-441.
- Alhammadi, S. (2022). Analyzing the Role of Islamic Finance in Kuwait Regarding Sustainable Economic Development in COVID-19 Era. *Sustainability* 14(2), 701-712.
- Allen, F. (2021). September. Globalization of Finance and FinTech in the MENA Region. Economic Research Forum (ERF).
- Allen, F., Gu, X. and Jagtiani, J. (2021). A survey of fintech research and policy discussion. *Review of Corporate Finance* 1, 259-339.
- Almuhammadi, A. (2020). March. An overview of mobile payments, FinTech, and digital wallet in Saudi Arabia. In *2020 7th International Conference on Computing for Sustainable Global Development (INDIACom)*, pp. 271-278. India, 12-14 March 2020. IEEE.
- Al-Naser, M. and Hamdan, A. (2021). The impact of public governance on the economic growth: Evidence from gulf cooperation council countries. *Economics and Sociology* 14(2), 851-10.

- Alt, R., Beck, R. and Smits, M.T. (2018). FinTech and the transformation of the financial industry. *Electronic Markets* 28(4), 235-243.
- Amanulla, R. M. and Sherif, K. (2022). An Assessment of the Capabilities of Service Providers in Sustaining Growth of the Mobile Payment Ecosystem in Qatar.
- Amit, R. and Zott, C. (2020). *Business model innovation strategy: Transformational concepts and tools for entrepreneurial leaders*. London: John Wiley & Sons.
- Andrae, S. (2022). The role of BigTech in emerging markets. In *Handbook of Banking and Finance in Emerging Markets* (pp. 433-463). Edward Elgar Publishing.
- Andersen, S. C. and Jakobsen, M. L. (2018). Political pressure, conformity pressure, and performance information as drivers of public sector innovation adoption. *International Public Management Journal* 21(2), 213–242.
- Andrews, D., Nicoletti, G. and Timiliotis, C. (2018). Digital technology diffusion: A matter of capabilities, incentives, or both? *European Economic Review* 128, 9-10.
- Antony, J., McDermott, O. and Sony, M. (2022). Quality 4.0 conceptualisation and theoretical understanding: a global exploratory qualitative study. *The TQM Journal* 34(5), 1169-1188.
- Anugerah, D.P. and Indriani, M. (2017). Data Protection in financial technology services: Indonesian legal perspective. In *Proceedings of the IOP Conference Series: Earth and Environmental Science*. Makassar, Indonesia. 25-26 October 2017.
- Antràs, P. (2020). *De-globalisation? Global value chains in the post-COVID-19 age* (No. w28115). National Bureau of Economic Research.
- Arab Times (2022). 90% of 'Apple users in Kuwait expected to shift to Apple Pay, 1 December. [Online]. Available: <https://www.arabtimesonline.com/news/90-of-apple-users-in-kuwaitexpected-to-shift-to-apple-pay/> (Accessed 12 December 2022).
- Arslanian, H. and Fischer, F. (2019). *The future of finance: The impact of FinTech, AI, and crypto on financial services*. Springer.
- Ashta, A. and Herrmann, H. (2021). Artificial intelligence and FinTech: An overview of opportunities and risks for banking, investments, and microfinance. *Strategic Change* 30(3), 211-222.
- Atlas, L.G., Kumar, C.M. and Hamsagayathi, P. (2020). 'Applications with blockchain technique'. In *Cryptocurrencies and Blockchain Technology Applications*. (pp.157-179). London: Wiley and Sons.

- Audi, M., Ali, A. and Al-Masri, R. (2022). Determinants of Advancement in Information Communication Technologies and its Prospect under the role of Aggregate and Disaggregate Globalization. *Scientific Annals of Economics and Business*.
- Awotunde, J.B., Adeniyi, E.A., Ogundokun, R.O. and Ayo, F.E. (2021). Application of big data with fintech in financial services. In *Fintech with Artificial Intelligence, Big Data, and Blockchain* (pp. 107-132). Singapore: Springer Singapore.
- Babbie, E. and Benaquisto, L. (2001). Qualitative field research. *The practice of Social Research* 9(1), 298-300.
- Banerjee, A. (2020). 'FinTech Revolution in the Gulf Countries and MENA Region'. In: Klonowski, D. (eds) *Entrepreneurial Finance in Emerging Markets*. Palgrave Macmillan, Cham. p.335-344.
- Barberis, J., Arner, D.W. and Buckley, R.P. (2019). *The RegTech book: The financial technology handbook for investors, entrepreneurs, and visionaries in regulation*. John Wiley and Sons.
- Barbu, C.M., Florea, D.L., Dabija, D.C. and Barbu, M.C.R. (2021). Customer experience in fintech. *Journal of Theoretical and Applied Electronic Commerce Research* 16(5), 1415-1433.
- Bartolacci, F., Cardoni, A., Lasak, P. and Sadkowski, W. (2022). An analytical framework for strategic alliance formation between a cooperative bank and a fintech start-up: An Italian case study. *Journal of Entrepreneurship, Management, and Innovation* 18(4), 115-156.
- Batista, C. and Vicente, P.C. (2020). Improving access to savings through mobile money: Experimental evidence from smaller farmers. *World Development* 129(3), 1-17.
- Battilana, J., Leca, B. and Boxenbaum, E. (2009). 2 how actors change institutions: towards a theory of institutional entrepreneurship. *Academy of Management Annals* 3(1), 65-107.
- Baxter, P. and Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report* 13(4), 544-559.
- Belin, O. (2019). How trade finance will benefit from Blockchain, The Global Treasurer. [Online]. Available at: <https://www.theglobaltreasurer.com/2019/02/27/how-trade-finance-will-benefit-from-blockchain/> (Accessed 3 September 2022).
- Bell, S. and Hindmoor, A. (2018). Are the major global banks now safer? Structural continuities and change in banking and finance since the 2008 crisis. *Review of International Political Economy* 25(1), 1-27.

- Ben Hassen, T. (2022). A Transformative State in the Wake of COVID-19: What Is Needed to Enable Innovation, Entrepreneurship, and Education in Qatar? *Sustainability* 14(13), 53-79.
- Berentsen, A., and Schar, F. (2019). Stablecoins: The quest for a low-volatility cryptocurrency. In *The Economics of FinTech and Digital Currencies*, pp. 65-75.
- Berg, B. L. (2001). *Qualitative research methods for the social sciences* (4th edition). Boston: Allen and Bacon.
- Bernard, H. R. (2000). *Research methods in anthropology: Qualitative and quantitative approaches* (3rd ed). Altamira Press.
- Bordens, K. and Abbott, B. (2002). *Research Design and Methods: A process approach*. Boston: McGraw Hill Companies.
- Bouille, I. and Haase, T. (2019). Adoption of global market practice for payments will pave the road to a successful global migration to ISO 20022. *Journal of Payments Strategy and Systems* 13(2), 104-112.
- Bouterraa, M., Chekima, B., Lajuni, N. and Anwar, A. (2023). Understanding Consumers' Barriers to Using FinTech Services in the United Arab Emirates: Mixed-Methods Research Approach. *Sustainability* 15(4), 29-31.
- Boutilier, R. (2017). *Stakeholder politics: Social capital, sustainable development, and the corporation*. Routledge.
- Breidbach, C., Choi, S., Ellway, B., Keating, B.W., Kormusheva, K., Kowalkowski, C., Lim, C. and Maglio, P. (2018). Operating without operations: how is technology changing the role of the firm?. *Journal of Service Management* 29(5), 809-833.
- Breidbach, C.F., Keating, B.W. and Lim, C. (2020). Fintech: research directions to explore the digital transformation of financial service systems. *Journal of Service Theory and Practice* 30(1), 79-102.
- Brink, H.I. (1993). Validity and reliability in qualitative research. *Curations* 16(2), 35-38.
- Brodsky, L. and Oakes, L. (2017). Data sharing and open banking. McKinsey and Company, 1097-1105.
- Bromberg, L., Godwin, A. and Ramsay, I. (2017). FinTech sandboxes: Achieving a balance between regulation and innovation. *Journal of Banking and Finance Law and Practical* 28(4), 314-336.
- Bryman, A. (2012). *Social Research Methods*. (4th ed). Oxford: Oxford University Press.
- Bryman, A. and Bell, E. (2015). *Business Research Methods*. London: Oxford Press.

- Bryman, A. and Bell, E. (2011). *Business Research Methods*. (3rd ed). Oxford University Press.
- Buckley, R.P., Arner, D., Veidt, R. and Zetsche, D. (2020). Building FinTech ecosystems: Regulatory sandboxes, innovation hubs and beyond. *Washington University Journal of Law and Policy* 61(1), 55-98.
- Buratti, N., Parola, F. and Satta, G. (2018). Insights on the adoption of social media marketing in B2B services. *The TQM Journal* 30(5), 490-529.
- Caiazza, R. (2016). A cross-national analysis of policies affecting innovation diffusion. *Journal of Technology Transfer* 41(3), 1406-1419.
- Carbo-Valverde, S., Cuadros-Sols, P.J. and Rodriguez-Fernandez, F. (2022). Entrepreneurial, institutional, and financial strategies for FinTech profitability. *Financial Innovation* 8(1), 1-36.
- Carbo-Valverde, S., Cuadros-Solas, P.J. and Rodríguez-Fernández, F. (2021). 'FinTech and banking: an evolving relationship'. In *Disruptive Technology in Banking and Finance: An International Perspective on FinTech*, pp.161-194.
- Cassell, C. and Symon, G. (2004). *Essential Guide to Qualitative Methods in Organisational Research*. London: SAGE.
- Castro, P., Rodrigues, J.P. and Teixeira, J.G. (2020). Understanding FinTech ecosystem evolution through service innovation and socio-technical system perspective. In *Exploring Service Science: 10th International Conference, IESS 2020, Porto, Portugal, February 5–7, 2020, Proceedings 10* (pp. 187-201). Springer International Publishing.
- CFI (2022). Distributed Ledgers. [Online]. Available: <https://corporatefinanceinstitute.com/resources/cryptocurrency/distributed-ledgers/> (Accessed 15 September 2022).
- Chan, R., Troshani, I., Rao Hill, S. and Hoffmann, A. (2022). Towards an understanding of consumers' FinTech adoption: The case of Open Banking. *International Journal of Bank Marketing* 40(4), 886-917.
- Changchit, C., Lonkani, R. and Sampet, J. (2017). Mobile banking: Exploring determinants of its adoption. *Journal of Organisational Computing and Electronic Commerce* 27(3), 239– 261.
- Chandra, S. and Kumar, K. N. (2018). Exploring factors influencing organisational adoption of augmented reality in E-Commerce: Empirical analysis using technology organisation environment model. *Journal of Electronic Commerce Research* 19(3), 14-30.

- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. Sage Publications.
- Chen, H., Cheong, C.M. and Verma, R. (2018). What drives FinTech adoption? A literature review. *Journal of Financial Services Research* 55(2-3), 263-295.
- Christian, L.M., Dillman, D.A. and Smyth, J.D. (2007). Helping respondents get it right the first time: the influence of words, symbols, and graphics in web surveys. *Public Opinion Quarterly* 71(1), 113-125.
- Chuen, K., Lee, D., Li, G. and Yu, W. (2018). Cryptocurrency: A New Investment Opportunity? *The Journal of Alternative Investments* 20(3), 16-40.
- Clark, M. (2021). NFTs explained. The Verge. [Online]. Available: <https://www.theverge.com/22310188/nft-explainer-what-is-blockchain-crypto-art-faq> . (Accessed: 16 April 2022).
- Clifford, N.J. and Valentine, G. (2003). *Ethical Practice in Geographical Research*. London: SAGE.
- Clinton, L. (2023). *Fixing American Cybersecurity: Creating a Strategic Public-Private Partnership*. Georgetown University Press.
- Chirulli, P. (2021). FinTech, RegTech and SupTech: Institutional challenges to the supervisory architecture of the financial markets. In *Routledge Handbook of Financial Technology and Law* (pp. 447-464). Routledge.
- Cloke, P., Cook, I., Crang, P., Goodwin, M., Painter, J. and Philo, C. (2004). *Practising Human Geography*. London: SAGE.
- Clough, P. and Nutbrown, C. (2002). *A Students' Guide to Methodology; Justifying enquiry*. London: SAGE.
- Coffie, C.P.K., Hongjiang, Z., Mensah, I.A., Kiconco, R. and Simon, A.E.O. (2020). Determinants of FinTech payment services diffusion by SMEs in Sub-Saharan Africa: evidence from Ghana. *Information technology for development*.
- Corbet, S., Lucey, B., Urquhart, A. and Yarovaya, L. (2019). Cryptocurrencies as a financial asset: a systematic analysis. *International Review of Financial Analysis* 62(1), 182-199.
- Cresswell, J. (2009). *Qualitative, Quantitative and Mixed Method Approaches*. Los Angeles: SAGE.
- Cresswell, J. W. (2002). *Educational Research: Planning, conducting, and evaluating qualitative and quantitative research*. Pearson Education.

- Creswell, J. W. (2007). *Qualitative Inquiry and Research Design. Choosing Among Five Approaches*. Thousand Oaks: SAGE Publication.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (4th ed). SAGE Publications.
- Curley, M. and Salmelin, B. (2017). *Open innovation 2.0: the new mode of digital innovation for prosperity and sustainability*. Springer.
- Degerli, K. (2019). Regulatory Challenges and Solutions for Fintech in Turkey. *Procedia Computer Science* 158(2), 929-937.
- Dabrowska, J., Almpantopoulou, A., Brem, A., Chesbrough, H., Cucino, V., Di Minin, A., Giones, F., Hakala, H., Marullo, C., Mention, A.L. and Mortara, L. (2022). Digital transformation, for better or worse: a critical multi-level research agenda. *R&D Management* 52(5), 930-954.
- Dahdal, A., Truby, J. and Botosh, H. (2020). Trade finance in Qatar: Blockchain and economic diversification. *Law and Financial Markets Review* 14(4), 223–236.
- Dahdal, A.M., Truby, J.M. and Ibrahim, I.A. (2021). Sandboxes in the Desert: Is a Cross-Border 'Gulf-Box' feasible?. What are the benefits and challenges of Arab Gulf States (Kuwait, Saudi Arabia, Qatar, Oman, Bahrain and UAE) working together to develop a cross border sandbox regulatory framework for the support of fintech development in the region?. [Online]: Available: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3958725 (Accessed 24 May 2023).
- Das, SR. (2019). The future of FinTech. *Financial Management* 48(4), 981-1007.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly* 13(3), 319-340.
- Davies, M. B. (2007). *Doing a successful research project. Using qualitative or quantitative methods*. New York: Palgrave Macmillan.
- Dawson, C. (2006). *A practical guide to research methods. (2nd ed)*. Oxford: How to Books Ltd. de Vaus, D. (2013). *Surveys In Social Research* (6th ed). Routledge.
- De Filippi, P., Mannan, M. and Reijers, W. (2020). Blockchain as a confidence machine: The problem of trust & challenges of governance. *Technology in Society* 62(1), 101-128.
- Dealroom.Co (2022). *FinTech investment smashed all records in 2021*. [Online]. Available: <https://dealroom.co/blog/FinTech-investment-2021-report> . (Accessed 10 April 2022).

- Delimatsis, P. (2021). Financial services trade in special economic zones. *Journal of International Economic Law*, 24(2), 277-297.
- Deloitte (2019). *InFocus: Payments trends 2019*. [Online]. Available: <https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/financial-services/lu-payment-trends-2019.pdf> (Accessed 20 July 2022).
- Demirguc-Kunt, A., Klapper, L., Singer, D. and Ansar, S. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*. World Bank Publications.
- Denzin, N. K. and Lincoln, Y. S. (2005). *Introduction: The discipline and practice of qualitative research*. Thousand Oaks: SAGE.
- Diemers, D., Lamaa, A., Salamat, J., and Steffens, T. (2015). Developing a FinTech ecosystem in the GCC. *Strategyand*. [Online]. Available: <https://www.strategyand.pwc.com/m1/en/reports/developing-a-FinTech-ecosystem-in-the-gcc.pdf> (Accessed 10 April 2022).
- DiMaggio, P.J. and Powell, W.W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organisational Fields. *American Sociological Review* 48(2), 147-160.
- Donovan, K. (2012). Mobile money for financial inclusion. *Information and Communications for development* 61(1), 61-73.
- Dowling, M. (2022). Fertile LAND: Pricing non-fungible tokens. *Finance Research Letters* 44(4), 1-5.
- Dratva, R. (2020). Is open banking driving the financial industry towards a true electronic market? *Electronic Markets* 30(1), 65-67.
- Du, W.D., Pan, S.L., Leidner, D.E. and Ying, W. (2019). Affordances, experimentation, and actualization of FinTech: A blockchain implementation study. *The Journal of Strategic Information Systems* 28(1), 50-65.
- Echchabi, A. and Azouzi, D. (2017). Oil price fluctuations and stock market movements: An application in Oman. *Journal of Asian Finance Economics and Business* 4(2), 19-86.
- Echchabi, A., Omar, M.M.S., Ayedh, A.M. and Sibanda, W. (2021). Islamic Banks Financing of FinTech Start-Ups in Oman: An Exploratory Study. *Journal of Muamalat and Islamic Finance Research (JMIFR)* 18(1), 55-65.
- Ediagbonya, V. and Tioluwani, C. (2023). The role of fintech in driving financial inclusion in developing and emerging markets: issues, challenges and prospects. *Technological Sustainability* 2(1), 100-119.

- Ekanem, I. (2007). "Insider accounts": a qualitative research method for small firms. *Journal of Small Business and Enterprise Development* 14(1), 105-117.
- Ellinger, A. and Ellinger, D. (2013). Leveraging human resource development expertise to improve supply chain managers' skills and competencies. *European Journal of Training and Development* 38(2), 118-135
- Eng, T. Y. and Quaia, G. (2009). Strategies for improving new product adoption in uncertain environments: A selective review of the literature. *Industrial Marketing Management* 38(3), 275–282.
- European Commission (2015). European Parliament adopts European Commission proposal to create safer and more innovative European payments. Brussels, Press release. [Online]. Available: https://ec.europa.eu/commission/presscorner/detail/en/P_15_5792. (Accessed 16 May 2022).
- Faisal, M.N. and Talib, F. (2016). E-government to m-government: a study in a developing economy. *International Journal of Mobile Communications* 14(6), 568-592.
- Fan, PS. (2018). Singapore approach to develop and regulate FinTech. In *Handbook of Blockchain, Digital Finance, and Inclusion* 1(2), 347-357.
- Faustino, S., Faria, I. and Marques, R. (2022). The myths and legends of king Satoshi and the knights of blockchain. *Journal of Cultural Economy* 15(1), 67-80.
- Field, P.A. and Morse, J.M. (1985). Nursing Research. *The Application of Qualitative Approaches* 16(2), 35-39.
- Filatotchev, I., Ireland, R.D. and Stahl, G.K. (2022). Contextualizing management research: An open systems perspective. *Journal of Management Studies* 59(4), 1036-1056.
- Finance, G. (2020). Kuwait Startups: Seeding Tomorrow's Giants. [Online]. Available: <https://www.gfmag.com/magazine/january-2020/kuwait-startups-seeding-tomorrowsgiants/>. (Accessed 5 September 2022).
- FinTech Futures (2021). Open banking: What you need to know. [Online]. Available: <https://www.FinTechfutures.com/2018/01/open-banking-what-you-need-to-know/> (Accessed 12 April 2022).
- FinTech Saudi (2021). FinTech Saudi Annual Report. [Online]. Available: https://fintechsaudi.com/wpcontent/uploads/2022/11/FintechSaudiAnnualReport_21_22E.pdf (Accessed 30 November 2022).

- Firmansyah, E.A., Masri, M., Anshari, M. and Besar, M.H.A. (2023). Factors affecting fintech adoption: a systematic literature review. *FinTech* 2(1), 21-33.
- Flew, T. (2020). Globalization, neo-globalization and post-globalization: The challenge of populism and the return of the national. *Global Media and Communication* 16(1), 19-39.
- Flowerdew, R. and Martin, D. (eds.) (2005). *Methods in Human Geography: a guide for students doing a research project* (2nd ed). Harlow, UK: Pearson.
- Fogaça, D., Grijalvo, M. and Neto, M.S. (2022). An institutional perspective in the industry 4.0 scenario: A systematic literature review. *Journal of Industrial Engineering and Management* 15(2), 309-322.
- Fourie, L. and Bennett, T. (2022). The Open banking Era: Surfing the Australian Data Wave. In *Transformation Dynamics in FinTech: An Open Innovation System Outlook*.
- Frey, D. F. (2017). Economic growth, full employment, and decent work: The means and ends in SDG 8. *The International Journal of Human Rights* 21(8), 1164-1184.
- FSDP (2020). *Financial Sector Development Program*. [Online] Available: <https://www.vision2030.gov.sa/v2030/vrps/fsdp/> . (Accessed 12 September 2022).
- Fugard, A. J. B. and Potts, H. W. W. (2015). Supporting thinking on sample sizes for thematic analyses: A quantitative tool. *International Journal of Social Research Methodology* 18(6), 669-684.
- Gallego-Álvarez, I. and Pucheta-Martínez, M.C. (2020). How cultural dimensions, legal systems, and industry affect environmental reporting? Empirical evidence from an international perspective. *Business Strategy and the Environment* 29(5), 2037-2057.
- Ghauri, P. (2004). Designing and conducting case studies in international business research. *Handbook of Qualitative Research Methods for International Business* 1(1), 109-124.
- Ghauri, P. and Gronhaug, K. (2002). *Research Methods in Business Studies, A Practical Guide* (2nd ed). Harlow, England: Pearson Education Ltd.
- Ghobakhloo, M., Iranmanesh, M., Grybauskas, A., Vilkas, M. and Petraitė, M., (2021). Industry 4.0, innovation, and sustainable development: A systematic review and a roadmap to sustainable innovation. *Business Strategy and the Environment* 30(8), 4237-4257.

- Giungato, P., Rana, R., Tarabella, A. and Tricase, C. (2017). Current trends in sustainability of bitcoins and related blockchain technology. *Sustainability* 9(12), 214-229.
- Gillham, B. (2008). *Developing a Questionnaire*. A&C Black.
- Gomber, P., Kauffman, R.J., Parker, C. and 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.
- Gomber, P., Koch, J-A. and Siering, M. (2017). Digital Finance and FinTech: current research and future research directions. *Journal of Business Economics* 87(2), 537-580.
- Goo, J.J. and Heo, J.Y. (2020). The impact of the regulatory sandbox on the FinTech industry, with a discussion on the relation between regulatory sandboxes and open innovation. *Journal of Open Innovation: Technology, Market, and Complexity* 6(2), 43-61.
- Grassa, R. and Gazdar, K. (2014). Financial development and economic growth in GCC countries: A comparative study between Islamic and conventional finance. *International Journal of Social Economics*.
- Gray, D.E. (2015). *Doing Research in the Real World*. London: SAGE.
- Gray, L.M., Wong-Wylie, G., Rempel, G.R. and Cook, K. (2020). Expanding qualitative research interviewing strategies: Zoom video communications. *The Qualitative Report* 25(5), 1292-1301.
- Greenwood, R. and Meyer, R.E. (2008). Influencing ideas: A celebration of DiMaggio and Powell (1983). *Journal of Management Inquiry* 17(4), 258-264.
- Grobys, K. (2021). Blockchain: The Blockchain does not block: On hackings and uncertainty in the cryptocurrency market. *Quantitative Finance* 21(8), 1267-1279.
- Guest, G., Bunce, A. and Johnson, L. (2006). How Many Interviews Are Enough? An Experiment with Data Saturation and Variability. *Field Methods* 18(1), 59-82.
- Guest, G., Namey, E. E. and Mitchell, M. L. (2013). *Collecting Qualitative Data: A Field Manual for Applied Research*. London: Sage Publications.
- Gulrez, T. (2021). 'Strategic assessment of Islamic Fintech in GCC Countries.' In *Fintech, digital currency, and the future of Islamic finance: Strategic, regulatory and adoption issues in the Gulf Cooperation Council*, 223-241.

- Guttentag, D. and Smith, S.L. (2022). The diffusion of Airbnb: a comparative look at earlier adopters, later adopters, and non-adopters. *Current issues in tourism* 25(20), 3225-3244.
- Guy Peters, B. and Pierre, J. (2004). *Institutional Theory in Political Science: The 'New Institutionalism'*. Pinter.
- Hagaman, A. K. and Wutich, A. (2017). How Many Interviews Are Enough to Identify Metathemes in Multi-sited and Cross-cultural Research? Another Perspective on Guest, Bunce, and Johnson's (2006) Landmark Study. *Field Methods* 29(1), 23-41.
- Hall, B.H. and Khan, B. (2003). Adoption of new technology. NBER Working Paper No. 9730. [Online]. Available: https://www.nber.org/system/files/working_papers/w9730/w9730.pdf . (Accessed 23 August 2022).
- Hamel, G. and Zanini, M. (2020). *Humanocracy: Creating organisations as amazing as the people inside them*. Harvard Business Press.
- Hamida, A. A. (2020). Oman as a FinTech hub: brief analysis of the concept and main players in Oman's economy. [Online], Available: https://www.researchgate.net/publication/350722863_Oman_as_a_FinTech_hub . (Accessed 2 September 2022).
- Hanieh, A. (2018). *Money, markets, and monarchies: The Gulf Cooperation Council and the political economy of the contemporary Middle East (Vol. 4)*. Cambridge University Press.
- Harris, J.L. (2021). Bridging the gap between 'Fin'and 'Tech': The role of accelerator networks in emerging FinTech entrepreneurial ecosystems. *Geoforum* 1(22), 174-182.
- Hassan, M.K., Al-Mohamed, S., Rabbani, M.R. and Jreisat, A. (2022). An Assessment of Level of Adoption of Fintech in Islamic Banks in the MENA Region. In *FinTech in Islamic Financial Institutions: Scope, Challenges, and Implications in Islamic Finance* (pp. 223-242). Cham: Springer International Publishing.
- Hatammimi, J. and Krisnawati, A. (2018). Financial literacy for entrepreneur in the industry 4.0 era: A conceptual framework in Indonesia. In *Proceedings of the ACM International Conference on Information Management and Engineering*. Salford, UK, 22-24 September 2018, pp. 183-188.
- He, M.D., Leckow, M.R.B., Haksar, M.V., Griffoli, M.T.M., Jenkinson, N., Kashima, M.M., Khiaonarong, T., Rochon, M.C. and Tourpe, H. (2017). *Fintech and financial services: Initial considerations*. International Monetary Fund.
- Heim, H., Chrimes, C. and Green, C. (2022). DIGITAL HESITANCY: Examining the Organisational Mindset Required for the Adoption of Digitalised Textile Supply Chain Transparency. In *Blockchain*

Technologies in the Textile and Fashion Industry (pp. 47-80).
Singapore: Springer Nature Singapore.

- Hendershott, T., Zhang, X., Zhao, J.L., and Zeng, Z. (2021). FinTech as a Game Changer: Overview of Research Frontiers. *Information Systems Research* 32(1), 1-17.
- Hendrikse, R., Bassens, D, and Van Meeteren, M. (2018). The Appleization of finance: Charting incumbent finance's embrace of FinTech. *Finance and Policy* 4(2), 159-180.
- Hennink, M. M., Kaiser, B. N. and Marconi, V. C. (2016). Code Saturation Versus Meaning Saturation: How Many Interviews Are Enough? *Qualitative Health Research* 27(4), 591– 608.
- Hill, J.A. (2021). COVID-19, Banks, and FinTechs (September 1, 2021). Consumer Finance Law Quarterly Report, U of Alabama Legal Studies Research Paper No. 3777562.
- Hoggart, K. (2002). *Researching Human Geography*. USA: Oxford University Press.
- Holland FinTech (2015). The future of socialisation of finance. [Online]. Available: <https://hollandFinTech.com/resources/regulatory-calendar-FinTech-beyond/>. (Accessed 10 April 2022).
- Homburg, C. and Pflesser, C. (2000). A multiple-layer model of market-oriented organisational culture: Measurement issues and performance outcomes. *Journal of Marketing Research* 37(4), 449–462.
- Hosen, M., Cham, T.H., Eaw, H.C., Subramaniam, V. and Thaker, H.M.T. (2023). The influence of FinTech on Financial Sector and Economic growth: An analysis of recent literature. In *Proceedings of the 2nd International Conference on Emerging Technologies and Intelligent Systems: ICETIS 2022 Volume 1* (pp. 251-263). Cham: Springer International Publishing.
- Hox, J.J. and Boeije, H.R. (2005). Data Collection, Primary vs. Secondary. *Encyclopaedia of Social Measurement* 1(3), 593-599.
- IFC (2017). FinTech at IFC. [Online]. Available: https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/fintech (Accessed 20 July 2022).
- IMF (2019). *Stablecoins, Central Bank Digital Currencies, and Cross-Border Payments: A New Look at the International Monetary System*. [Online]. Available: <https://www.imf.org/en/News/Articles/2019/05/13/sp051419-stablecoins-central-bankdigital-currencies-and-cross-border-payments> (Accessed 16 July 2022).

- Jaiswal, M. and Zane, L.J. (2021). Drivers of sustainable new technology diffusion in national markets: The case of electrical vehicles. *Thunderbird International Business Review* 64, 25-38.
- Jette, D. J., Grover, L. and Keck, C. P. (2003). A qualitative study of clinical decision making in recommending discharge placement from acute care setting. *Physical Therapy* 83(3), 224–236.
- Jin, C.C., Seong, L.C. and Khin, A.A. (2019). Factors affecting the consumer acceptance towards FinTech products and services in Malaysia. *International Journal of Asian Social Science* 9(1), 59-65.
- Johnson, D.R., Christopher P., Scheitle, A., and Ecklund, E. (2021). Beyond the in-person interview? How interview quality varies across in-person, telephone, and Skype interviews. *Social Science Computer Review* 39, (6), 1142-1158.
- Jovic, Z. and Nikolic, I., (2022). The Darker Side of Fintech: The Emergence of New Risks. *Zagreb International Review of Economics and Business*, 25(4), 46-63.
- Jun, J. and Yeo, E. (2021). Central bank digital currency, loan supply, and bank failure risk: a microeconomic approach. *Financial Innovation* 7(1), 1-22.
- Kalberg, S.E. (1978). *Max Weber's Concept of Rationalization*. State University of New York at Stony Brook.
- Kanga, D., Oughton, C., Harris, L. and Murinde, V. (2021). The diffusion of FinTech, financial inclusion and income per capita. *The European Journal of Finance* 28(1), 108-136.
- Kanga, D., Oughton, C., Harris, L. and Murinde, V. (2022). The diffusion of fintech, financial inclusion and income per capita. *The European Journal of Finance* 28(1), 108-136.
- Kaplan, B. and Maxwell, J.A. (2005). Qualitative research methods for evaluating computer information systems. In *Evaluating the organisational impact of healthcare information systems* (pp. 30-55). New York, NY: Springer.
- Kaushik, V. and Walsh, C.A. (2019). Pragmatism as a research paradigm and its implications for social research work. *Social Sciences* 8(9), 255-272.
- Katz, E., Levin, M. and Hamilton, H. (1963). Traditions of research on the diffusion of innovation. *American Sociological Review* 28(2), 237-252.
- Kavuri, A.S. and Milne, A. (2019). FinTech and the future of financial services: What are the research gaps?
- Kellam, S.G., Koretz, D. and Mościcki, E.K. (1999). Core elements of developmental epidemiologically based prevention

research. *American Journal of Community Psychology* 27(4), 463-482.

- Kelley, B., Renshaw, T. and Kamarck, M. (2021). Process and operations strategies to enable global access to antibody therapies. *Biotechnology Progress* 37(3), 31-39.
- Kelley, K. (2022). Technology Trends in GCC Countries: A Bird's Eye Overview. [Online]. Available: <https://www.simplilearn.com/technology-trends-in-gcc-countries-article> . (Accessed 2 October 2022).
- KFAS (2019). *FinTech: Future of Financial Services*. [Online]. Available: <https://www.kfas.org/media-publications/research-studies-whitepaper/FinTech-future-offinancial-services> (Accessed 4 October 2022).
- Khan, S., Khan, H.U. and Nazir, S. (2023). Utilizing the collective wisdom of fintech in the GCC region: A systematic mapping approach. *Measurement and Control* 56(3-4), 713-732.
- Kiger, M.E. and Varpio, L (2020). Thematic analysis of qualitative data: AMEE Guide No. 131. *Medical teacher* 42(8), 846-854.
- Kliman, D., FitzGerald, B., Lee, K. and Fitt, J. (2020). *Forging an Alliance Innovation Base*. Center for a New American Security.
- Kitsios, F., Giatsidis, I. and Kamariotou, M. (2021). Digital transformation and strategy in the banking sector: Evaluating the acceptance rate of e-services. *Journal of Open Innovation: Technology, Market, and Complexity* 7(3), 204-217.
- Kocak, A., Carsrud, A. and Oflazoglu, S. (2017). Market, entrepreneurial, and technology orientations: impact on innovation and firm performance. *Management Decision* 55(2), 248-270.
- Kumari, A. and Kumar Sharma, A. (2017). Infrastructure financing and development: A bibliometric review. *International Journal of Critical Infrastructure* 16(1), 49-65.
- Kung, L., Cegielski, C. G. and Kung, H. J. (2015). An integrated environmental perspective on software as a service adoption in manufacturing and retail firms. *Journal of Information Technology* 30(4), 352–363.
- Kunhibava, S., Muneeza, A., Mustapha, Z., Karim, M.E. and Sa'ad, A.A. (2023). Selected issues in the use of RegTech in the Islamic and conventional financial markets. *Journal of Islamic Accounting and Business Research*.
- Kurt, O.E. (2022). 'Diffusion of Innovation and Technovation in Organisations'. *Research on Economics and Administration and Social Sciences*. Lyon: Livre De Lyon,

- Kuwait Times (2019). *Digital Transactions, FinTech, to Grow in Coming Years*. [Online] Available at: <https://www.timeskuwait.com/news/digital-transactions-FinTech-to-growin-coming-years/> (Accessed 2 September 2022).
- Kyale, S. (1996). *Interview Views: An Introduction to Qualitative Research Interviewing*. Thousand Oaks, CA. Sage Publications.
- Lacity, M.C. (2022). Blockchain: from bitcoin to the internet of value and beyond. *Journal of Information Technology* 37(4), 326-340.
- Lai, T.H. and Baur, D.G. (2021). How stable are Stablecoins? *The European Journal of Finance* <https://doi.org/10.1080/1351847X.2021.1949369>
- Lang, V.F. and Tavares, M.M.M. (2018). *The distribution of gains from globalization*. International Monetary Fund.
- Lashitew, A.A., van Tulder, R. and Liasse, Y. (2019). Mobile phones for financial inclusion: What explain the diffusion of mobile money innovations? *Research Policy* 48(5), 1201-1215.
- Le Comple, M.D. and Goetz, J.P. (1992). Problems of reliability and validity in ethnographic research. *Review of Educational Research* 52(1), 31-60.
- Lee, S.M. and Lee, D. (2020). Untact: A New Customer Service Strategy in the Digital Age. *Service Business* 14(1), 1-22.
- Lee, I. and Shin, Y.J. (2018). FinTech: Ecosystem, business models, investment decisions, and challenges. *Business Horizons* 61(1), 35-46.
- Lee, G. and Megargel, A. (2021). Empowering Singapore's SMEs: FinTech P2P lending—A lifeline for SMEs' survival? *Journal of Digital Banking* 5(4), 365-377.
- Leedy, P.D. and Ormrod, J.E. (2005). *Practical Research* (Vol. 108). Saddle River, NJ, USA: Pearson Custom.
- Leininger, M. (1991). *Culture care, diversity, and universality: A theory of nursing*. New York.
- Lemieux, P. (2013). "Who is Satoshi Nakamoto?". *Regulation* 36(3), 14-16.
- Li, Y., Spigt, R. and Swinkels, L. (2017). The impact of FinTech start-ups on incumbent retail banks' share prices. *Financial Innovation* 26(3), 1-16.
- Liamputtong, P. and Ezzy, D. (2005). *Qualitative Research Methods*. Melbourne: Oxford University Press.
- Lincoln, Y.S. and Guba, E.G. (1985). *Naturalistic Inquiry*. London: SAGE.

- Lipton, A., Sanrdon, A., Schar, F. and Schupbach, C. (2021). Stablecoins, Digital Currency, and the Future of Money. In *Building the New Economy: Data as Capital*. Cambridge, Massachusetts, 254-264.
- Litchman, M. (2006). *Qualitative research in education: A user's guide*. Thousands Oask: SAGE Publications.
- Long, T. and Johnson, M. (2000). Rigour, reliability and validity in qualitative research. *Clinical Effectiveness in Nursing* 4(1), 30-37.
- Long, G., Tan, Y., Jiang, J. and Zhang, C. (2020). Federated learning for open banking. In *Federated Learning: Privacy and Incentive* (pp. 240-254). Cham: Springer International Publishing.
- Lumsden, J. and Morgan, W. (2005). Online-questionnaire design: Establishing guidelines and evaluating existing support. In *2005 Information Resources Management Association International Conference* (pp. 52-53). IGI Global.
- Luo, D., Mishra, T., Yarovaya, L. and Zhang, Z. (2021). Investing during a Fintech Revolution: Ambiguity and return risk in cryptocurrencies. *Journal of International Financial Markets, Institutions and Money* 73(2), 101-162.
- Lynn, G.S., Morone, J.G. and Paulson, A.S. (1996). Marketing and Discontinuous Innovation: The probe and learn process. *California Management Review* 38(3), 8-37.
- MacKenzie, D. and Wajcman, J. (1999). *The Social Shaping of Technology*. Buckingham: Open University Press.
- Mahroof, K., Weerakoddy, V., Onkal, D. and Hussain, Z. (2018). Technology as a Disruptive Agent: Integrational Perspective. *Information Systems Frontiers* 22(3), 749-770.
- Mandal, P. C. (2018). Saturation in qualitative research: Considerations and limitations. *International Journal of Academic Research and Development* 3(2), 624-628.
- Marmore MENA Intelligence (2021). 'COVID-19 accelerates Saudi Arabia's push towards cashless society'. [Online]. Available: <https://www.marmoremna.com/en/insights/covid19-accelerates-saudi-arabias-push-towards-cashless-society/> (Accessed 1 November 2022).
- Marshall, M. N. (1996). Sampling for qualitative research. *Family Practice* 13(6), 522-526.
- Marshall, B., Cardon, P., Poddar, A. and Fontenot, R. (2015). Does Sample Size Matter in Qualitative Research? A Review of Qualitative Interviews in Research. *Journal of Computer Information Systems* 54(1), 11-22.

- Martinez-Ferrero, J. and Garcia-Sanchez, I. (2017). Coercive, normative, and mimetic isomorphism as determinants of the voluntary assurance of sustainability reports. *International Business Review* 26(2), 102-118.
- Maskus, K.E. and Reichman, J.H. (2004). The globalization of private knowledge goods and the privatization of global public goods. *Journal of International Economic Law* 7(2), 34-49.
- Mason, M. (2010). Sample Size and saturation in PhD Studies using qualitative interviews. *Qualitative Social Research* 11(3), 50-71.
- Magdy Rezk, W. and Halim, M.A.A. (2022). Financial Technology (Fintech) in the Arab Countries: Challenges and Opportunities. *L'Egypte Contemporaine*, 13(547), 437-466.
- MAGNiTT and ADGM (2019). MENA FinTech Venture Report. [Online]. Available: <https://www.adgm.com/documents/publications/en/adgm-mena-FinTech-venture-report2019.pdf> . (Accessed 20 September 2022).
- Matikainen, M., Terho, H., Parvinen, P. and Juppo, A. (2016). The role and impact of firm's strategic orientations on launch performance: Significance of relationship orientation. *Journal of Business and Industrial Marketing* 31(5), 625–639.
- Makina, D. (2019). The potential of FinTech in enabling financial inclusion. In *Extending financial inclusion in Africa*, pp. 299-318. Academic Press.
- Mallinson, D.J. (2021). Policy innovation adoption across the diffusion life course. *Policy Studies Journal* 49(2), 335-358.
- May, T. (2011). *Social Research: Issue, Methods, and Processes*, (4th ed). Maidenhead: Open University Press
- Mazambani, L., and Mutambara, E. (2019). Predicting FinTech innovation adoption in South Africa: the case of cryptocurrency. *African Journal of Economics and Management Studies* 11(1) 30-50.
- Mazzorana-Kremer, F. (2022). The CBDC Money Revolution and its Impact on Monetary Policies and Consumer Behaviors. *Academy of Marketing Studies Journal* 26(1), 1-11.
- McGuirk, P.M. and O'Neill, P. (2016). Using questionnaires in qualitative human geography. *Faculty of Social Sciences - Papers*. 2518. [Online]. Available: <https://ro.uow.edu.au/cgi/viewcontent.cgi?article=3519andcontext=sspapers> (Accessed 10 September 2022).
- McWaters, R. and Galaski, R. (2017). Beyond FinTech: A pragmatic assessment of disruptive potential in financial service. In *Part of*

the Future of Financial Services Series/Prepared in Collaboration with Deloitte. Colony: World Economic Forum.

- Meiling, L., Yahya, F., Waqas, M., Shaohua, Z., Ali, S.A. and Hania, A. (2021). Boosting sustainability in healthcare sector through FinTech: analysing the moderating role of financial and ICT development. *INQUIRY: The Journal of Health Care Organisation, Provision, and Financing* 58(4), 43-59.
- Mensi, W., Hammoudeh, S., Shahzad, S.J.H. and Shahbaz, M. (2017). Modelling systematic risk and dependence structure between oil stock markets using a variational mode decomposition-based copula method. *Journal of banking and Finance* 75(C), 258-279.
- Merriam, S.B. (1998). *Qualitative Research and Case Study Applications in Education. Revised and expanded from "Case Study Research in Education."*. San Francisco: Jossey-Bass Publishers.
- Meyer, E. (2018). 'The new economic scenario and its impact on the cooperative banking business model'. In M. Migliorelli (Ed.), *New cooperative banking in Europe. In New Cooperative Banking in Europe - Strategies for Adapting the Business Model Post Crisis.* Switzerland: Palgrave Macmillan., 29–45.
- Miles, M.B. and Huberman, A.M., (1984). *Qualitative data analysis: A sourcebook of new methods.* Beverly Hills, CA: SAGE.
- Mirzaei, M. (2022). Fintech market in Iran: an analysis of Fintech ecosystem and business models. *Middle East Development Journal* 14(2), 323-336.
- Mishra, D.R.N. (2015), August. Sink or Swim: It is Time Ripe to Move in for an International Monetary Policy and Financial Stability Policy Coordination Mechanism. In *4th International Conference on Global Prosperity, Sydney* (Vol. 27).
- Mishrif, A. and Kapetanovic, H. (2018). Dubai's Model of Economic Diversification. In *Economic Diversification in Gulf Region.* Volume II, Comparing Global Challenges.
- Moore, N. (2006). *How to do research: a practical guide to designing and managing research projects.* Facet Publishing.
- Morales, W.U. (2020). FinTech Focus: What is Banking-as-a-Service (BaaS)?. In *Medium.* [Online]. Available: <https://medium.com/FinTechtris/FinTech-focus-what-is-banking-asa-service-baas>. (Accessed 15 June 2022).
- Morgan, D.L. (2014). Pragmatism as a paradigm for social research. *Qualitative Inquiry* 20(8), 1045-1053.
- Morgan, T., Anokhin, S., Kretinin, A. and Frishammar, J. (2015). The dark side of the entrepreneurial orientation and market orientation

- interplay: A new product development perspective. *International Small Business Journal* 33(7), 731–751.
- Morse, J. (1991). Strategies for sampling. *Qualitative nursing research: A contemporary dialogue* 127(3), 145-153.
- Morse, J. M. (2000). Determining sample size. *Qualitative Health Research* 10(1), 3-5.
- Morse, J. M. (2015). Data were saturated. *Qualitative Health Research* 25(5), 587-588.
- Moser, A. and Korstjens, I. (2018). Series: Practical Guidance to Qualitative Research. Part 3: Sampling, Data Collection and Analysis. *European Journal of General Practice* 24(3), 9-18.
- Mourouzis, T. and Filipou, C. (2017). The Blockchain Revolution: *Insights from Top Management* 17(12),46-49.
- Mthuli, S.A., Ruffin, F. and Singh, N. (2022). 'Define, Explain, Justify, Apply'(DEJA): An analytic tool for guiding qualitative research sample size. *International Journal of Social Research Methodology* 25(6), 809-821.
- Mueller, J. (2017). FinTech: Considerations on How to Enable a 21st Century Financial Services Ecosystem. *Viewpoints, Milken Institute*.
- Murinde, V., Rizopoulos, E. and Zachariadis, M. (2022). The impact of the FinTech revolution on the future of banking: Opportunities and risks. *International Review of Financial Analysis* 81(2), 102-103.
- Muthukannan, P., Tan, B., Tan, F.T.C. and Leong, C. (2021). Novel mechanisms of scalability of financial services in an emerging market context: Insights from Indonesian Fintech Ecosystem. *International Journal of Information Management* 61(3),102-113.
- Muzelle, L., Ronteau, S. and Lambkin, M., (2015). Two-sided internet platforms; a business model lifecycle perspective. *Industrial Marketing Management* 45(4), 139-150.
- Nancy, P., Muthurajkumar, S., Ganapathy, S., Santhosh Kumar, S.V.N., Selvi, M. and Arputharaj, K. (2020). Intrusion detection using dynamic feature selection and fuzzy temporal decision tree classification for wireless sensor networks. *IET Communications* 14(5), 888-895.
- Nayak, K., Singh, P. and Dave, P. (2021). Does Data Security and Trust Affect the Users of Fintech?. *International Journal of Management* 12(1), 89-123.
- Naz, F., Karim, S., Houcine, A. and Naeem, M.A. (2022). Fintech Growth during COVID-19 in MENA Region: Current Challenges and Future prospects. *Electronic Commerce Research* 4(3), 1-22.

- NBKCapital (2019). *Digital Banking: Why Embracing a Meaningful Digital Transformation is the only option*. [Online] Available at: <https://nbkcapital.com/2019/digital-bankingembracing-meaningful-digital-transformation-option/> . (Accessed 1 September 2022).
- NDU (2020). *National Digital Transformation Unit*. [Online] Available at: <https://ndu.gov.sa/en/> (Accessed 1 September 2022).
- Newman, A., Bavik, Y.L., Mount, M. and Shao, B. (2021). Data collection via online platforms: Challenges and recommendations for future research. *Applied Psychology* 70(3), 1380-1402.
- Nelaturu, K., Du, H. and Le, D.P. (2022). A Review of Blockchain in Fintech: Taxonomy, Challenges, and Future Directions. *Cryptography* 6(2), 18-29.
- Ng, A.W. and Kwok, B.K. (2017). Emergence of Fintech and cybersecurity in a global financial centre: Strategic approach by a regulator. *Journal of Financial Regulation and Compliance*.
- Niehaus, J. (1983). Financial innovation, multinational banking, and monetary policy. *Journal of Banking and Finance* 7(4), 537-551.
- Noble, H. and Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evidence based nursing* 18(2), 34-35.
- Nugraha, K., Arief, M., Abdinagoro, S.B. and Heriyati, P. (2022). Factors Influencing Bank Customers' Orientations toward Islamic Banks: Indonesian Banking Perspective. *Sustainability* 14(19), 105-126.
- Obrenovic, B., Du, J., Godinic, D., Tsoy, D., Khan, M.A.S. and Jakhongirov, I., (2020). Sustaining enterprise operations and productivity during the COVID-19 pandemic: "Enterprise Effectiveness and Sustainability Model". *Sustainability* 12(15), 59-81.
- Odey, L. (2021). Evaluation of Challenges Affecting New Technology Startups in the United Kingdom Today: A PEST Analysis.
- OECD (2011). *Demand-side innovation policies*. Paris: OECD Publishing.
- Park, H. and Choi, S.O. (2019). Digital innovation adoption and its economic impact focused on path analysis at national level. *Journal of open innovation: Technology, Market, and Complexity* 5(3), 56-70.
- Parmentola, A., Simoni, M., Tutore, I. and Wallis, S.E. (2020). Boosting the spread of new technologies: an integrative propositional analysis of diffusion policies. *Technology Analysis, and Strategic Management* 32(2), 133-145.
- Patten, M. (2016). *Proposing empirical research: A guide to the fundamentals*. Routledge.

- Patwardhan, A. (2018). Financial inclusion in the digital age. In *Handbook of Blockchain, Digital Finance, and Inclusio*. Academic Press.
- Pelz, M. (2019). Can management accounting be helpful for young and small companies?: Systematic review of a paradox. *International Journal of Management Reviews* 21(2), 256-274.
- Perdana, A., Robb, A., Balachandran, V. and Rohde, F. (2021). Distributed ledger technology: Its evolutionary path and the road ahead. *Information and Management* 58(3), 1-14.
- Peter, V., Izsak, K., Bruno, N., Castel, J. and Roman, L. (2013). Developing an evaluation and progress methodology to underpin the intervention logic of the Action Plan to Boost Demand for European Innovations. *Final report of Technopolis Group on behalf of European Commission and DG Enterprise and Industry cited in D, 3*.
- Podoyntsyna, K., Song, M., van der Bij, H., and Weggeman, M. (2013). Improving new technology venture performance under direct and indirect network externality conditions. *Journal of Business Venturing* 28(2), 195–210.
- Polkinghorne, D.E. (2005). Language and Meaning: Data Collection in Qualitative Research. *Journal of Counselling Psychology* 52(1), 137-145.
- Pounder, D.G. (1993). 'Rigor in Traditional Quantitative Methods'. The Annual Meeting of the American Educational Research Association. Atlanta, Georgia, April 12-16, 1993.
- Premchand, A. and Choudhry, A. (2018). Open banking and APIs for transformation in banking. In *2018 international conference on communication, computing, and internet of things (IC3IoT)*, pp. 25-29. IEEE.
- Punch, K.F. (2014). *Introduction to Social Research: Quantitative and Qualitative Approaches*. Thousand Oaks, CA: SAGE Publications.
- Rabaa'i, A. (2022). FinTech in Kuwait: a survey study. *International Journal of Business Information Systems*.
- Ramya, KC, Rani, SS, Gupta, D. and Shankar, K. (2020). An Efficient Lightweight Integrated Blockchain (ELIB) Model for IoT Security and Privacy. *Future Generation Computer Systems* 102(1), 1027-1037.
- Razzaque, A., Cummings, R.T., Karolak, M. and Hamdan, A. (2020). The propensity to use FinTech: input from bankers in the Kingdom of Bahrain. *Journal of Information and Knowledge Management* 19(1), 1-22.

- Risi, D., Vigneau, L., Bohn, S. and Wickert, C. (2023). Institutional theory-based research on corporate social responsibility: Bringing values back in. *International Journal of Management Reviews* 25(1), 3-23.
- Rivas, P. and Zhao, L., (2023). Marketing with chatgpt: Navigating the ethical terrain of gpt-based chatbot technology. *AI* 4(2), 375-384.
- Rocca, L., Veneziani, M. and Carini, C. (2022). Mapping the diffusion of circular economy good practices: Success factors and sustainable challenges. *Business Strategy and the Environment* 4(3), 48-61.
- Roeder, A.C., Bisel, R.S. and Morrissey, B.S. (2018). Weathering the financial storm: A professional forecaster team's domain diffusion of resilience. *Communication Studies* 72(1), 1-16.
- Rogers, E.M. (2003). *Diffusion of Innovations*. Free Press.
- Rogers, E.M. (1995). Diffusion of Innovations: Modifications of a Model for Telecommunications. In Stoetzer, MW., Mahler, A. (eds) *Die Diffusion von innovationen in der Telekommunikation. Schriftenreihe des Wissenschaftlichen Instituts für Kommunikationsdienste*, vol 17. Springer, Berlin, Heidelberg.
- Rogers, E.M., Singhal, A. and Quinlan, M.M. (2014). Diffusion of innovations. In *An integrated approach to communication theory and research* (pp. 432-448). Routledge.
- Rogers, E. M. and Shoemaker, F. F. (1971). *Communication of Innovation*. New York: The Free Press.
- Rolfe, G. (2006). Validity, trustworthiness, and rigour: quality and the idea of qualitative research. *Journal of advanced nursing* 53(3), 304-310.
- Romanov, V.A. and Khubulova, V.V. (2020). The FinTech industry: key technologies and directions of development of the digitalisation. *RUND Journal of Economics* 28(4), 700-712.
- Rosenberg, J.C. (2021). *Enemies and Allies: An Unforgettable Journey Inside the Fast-moving and Immensely Turbulent Modern Middle East*. Tyndale House Publishers, Inc.
- Rout, S.K., Gupta, M. and Sahoo, M. (2022). The role of technological innovation and diffusion, energy consumption and financial development in affecting ecological footprint in BRICS: an empirical analysis. *Environmental Science and Pollution Research*, pp.1-18.
- Rugman, A.M., Verbeke, A. and Nguyen, Q.T.K., Manova, K., Wei, S.-J. and Zhang, Z. (2015). Firm Exports and Multinational Activity Under Credit Constraints. *The Review of Economics and Statistics* 97(3), 574–588.

- SandP Global (2019). SandP Global Ratings' Global Outlook 2019: A deep dive into SandP Global Ratings' insights on the credit outlook for 2019 and what are the risks and vulnerabilities to look out for. [Online]. Available: <https://www.spglobal.com/en/researchinsights/podcasts/essential-podcast/the-essential-podcast-episode-67-pyramid-of-liesreporting-on-greensill-capital> (Accessed 16 September 2022).
- Sandelowski, M. (1995). Sample size in qualitative research. *Research in Nursing and Health* 18(1), 179–183.
- Santos, R. (2022). 'Saudi Arabia and the Fintech Ecosystem in 2022'. The FinTech Times. 15 July. [Online]. Available: <https://thefintechtimes.com/saudi-arabia-and-the-fintechecosystem-in-2022/> (Accessed 2 September 2022).
- Sarankatos, S. (2012). *Social Research*. Macmillan International Higher Education.
- Sarta, A., Durand, R. and Vergne, J.-P., 2021. Organizational Adaptation. *Journal of Management* 47(4), 43-75.
- Saunders, M., Lewis, P. and Thornhill, A. (2012). *Research Methods for Business Students*. London. Pearson Education Limited.
- Savin-Baden, M. and Major, C. (2013). *Qualitative Research: The Essential Guide to Theory and Practice*. London: Routledge.
- Sayer, A. (2010). *Method in Social Science*. London: Routledge.
- Schilirò, D. (2021). FinTech in Dubai: Development and Ecosystem. *International Business Research* 14(11), 61-70.
- Schlecht, L., Schneider, S. and Buchwald, A. (2021). The prospective value creation potential of Blockchain in business models: A delphi study. *Technological Forecasting and Social Change* 166.
- Schueffel, P. (2016). Taming the Beast: A Scientific Definition of FinTech. *Journal of Innovation Management* 4(4), 32-54.
- Scott, S.V., Van Reenen, J. and Zachariadis, M. (2017). The long-term effect of digital innovation on bank performance: An empirical study of SWIFT adoption in financial services. *Research Policy* 46(5), 984-1004.
- Seidman, I. (2006). *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences* (3rd ed.). Teacher College Press.
- Selznick, P. (1996). Institutionalism "Old" and "New". *Administrative Science Quarterly* 41(2), 270-277.

- Shaikh, Z., Wadi, R.A. and AlMahari, E. (2022). The Impact of Fintech Phenomenon on Economic Development: The Case of Bahrain. In: *Musleh Al-Sartawi, A.M.A. (eds) Artificial Intelligence for Sustainable Finance and Sustainable Technology*. ICGER 2021. Lecture Notes in Networks and Systems, vol 423. Springer, Cham.
- Sharma, Y., Balamurugan, B., Snegar, N. and Ilavendhan, A. (2021). How IoT, AI, and Blockchain Will Revolutionise Business. In *Blockchain, Internet of Things, and Artificial Intelligence* (pp. 235-255). Chapman and Hall/CRC.
- Shaya, M.H. and Sun, Z. (2019). Employment in the Gulf Cooperation Council (GCC) Countries- Current Issues and Future Trends. In *2nd International Conference on Social Science, Public Health and Education (SSPHE 2018)*, pp. 412-415. Atlantis Press.
- Shiau, W. L., Yuan, Y., Pu, X., Ray, S. and Chen, C. C. (2020). Understanding FinTech continuance: Perspectives from self-efficacy and ECT-IS theories. *Industrial Management and Data Systems* 120(9), 1659–1689.
- Sidaoui, M., Ben Bouheni, F., Arslankhuyag, Z. and Mian, S. (2022). Fintech and Islamic banking growth: new evidence. *The Journal of Risk Finance* 23(5), 535-557.
- Singh, D. and Gal, Z. (2020). Economic freedom and its impact on foreign direct investment: Global overview. *Review of Economic Perspectives* 20(1), 73-90.
- Smets, M., Morris, T.I.M. and Greenwood, R. (2012). From practice to field: A multilevel model of practice-driven institutional change. *Academy of Management Journal* 55(4), 877-904.
- Soloviev, V.I. (2018). FinTech ecosystem and landscape in Russia. *Journal of Reviews on Global Economics* 7 (special issue) 377-390.
- Soy, S. K. (1997). The case study as a research method: Uses and users of information. [Online] Available at: <http://www.ischool.utexas.edu/~ssoy/useusers/1391d1b.html> [Accessed October 2022].
- Stake, R. E. (2006). *Multiple case study analysis*. Guilford Press.
- Steger, M.B. and James, P. (2019). *Globalization matters: Engaging the global in unsettled times*. Cambridge University Press.
- Strategyand (2022). *FinTech in the Middle East: Building on the momentum*. [Online]. Available: <https://www.strategyand.pwc.com/m1/en/strategic-foresight/sector-strategies/financialservices/FinTech-in-the-middle-east/FinTech-middle-east.pdf>. (Accessed 8 August 2022).

- Stokey, N.L. (2021). Technology diffusion. *Review of Economic Dynamics* 42(1), 15-36.
- Stelling, O. (2023). *COMMUNICASIAN: How Asia's Rise is Shaping the Future of Communications, and how to Plan for it*. Taylor & Francis.
- Sue, V.M. and Ritter, L.A. (2012). *Conducting Online Surveys*. London: SAGE Publications.
- Suryono, R.R., Budi, I. and Purwandari, B. (2020). Challenges and Trends of Financial Technology (FinTech): A Systematic Literature Review. *Information* 11(590), 1-20.
- Syanda, A. M., Fayth, R. and Nikita, S. (2021). 'Define, Explain, Justify, Apply' (DEJA): An analytic tool for guiding qualitative research sample size. *International Journal of Social Research Methodology* 25(6), 809-821.
- Sykes, B. L., Verma, A. and Hancock, B. H. (2018). Aligning sampling and case selection in quantitative-qualitative research designs: Establishing generalizability limits in mixed method studies. *Ethnography* 19(2), 227–253.
- Taherdoost, H., 2018. Development of an adoption model to assess user acceptance of e-service technology: E-Service Technology Acceptance Model. *Behaviour & Information Technology* 37(2), 173-197.
- Tapscott (2020). *Financial Services Revolution: How Blockchain Is Transforming Money, Markets, and Banking*. Barlow Publishing.
- Tapscott, D. and Tapscott, A. (2017). How blockchain will change organizations. *MIT Sloan Management Review* 58(2), 10-13.
- Teigland, R., Siri, S., Larsson, A., Puertas, A.M. and Bogusz, C.I. (2018). Introduction: FinTech and shifting financial system institutions. In *Rise and Development of FinTech* 1-18. Routledge.
- Thakor, A.V. (2020). FinTech and banking: What do we know?. *Journal of Financial Intermediation* 41(30), 33-51.
- Townsend, Z. (2022). What the embedded-finance and banking-as-a-service trends mean for financial services. [Online]. Available: <https://www.openbankingdirectory.io/news/whatthe-embedded-finance-and-banking-as-a-service-trends-mean-for-financial-services>. (Accessed 18 April 2022)
- Ullrich, C. (2019). New Approach meets new economy: Enforcing EU product safety in ecommerce. *Maastricht Journal of European and Comparative Law* 26(4), 558-584.
- Uptech (2022). The Future of DeFi In Fintech. [Online]. Available: <https://www.uptech.team/blog/the-future-of-defi-in-fintech> (Accessed 2 September 2022).

- Utami, A.F., Ekaputra, I.A. and Japutra, A. (2021). Adoption of FinTech products: a systematic literature review. *Journal of Creative Communications* 16(3), 233-248.
- Valente, T.W. (1993). Diffusion of Innovations and Policy Decision-Making. *Journal of Communication* 43(1), 30-45.
- Valente, S. and Saunders, J. (1997). Phenomenology and the human dimension. *Image-The Journal of Nursing Scholarship* 29(2), 64-71.
- Van den Berg, A. and Struwig, M. (2017). Guidelines for researchers using an adapted consensual qualitative research approach in management research. *Electronic Journal of Business Research Methods* 15(2), 109-119.
- Vasiljeva, T. and Lukanova, K. (2016). Commercial Banks and FinTech Companies in The Digital Transformation: Challenges for the Future. *Journal of Business Management* 11(3), 125-135.
- Vargo, S.L., Akaka, M.A. and Wieland, H. (2020). Rethinking the Process of Diffusion in Innovation: A Service-Ecosystems and Institutional Perspective. *Journal of Business Research*, 116(4), 526-534.
- Visa (2021). *Saudi Arabia achieves highest adoption of NFC contactless payments in MENA at 94% of all in-store payments*. 28 September. [Online]. Available: https://sa.visamiddleeast.com/en_SA/about-visa/newsroom/press-releases/pr127092021.html (Accessed 10 December 2022).
- Voshmgir, S. (2019). *Token economy: How blockchains and smart contracts are revolutionising the economy*. Shermin Voshmgir-Blockchain Hub.
- Walchek, S. (2015). 'The Unbundling of Finance'. TechCrunch+. [Online]. Available: <https://techcrunch.com/2015/05/29/the-unbundling-of-finance/> (Accessed 10 April 2022).
- Wandhofer, R. and Nakib, H.D. (2023). Borderless, Digital Future of Money. In *Redecentralisation: Building the Digital Financial Ecosystem* (pp. 103-136). Cham: Springer International Publishing.
- Wang, H. and Gao, S. (2021). The Future of the International Financial System: A CBDC Network and Regulatory Outlook. *Manuscript*. University of New South Wales, Sydney.
- Wang, H., Ma, S., Dai, H.N., Imran, M. and Wang, T. (2020). Blockchain-based data privacy management with nudge theory in open banking. *Future Generation Computer Systems* 110(3), 812-823.

- Wang, K., Zipperle, M., Becherer, M., Gottwalt, F. and Zhang, Y. (2020). An AI-based automated continuous compliance awareness framework (CoCAF) for procurement auditing. *Big Data and Cognitive Computing* 4(3), 23-35.
- Weerakkody, V., Omar, A., El-Haddadeh, R. and Al-Busaidy, M. (2016). Digitally enabled service transformation in the public sector: The lure of institutional pressure and strategic response towards change. *Government Information Quarterly* 33(4), 658-668.
- World Economic Forum (2019). The Global Competitiveness Report 2019. [Online]. Available: https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf. (Accessed 2 September 2022).
- Yang, S. (2015). Why Wall Street is pouring money into companies that want to eat its lunch. [Online]. Available: <https://www.businessinsider.com/wall-street-invests-in-FinTechstartups-2015> . (Accessed 12 April 2022).
- Yang, Q., Gong, X., Zhang, K.Z., Liu, H. and Lee, M.K. (2020). Self-disclosure in mobile payment applications: Common and differential effects of personal and proxy control enhancing mechanisms. *International Journal of Information Management* 52(4), 33-50.
- Yin, R.K. (2003). Designing case studies. *Qualitative Research Methods* 5(14), 359-386.
- Young, G., Smith, K. G. and Grimm, C. M. (1996). 'Austrian' and industrial organisation perspectives on firm level competitive activity and performance. *Organisation Science* 7(3), 243–260.
- Yunus, M. (2014). Diffusion of innovation, consumer attitudes and intentions to use mobile banking. *Information and Knowledge Management* 4(10), 12-18.
- Zajac, E., Kraatz, M. and Bresser, R. (2000). Modelling the dynamics of strategic fit: A normative approach to strategic change. *Strategic Management Journal* 21(2), 429-453.
- Zaki, M. (2019). Digital transformation: harnessing digital technologies for the next generation of services. *Journal of Services Marketing* 4(3), 84-101.
- Zalan, T. and Toufaily, E. (2017). The promise of fintech in emerging markets: Not as disruptive. *Contemporary Economics* 11(4), 415-431.
- Zandvliet, L. and Anderson, M. (2017). *Getting it right: making corporate-community relations work*. Routledge.
- Zarrouk, H., Ghak, E. and Bakhouch, A. (2021). Exploring Economic and Technological Determinants of FinTech startups' success and

Growth in the United Arab Emirates. *Journal of Open Innovation and Technology, Market and Complexity* 7(1), 50-63.

Zavolokina, L., Dolata, M. and Schwabe, G. (2016). The FinTech phenomenon: antecedents of financial innovation perceived by the popular press. *Financial Innovation* 2(1), 1-16.

Zhang, C., Song, P. and Qu, Z. (2011). Competitive action in the diffusion of internet technology products in emerging markets: Implications for global marketing managers. *Journal of International Marketing* 19(4), 40–60.

Zehri, S., Asghar, N. and Yousafzai, S. (2020). Analysing consumers' adoption of FinTech services in GCC countries: A study based on the unified theory of acceptance and use of technology (UTAUT) model. *Journal of Financial Services Marketing* 25(1), 1-18.

Zetsche, D.A., Arner, D.W. and Buckley, R.P. (2020). Decentralised Finance. *Journal of Financial Regulation* 6(2), 172-203.