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DISSERTATION

Exploring the Role of Digital Financial Innovation in Enhancing the Competitive Advantage of Banks: A case study of CITIC Bank

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Master's Degrees by Examination and Dissertation

Declaration Form

I, Jie Liu, declare that this dissertation has been composed by myself, that the work contained herein is entirely my own except where explicitly stated otherwise in the text, and that this work has not been submitted for any other degree or qualification, in whole or in part, except as specified.

Signature: Jie Liu

Date: 12/10/2024

Acknowledgements

This research would not have been possible without the support and guidance of a number of individuals and institutions. Firstly, I would like to express my deepest gratitude to the teachers at UWTSD for their valuable insights, continuous encouragement and constructive feedback throughout the project. Their expertise has contributed significantly to the quality of this work.

In addition, I would like to thank CITIC Bank London Branch for their help in the data collection process. Discussions with them enriched my understanding of the topic and inspired many of the ideas presented here.

Finally, I would like to express my deepest gratitude to my family and friends for their unwavering encouragement and emotional support, without whom my journey would not have been possible.

Abstract

This study uses CITIC Bank as a case study to explore the role of digital financial innovation in enhancing the competitive advantage of banks. To achieve this goal, the author constructed a model based on Porter's theory of corporate competitive advantage and the conceptual framework in the literature review. In the study, the author followed the philosophy of positivism and used a deductive method to collect 103 survey responses from CITIC Bank customers, and conducted descriptive and multiple regression analyses on the collected data to test the research hypotheses and achieve the research objectives. The results of the quantitative analysis show that digital financial innovation has a positive and significant impact on corporate competitive advantage. This paper fills the research gap on the relationship between digital financial innovation and corporate competitive advantage, and supplements the review contribution of digital financial innovation in the banking industry. Finally, this study summarizes the limitations of the research and makes suggestions for future research directions.

Table of Contents

Master's Degree by Examination and Dissertation Declaration

Form.....	2
Acknowledgements.....	3
Abstract.....	4
Section1. Introduction.....	8
Introduction.....	8
Background.....	8
Research Justification.....	9
Rationale of the study.....	9
Research Aims and Objectives.....	10
Research Questions.....	10
Research Hypothesis.....	11
Structure.....	11
Section2. Literature Review.....	13
Introduction.....	13
Digital financial innovation.....	13
Company competitive advantage.....	15
Digital financial innovation and competitive advantage in Banking.....	17
Theoretical overview.....	20
Literature Gap.....	21
Summary.....	22
Section3. Research Methodology.....	23
Introduction.....	23
Research Philosophies – Positivism.....	23
Research Approaches – Deductive.....	24
Research Strategies –Questionnaire, case study.....	25
Choices –Quantitative mono method.....	26
Time Horizons- Cross sectional method.....	26
Data collection-Quantitative data collection.....	26
Data analysis- Descriptive analysis and multiple regression analysis.....	27
Ethical Consideration.....	28
Summary.....	29
Section4. Date Analysis.....	30
Introduction.....	30

Findings on primary data.....	30
Data Validation.....	45
Structural Validity.....	47
Multiple Regression Analysis.....	49
Summary.....	52
Section5. Discussion.....	53
Section6. Conclusion and Recommendations.....	58
Conclusion.....	58
Recommendations.....	58
Research limitations.....	59
Future research directions and topics.....	60
Reference list	62
Appendix A. Participant Consent Form.....	74
Appendix B. Questionnaire.....	76

Index of Figures

Figure2.1. Digital banking net interest income 2018-2028.....	14
Figure2.2. Competitive Advantage model.....	16
Figure2.3. Research Modal.....	21
Figure3.1. The Research Onion.....	23
Figure4.1. Responses to question1.....	31
Figure4.2. Responses to question2.....	31
Figure4.3. Responses to question3.....	31
Figure4.4. Responses to question4.....	32
Figure4.5. Responses to question5.....	32
Figure4.6. Responses to question6.....	32
Figure4.7. Responses to question7.....	33
Figure4.8. Responses to question13.....	35
Figure4.9. Responses to question 14.....	35
Figure4.10. Responses to question 15.....	36
Figure4.11. Responses to question 16.....	36
Figure4.12. Responses to question 17.....	37
Figure4.13. Responses to question 18.....	37
Figure4.14. Responses to question 19.....	38
Figure4.15. Responses to question 20.....	39
Figure4.16. Responses to question 21.....	39

Figure4.17. Responses to question 22.....	40
Figure4.18 Responses to question 23.....	40
Figure4.19. Responses to question 24.....	41
Figure4.20. Responses to question 25.....	42
Figure4.21. Responses to question 26.....	42
Figure4.22. Responses to question 27.....	43
Figure4.23 Responses to question 28.....	43
Figure4.24. Responses to question 29.....	44
Figure4.25. Responses to question 30.....	44
Figure4.26. Responses to question 31.....	45

Index of Tables

Tables1.1. Dissertation structure.....	12
Table 4.1. The demographic characteristics of the respondents.....	33
Table 4.2. Frequency and percentage to question 12.....	34
Table 4.3. Response and popularity rate to question 12.....	34
Table 4.4. Reliability statistics of Digital Financial Innovation.....	46
Table 4.5. Reliability statistics of Cost Competitive Advantage.....	46
Table 4.6. Reliability statistics of Differentiation competitive advantage...46	
Table 4.7. Reliability statistics of Focus competitive advantage.....	46
Table 4.8. Overall reliability.....	46
Table 4.9. KMO and Bartlett test results.....	47
Table 4.10. Total Variance Explained.....	48
Table 4.11. Factor Loading.....	49
Table 4.12. Pearson Correlation.....	49
Table 4.13.ParameterEstimatesof H1.....	50
Table 4.14.ParameterEstimatesof H2.....	51
Table 4.15.ParameterEstimatesof H3.....	51

Section1. Introduction

Introduction

With the rapid development of information technology, digital financial innovation has become an indispensable component of the modern financial system. The continuous advancement of financial technologies, such as the internet, artificial intelligence, big data, and blockchain, is rapidly transforming the traditional financial industry. As the core of the financial system, the competitive landscape of the banking sector is undergoing profound changes due to digital transformation. Digital financial innovation has become a key factor that cannot be ignored in the banking industry. It is not only a supplement to traditional financial services but also a major driving force for upgrading banking services and transforming business models. At the same time, the banking industry is improving performance and profitability through financial innovation (Mbama and Ezepeue, 2018). Therefore, studying how digital financial innovation enhances the competitive advantage of banks holds significant theoretical and practical importance. This paper will explore the role of digital financial innovation in enhancing banks' competitive advantage, using CITIC Bank as a case study.

Background

In recent years, as research on digital financial innovation has become increasingly in-depth and widespread, the understanding and application of digital financial innovation have also reached a fairly mature stage. When people refer to digital financial innovation, it not only includes new technologies and applications but also encompasses the introduction of new technologies and methods into production and service processes to provide significant benefits and advantages to customers (Oliva and Kotabe, 2019).

In the financial industry, especially in the banking sector, digital transformation is being used to enhance competitiveness. At the same time, the application of digital financial innovation tools has significantly lowered the barriers between large and small banks (Hauswald and Marquez, 2006), intensifying competition among banks and causing them to lose their advantages in traditional business areas. As a result, banks must actively innovate to cultivate new competitive advantages and secure and strengthen their market position and share. Korir et al. (2015) pointed out that digital financial innovation involves the introduction of new tools and means by financial institutions. These institutions have improved the effectiveness and efficiency of services provided to customers. Access to financial services can help households save, manage cash flow, build and access credit, and promote entrepreneurship that fosters job creation (Buku, 2022). The outbreak of COVID-19 further stimulated the rapid growth of digital banking transactions and accelerated the pace of digital financial innovation.

Mobile and other forms of digital financial services, such as mobile applications and QR codes, provide significant advantages in transaction convenience. Digital banking websites and apps offer customers greater flexibility and enhance their quality of life (Bapat, 2021), improving the customer experience. The widespread adoption of digital finance can also help reduce banks' operational costs to some extent, including by increasing process automation, expanding online channels, and reducing the number of physical branches. Therefore, the innovation and application of digital finance have become an inevitable means of competition among banks and are a crucial direction for banks to improve and maintain their competitive advantage in the future.

Research Justification

In recent years, due to the development of digital technology, financial services have undergone profound changes. Digital financial innovation has completely transformed how banks operate, build relationships with customers, and develop business models. Technology plays a crucial role in shifting consumer behavior towards digital payment transactions. Consumers are increasingly drawn to digital transactions, as evidenced by the rise in mobile banking, online banking, and mobile app transactions. Consequently, many scholars (Liu et al., 2021; Ozturk and Ullah, 2022; Lu et al., 2021) have conducted in-depth studies on digital finance from various perspectives. However, most existing research focuses on the inclusiveness, accessibility, or marketing aspects of digital financial technologies (Runde, 2022; Jain, 2018; Simatele et al., 2021). There remains a gap in studying the relationship between digital financial innovation and corporate competitive advantage, particularly the connection between digital financial innovation and the three internal factors of corporate cost advantage, demand advantage, and differentiation advantage. This study aims to analyze, through case studies, the role of digital innovation in enhancing competitive advantage in the banking sector.

Rationale of the study

The research process of this paper is based on the research onion model proposed by Saunders, Lewis, and Thornhill (2019), examining and explaining the research objectives and questions from the perspectives of ontology, epistemology, research philosophy, and methodology. This paper adopts an objective epistemology, corresponding to an empirical philosophical stance. Data is collected and analyzed objectively and accurately, allowing for scientific induction and analysis. The study then employs deductive analysis and multiple regression analysis to develop and validate the theories and hypotheses presented in this paper and to describe the causal relationships among the variables. To achieve the aforementioned objectives, the author utilized quantitative data collection methods and conducted a cross-sectional study.

Through questionnaire surveys and case analyses, data collection and analysis were carried out more effectively and accurately, validating the hypotheses of this paper and fulfilling its aims and intentions.

Research Aims and Objectives

This study aims to analyze the relationship between digital financial innovation and corporate competitive advantage using the digital financial innovation strategy of CITIC Bank as a case study, exploring how digital financial innovation enhances corporate competitive advantage. In this paper, the author will discuss the following topics:

- To analyze how digital financial innovation impacts the competitive advantage of CITIC Bank;
- To analyze the extent to which digital financial innovation influences the competitive advantage of CITIC Bank;
- To analyze the challenges faced by CITIC Bank in leveraging digital financial innovation.

Research Questions

In the existing literature, corporate competitive advantage has been extensively studied from various perspectives (Moraes, 2023; Dymitrowski and Mielcarek, 2021). At the same time, research on digital financial innovation has become increasingly common; however, there is still a lack of studies examining whether digital financial innovation affects the competitive advantage of enterprises in the banking industry and how digital financial innovation relates to various aspects of corporate competitive advantage. Based on this background and motivation, this paper poses three research questions:

RQ1: How does digital financial innovation impact the competitive advantage of CITIC Bank?

RQ2: To what extent does digital financial innovation influence the competitive advantage of CITIC Bank?

RQ3: What challenges does CITIC Bank face in leveraging digital financial innovation?

The objectives of this study are threefold. First, it fills the research gap in the current literature on the relationship between digital financial innovation and corporate competitive advantage. Second, this study uses quantitative research and analysis methods to determine the relationship between digital financial innovation and cost advantage, demand advantage, and differentiation advantage. Finally, this study enriches the research on the application of digital financial innovation in the banking industry.

Research Hypothesis

Based on previous research models and literature, this study proposes three research hypotheses:

H1: There is a positive correlation between digital financial innovation and cost advantage strategy.

H2: There is a positive correlation between digital financial innovation and differentiation advantage strategy.

H3: There is a positive correlation between digital financial innovation and focus advantage strategy.

Structure

This paper consists of eight parts. First, the introduction briefly introduces the purpose and relevance of the research topic. This part also contains the background information of this paper, research questions, and article structure. The second part is the literature review, which introduces the research that has been conducted on the topic of this paper, provides a conceptual framework, and critically reviews the existing research on corporate competitive advantage and digital financial innovation. The third part is the research method, which explains how the author obtained the research results and how these research results verify the research hypothesis or research questions. The fourth part is the data analysis, in which the author will present the collected data and analyze its relevance to the research questions. The fifth part is the discussion, which will analyze the results obtained through quantitative analysis and discuss its theoretical and managerial significance. The sixth part is the conclusion and suggestions, which will introduce the main results of the study and explain how these results, enrich the current literature. At the same time, the author will point out the shortcomings and limitations of the paper and provide suggestions to enterprises and policymakers, as well as the possible development direction of this topic in future research. The seventh part is the reference part of this paper. The eighth part is the appendix of this paper, including reading information related to this paper such as questionnaires.

Tables1.1. Dissertation structure

Serial number	Section	Page	Content
1	Introduction	7-11	Briefly introduce the purpose and relevance of this paper's research topic
2	Literature Review	12-21	Introduces previous research on the topic and analyzes the research hypotheses and models of this paper
3	Research Methodology	22-28	Explain the method used to obtain the research results of this paper
4	Date analysis	29-51	Showcase the data analysis for this article
5	Discussion	52-56	Analyze the data for this article and address the research questions for this article
6	Conclusion and Recommendations	57-60	Present the conclusions of this paper, re-examine the research questions and make suggestions
7	Reference list	61-72	List the literature cited in this article
8	Appendices	73-78	List the data and information related to this article

Section2. Literature Review

Introduction

In today's digital transformation, discussions on digital finance have become quite in-depth and comprehensive, while research and application regarding corporate competitive advantage have matured. In the literature review section, the author will focus on introducing the latest research directions related to digital financial innovation in recent years, as well as some mature applications of financial innovation in the banking industry. Additionally, the author will review the theories and models of corporate competitive advantage, discussing in detail and analyzing the role that digital financial innovation plays in enhancing competitive advantage within the banking sector.

Digital financial innovation

Digital financial innovation has become a hot topic, with a sharp increase in the number of papers and publications related to this subject, indicating its growing importance. According to the European Commission, digital finance is a term used to describe the impact of new technologies on the financial services industry. It encompasses various products, applications, processes, and business models that change the way traditional banking and financial services are delivered (European Commission, 2022). The driving goal of digital finance is to enhance the coverage, speed, and cost-effectiveness of financial services (Michaeli, 2024), which is particularly beneficial in areas where traditional banking infrastructure is limited or individuals are unable to access conventional financial services. Digital finance spans a wide range of financial domains, including cross-border payments, savings and investments, personal finance, and trade financing. It can also include various financial processes such as capital market activities, banking system linkages, credit scoring, asset securitization, risk management, and trading. For enterprises, digital finance offers opportunities to save costs, improve efficiency, and enhance customer experience. The development of digital finance is closely linked to the Fourth Industrial Revolution (Mhlanga, 2020). Advances in various important and emerging technologies and concepts, such as mobile connectivity, cloud computing, blockchain, big data, and artificial intelligence, have driven the flourishing of services like digital banking and mobile payments (Dozier and Montgomery, 2020; Du et al., 2020). Crossan and Apaydin (2010) argue that innovation involves producing and utilizing new production methods in the economic and social spheres, establishing new management systems, and is both a process and an outcome. In this context, corporate innovation will be combined with digital financial technology to introduce new technologies, methods, and processes into production, thereby providing significant advantages to customers in terms of services (Oliva and Kotabe, 2019). The integration of digital finance and corporate innovation is rapidly transforming the financial industry, with several

clear examples demonstrating its strength. First is the widespread adoption of online banking and mobile banking, which allows individuals to conveniently and quickly conduct banking transactions such as payments, transfers, and balance inquiries through online and mobile applications from home or while traveling (George and Sunny, 2022). This transformation has sparked a revolution in the banking sector, leading major banks to significantly reduce physical branches and counter staff, shifting costs to digital platforms (Napoletano and Foreman, 2021). Mobile wallets and digital payments enable consumers to store payment information and make payments via their phones without the need to carry physical cards, with NFC technology making contactless payments possible (Hollington and Bizzaco, 2019). Successful mobile wallet providers, including Apple Pay and Google Pay, leverage their hardware devices to become leading payment solution providers, challenging traditional banking transaction methods. Digital currencies for online transactions, such as Bitcoin and Ethereum, use blockchain technology, utilizing a decentralized ledger that allows transactions to occur without the need for central authorities or intermediaries to validate them (BBC, 2018). Cryptocurrencies pose a disruptive challenge to traditional financial institutions. Although cryptocurrencies are still in their early stages, financial institutions like PayPal and Venmo have already incorporated them into their trading platforms, allowing customers to buy, sell, and trade these digital assets. From the above examples, it is evident that behind digital financial innovation lies the driving force of technology. Digital transformation is reshaping the previously lagging systems in the financial industry, freeing it from the constraints of traditional thinking and continuously evolving to provide more convenience for consumers. According to Statista (2024), the annual growth rate of net interest income in the digital banking market is expected to reach 6.86% from 2024 to 2029, with the market size projected to reach \$2.09 trillion by 2029.

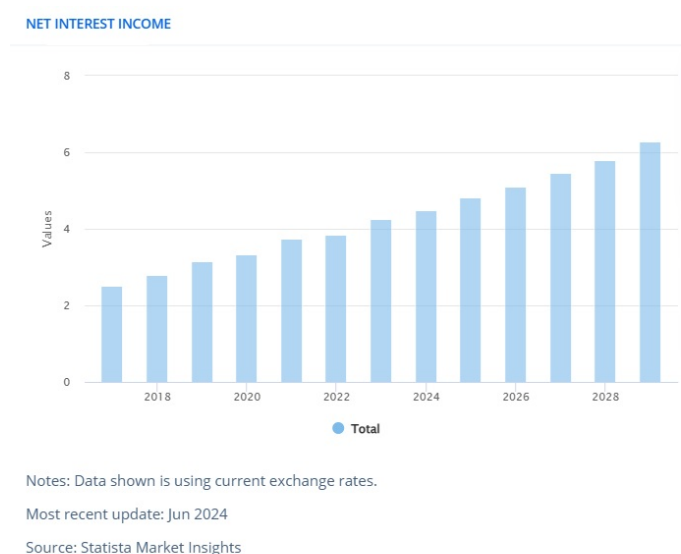


Figure2.1. Digital banking net interest income 2018-2028(Statista, 2024)

However, alongside digital financial innovation, the financial industry also faces significant new challenges, including security issues, regulatory compliance, the complexity of data management, and the difficulty of system integration. Among these, the issue of data breaches deserves particular attention; many cases of financial fraud indicate that the extent of data breaches often exceeds people's expectations. Therefore, the financial services industry should accept stricter regulations, and government agencies need to formulate laws to ensure that new technological measures are in place to protect consumer information.

Company competitive advantage

Competitive advantage refers to a company's ability to produce goods or offer services better than its competitors, thereby creating more economic value—essentially, the profits customers are willing to pay for that company's products or services (Barney and Hesterly, 2019, p. 30). Thus, the magnitude of a company's competitive advantage is the difference between the economic value it can create and the economic value its competitors can generate. Competitive advantage allows a company to achieve higher profits and create value for both the company and its shareholders. Since the concept of corporate competitive advantage was introduced, research on the topic has been extensive and in-depth (Deszczyński, 2021; Latif Al-Hakim et al., 2016; Gloor, 2006). In his 1985 book, **Competitive Advantage: Creating and Sustaining Superior Performance**, Professor Michael Porter of Harvard Business School proposed three strategies for achieving competitive advantage: cost advantage, differentiation, and focus (Porter, 1985). The goal of a cost advantage strategy is to become the manufacturer or provider of goods or services with the lowest cost structure while maintaining product quality comparable to that of competitors (Hooley et al., 2020, pp. 45–47). To achieve this goal, companies need to strive to build efficient economies of scale by lowering costs and strictly controlling production costs and management expenses. Ryanair is a typical example of a company that actively adopts a cost advantage strategy (Thomas M and Kent, 2015). Companies employing this strategy can successfully convert cost leadership into competitive advantage if they can combine lower unit profit margins with higher market shares.

The differentiation strategy involves developing unique products or services that are distinctly different from those of competitors (Hooley et al., 2020, pp. 45–47). Companies employing this strategy need to leverage their strengths to distinguish their products and services from those of competitors based on criteria that consumer's value. Differentiation can arise from basic elements such as design style, product features, and corporate image, as well as from key industry cores such as new technologies and innovative products. Compared to the cost advantage strategy, the main goal of a differentiation strategy is to provide consumers with a reason to choose their products over those of

competitor companies. To achieve differentiation advantage, companies must continuously invest in research and development to maintain or improve the key functionalities of their products or services. In market competition, the position of a differentiation strategy is generally more proactive than that of a cost advantage strategy, as the latter typically requires minimal investment in R&D, product improvement, and branding. These strategies do not necessarily offer superior products and can be easily challenged by competitors. In contrast, differentiation advantage focuses on building unique capabilities or assets that are difficult for competitors to replicate, thereby creating purchasing value and minimizing the threat from competitors.

The above outlines the two fundamental and primary strategies for building competitive advantage that Porter initially proposed in his model of corporate competitive advantage in 1980. Each of these strategies has its own distinct drawbacks. The cost advantage strategy is prone to triggering costly price wars within the industry, which can severely erode profits. On the other hand, the differentiation strategy often invites imitation from competitors, or over time, the differentiation may lose its significance to consumers, resulting in a loss of advantage. Based on these reasons, Porter's concept of competitive advantage later developed a third direction, known as the focus strategy. The focus strategy involves identifying market demands, concentrating on a specific segment within the industry, and then developing products that meet the specific needs of that segment (Porter, 2008). There are two variants of the focus strategy: cost focus and differentiation focus. As the names suggest, in cost focus, a company seeks to achieve cost advantage within its target segment, while in differentiation focus, a company aims to achieve differentiation within its target segment.



Figure2.2. Competitive Advantage model (Porter, 2008)

Both variants rely on the segmentation of the market and the differences between segments within the industry. Cost focus leverages the differences in cost behavior within certain segments, while differentiation focus capitalizes on the unique needs of buyers in specific segments. This distinction means that broadly targeted competitors serve these segments while also catering to other segments, allowing focusers to gain a competitive advantage by concentrating on these niche markets. The breadth of the target is clearly a matter of degree, but the essence of focus is to exploit the differences between a narrow target and the broader industry balance. A narrow focus alone is insufficient to achieve above-average performance. Additionally, if a company's actions in its target segment do not differ significantly from those in other segments, then the focus strategy is unlikely to succeed.

The specific actions required to implement each generic strategy vary by industry, and the feasible generic strategies differ across specific industries. While choosing and implementing a generic strategy is no easy task, these strategies represent a reasonable path to exploring competitive advantage in any industry (Porter, 1985).

Digital financial innovation and competitive advantage in Banking

Among the three strategies for competitive advantage—cost leadership, differentiation, and focus—the relationship between cost leadership and digital financial innovation has been the most extensively discussed. This is primarily because digital financial innovation can directly lead to cost reductions for businesses. Many scholars have explored the relationship between digital financial innovation and corporate costs from various perspectives, with most researchers (Chawla and Joshi, 2019) agreeing that the relationship between digital financial innovation and costs is mutually reinforcing. Digital financial innovation, through technological and model innovations, helps banks reduce operating costs and improve work efficiency, while also expanding their business and enhancing market competitiveness (Satell, 2021). This innovation not only impacts the cost structure of banks but can also solidify their cost leadership advantage in the long term. This influence is primarily achieved through several aspects.

First, the application of digital financial innovations, such as blockchain, artificial intelligence, and big data analytics (Backbase, 2018), can significantly lower banks' operating costs. Through automation and intelligence, banks can reduce manual operations, thus lowering labor costs and error rates. The widespread adoption of digital banking and mobile payments has reduced the demand for physical branches and paper-based operations, thereby decreasing operational expenses (Fang, 2021). Simultaneously, leveraging big data and artificial intelligence for risk management and compliance operations can enhance efficiency, reducing the time and costs associated with manual reviews (Inder, Sood, and Grima, 2022). These traditional banking processes are often redundant

and cumbersome, consuming significant human and time resources for businesses (Coetzee, 2018). The innovation in digital finance significantly lowers costs while improving the quality and accuracy of operations, which is crucial for business development.

Moreover, digital financial innovation enables banks to handle large volumes of customer demands more efficiently, achieving economies of scale and further solidifying their cost leadership advantage. Most businesses today have implemented automated customer service systems, utilizing chatbots or automated service networks to manage large-scale customer requests simultaneously. Such services are not only cost-effective but can also process substantial amounts of data, making them an indispensable capability in today's service industry.

Additionally, by utilizing big data analytics, companies can more accurately conduct market positioning and risk assessment, optimizing resource allocation and minimizing unnecessary expenses.

Furthermore, the use of digital financial tools can enhance a company's market competitiveness, allowing it to maintain a leading position in a fiercely competitive market. For example, through digital tools, companies can offer a superior and more convenient customer experience, attracting more clients and thereby spreading fixed costs, which further enhance their cost advantage. Alternatively, digital technologies allow for rapid adaptation to market changes, enabling companies to adjust strategies and products quickly, thus reducing losses from market fluctuations.

In summary, digital financial innovation is a vital means of achieving and maintaining cost leadership, allowing companies to sustain a competitive edge in a highly competitive market environment. Therefore, this study hypothesizes that:

Hypothesis 1 (H1)

There is a positive correlation between digital financial innovation and cost advantage strategy.

The relationship between digital financial innovation and the differentiation advantage strategy in banking is quite close. Digital financial innovation not only drives the diversification of bank products and services but also enhances customer experience and strengthens brand uniqueness, helping banks establish and consolidate their differentiation advantage.

Firstly, digital financial innovation enables banks to provide highly personalized services through data analysis and artificial intelligence (Reydet and Carsana, 2017). This personalized service is key to the differentiation advantage of banks. Digital finance allows banks to use big data to analyze customer behavior and needs, offering customized financial products and services, such as personalized loan plans, investment advice, and wealth management services. AI technology

can also provide 24/7 personalized support to customers, thereby enhancing customer satisfaction and loyalty (Garzaro, Varotto, and Pedro, 2020).

Secondly, digital financial innovation promotes the diversification of bank products, allowing them to stand out in a homogeneous market and form a unique competitive advantage. Emerging digital financial products, such as digital wallets, payment services, and cryptocurrencies, can meet the specific needs of different market segments, increasing the bank's market appeal. Innovative payment methods and currencies, such as digital payments and cross-border payments, provide customers with faster, safer, and more convenient transaction experiences.

Through digital financial innovation, banks can reinvent their image, actively adopt new promotional technologies, and establish a reputation for technological leadership, attracting tech-sensitive market segments. Additionally, by offering green financial products, banks can enhance their image in the field of sustainable development and increase their social responsibility role. By leveraging digital financial innovation, banks can respond more swiftly to market changes, launching unique products and services. They can utilize mechanisms like innovation labs to quickly introduce and test new products and services in response to shifts in market demand. Collaborating with technology companies and fintech enterprises enables banks to develop uniquely positioned financial products, further strengthening their market differentiation advantage.

In summary, by utilizing digital financial innovation, banks can establish a unique competitive advantage in intense competition and consolidate their achievements. Therefore, this study hypothesizes:

Hypothesis 2 (H2)

There is a positive correlation between digital financial innovation and the differentiation advantage strategy.

The relationship between digital financial innovation and a bank's focus advantage is established through the combination of technology and strategy, enabling banks to gain and maintain a competitive edge in specific market segments. By adopting a focus strategy, the banking industry concentrates on a particular customer group, product type, or geographical area to implement targeted marketing efforts. Digital financial innovation plays a key role in this process. For example, through digital finance, banks can develop customized products and services tailored to specific market segments. They can launch exclusive financial products for particular customer groups, such as small businesses, students, or seniors, or offer personalized wealth management solutions, social benefits, and insurance products through artificial intelligence. These specially designed financial products are better aligned with the needs of specific market segments.

Furthermore, leveraging digital financial innovation can enhance operational efficiency, supporting banks' competitive advantages in specific markets and

making their focus strategy more cost-effective. By utilizing artificial intelligence and automation technologies, banks can streamline operational processes and reduce costs, making it more feasible to provide customized services in specific markets. For instance, an automated credit approval system can help banks deliver loan services more quickly to small and micro enterprises.

Additionally, digital financial innovation can help banks establish hard-to-replicate competitive barriers in specific markets, thereby reinforcing their focus advantages. Through continuous technological innovation, banks can create a technological moat in particular areas, making it difficult for competitors to imitate. For example, developing blockchain solutions specifically designed for a particular industry can position a bank as a leader in that sector. By providing high-quality customized services through digital means, banks can significantly enhance customer loyalty, thereby establishing a lasting competitive advantage in specific markets. Thus, this study hypothesizes:

Hypothesis 3 (H3)

There is a positive correlation between digital financial innovation and the focus advantage strategy.

Theoretical overview

The main focus of this study is based on previous empirical literature and existing theories. The models concerning the three strategies for corporate competitive advantage have become well-established, and this research is an induction and summary built upon these mature models. This study considers the impact of digital financial innovation on three independent variables related to corporate competitive advantage, examining how changes in these variables affect the conclusion regarding corporate competitive advantage. The significance of this research lies not only in demonstrating the current importance of digital finance but also in predicting that, for a considerable period in the future, digital financial innovation will be a primary area of intense competition among enterprises. Therefore, an in-depth investigation of the relationship between digital financial innovation and corporate competitive advantage is of practical importance. Based on previous research models and literature, this study uses the banking industry as a case study and proposes the following research model:

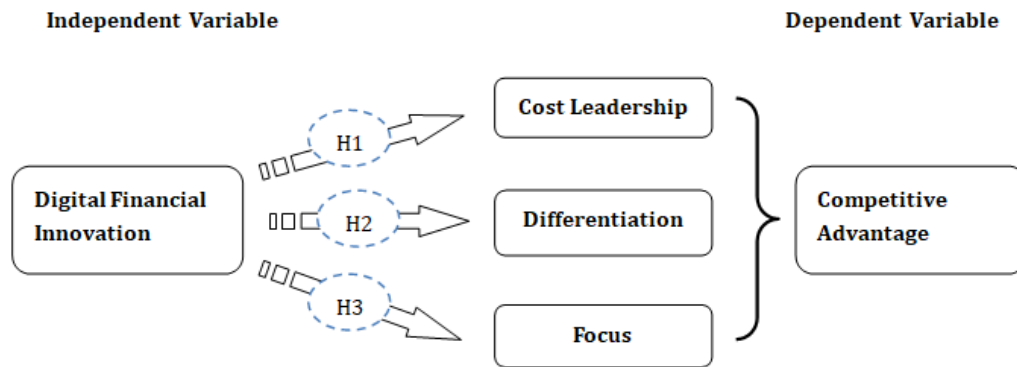


Figure2.3. Research Modal (Source: Created by Author)

In this study, the independent variable is digital financial innovation, while the dependent variable comprises the three main factors of corporate competitive advantage: cost advantage, differentiation, and focus. The three research hypotheses are as follows:

H1: There is a positive correlation between digital financial innovation and cost advantage strategy.

H2: There is a positive correlation between digital financial innovation and differentiation advantage strategy.

H3: There is a positive correlation between digital financial innovation and focus advantage strategy.

Literature Gap

From the above literature review, we can see that research on digital financial innovation has become quite in-depth and extensive, highlighting its significance as an essential area of development in today's society that has garnered considerable attention from scholars. In the existing literature, there are numerous studies on digital financial innovation in relation to financial inclusion (Gibson and Buckley, 2015; Owens, 2013) and accessibility (Tay, Tai, and Tan, 2022), as well as a wealth of macroeconomic research papers (Munoz et al., 2022). Additionally, there are many studies focusing on specific aspects of digital financial innovation related to cost advantages or differentiated market promotion, along with discussions on digital financial security and compliance (Patrick, 2019). However, there are very few articles that systematically and comprehensively analyze the relationship between digital financial innovation and corporate competitive advantage.

Moreover, we have noticed a lack of papers that analyze the relationship between digital financial innovation and corporate competitive advantage using a specific bank as a case study. This paper aims to fill this gap in the literature. Additionally, as the largest developing country and the second-largest economy in the world, China's development and research in financial technology are relatively lagging,

failing to match its existing economic scale and financial activity. As one of China's major commercial banks, CITIC Bank also lacks academic research data. The author hopes that this paper will enrich the literature in China's digital finance field and provide a reference for other enterprises.

Summary

This chapter provides a comprehensive review of the literature and research findings regarding digital financial innovation and corporate competitive advantage over the past period. These research findings encompass literature and papers from various levels and fields of society. Building on existing research, this paper introduces more targeted innovations and proposes new research models, hypotheses, and questions. Through quantitative research, this study aims to analyze CITIC Bank as a case study, contributing meaningfully to the existing literature.

Section3. Research Methodology

Introduction

The research process of this paper follows the research onion model proposed by Saunders, Lewis, and Thornhill (2009). The pathway and choice of research methods are crucial to the results of the study, serving as the foundation for all research. By employing the correct research pathways and methods, accurate data can be collected. This chapter will provide a detailed presentation and introduction of the research methods chosen at each level of the research process, as well as how layered analyses ultimately yield the most important data. Through this data, the paper will analyze the impact of digital financial innovation on corporate competitive advantage.

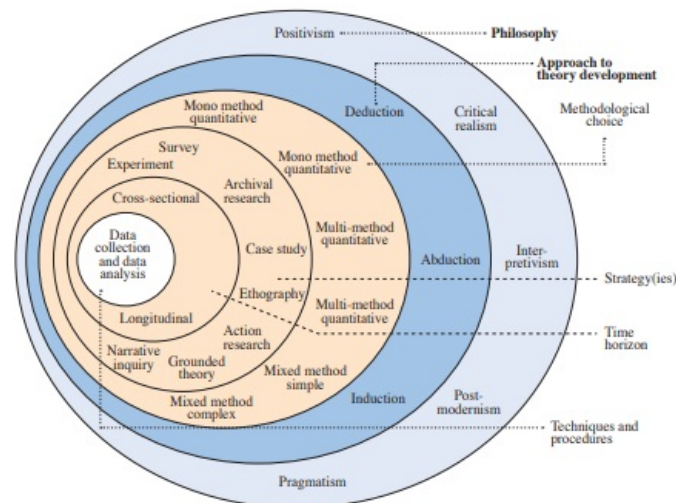


Figure3.1. The Research Onion (Saunders et al., 2009)

Research Philosophies – Positivism

Research philosophies refer to the fundamental frameworks or principles that guide researchers' beliefs and assumptions during the research process. These philosophies help researchers determine the strategies, methods, and analytical techniques used in their studies, influencing the ways data is collected, interpreted, and analyzed (Easterby-Smith, Jackson and Thorpe, 2012). Research philosophy mainly concerns how researchers perceive the subjects of their study. The primary research philosophies include positivism, interpretivism, realism, and pragmatism (Saunders et al., 2009). This paper chooses to adopt positivism as its research philosophy.

Positivism advocates for acquiring knowledge through observation and experience, considering the scientific method as the primary means of understanding the world (Crotty, 1998). The core idea of positivism is that reality

exists objectively and independently of human consciousness. Through systematic, observable, and measurable evidence, researchers can reveal universal laws and causal relationships (Crotty, 1998). Positivism relies on the scientific method, which includes formulating hypotheses, designing experiments or observations, collecting and analyzing data, and interpreting results (Remenyi, Williams, Money, & Swartz, 2005). Positivism is typically associated with quantitative research methods, allowing positivists to identify and describe relationships between variables. Within the framework of positivism, understanding causal relationships is one of the core objectives of research, and establishing these relationships depends on the accuracy of data and the rigor of experimental design. Therefore, positivism is particularly suitable for application in natural and social sciences, where researchers test hypotheses, validate theories, and propose predictive models or generalizable conclusions through experiments, surveys, and data analysis (Saunders et al., 2009).

Despite its dominant position in scientific research, positivism has faced criticism. Critics argue that positivism places too much emphasis on objectivity and measurement while neglecting the complexity and subjectivity of social phenomena. Particularly in the social sciences, interpretivists contend that many human behaviors and social phenomena cannot be understood simply through quantitative methods, but rather require in-depth qualitative approaches to explore the underlying meanings and motivations.

Research Approaches – Deductive

Research Approaches refer to the overall strategies or pathways that researchers adopt when designing and implementing their studies. Research methods determine how data is collected, analyzed, and interpreted, influencing the design, implementation, and outcomes of the research. The choice of research method is typically based on the nature of the research question, the researcher's philosophical stance, and the expected research outcomes. In the research onion model, research approaches include deductive and inductive methods (Saunders et al., 2003). The method used in this paper is the deductive approach.

The deductive approach is a research method that starts from general theories or hypotheses and derives specific conclusions. It is a form of logical reasoning aimed at verifying or falsifying existing theories to ensure their applicability (Saunders et al., 2003). The deductive approach is typically based on an established and widely accepted theory or hypothesis, from which researchers formulate hypotheses related to variables (Blaikie and Priest, 2020). To test these hypotheses, researchers usually employ quantitative methods. In this study, for example, a questionnaire survey is used to collect data in order to verify whether the hypotheses hold true (Creswell and Creswell, 2017). The data collection process must adhere strictly to scientific methods to ensure the accuracy and reliability of the data. This process often involves determining the correlations or causal relationships between variables (Saunders et al., 2009). Through data analysis, researchers draw conclusions regarding the hypotheses. If the data

support the hypotheses, then the research findings further affirm the validity of the theory. If the data do not support the hypotheses, researchers may question the theory or suggest modifications to it. Throughout this process, researchers can adjust their hypotheses or propose new ones and then conduct further research. This feedback loop contributes to the ongoing refinement and development of the theory.

The deductive approach relies on strict logical reasoning, and the research process follows clear steps and structure. This method helps ensure the accuracy and reliability of research findings. Through well-defined hypotheses and rigorous data analysis, the deductive approach can provide specific, quantitative conclusions that contribute to precise descriptions and explanations of phenomena.

Research Strategies –Questionnaire, case study

Research strategies refer to the overall plan that researchers implement to achieve their research objectives, including clear research goals, specific methods, and pathways for implementation (Saunders et al., 2003). Research strategies provide a guiding framework for the study, assisting researchers in selecting primary data collection methods or sets of methods to ensure coherence and systematicity throughout the research process (Melnikovas, 2018). Different research strategies are suitable for various types of research questions, data types, and research methods. Common research strategies include experiments, surveys, and action research (Saunders et al., 2009). This study employs survey research and case study strategies.

Survey research is a common method in social research, and this study chooses survey research because this strategy is associated with the deductive approach (Saunders et al., 2009). Survey research is a method of studying the behaviors, attitudes, opinions, and characteristics of a group of people or a population by collecting data from them (Ponto, 2015). This method typically uses questionnaires, interviews, or online survey tools for data collection, aiming to understand the prevalence of a specific phenomenon within the population. If the sample is well-designed, survey research can more accurately, economically, and directly collect original data that reflects the overall characteristics of the target group (Zikmund, 2003).

This study's survey research is primarily quantitative, focusing on collecting quantifiable data. In quantitative analysis, data is typically presented in numerical form, and descriptive and inferential statistics are used to analyze the data (Saunders et al., 2009). To ensure the generalizability and accuracy of the results, survey research should typically target a representative population, so the results can be more universally applicable. Common data collection tools include questionnaires and structured interviews. In this study's questionnaire design, the questions are closed-ended to reduce subjectivity and enhance data comparability.

Case study research involves a detailed examination of a specific subject, such as an individual, group, location, event, organization, or phenomenon, aiming to gain a deep understanding of complex phenomena, processes, or contexts (McCombes, 2022). A case can refer to a person, an organization, an event, or a project, and the case chosen for this study is a company. Case studies typically focus on collecting detailed qualitative data, such as textual records, observations, and interview content. This information helps to gain a deeper understanding of the background, motivations, and processes of the research subject (Crowe et al., 2011).

Choices –Quantitative mono method

In research design, "Choices" typically refer to the type of data used by the researcher (Phair and Warren, 2021). These choices involve research methods, data collection, analysis techniques, and other factors that influence the research process and outcomes. Quantitative methods focus on statistical analysis of numerical data to reveal relationships between variables, measure the prevalence of phenomena, and test hypotheses. This study employs a quantitative mono method for primary data collection. The main reason for this choice is to align with the previously established research philosophy and strategy, using a series of structured questions to observe and analyze the relationship between the independent and dependent variables and to test the research hypotheses.

Time Horizons- Cross sectional method

Time Horizons refer to the time frame or period considered during the research process, describing the timing of data collection within the study (Phair and Warren, 2021). There are two main methods for data collection based on time horizons: cross-sectional and longitudinal studies (Phair and Warren, 2021). This study uses the cross-sectional method. A cross-sectional approach is an empirical method that collects data from different backgrounds simultaneously. When using this method, data is collected only once over a short period, focusing on reflecting and summarizing the current situation (Chat, 2016). It is a common approach in research.

Data collection-Quantitative data collection

Data Collection refers to the process in which researchers gather and integrate information or data through various research methods to answer research questions, test hypotheses, analyze phenomena, or reveal trends (Simplilearn, 2023). It is a core step in any research project, as the quality and completeness of the data directly impact the accuracy and reliability of the research results. Data collection techniques can be categorized into two types: primary data collection

and secondary data collection. This study employs primary data collection methods, as it involves collecting data directly from the source. Primary data collection is often considered the most reliable method because researchers gather information directly from respondents (Heath, 2023).

Data can be collected through various methods, but it is mainly categorized into two types: quantitative data and qualitative data. This study utilizes quantitative data collection methods. Quantitative data collection primarily involves numerical data and is often used to measure and quantify relationships between variables. In this study, data collection is achieved through surveys, where closed-ended questions are designed to gather respondents' answers, followed by statistical analysis to collect first-hand data. Surveys, as a data collection method, have several advantages. For instance, surveys are relatively quick and easy to administer, flexible in terms of the content being queried, and can be customized to collect data on a variety of topics or specific demographic groups (Heath, 2023).

Before beginning this process, the author first identified the specific objectives of the study, which serve as the foundation for the data collection method. Based on the research objectives, the nature of the questions, resources, and time, the content and number of survey questions were designed accordingly. During the data collection process, it was ensured that the established methods and plans were followed to guarantee the accuracy and completeness of the data. Data collection is the cornerstone of research. High-quality data collection ensures the accuracy and reliability of research results and helps researchers draw effective conclusions and make informed decisions. The quality of data collection directly affects the scientific validity and credibility of the research findings, making it essential for researchers to be meticulous in every aspect of designing and executing the data collection process.

Data analysis- Descriptive analysis and multiple regression analysis

Data analysis refers to the systematic process of collecting, cleaning, transforming, describing, modeling, and interpreting data during research (Eldridge, 2023). The purpose is to extract useful information from the data, reveal patterns, test hypotheses, identify relationships, and draw conclusions. Data analysis is a core step in research, transforming raw data into actionable insights. It is generally categorized into two main types: quantitative data analysis and qualitative data analysis (Stevens, 2022). This study employs quantitative data analysis methods. Quantitative data analysis involves statistical analysis of numerical data to measure and quantify relationships between variables. Common methods include descriptive statistics, correlation analysis, and regression analysis (Kelley, 2024).

In this research, the chosen methods are descriptive statistics and multiple linear regression analysis. Descriptive statistics are used to summarize and describe the main features of the data, such as mean, median, and standard deviation (Kelley,

2024). Descriptive analysis is the most basic and easily understood form of analysis, helping to interpret data and identify trends and relationships between variables (Cote, 2021). To achieve this, the author utilized SPSS analysis software in the study, providing a direct and clear presentation of data summaries.

Regression analysis is a mathematical method used to determine which variables have significant effects. It addresses questions about which factors are most important and how these factors interact in the study. In regression analysis, these factors are referred to as variables (Gallo, 2015). Regression analysis has extensive applications across various fields, including finance (Taylor, 2024), and many statistical programs can be used to run regression analyses, such as Microsoft Excel, SPSS, and STATA. In this research, the software used is SPSS (Cote, 2021b).

Data analysis plays a crucial role in research, as it allows researchers to extract valuable information from complex data using scientific methods, verify hypotheses, reveal new insights, and provide a basis for theoretical development and practical application. Good data analysis not only aids in drawing reliable conclusions but also points the way for future research.

Ethical Consideration

Ethical consideration refers to a set of moral principles and guidelines that researchers must adhere to during the research process to ensure that the design, implementation, data collection, analysis, and reporting conform to ethical standards and respect the rights and interests of research participants (Damyanov, 2023). The core of ethical consideration is the protection of participants' dignity, privacy, autonomy, and the prevention of harm to them. Key ethical principles include informed consent, confidentiality and privacy protection, the principle of non-maleficence, fairness, and respect for participants' autonomy (Yip, Han, and Sng, 2016).

From the outset of this study's design, potential ethical issues were considered, ensuring the legitimacy of the research objectives and the reasonableness of the data collection methods. During the data collection process, the author strictly adhered to the principle of informed consent and protected participants' privacy, while avoiding the inclusion of sensitive information and being mindful of participants' psychological and emotional safety. In the data analysis phase, confidentiality and anonymity of the data were maintained, presenting the results in an objective and accurate manner. Information that could identify individuals was protected to prevent data breaches.

Ethical considerations are crucial in research because they ensure the moral and legal integrity of the research process, protect participants' rights, maintain the integrity of the research, and enhance its social credibility and academic value (Resnik, 2020). Ignoring ethical considerations can lead to harm to participants, loss of credibility in research findings, and even legal disputes and social criticism. Therefore, ethical consideration is a moral principle and guideline that

every researcher must follow throughout the research process.

Summary

In this chapter, the author systematically and comprehensively presents the research process and methodologies chosen for this study. Firstly, the researcher selected Positivism as the research philosophy, establishing the fundamental direction and principles of the research. In the section on research approaches, this study employed a deductive approach, designing new experiments and models based on existing theories and proposing new hypotheses.

Furthermore, in the research strategies, primary data was collected through surveys and case analyses, employing quantitative analysis methods. SPSS software was utilized to analyze the data. Through descriptive statistics, the researcher extracted valuable information from complex data, thus supporting the hypotheses of this study and drawing reliable conclusions. Throughout the entire process, this research strictly adhered to ethical considerations to ensure the legality and morality of the research process, thereby maintaining the credibility and academic value of the study.

Section4. Date Analysis

Introduction

In this chapter, the author will discuss the data obtained during the course of this research to understand the impact of digital financial innovation on the competitive advantages of CITIC Bank, particularly in terms of cost competition advantage, differentiation competition advantage, and focus advantage within the external business environment. The findings in this chapter will correspond to the research questions and objectives outlined in the previous chapters. Through data analysis, the study aims to reveal the attitudes and acceptance levels of CITIC Bank's customers toward its digital financial innovations, thus fulfilling the objectives of this research.

As introduced in earlier chapters, the data analysis is conducted based on the research objectives and questions established at the beginning of the study. The author will provide a detailed account of the data sources, how the data was collected, and the conclusions related to the objectives of this research that are reflected in the data.

Findings on primary data

This study employs a quantitative research method, using descriptive analysis to summarize and present the data, highlighting its basic characteristics and structure. Subsequently, multiple regression analysis is conducted to further explain the relationship between the independent and dependent variables, thereby validating the research hypotheses of this paper. Data was collected through a survey distributed to existing customers of CITIC Bank, with geographical coverage including the UK, China, the USA, and Canada. The data collection efforts received consent and strong support from the London branch of CITIC Bank.

As of October 4, 2024, a total of 198 questionnaires were distributed via online platforms (Email, WeChat, WhatsApp), resulting in 103 valid responses, accounting for 52.02% of the total. The designed survey consists of six sections with 31 questions; all responses rated using a 1-5 Likert scale. The first seven questions serve as a participant consent form; questions 8 to 12 gather basic personal information; questions 13 to 17 focus on digital financial innovation; questions 18 to 22 address cost competition advantage; questions 23 to 26 explore differentiation competition advantage; and questions 27 to 31 pertain to focus competition advantage.

The following section will provide a detailed description of the six parts of the survey questionnaire.

● Participant consent

This study places great importance on ethical considerations throughout the entire process. Therefore, in the first part of the questionnaire, the author designed questions related to the participants' right to informed consent. This section consists of seven questions, with a total of 103 respondents, achieving a consent rate of 100%.

1. I understand there are no material benefits for participating:

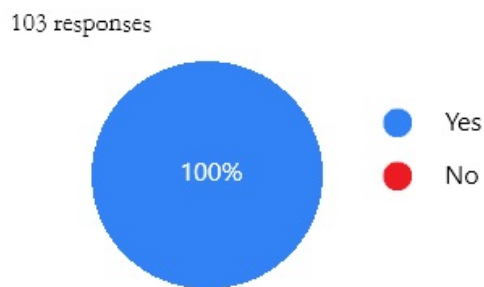


Figure4.1. Responses to question1

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason:

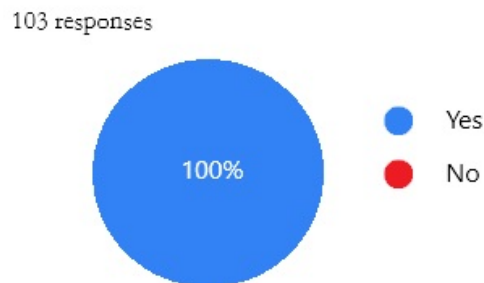


Figure4.2. Responses to question2

3. I understand that any information given by me may be used in future reports, articles or presentations by the researcher:

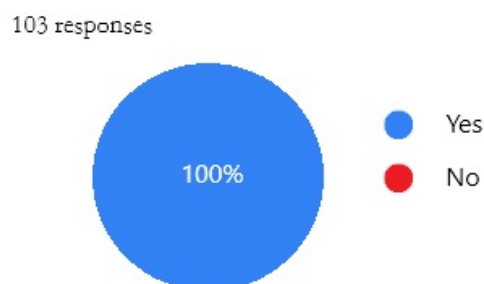


Figure4.3. Responses to question3

4. I agree to be recorded (audio and/or audio-visual video):

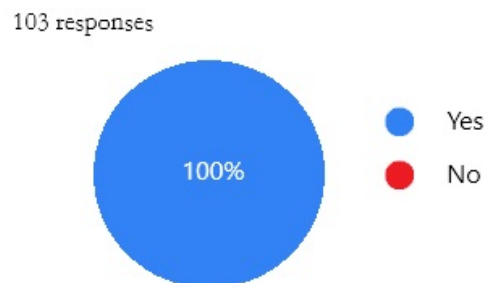


Figure4.4. Responses to question4

5. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily:

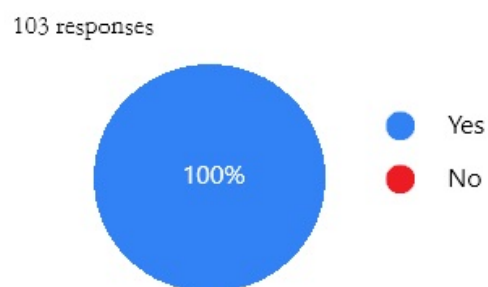


Figure4.5. Responses to question5

6. I agree to take part in the above study:

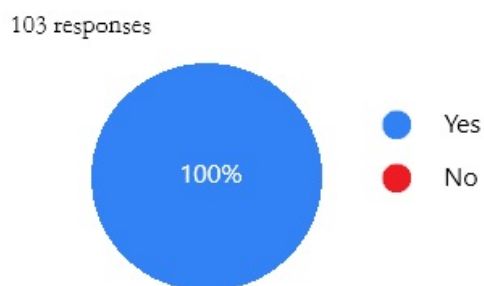


Figure4.6. Responses to question6

7. I confirm that I have read and understood the information sheet for the above study:

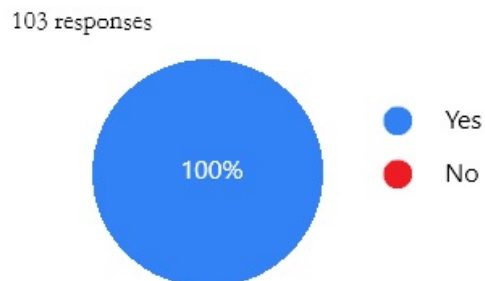


Figure 4.7. Responses to question 7

● Basic information

The questionnaire contains seven questions related to personal information. Table 1 summarizes questions 1 to 6 from the questionnaire, highlighting the demographic characteristics of the respondents.

Table 4.1. The demographic characteristics of the respondents

Characteristics	Category	Frequency	Percentage (%)
Age group	18-25 years	7	6.80%
	26-35 years	21	20.39%
	36-45 years	41	39.81%
	46-55 years	32	31.07%
	56 years and above	2	1.94%
Gender	Male	65	63.11%
	Female	38	36.89%
Annual income	Below 20,000GBP	21	20.39%
	20,001-30,000GBP	38	36.89%
	30,001-40,000GBP	31	30.10%
	40,001-50,000GBP	13	12.62%
	Above 50,000GBP	0	0%
Occupation	Student	11	10.68%
	Employee	75	72.82%
	Business owner	9	8.74%
	Freelancer	8	7.77%

As part of gathering basic information about CITIC Bank customers, this study asked respondents in the questionnaire about their preferred methods for conducting banking transactions. This was the only multiple-choice question in

the survey.

Table 4.2. Frequency and percentage to question 12

Characteristics	Category	Frequency	Percentage (%)
When you need to handle banking business, which method will you choose(Multiple choices are allowed)	Go to a local branch	69	39.20%
	Use the mobile app	103	58.52%
	Use the bank website	3	1.70%
	Use telephone banking	1	0.57%

For the analysis of multiple-choice questions, the author utilized multiple responses to examine whether the selection proportions exhibited significant differences. As shown in Table 1, there is a significant difference ($\chi^2=173.545$, $p=0.000<0.05$), indicating that the selection proportions are markedly different and can be specifically compared through response rates or prevalence rates. Specifically, options 1 and 2 have significantly higher response and prevalence rates, meaning that a large number of customers choose to visit a local branch (66.99%) and use the mobile app (100%) when they need to conduct banking transactions.

Table 4.3. Response and popularity rate to question 12

Response and popularity rate			
Categories	Response		Popularity rate ($n=103$)
	n	Response rate	
5 M_1	69	39.20%	66.99%
5 M_2	103	58.52%	100.00%
5 M_3	3	1.70%	2.91%
5 M_4	1	0.57%	0.97%
Total	176	100%	170.87%

Goodness of fit, $\chi^2=173.545$ $p=0.000$

● CITIC Bank's digital financial innovation

1. How often do you use CITIC Bank's digital financial innovation services (Smart Wealth Advisor, intelligent customer service and intelligent dialogue, etc):

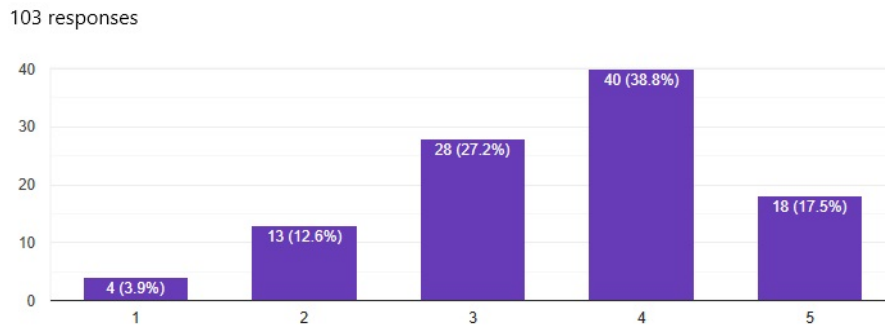


Figure4.8. Responses to question13

The responses for this question totaled 103, with 4 individuals never using various digital financial products, accounting for 3.9%. Additionally, 13 individuals occasionally use them, representing 12.6%; 28 individuals sometimes use them, making up 27.2%; 40 individuals use them frequently, comprising 38.8%; and 18 individuals use them regularly, which accounts for 17.5%.

2. How effective do you think CITIC Bank's digital financial innovation is in improving the convenience of banking services:

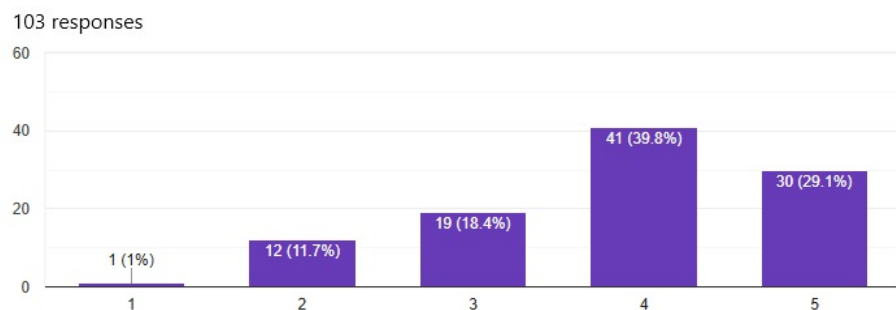


Figure4.9. Responses to question 14

The responses for this question totaled 103, with 1 person feeling that there was no improvement at all, accounting for 1%. Additionally, 12 people felt there was some improvement, representing 11.7%; 19 people considered the effect to be average, making up 18.4%; 41 individuals believed there was a certain degree of improvement, comprising 39.8%; and 30 individuals felt there was significant improvement, which accounts for 29.1%.

3. How do you perceive the impact of CITIC Bank's digital financial innovation on service security:

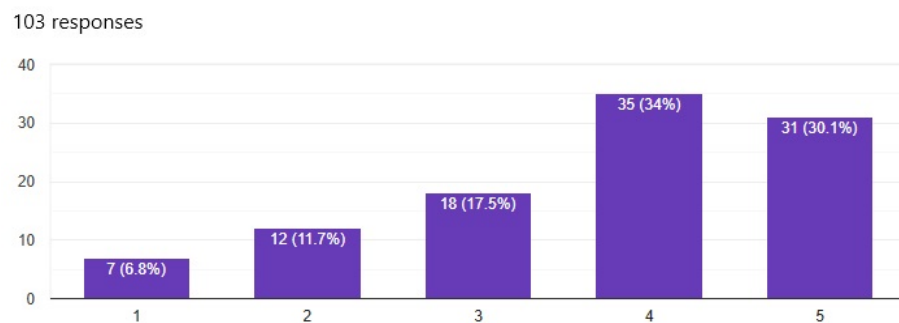


Figure4.10. Responses to question 15

The responses for this question totaled 103, with 7 people believing that the use of digital finance has no impact on service security at all, accounting for 6.8%. Additionally, 12 people felt it had some impact, representing 11.7%; 18 individuals maintained a neutral stance, making up 17.5%; 35 people thought the impact was relatively good, comprising 34%; and 31 individuals felt the impact was very good, accounting for 30.1%.

4. How do you rate CITIC Bank's digital financial innovation in enhancing customer experience:

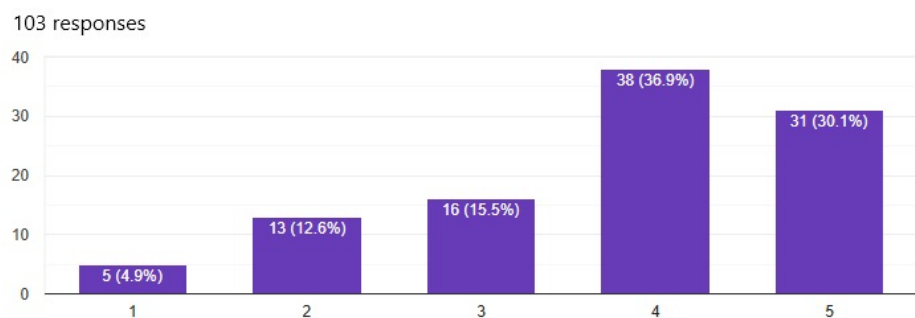


Figure4.11. Responses to question 16

The responses for this question totaled 103, with 5 people believing that the effectiveness of using digital finance in enhancing customer experience is very poor, accounting for 4.9%. Additionally, 13 people rated it as poor, representing 12.6%; 16 individuals felt it was average, comprising 15.5%; 38 people thought it was relatively good, making up 36.9%; and 31 individuals felt it was very effective, accounting for 30.1%.

5. How would you assess the impact of CITIC Bank's digital financial innovation on the bank's overall competitiveness:

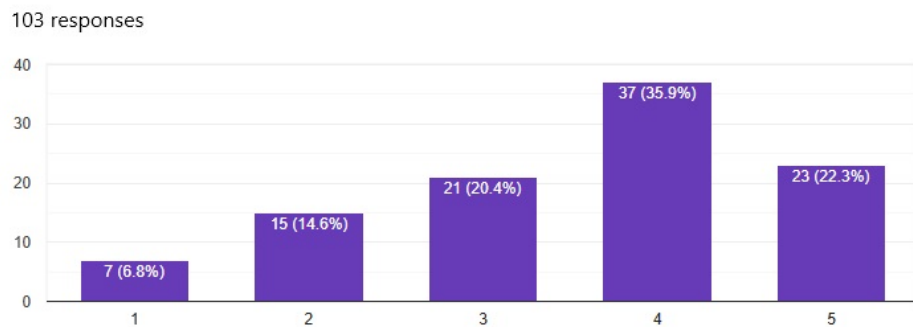


Figure4.12. Responses to question 17

The responses for this question totaled 103, with 7 people believing that the use of digital finance has no impact on the overall competitiveness of CITIC Bank, accounting for 6.8%. Additionally, 15 individuals felt it had a small impact, representing 14.6%; 21 respondents rated it as average, comprising 20.4%; 37 people thought it had a significant impact, making up 35.9%; and 23 individuals believed it had a very large impact, accounting for 22.3%.

● Cost competitive advantage

1. How do you think CITIC Bank's digital financial innovation affects its operational costs:

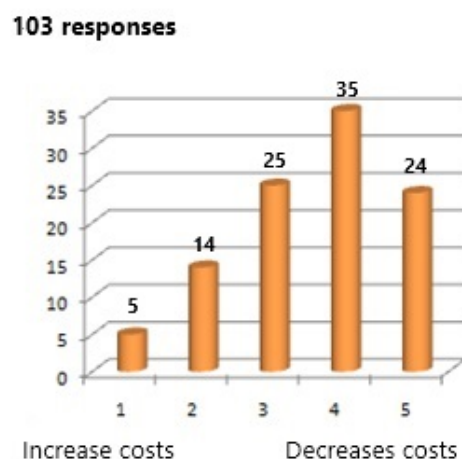
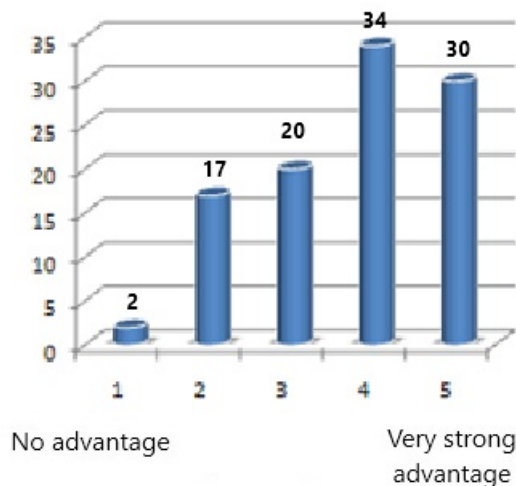


Figure4.13. Responses to question 18

The responses for this question totaled 103, with 5 people believing that the use of digital finance significantly increased the operating costs of CITIC Bank, accounting for 4.9%. Additionally, 14 individuals felt it slightly increased costs,

2. How would you rate CITIC Bank's cost advantages when using digital financial innovation:



The responses for this question totaled 103, with 2 people believing that CITIC Bank's use of digital finance did not create any cost competitive advantage, accounting for 1.9%. Additionally, 17 individuals felt that a certain cost advantage was formed, representing 16.5%; 20 respondents were neutral, comprising 19.4%; 34 people thought there was an advantage, making up 33%; and 30 individuals believed there was a significant advantage, accounting for 29.1%.

- 38 / 81

103 responses

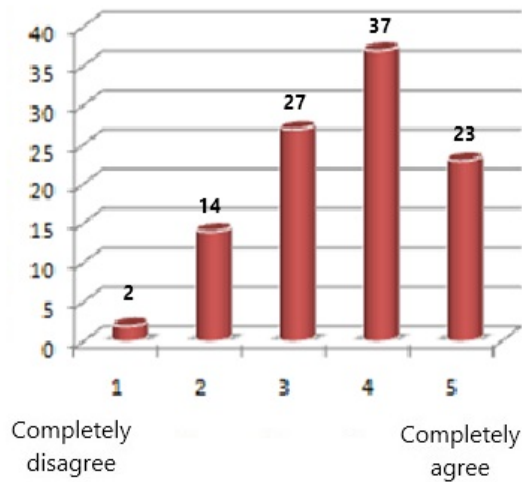


Figure4.15. Responses to question 20

The responses for this question totaled 103, with 2 people completely disagreeing that digital financial innovation reduced customers' transaction costs, accounting for 1.9%. Additionally, 14 individuals disagreed, representing 13.6%; 27 respondents were neutral, comprising 26.2%; 37 people agreed, making up 35.9%; and 23 individuals completely agreed, accounting for 22.3%.

4. Do you think CITIC Bank's digital financial innovation can help reduce customer time costs:

103 responses

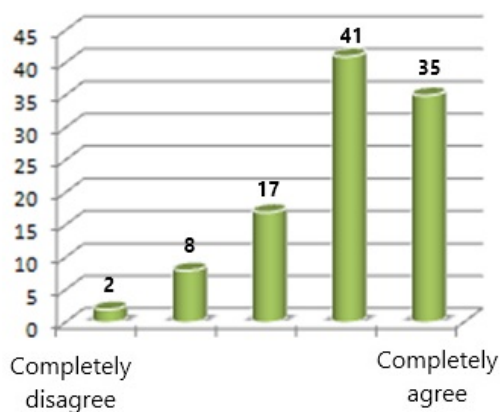


Figure4.16. Responses to question 21

The responses for this question totaled 103, with 2 people completely disagreeing that digital financial innovation reduced customers' time costs, accounting for 1.9%. Additionally, 8 individuals disagreed, representing 7.8%; 17

respondents were neutral, comprising 16.5%; 41 people agreed, making up 39.8%; and 35 individuals completely agreed, accounting for 34%.

5. How satisfied are you with the overall cost-performance ratio of CITIC Bank:

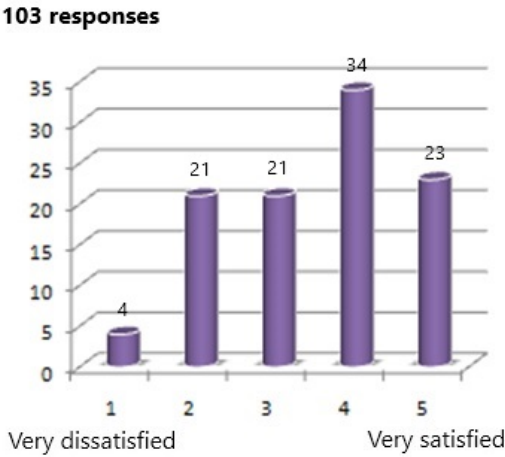


Figure4.17. Responses to question 22

The responses for this question totaled 103, with 4 people being very dissatisfied with the overall cost-performance ratio of CITIC Bank, accounting for 3.9%. Additionally, 21 individuals were dissatisfied, representing 20.4%; 21 respondents were neutral, also comprising 20.4%; 34 people expressed satisfaction, making up 33%; and 23 individuals were very satisfied, accounting for 22.3%.

● **Differentiation competitive advantage**

1. How do you think CITIC Bank’s digital financial innovation impacts product differentiation:

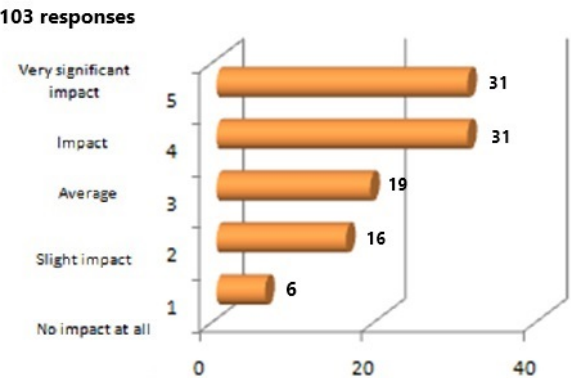


Figure4.18 Responses to question 23

The responses for this question totaled 103, with 6 individuals indicating that the use of digital finance had no impact on the product differentiation of CITIC Bank, accounting for 5.8%. Additionally, 16 respondents felt it had an impact, representing 15.5%; 19 individuals had a neutral attitude, comprising 18.4%; 31 participants indicated a positive impact, making up 30.1%; and another 31 respondents believed it had a significant impact, also accounting for 30.1%.

2. Do you think CITIC Bank's digital financial innovation enhances the personalization of its products:

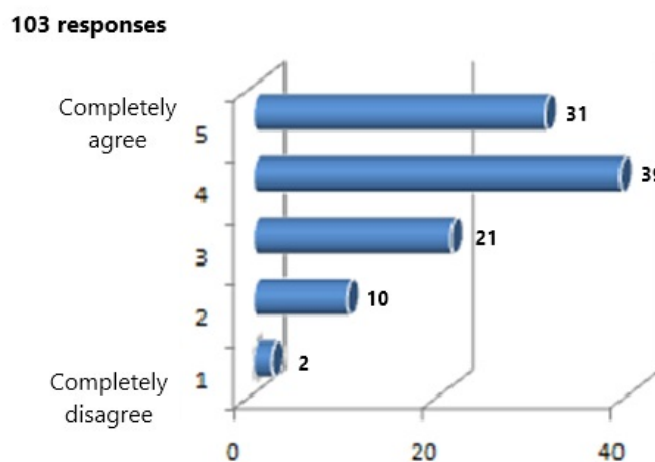


Figure4.19. Responses to question 24

The responses for this question totaled 103, with 2 individuals completely disagreeing that the use of digital finance enhanced the product personalization of CITIC Bank, accounting for 1.9%. Additionally, 10 respondents disagreed, representing 9.7%; 21 individuals had a neutral attitude, comprising 20.4%; 39 participants agreed, making up 37.9%; and 31 respondents completely agreed, accounting for 30.1%.

3. Do you feel that CITIC Bank's innovative products have a clear competitive advantage in the market:

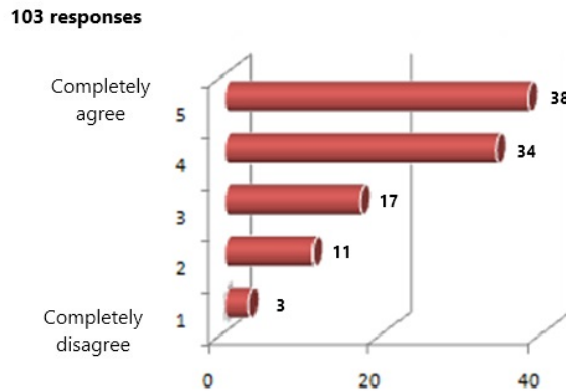


Figure4.20. Responses to question 25

The responses for this question totaled 103, with 3 individuals completely disagreeing that the innovative products of CITIC Bank have a significant competitive advantage in the market, accounting for 2.9%. Additionally, 11 respondents disagreed, representing 10.7%; 17 individuals had a neutral attitude, comprising 16.5%; 34 participants agreed, making up 33%; and 38 respondents completely agreed, accounting for 36.9%.

4. Do you think CITIC Bank's digital financial innovation improves brand recognition:

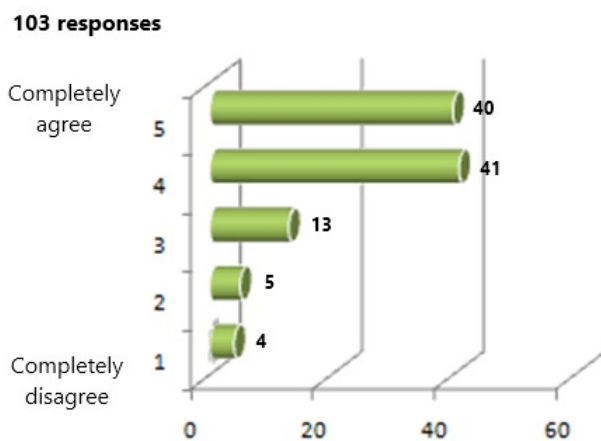


Figure4.21. Responses to question 26

The responses for this question totaled 103, with 4 individuals completely disagreeing that the use of digital finance has enhanced the brand awareness of CITIC Bank, accounting for 3.9%. Additionally, 5 respondents disagreed, representing 4.9%; 13 individuals had a neutral attitude, comprising 12.6%; 41 participants agreed, making up 39.8%; and 40 respondents completely agreed, accounting for 38.8%.

- **Focus competitive advantage**

1. Do you think CITIC Bank's digital financial innovation helps better meet the needs of specific customer(e.g. student, business etc) segments:

103 responses

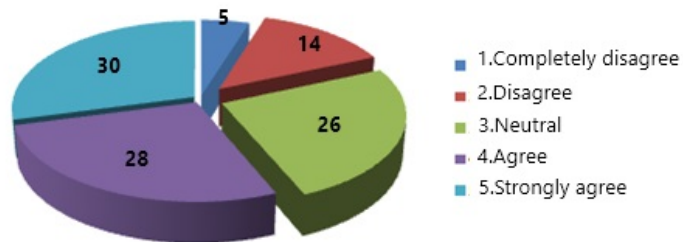


Figure4.22. Responses to question 27

The responses for this question totaled 103, with 5 individuals completely disagreeing that the digital finance of CITIC Bank helps meet the needs of more specific customers, accounting for 4.9%. Additionally, 14 respondents disagreed, representing 13.6%; 26 individuals had a neutral attitude, comprising 25.2%; 28 participants agreed, making up 27.2%; and 30 respondents completely agreed, accounting for 29.1%.

2. Do you believe that CITIC Bank's service capabilities in specific areas (e.g. loan financing, insurance etc) have improved due to digital financial innovation :

103 responses

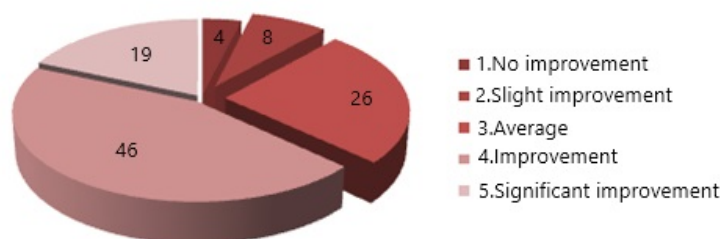


Figure4.23. Responses to question 28

The responses for this question totaled 103, with 4 individuals believing that CITIC Bank's services in specific areas have not improved at all due to digital finance, accounting for 3.9%. Additionally, 8 respondents felt there was a slight

improvement, representing 7.8%; 26 individuals had a neutral attitude, comprising 25.2%; 46 participants believed there was an improvement, making up 44.7%; and 19 respondents felt there was a significant improvement, accounting for 18.4%.

3. How satisfied are you with CITIC Bank's competitiveness in specific markets(e.g. London) or customer segments:

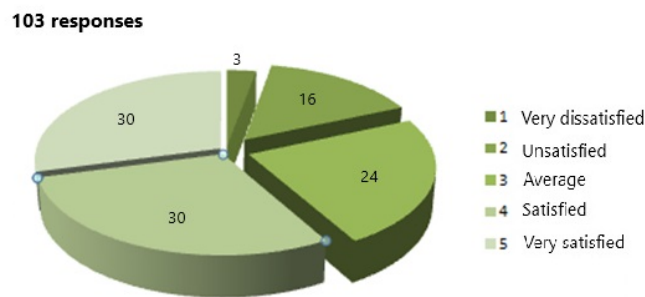


Figure4.24. Responses to question 29

The responses for this question totaled 103, with 3 individuals expressing strong dissatisfaction with CITIC Bank's performance in specific markets, accounting for 2.9%. Additionally, 16 respondents indicated they were somewhat dissatisfied, representing 15.5%; 24 individuals maintained a neutral stance, comprising 23.3%; 30 participants expressed satisfaction, making up 29.1%; and another 30 respondents indicated they were very satisfied, also accounting for 29.1%.

4. Do you think the customer service quality of CITIC Bank has improved because of digital financial innovation:

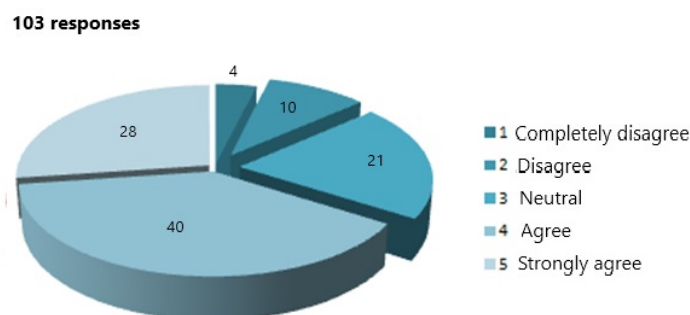


Figure4.25. Responses to question 30

The responses for this question totaled 103, with 4 individuals believing that the service quality of CITIC Bank has not improved at all due to the use of digital finance, accounting for 3.9%. Additionally, 10 respondents disagreed, representing 9.7%; 21 individuals maintained a neutral stance, comprising 20.4%; 40 participants agreed, making up 38.8%; and 28 respondents

completely agreed that the service has improved, accounting for 27.2%.

5. How do you think CITIC Bank's Digital Financial Innovations have enhanced its ESG capabilities:

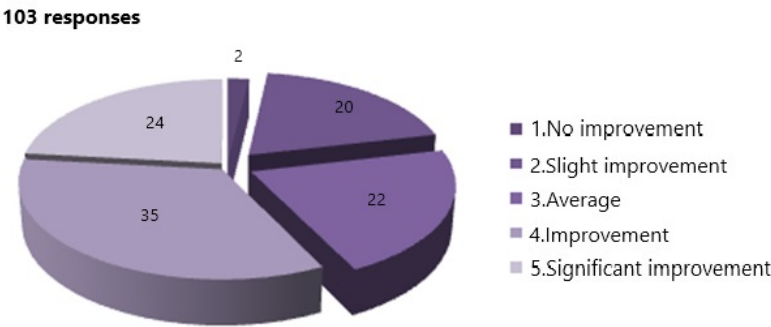


Figure4.26. Responses to question 31

The responses for this question totaled 103, with 2 individuals believing that the use of digital finance has not improved CITIC Bank's ESG at all, accounting for 1.9%. Additionally, 20 respondents indicated a slight improvement, representing 19.4%; 22 individuals maintained a neutral stance, comprising 21.4%; 35 participants stated that there has indeed been an improvement, making up 34%; and 24 respondents indicated a significant improvement in CITIC Bank's ESG, accounting for 23.3%.

Data Validation

The reliability test of the questionnaire assesses its reliability and credibility by measuring the consistency or stability of the results, reflecting the accuracy of the data being measured (Taylor, 2023). The higher the internal consistency of the questionnaire, the greater its credibility. This study employs Cronbach's Alpha to measure the reliability of the questionnaire. Cronbach's Alpha is an indicator of the internal consistency and reliability among multiple items or measures (Bujang, Omar, and Baharum, 2018). In the Cronbach's Alpha measurement, a higher coefficient indicates greater internal consistency of the questionnaire (Bujang, Omar, and Baharum, 2018). According to the author, a Cronbach's Alpha coefficient above 0.8 indicates high reliability; a value between 0.7 and 0.8 suggests good reliability; a value between 0.6 and 0.7 indicates acceptable reliability.

According to the data in Tables 4.4, Tables 4.5, Tables 4.6, Tables 4.7 and Tables 4.8, the Cronbach's Alpha coefficients of the scales are all above 0.7, with the overall reliability exceeding 0.9. This indicates that the internal consistency of the questionnaire is relatively high, and it can serve as a research tool for this study.

Regarding the CITC (Corrected Item-Total Correlation) values, all analysis items have CITC values greater than 0.3, indicating a good correlation among the analysis items and further confirming a good level of reliability. In summary, the reliability coefficient values of the research data exceed 0.8, indicating high data reliability and quality, making it suitable for further analysis.

Table 4.4. Reliability statistics of Digital Financial Innovation

Reliability Statistics (Cronbach Alpha)			
Items	Corrected Item-Total Correlation(CITC)	Cronbach Alpha if Item Deleted	Cronbach α
Inno1	0.581	0.845	0.854
Inno2	0.66	0.827	
Inno3	0.704	0.815	
Inno4	0.678	0.821	
Inno5	0.721	0.81	

Table 4.5. Reliability statistics of Cost Competitive Advantage

Reliability Statistics (Cronbach Alpha)			
Items	Corrected Item-Total Correlation(CITC)	Cronbach Alpha if Item Deleted	Cronbach α
Cost1	0.73	0.84	0.874
Cost2	0.724	0.841	
Cost3	0.671	0.854	
Cost4	0.742	0.839	
Cost5	0.652	0.86	

Table 4.6. Reliability statistics of Differentiation competitive advantage

Reliability Statistics (Cronbach Alpha)			
Items	Corrected Item-Total Correlation(CITC)	Cronbach Alpha if Item Deleted	Cronbach α
Diff1	0.666	0.774	0.824
Diff2	0.6	0.8	
Diff3	0.653	0.777	
Diff4	0.688	0.763	

Table 4.7. Reliability statistics of Focus competitive advantage

Reliability Statistics (Cronbach Alpha)			
Items	Corrected Item-Total Correlation(CITC)	Cronbach Alpha if Item Deleted	Cronbach α
Focus1	0.722	0.846	0.876
Focus2	0.668	0.858	
Focus3	0.657	0.861	
Focus4	0.723	0.845	
Focus5	0.763	0.835	

Table 4.8. Overall reliability

Cronbach Alpha-总信度		
N of Items	<i>n</i>	Cronbach α
19	103	0.905

Structural Validity

Validity, also known as construct validity, refers to the extent to which the results of a study, test, or experiment effectively reflect or represent the phenomenon being studied or the expected outcomes (Bhandari, 2022). Common methods for assessing construct validity include convergent validity, discriminant validity, and exploratory factor analysis (Nickerson, 2023). This study employed the KMO (Kaiser-Meyer-Olkin) test and Bartlett’s test of sphericity for factor analysis to validate the construct validity of the data.

The KMO test and Bartlett’s test of sphericity are two commonly used statistical tests in factor analysis. The KMO test measures the appropriateness of the data for factor analysis by comparing the simple correlations and partial correlations among variables, thus assessing the suitability of factor analysis (Glen, 2016). A KMO value closer to 1 indicates a strong correlation among the variables, making them suitable for factor analysis (Glen, 2016). Bartlett’s test of sphericity examines whether there are significant correlations among the variables. If the p-value from Bartlett’s test is less than the significance level (typically 0.05), it indicates that there are correlations among the variables, making them suitable for factor analysis. Conversely, if the p-value is greater than 0.05, it suggests that there is no significant correlation among the variables, rendering them unsuitable for factor analysis (Bobbitt, 2019).

Table 4.9 presents the information extraction status of the factors related to the research items, as well as the correspondence between the factors and the research items. The KMO(Kaiser-Meyer-Olkin) value is used to assess the suitability of information extraction, while the communalities are employed to eliminate unreasonable research items. The variance explained indicates the level of information extraction, and the factor loadings measure the relationship between the factors (dimensions) and the items.

From the conclusions drawn in Table 4.9, it can be observed that all research items have communalities exceeding 0.4, and the KMO value is 0.870, indicating that the data can effectively extract information.

Table 4.9. KMO and Bartlett test results

KMO and Bartlett test		
Bartlett test	KMO	0.870
	Approx. Chi-Square	1023.483
	df	171
	p value	0.000

Analyzing the factor extraction status and the amount of information extracted, Table 4.10 indicates that a total of four factors were extracted through factor analysis, all with eigenvalues greater than 1. The variance explained after rotation for these four factors is as follows: 18.173%, 17.864%, 16.728% and

14.646%. The cumulative variance explained by these four factors accounts for 67.411% of the total variance in the questionnaire data, suggesting that the information related to the research items can be effectively extracted.

Table 4.10. Total Variance Explained

Factor	Total Variance Explained								
	Eigen values			% of variance (Initial)			% of variance (Rotated)		
	Eigen	% of Variance	Cum. % of Variance	Eigen	% of Variance	Cum. % of Variance	Eigen	% of Variance	Cum. % of Variance
1	7.117	37.459	37.459	7.117	37.459	37.459	3.453	18.173	18.173
2	2.379	12.524	49.983	2.379	12.524	49.983	3.394	17.864	36.038
3	1.957	10.3	60.283	1.957	10.3	60.283	3.178	16.728	52.765
4	1.354	7.128	67.411	1.354	7.128	67.411	2.783	14.646	67.411
5	0.757	3.984	71.395	-	-	-	-	-	-
6	0.677	3.565	74.961	-	-	-	-	-	-
7	0.618	3.255	78.215	-	-	-	-	-	-
8	0.542	2.854	81.069	-	-	-	-	-	-
9	0.486	2.556	83.625	-	-	-	-	-	-
10	0.463	2.439	86.064	-	-	-	-	-	-
11	0.429	2.258	88.322	-	-	-	-	-	-
12	0.374	1.969	90.29	-	-	-	-	-	-
13	0.364	1.913	92.204	-	-	-	-	-	-
14	0.318	1.676	93.88	-	-	-	-	-	-
15	0.288	1.514	95.393	-	-	-	-	-	-
16	0.25	1.316	96.709	-	-	-	-	-	-
17	0.24	1.262	97.971	-	-	-	-	-	-
18	0.207	1.088	99.059	-	-	-	-	-	-
19	0.179	0.941	100	-	-	-	-	-	-

Finally, by examining the factor loading coefficients, we can confirm the correspondence between the factors (dimensions) and the research items to determine if they align with expectations. If they do align, it indicates that the construct has validity; if not, adjustments will be necessary. A factor loading coefficient with an absolute value greater than 0.3 suggests a meaningful relationship between the options and the factors. If the factor loadings for the expected relationships meet or exceed this threshold, it supports the validity of the factors in reflecting the intended constructs. Conversely, if certain items do not show significant loadings, it may indicate a need for reevaluation and potential modification of those items to ensure they adequately represent the constructs of interest.

Table 4.11. Factor Loading

Items	Factor loading (Rotated)				Communalities
	Factor 1	Factor 2	Factor 3	Factor 4	
Inno1	0.166	0.208	0.677	0.075	0.534
Inno2	0.155	0.213	0.757	0.089	0.65
Inno3	0.189	0.153	0.754	0.219	0.676
Inno4	0.225	0.201	0.664	0.355	0.657
Inno5	0.115	0.309	0.765	0.108	0.706
Cost1	0.785	0.23	0.118	0.152	0.707
Cost2	0.793	0.249	0.193	0.01	0.728
Cost3	0.786	0.061	0.034	0.141	0.643
Cost4	0.81	0.097	0.207	0.098	0.719
Cost5	0.73	-0.052	0.238	0.2	0.633
Diff1	0.265	-0.01	0.154	0.762	0.674
Diff2	0.082	0.149	0.105	0.744	0.593
Diff3	0.003	0.061	0.15	0.824	0.706
Diff4	0.237	0.225	0.175	0.756	0.708
Focus1	0.104	0.769	0.283	0.038	0.684
Focus2	-0.095	0.674	0.373	0.284	0.683
Focus3	0.112	0.745	0.204	0.103	0.619
Focus4	0.148	0.833	0.108	0.081	0.733
Focus5	0.249	0.804	0.199	0.088	0.755

Multiple Regression Analysis

Through the Pearson Correlation Coefficient analysis of the above data, Table 11 was obtained. It shows that digital financial innovation has a significant correlation with cost advantage, differentiation advantage, and focus advantage. The correlation coefficients are 0.450, 0.443, and 0.566, respectively. Since all the correlation coefficient values are greater than 0, this indicates a positive correlation between digital financial innovation and cost advantage, differentiation advantage, and focus advantage.

Table 4.12. Pearson Correlation

	Pearson Correlation			
	Inno	Cost	Diff	Focus
Inno	1			
Cost	0.450***	1		
Diff	0.443***	0.366***	1	
Focus	0.566***	0.338***	0.321***	1

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

According to Table 4.13, a linear regression analysis was conducted with digital financial innovation as the independent variable and cost competitive advantage as the dependent variable. The model formula is as follows:

$$\text{Cost competitive advantage} = 2.033 + 0.447 \times \text{Digital Financial Innovation}$$

The model's R-squared value is 0.202, indicating that digital financial innovation accounts for 20.2% of the variation in cost competitive advantage.

During the F-test of the model, it was found that the model passed the F-test ($F = 25.600$, $p=0.000<0.05$), suggesting that digital financial innovation has a significant impact on cost competitive advantage. Further analysis reveals that the regression coefficient for digital financial innovation is 0.447 ($t = 5.060$, $p = 0.000 < 0.01$), indicating that digital financial innovation has a significant positive effect on cost competitive advantage.

Table 4.13. Parameter Estimates of H1

Parameter Estimates (n=103)							
	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>	Collinearity Statistics	
	<i>B</i>	Std. Error	<i>Beta</i>			VIF	Tolerance
Constant	2.033	0.334	-	6.092	0.000***	-	-
Inno	0.447	0.088	0.45	5.06	0.000***	1	1
<i>R</i> ²				0.202			
Adj <i>R</i> ²				0.194			
<i>F</i>				$F(1,101)=25.600, p=0.000$			
D-W值				1.794			

Dependent Variable=Cost

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

In summary, the analysis indicates that digital financial innovation has a significant positive impact on cost competitive advantage across all dimensions.

According to Table 4.14, a linear regression analysis was conducted with digital financial innovation as the independent variable and differentiation competitive advantage as the dependent variable. The model formula is as follows:

Differentiation Competitive Advantage = $2.237 + 0.442 \times \text{Digital Financial Innovation}$

The model's R-squared value is 0.196, indicating that digital financial innovation accounts for 19.6% of the variation in differentiation competitive advantage.

During the F-test of the model, it was found that the model passed the F-test ($F = 24.678$, $p = 0.000 < 0.05$), suggesting that digital financial innovation significantly affects differentiation competitive advantage. Further analysis reveals that the regression coefficient for digital financial innovation is 0.442 ($t = 4.968$, $p = 0.000 < 0.01$), indicating that digital financial innovation has a significant positive effect on differentiation competitive advantage.

Table 4.14.Parameter Estimates of H2

Parameter Estimates (n=103)							
	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>	Collinearity Statistics	
	<i>B</i>	Std. Error	<i>Beta</i>			VIF	Tolerance
Constant	2.237	0.336	-	6.668	0.000***	-	-
Inno	0.442	0.089	0.443	4.968	0.000***	1	1
<i>R</i> ²				0.196			
Adj <i>R</i> ²				0.188			
<i>F</i>				<i>F</i> (1,101)=24.678, <i>p</i> =0.000			
D-W值				1.64			
Dependent Variable=Diff							
* <i>p</i> <0.05 ** <i>p</i> <0.01 *** <i>p</i> <0.001							

In summary, the analysis indicates that digital financial innovation has a significant positive impact on differentiation competitive advantage across all dimensions.

According to Table 4.15, a linear regression analysis was conducted with digital financial innovation as the independent variable and focus competitive advantage as the dependent variable. The model formula is as follows:

$$\text{Focus Competitive Advantage} = 1.564 + 0.570 \times \text{Digital Financial Innovation}$$

The model's R-squared value is 0.320, indicating that digital financial innovation accounts for 32.0% of the variation in focus competitive advantage. During the F-test of the model, it was found that the model passed the F-test (*F* = 47.535, *p* = 0.000 < 0.05), suggesting that digital financial innovation significantly affects focus competitive advantage. Further analysis reveals that the regression coefficient for digital financial innovation is 0.570 (*t* = 6.895, *p* = 0.000 < 0.01), indicating that digital financial innovation has a significant positive effect on focus competitive advantage.

Table 4.15.Parameter Estimates of H3

Parameter Estimates (n=103)							
	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>	Collinearity Statistics	
	<i>B</i>	Std. Error	<i>Beta</i>			VIF	Tolerance
Constant	1.564	0.312	-	5.01	0.000***	-	-
Inno	0.57	0.083	0.566	6.895	0.000***	1	1
<i>R</i> ²				0.32			
Adj <i>R</i> ²				0.313			
<i>F</i>				<i>F</i> (1,101)=47.535, <i>p</i> =0.000			
D-W值				1.867			
Dependent Variable=Focus							
* <i>p</i> <0.05 ** <i>p</i> <0.01 *** <i>p</i> <0.001							

In summary, the analysis indicates that digital financial innovation has a significant positive impact on focus competitive advantage across all dimensions.

Summary

In this chapter, the author provides a detailed explanation of the data collection process and the results of data analysis conducted in this study. Through descriptive analysis, the author presents the collected data, and performs reliability analysis, exploratory factor analysis, and multiple regression analysis on the obtained data. This chapter offers a clear and objective summary and presentation of the data and results. As the core part of data analysis, the multiple regression analysis is also fully demonstrated in this chapter. The purpose of this chapter is to objectively and clearly present the raw data collected in this study and the analysis conducted on the data, providing an objective foundation for the discussion chapter that follows.

Section5. Discussion

This study aims to explore the impact of digital financial innovation on corporate competitive advantage, using CITIC Bank as a case study. The study proposes three hypotheses as follows:

H1: There is a positive correlation between digital financial innovation and cost leadership strategy;

H2: There is a positive correlation between digital financial innovation and differentiation strategy;

H3: There is a positive correlation between digital financial innovation and focus strategy.

The conclusions drawn from testing the research hypotheses and conducting multiple regression analysis support all three hypotheses proposed in this study. These results provide strong empirical evidence for the relationship between digital financial innovation and competitive advantage.

Hypothesis H1: By analyzing digital financial innovation as the independent variable and cost competitive advantage as the dependent variable, it was found that digital financial innovation can explain 20.2% of the variance in cost competitive advantage. This indicates that digital financial innovation has a significant positive impact on cost competitive advantage, thus confirming this hypothesis.

Hypothesis H2: By analyzing digital financial innovation as the independent variable and differentiation competitive advantage as the dependent variable, it was found that digital financial innovation can explain 19.6% of the variance in differentiation competitive advantage. This indicates that digital financial innovation has a significant positive impact on differentiation competitive advantage, confirming hypothesis H2 of this study.

Hypothesis H3: Lastly, when examining the relationship between digital financial innovation as the independent variable and focus competitive advantage as the dependent variable, the analysis revealed that digital financial innovation can explain 32.0% of the variance in focus competitive advantage. This indicates that digital financial innovation has a significant positive impact on focus competitive advantage, confirming hypothesis H3 of this study.

In summary, the research results indicate that digital financial innovation has a positive impact on CITIC Bank's competitive advantage in terms of cost, differentiation, and focus strategies, confirming the proposed hypotheses.

This study raises three research questions:

RQ1: How does digital financial innovation impact CITIC Bank's competitive advantage?

Based on the data collected through the questionnaire and the analysis results, firstly, as shown in Table 4.12, the correlation coefficients between digital financial innovation and cost competitive advantage, differentiation competitive advantage, and focus advantage are 0.450, 0.443, and 0.566, respectively, all greater than 0. This indicates that there is a significant positive correlation between the independent variable and the dependent variables. Specifically, the introduction of digital technologies has enabled CITIC Bank to achieve lower operational costs, higher service differentiation, and a more focused competitive advantage in specific markets. This demonstrates that digital financial innovation plays a key role in supporting the bank's development and execution of cost leadership, differentiation, and focus strategies.

Regarding cost competition, the analysis results indicate that CITIC Bank has gained a cost competitive advantage in the market by reducing customers' time and financial costs through increased automation and reduced labor costs (Redhat Reward, 2020). This supports the study's hypothesis H1. In terms of differentiation competitive advantage, CITIC Bank has been able to offer a unique customer experience through personalized services and data-driven customer relationship management (CITIC BANK, 2024), aligning with the study's hypothesis H2. The success of the differentiation strategy depends on the bank's deep understanding of customer needs, which is precisely met through the application of digital technologies. Regarding focus advantage, digital financial innovation also plays a key role in the bank's focus strategy in specific niche markets. Through big data analysis, CITIC Bank can accurately identify and target specific markets, particularly showing significant focus advantages in serving high-net-worth individuals and small to medium-sized enterprises (CITIC BANK, 2024), which supports hypothesis H3.

In summary, digital financial innovation has a positive and significant impact on CITIC Bank's overall competitive advantage by positively influencing the areas of cost, differentiation, and focus competition.

RQ2: To what extent does digital financial innovation impact CITIC Bank's competitive advantage?

The results of the multiple regression analysis indicate that digital financial innovation at CITIC Bank can explain 20.2% of the variance in cost competitive advantage, 19.6% in differentiation competitive advantage, and 32.0% in focus competitive advantage. It is evident that digital financial innovation has a significant impact on cost reduction; however, it cannot be considered the primary influencing factor. In the minds of customers at CITIC Bank, price advantages are influenced by many other important aspects, such as economies of scale and the external economic environment.

Regarding differentiation competitive advantage, digital financial innovation

plays a positive but limited role for CITIC Bank. Through digital financial innovation, the bank can offer personalized and customized financial services. In particular, through big data analysis and artificial intelligence technologies, the bank can gain deep insights into customer needs and preferences, launching differentiated financial products and services (CITIC BANK, 2024). Additionally, digital services such as mobile banking, intelligent customer systems, and online investment tools enhance customer experience (CITIC BANK, 2024), improving customer satisfaction and brand loyalty. However, the 19.6% explanatory power indicates that other important factors also influence differentiation competitive advantage. These factors may include brand trust, bank terms, or marketing strategies, particularly in the banking industry, where customers place high importance on service stability, brand reputation, and security (Statista, 2024).

The explanatory power of digital financial innovation for CITIC Bank's focus competitive advantage is as high as 32.0%, indicating a particularly significant impact in this area. The core of a focus competitive strategy is to gain a competitive advantage within specific markets or customer segments. Digital financial innovation provides strong technological support for CITIC Bank, especially in big data analysis, precise marketing, and customer segmentation. Through these technologies, the bank can more accurately identify target customers and provide tailored services based on their needs. Digital technology also helps the bank enhance the responsiveness and flexibility of its services, allowing it to quickly adapt to changes in niche markets. The 32.0% explanatory power indicates that digital financial innovation significantly contributes to the success of the focus strategy. Compared to cost and differentiation advantages, digital financial innovation is more effective in helping the bank precisely target customer needs in specific markets and rapidly provide tailored solutions. This high explanatory power reflects that CITIC Bank has effectively leveraged digital means to strengthen its competitiveness in specific markets.

However, while digital financial innovation plays a significant role in the focus strategy, 68.0% of the variance is still determined by other factors, which may include market dynamics, policy environment, competitor actions, and the bank's customer service capabilities.

RQ3: What challenges does CITIC Bank face in leveraging digital financial innovation?

In the process of leveraging digital financial innovation, CITIC Bank has significantly enhanced its competitive advantage but also faces many challenges. Firstly, digital financial technologies such as blockchain, artificial intelligence, big data, and cloud computing are developing rapidly. While these technologies provide enormous innovation opportunities for banks, the constant updates and iterations also present significant challenges. To ensure the continuous upgrade and update of its technological infrastructure and maintain sensitivity to the latest financial technologies, the bank must continually increase its capital expenditure and research and development investment, which undoubtedly

raises operational costs and expenses (CSFI, 2023).

Secondly, addressing security issues on a large scale is a challenge. With the development of digital financial technologies, the bank has accumulated a vast amount of customer data, including personal identification information, transaction records, and investment preferences. Protecting customer data privacy and the security of financial transactions is another major challenge faced by CITIC Bank (Spizheva, 2024). In the digital age, the risk of cyberattacks and data breaches faced by financial institutions has significantly increased. The increasingly sophisticated methods employed by hackers and cybercriminals may lead to system failures or customer data leaks, which not only harm the bank's reputation but also result in substantial financial losses.

Finally, with the rise of fintech companies, traditional banks are facing more severe challenges and competition (Fitsak, 2024). Fintech companies attract a large number of customers, particularly among the younger generation, by offering faster, more convenient, and lower-cost services. This poses a challenge to traditional banking operations and may result in a decline in market share for CITIC Bank in certain areas, presenting new challenges to the bank's management capabilities.

The findings of this study are generally consistent with the viewpoints and research conclusions found in existing literature. Many scholars (Scott, Van Reenen, and Zachariadis, 2017; Zhou and Xu, 2023) have pointed out that digital financial innovation significantly enhances banks' competitive advantage. This study finds that digital financial innovation can improve the cost advantage of banks by reducing operational costs and increasing efficiency. This result aligns with existing literature (Michaeli, 2024), which supports the notion that banks can substantially lower labor and material costs through automated operations enabled by digital technologies.

This study also supports Barney's Resource-Based View (RBV) (Barney, 1991, pp. 99–120), which posits that a firm's unique resources can be a source of competitive advantage. Digital financial innovation provides CITIC Bank with new technological resources and service models, enabling it to effectively differentiate itself from competitors and enhance its differentiation capabilities. The research demonstrates that through technological innovation, banks can serve target customers in niche markets more efficiently, consistent with the strategic focus theory proposed by Hamel and Prahalad (Hamel and Prahalad, 1994).

Not only does this study enrich the theoretical understanding of the relationship between digital financial innovation and competitive advantage, but it also holds significant practical implications. Firstly, the study reveals the competitive advantages gained by CITIC Bank through digital financial innovation, providing important insights for bank managers. Bank managers should continue to

increase investments in digital technologies, particularly in data analysis, artificial intelligence, and blockchain, to strengthen the bank's market position. The findings of this study also offer valuable references for other financial institutions and enterprises in various industries. Whether in cost competition or the implementation of differentiation strategies, digital financial innovation can provide enterprises with substantial competitive advantages. Companies in other industries can look to the innovative practices of the banking sector and adopt similar digital transformations to enhance their market competitiveness.

Section6. Conclusion and Recommendations

This study uses CITIC Bank as a case example to explore the role of digital financial innovation in enhancing the competitive advantage of banks. It proposes three main research questions (RQ1, RQ2, RQ3) and three hypotheses (H1, H2, H3). Through a questionnaire survey and data analysis, the study verifies the positive effects of digital financial innovation in reducing costs and achieving differentiation and focus strategies. It also discusses the opportunities and challenges that digital financial innovation presents to CITIC Bank. This chapter summarizes the main findings of the research, discusses its limitations, and suggests directions for future research along with relevant recommendations.

Conclusion

This study aims to explore the role of digital financial innovation in enhancing corporate competitive advantage, using CITIC Bank as a case example. The research adopts a positivist approach and employs a deductive method, collecting data through questionnaires and conducting descriptive analysis, reliability analysis; construct validity analysis, and multiple regression analysis. This methodology verifies the initial hypotheses, addresses the research questions, and confirms that digital financial innovation has played a positive role in enhancing the competitive advantage of CITIC Bank, with the most significant contribution observed in the area of focus competitive strategy. While digital financial innovation also plays a crucial role in cost and differentiation competitive advantages, other factors still have a significant impact on these two strategies. The findings of this study fill a gap in the literature regarding the relationship between digital financial innovation and corporate competitive advantage and contribute to the accumulation of knowledge for future related research.

Recommendations

Based on the results of this study, the following recommendations are made for CITIC Bank to enhance its competitive advantage through digital financial innovation:

Firstly, CITIC Bank should continue to increase its investment in digital technologies, particularly in areas such as artificial intelligence, big data, and blockchain. By automating processes and utilizing intelligent decision-support systems, the bank can reduce operational costs and improve business efficiency. Additionally, it should consistently monitor the latest trends in financial technology to ensure timely adoption of cutting-edge technologies. Continued investment in digital financial innovation will enhance the bank's competitive

advantage.

Secondly, the bank should leverage digital tools to provide more personalized services to customers, particularly by utilizing big data technology to gain deep insights into customer needs and offering customized financial products. This approach will not only improve customer satisfaction but also enhance customer loyalty, thereby building a differentiation competitive advantage. Furthermore, the bank should focus on the user experience design of its digital platforms to ensure convenience and efficiency in service delivery.

Moreover, the widespread application of digital financial innovation has also brought challenges related to data security and privacy protection. CITIC Bank should strengthen its cybersecurity measures by establishing a comprehensive information security management system and strictly adhering to relevant laws and regulations to ensure the safety of customer data. Additionally, the bank needs to enhance its capabilities to respond to cyberattacks and data breaches to maintain customer trust.

Research limitations

Despite providing valuable insights into the impact of digital financial innovation on competitive advantage, this study has some limitations.

Firstly, CITIC Bank operates globally, serving a diverse clientele that includes individuals, small and medium-sized enterprises, and large state-owned enterprises, with business areas covering asset management, leasing, and other non-banking financial services. The data collected for this study primarily came from individual customers located in the UK and China. This sample size, in terms of geographic location and representativeness, may not accurately reflect the full scope of CITIC Bank's operations. Additionally, the relatively small sample size may affect the generalizability of the results.

Secondly, this study utilized cross-sectional data for analysis. Although it demonstrated a positive impact of digital financial innovation on competitive advantage, cross-sectional data do not capture long-term dynamic changes. The effects of digital financial innovation on competitive advantage may evolve over time, a factor that this study did not consider. Future research could employ a longitudinal study design to observe the long-term impact of digital financial innovation on banking competitive advantage, thereby gaining a more comprehensive understanding of the dynamic effects of innovation.

Furthermore, this study primarily explored the direct effects of digital financial innovation on three aspects of competitive advantage. However, the process of forming competitive advantage may involve multiple complex mediating and moderating variables. Factors such as market environment, corporate culture, and government policies may influence the relationship between digital financial

innovation and competitive advantage. This study did not delve deeply into these mediating and moderating variables, which may limit the findings' scope. Additionally, while discussing competitive advantage, this study mainly focused on external environments and did not investigate or study CITIC Bank's internal conditions. However, the bank's internal strategies are also critical factors influencing its competitive advantage. Future research should consider and explore the effects of digital financial innovation within CITIC Bank.

Finally, the theoretical foundation of this study is based on Porter's model of competitive advantage. The survey was designed with digital financial innovation as the independent variable and the three aspects of competitive advantage—cost advantage, differentiation advantage, and focus advantage—as dependent variables, and the data analysis validated the relationships between the independent variable and the three dependent variables. However, the study did not delve into how cost advantage, differentiation advantage, and focus advantage influence overall competitive advantage, nor did it explore whether any relationships exist among these three variables. Future research that quantitatively analyzes the effects of these three variables on competitive advantage would provide a more accurate and in-depth analysis of how digital financial innovation impacts corporate competitive advantage.

Future research directions and topics

Based on the above limitations, the author proposes the following future research directions:

Firstly, future studies could expand the sample size and representation. When collecting samples, considering CITIC Bank's business distribution and proportions, sample collection could take place across multiple countries and regions. Additionally, the collected samples should not only focus on individual clients but could also be extended to corporate and group clients, allowing the data to comprehensively reflect the status of CITIC Bank.

Secondly, future research could further explore how digital financial innovation affects competitive advantage through mediating variables such as internal organizational culture and technology acceptance. Moreover, the study could examine moderating variables like the external market environment, government policies, or the technological environment, to understand how they influence the relationship between digital financial innovation and competitive advantage, thereby providing more comprehensive strategic guidance for bank managers.

Future research could be conducted in different types of banks (such as state-owned banks, joint-stock banks, and small local banks) to further validate the universality of the impact of digital financial innovation on competitive

advantage. Additionally, similar studies could be carried out in the international banking sector, comparing the different impacts of financial innovation practices on competitive advantage across various countries or regions.

This study primarily employed quantitative analysis methods, which, while providing a certain degree of interpretability, have limitations in deeply exploring the micro-mechanisms through which digital financial innovation specifically affects competitive advantage. Future research could integrate qualitative methods (such as in-depth interviews or case studies) to uncover the pathways of influence of digital financial innovation from a more nuanced perspective.

This research did not receive external funding.

The study was conducted in accordance with the guidelines of the Declaration of Helsinki and received approval from the UWTSD Ethics Committee.

All participants in the study provided informed consent.

The author expresses gratitude for the support from the London Branch of CITIC Bank.

The author declares that there are no conflicts of interest.

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Appendix A. Participation Consent Form



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

University of Wales Trinity Saint David (c

Participant

Identification

Number:

PARTICIPATION CONSENT FORM

(for researcher to fill)

Project Title: MBA

Name of Researcher:

Jie Liu

Name of Supervisor:

Isaiah Oino

Email of Researcher: 2308305@student.uwtsd.ac.uk

Aim of Research: To analysis the role of digital financial innovation in enhancing the competitive advantage of banks: A case study of CITIC bank

(for participant to fill)		YES	NO
1	I confirm that I have read and understood the information sheet dated _____ for the above study.		
2	I understand there are no material benefits for participating.		
2	I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.		
3	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.		
4	I understand that any information given by me may be used in future reports, articles or presentations by the researcher.		
5	I consent for my name and title to be used within this study.		
	Where applicable, I understand that my details will not be anonymous.		

6	I agree to be recorded (audio and/or audio-visual video).				
7	I agree to take part in the above study.				
Researcher's Name (Print)		Signature		Date	
Participant's Name (Print)		Signature		Date	

You may decline to participate in this study. You may end your participation in this study at any time. All data generated from this or any interview will remain confidential. For more information, please view the university's [Research and Data Management Policy](#).

When completed please email a copy to the below address to be kept on the file of the researcher and retain a copy for yourself.

Subject Title: **[NAME OF PARTICIPANT] – Participant Consent Form**

Email: 2308305@student.uwtsd.ac.uk

Appendix B. Questionnaire

Digital finance innovation and competitive advantages in the banking industry questionnaire

● **INTRODUCTION**

Dear Participant:

Thank you for agreeing to participate in this voluntary survey. The purpose of this survey is to understand the role of digital financial innovation in enhancing corporate competitive advantage. Your insights will contribute to the findings of this research. If you choose to participate, your responses will be kept confidential, and you are free to withdraw at any time. The survey will take no more than 12 minutes to complete. Before starting the survey, please review the participant consent form to ensure the confidentiality of your responses, which will be used solely for academic purposes. Thank you for your support.

● **PARTICIPANT CONSENT FORM**

1. I understand there are no material benefits for participating

☐ Yes ☐ No

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

☐ Yes ☐ No

3. I understand that any information given by me may be used in future reports, articles or presentations by the researcher.

☐ Yes ☐ No

4. I agree to be recorded (audio and/or audio-visual video).

☐ Yes ☐ No

5. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

☐ Yes ☐ No

6. I agree to take part in the above study.

☐ Yes ☐ No

7. I confirm that I have read and understood the information sheet for the above study.

☐ Yes ☐ No

● **Basic information**

1. Your age group:

☐ 18-25

☐ 26-35

☐ 36-45

☐ 46-55

☐ 56 and above

2. Your gender:

☐ Male

☐ Female

3. Your annual income is:

☐ Below 20,000GBP

☐ 20,001-30,000GBP

☐ 30,001-40,000GBP

☐ 40,001-50,000GBP

☐ Above 50,000GBP

4. Your occupation is:

☐ Student

☐ Employee

☐ Business owner

☐ Freelancer

5. When you need to handle banking business, which method will you choose
(Multiple choices are allowed):

☐ Go to a local branch

☐ Use the mobile app

☐ Use the bank website

☐ Use telephone banking

● **Digital Financial Innovation of CITIC Bank**

1. How often do you use CITIC Bank's digital financial innovation services (Smart Wealth Advisor, intelligent customer service and intelligent dialogue, etc.):

	1	2	3	4	5	
Never	☐	☐	☐	☐	☐	Frequently

2. How effective do you think CITIC Bank's digital financial innovation is in improving the convenience of banking services:

	1	2	3	4	5	
Very poor	☐	☐	☐	☐	☐	Very good

3. How do you perceive the impact of CITIC Ban's digital financial innovation on service security:

	1	2	3	4	5	
Very poor	☐	☐	☐	☐	☐	Very good

4. How do you rate CITIC Bank's digital financial innovation in enhancing customer experience:

	1	2	3	4	5	
Very poor	☐	☐	☐	☐	☐	Very good

5. How would you assess the impact of CITIC Bank's digital financial innovation on the bank's overall competitiveness:

	1	2	3	4	5	
Very small	☐	☐	☐	☐	☐	Very large

● **Cost advantage**

1. How do you think CITIC Bank's digital financial innovation affects its operational costs:

	1	2	3	4	5	
Increases costs	☐	☐	☐	☐	☐	Decreases costs

2. How would you rate CITIC Bank's cost advantages when using digital financial innovation:

	1	2	3	4	5	
No advantage at all	☐	☐	☐	☐	☐	Very strong advantage

3. Do you think CITIC Bank's digital financial innovation can help reduce customer transaction costs:

	1	2	3	4	5	
Completely disagree	☐	☐	☐	☐	☐	Completely agree

4. Do you think CITIC Bank's digital financial innovation can help reduce customer time costs:

	1	2	3	4	5	
Completely disagree	☐	☐	☐	☐	☐	Completely agree

5. How satisfied are you with the overall cost-performance ratio of CITIC Bank:

	1	2	3	4	5	
Very dissatisfied	☐	☐	☐	☐	☐	Very satisfied

● **Differentiation advantage**

1. How do you think CITIC Bank's digital financial innovation impacts product differentiation:

	1	2	3	4	5	
No impact at all	☐	☐	☐	☐	☐	Very significant impact

2. Do you think CITIC Bank's digital financial innovation enhances the personalization of its products:

	1	2	3	4	5	
Completely disagree	☐	☐	☐	☐	☐	Completely agree

3. Do you feel that CITIC Bank's innovative products have a clear competitive advantage in the market:

	1	2	3	4	5	
Completely disagree	☐	☐	☐	☐	☐	Completely agree

4. Do you think CITIC Bank's digital financial innovation improves brand recognition:

	1	2	3	4	5	
Completely disagree	☐	☐	☐	☐	☐	Completely agree

● **Focus advantage**

1. Do you think CITIC Bank's digital financial innovation helps better meet the needs of specific customer(e.g. student, business etc) segments:

	1	2	3	4	5	
Completely disagree	☐	☐	☐	☐	☐	Completely agree

2. Do you believe that CITIC Bank's service capabilities in specific areas (e.g. loan financing, insurance etc 筹? have improved due to digital financial innovation :

	1	2	3	4	5	
No improvement at all	☐	☐	☐	☐	☐	Significant improvement

3. How satisfied are you with CITIC Bank's competitiveness in specific markets (e.g. London) or customer segments:

	1	2	3	4	5	
Very dissatisfied	☐	☐	☐	☐	☐	Very satisfied

4. Do you think the customer service quality of CITIC Bank has improved because of digital financial innovation:

	1	2	3	4	5	
Completely disagree	☐	☐	☐	☐	☐	Completely agree

5. How do you think CITIC Bank's Digital Financial Innovations have enhanced its ESG capabilities:

	1	2	3	4	5	
Not improvement	☐	☐	☐	☐	☐	Greatly improved