

THE IMPACT OF INTELLIGENT BRANCH, SERVICE INNOVATION, AND PERCEIVED SERVICE QUALITY ON BANKING RETAIL FINANCIAL PERFORMANCE

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Abstract

This study investigates the impact of intelligent branch, service innovation, and perceived service quality on banking retail financial performance in China. The study utilizes data from 80 urban commercial banks from 2020 to 2022. The study finds that all three factors have a positive impact on financial performance. Additionally, service innovation and intelligent branch have a positive impact on perceived service quality. These findings suggest that urban commercial banks in China can improve their financial performance by focusing on service innovation, intelligent branch, and perceived service quality. Found that All factors intelligent branch, service innovation, and perceived service quality have a positive impact on the financial performance of urban commercial banks in China. Service innovation and intelligent branch also have a positive impact on perceived service quality.

Keywords: Service Innovation, Intelligent Branch, Service Quality, Banking Retail Financial Performance, Urban Commercial Banks.

INTRODUCTION

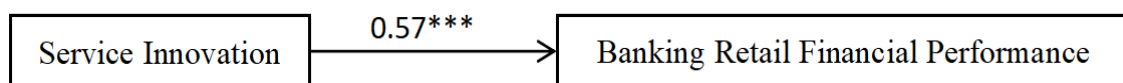
As China's economy flourishes and consumer needs diversify, financial technology (FinTech) has emerged as a transformative force in the financial industry. Internet giants like Baidu, Alibaba, Tencent, and JD leverage technology to develop innovative financial solutions, creating ecosystems that cater to various daily consumption scenarios. These FinTech companies have rapidly captured customers from traditional retail banks, posing a significant challenge to their profitability. FinTech's impact on banking retail business is multifaceted. Firstly, the rise of mobile payment platforms like WeChat and Alipay has disrupted traditional cash payment methods, leading to a decline in settlement income for banks. Secondly, FinTech companies utilize big data and cloud computing to personalize customer experiences and offer targeted financial products, exceeding the capabilities of traditional banks. This has resulted in a loss of customer loyalty and a decline in retail deposits. Finally, FinTech companies offer flexible and high-yield deposit and withdrawal products, attracting customers away from traditional low-yield bank deposits.

In response to these challenges, banks are adopting intelligent technologies in their branches, shifting from counter-based services to self-service models with intelligent machines. This transformation aims to improve customer experience and efficiency. However, to remain competitive, banks must go beyond technological advancements and adopt a customer-centric approach. This involves strengthening customer relationship management, personalizing financial products, and prioritizing customer satisfaction. By focusing on the customer

experience and leveraging technology effectively, traditional banks can adapt to the changing landscape and regain their competitive edge in the FinTech era. Specifically, the impact of financial technology on the retail business of commercial banks is mainly reflected in three aspects: first, payment and settlement functions. With the emergence of WeChat and Alipay as mainstream payment methods, the traditional cash payment method is not convenient enough. Especially with the popularity of smartphones, it has changed the payment concepts and habits of young consumers, and has had an impact on the payment and settlement business of traditional commercial banks, resulting in a significant decline in settlement income. The second is customer management. Although traditional commercial banks have a certain number of branches, due to insufficient information technology and a lack of complete and accurate understanding of customer needs, they are unable to carry out differentiated and targeted marketing for different customer needs, which weakens the stickiness of retail customers. The application of big data, cloud computing and other functions in financial technology can quickly and accurately process customer data, differentiate and personalize customer needs, and support Tianhong Fund of Yu'e Bao as a typical example. The third is debt business. As the main source of funding for commercial banks, the main source of liability business is RMB deposits. However, the low yield and lack of flexibility of traditional bank deposit products have not met customers' expectations. Taking Yu'e Bao launched by Alipay as an example, there are more and more flexible deposit and withdrawal products of financial technology companies in the market, attracting a large number of users. Its high yield and flexible deposit and withdrawal characteristics are superior to traditional commercial banks. These products have advantages such as low purchase threshold, high efficiency, and ease of use, which traditional commercial banks cannot match. Customer churn has become an inevitable trend.

Assumption Analysis

Assuming the test results of hypothesis 1 conclude that service innovation in commercial banks has a positive impact on the improvement of banking retail financial performance, with a direct effect size of 0.57, an indirect effect size of 0.42, and a total effect size of 0.99, which is statistically significant ($p < 0.001$), as shown in Figure 4.24 and Table 4.7.



Note: *** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$, S.E. = 0.101

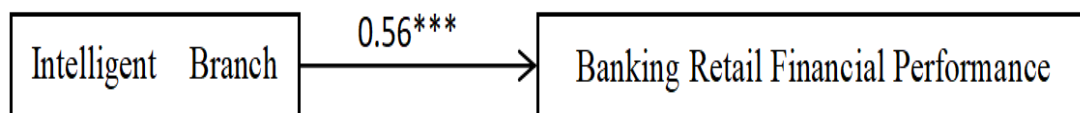
Figure 4.24: Test results of hypothesis 1

Table 4.7: Test results of the impact of service innovation on banking retail financial performance

Effect Variable	Banking Retail Financial Performance (BRP)		
Casual Variable	Total Effect	Direct Effect	Indirect Effect
service innovation (SIN)	0.99***	0.57***	0.42***

Note: *** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$, S.E. = 0.101

The test results of hypothesis 2 conclude that intelligent branches of commercial banks have a positive impact on the improvement of banking retail financial performance, with a direct effect size of 0.56, an indirect effect size of 0.38, and a total effect size of 0.94, which is statistically significant ($p < 0.001$), as shown in Figure 4.25 and Table 4.8.



Note: *** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$, S.E. = 0.086

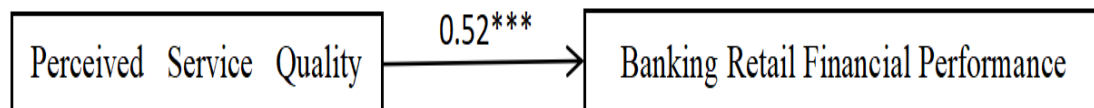
Figure 4.25: Test results of hypothesis 2

Table 4.8: Test results of the impact of intelligent branch on banking retail financial performance

Effect Variable	Banking Retail Financial Performance (BRP)		
Casual Variable	Total Effect	Direct Effect	Indirect Effect
Intelligent Branch (IBH)	0.94***	0.56***	0.38***

Note: *** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$, S.E. = 0.086

Assuming the test results of hypothesis 3 conclude that perceived service quality of commercial banks has a positive impact on the improvement of banking retail financial performance, with a direct effect size of 0.52, an indirect effect size of 0.34, and a total effect size of 0.86, which is statistically significant ($p < 0.001$), as shown in Figure 4.26 and Table 4.9.



Note: *** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$, S.E. = 0.095

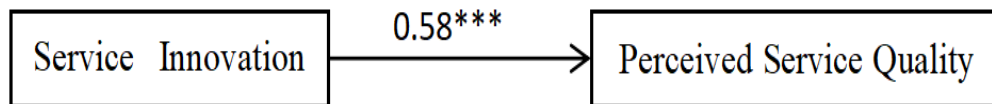
Figure 4.26: Test results of hypothesis 3

Table 4.9: Test results of the impact of perceived service quality on banking retail financial performance

Effect Variable	Banking Retail Financial Performance (BRP)		
Casual Variable	Total Effect	Direct Effect	Indirect Effect
Perceived Service Quality (PSQ)	0.86***	0.52***	0.34***

Note: *** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$, S.E. = 0.095

Assuming the test results of hypothesis 4 conclude that service innovation in commercial banks has a positive impact on the improvement of perceived service quality, with a direct effect size of 0.58, an indirect effect size of 0.31, and a total effect size of 0.89, which is statistically significant ($p < 0.001$), as shown in Figure 4.27 and Table 4.10.



Note: *** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$, S.E. = 0.043

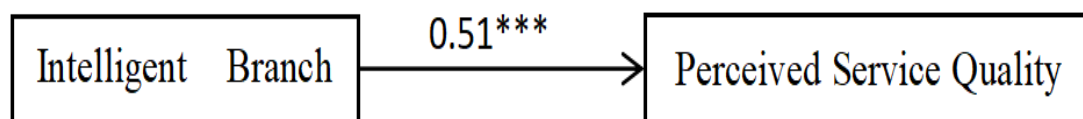
Figure 4.27: Test results of hypothesis 4

Table 4.10: Test results of the impact of service innovation on perceived service quality

Effect Variable	Perceived Service Quality (PSQ)		
Casual Variable	Total Effect	Direct Effect	Indirect Effect
Service Innovation (SIN)	0.89***	0.58***	0.31***

Note: *** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$, S.E. = 0.043

Assuming the test results of hypothesis 5 conclude that intelligent branches of commercial banks have a positive impact on the improvement of perceived service quality, with a direct effect size of 0.51, an indirect effect size of 0.43, and a total effect size of 0.94, which is statistically significant ($p < 0.001$), as shown in Figure 4.28 and Table 4.11.



Note: *** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$, S.E. = 0.013

Figure 4.28: Test results of hypothesis 5

Table 4.11: Test results of the impact of intelligent branch on perceived service quality

Effect Variable	Perceived Service Quality (PSQ)		
Casual Variable	Total Effect	Direct Effect	Indirect Effect
Intelligent Branch (IBH)	0.94***	0.51***	0.43***

Note: *** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$, S.E. = 0.013

As shown in Table 4.12, it is assumed that 1-5 have statistical significance at the P-value < 0.001 - P-value < 0.05 level. This table displays the C. of all hypothetical test results R. (Critical ratio) or t-value of testing results of all hypotheses, as they are not calculated in AMOS.

Testing results of hypothesis 1 described the t-value of 6.164. Testing results of hypothesis 2 described the t-value of 7.364. Testing results of hypothesis 3 described the t-value of 7.385. Testing results of hypothesis 4 described the t-value of 6.214. Testing results of hypothesis 5 described the t-value of 5.783. These t-values were meet the acceptable criterion of C.R. or t-value > 1.96 .

Table 4.12: Hypothesis testing results

Hypotheses	Paths	(β)	t-value	Results
H1	service innovation→banking retail financial performance	0.524***	6.164	Supported
H2	intelligent branch→banking retail financial performance	0.531***	7.364	Supported
H3	perceived service quality→banking retail financial performance	0.357***	7.385	Supported
H4	service innovation→perceived service quality	0.462*	6.214	Supported
H5	intelligent branch→perceived service quality	0.486***	5.783	Supported

4.5 Qualitative Data Analysis

In this study, data was collected through in-depth interviews and analyzed using content analysis. The research results indicate that several themes appeared in the data, including but not limited to service innovation, intelligent branch, perceived service quality, and banking retail financial performance, which provided participants with insights and perspectives on the surveyed themes. There are a total of 15 interviewees for this interview. In order to maintain anonymity, we have replaced their names with numbers 1-15.

Table 4.13: Interviewer data information

NO	Position	Proportion
1	President	6.66%
2	Product manager	20.00%
3		
4		
5	Customer Manager	26.67%
6		
7		
8		
9	Financial Advisor	20.00%
10		
11		
12	Counter employee	26.67%
13		
14		
15		6.66%

RESULTS

From the research was to find out Service Innovation of commercial banks has a positive impact on Banking Retail Financial Performance; The Intelligent Branch of a commercial bank branch has a positive impact on the Banking Retail Financial Performance of the bank; Perceived Service Quality has a positive impact on Banking Retail Financial Performance of commercial banks; The Service Innovation of commercial banks has a positive impact on Perceived Service Quality; The Intelligent Branch of commercial bank branches has a positive impact on Perceived Service Quality.

CONCLUSION

The purpose of this study is to investigate (1) To study the level of the current development status of commercial banks, reveal the main problem face by commercial banks in the current development process, and provide corresponding solutions. (2) To identify the impact of the significance and characteristics of service innovation, as well as the model for measuring service innovation. (3) To develop a model of the specific content of the perceived service quality measurement model.

The subjects of this study are staff members of urban commercial banks. The sample size of this study is 480 staff members from 80 urban commercial banks, using stratified random sampling. As this study is an explanatory research design based on quantitative methods, a questionnaire was used as the research tool to collect quantitative data. This questionnaire consists of 45 questions measuring 4 variables in this study. The four dimensions of perceived service quality - supportability, responsiveness, caring, and ease of use - are measured through 12 questions. The three dimensions of banking retail financial performance - liquidity, profitability, and growth of performance - are measured through nine questions. The four dimensions of service innovation - service product innovation, service delivery innovation, service concept innovation, and customer interface innovation - are measured through 12 questions. The four dimensions of intelligent branch - intelligent terminal data analysis, full self-service processing, intelligent terminal data collection, and differentiated configuration management - are measured through 12 questions. After data collection is completed, the data is analyzed using percentage, frequency, mean, standard deviation, variance, skewness, kurtosis, confirmatory factor analysis, and path analysis.

The answers to the research questions and objectives of this study are as follows:

(1) To study the level of the current development status of commercial banks, reveal the main problems faced by commercial banks in the current development process, and provide corresponding solutions. (2) To identify the impact of the connotation and characteristics of service innovation, as well as the model for measuring service innovation. (3) To develop a model of the specific content of the perceived service quality measurement model.

The basic statistical analysis of the variables in the study showed that all observed variables were normally distributed. The detailed analysis of the measurement models for perceived service quality, banking retail financial performance, service innovation, and intelligent branch using confirmatory factor analysis can lead to the conclusion that perceived service quality consists of four components: supportability, responsiveness, caring, and ease of use. From the perspective of factor load, support is the most important component, followed by responsiveness, care, and ease of use. The perceived service quality measurement model fits well because Chi Square=0.023; df =21; p-value =0.975; Relative Chi-square =0.012; GFI =1.000; AGFI =1.000; TLI =1.000; CFI = 1.000; RMR = 0.000; RMSEA = 0.000.

Banking retail financial performance consists of three components: liquidity, profitability, and growth of performance. From the perspective of factor load, liquidity is the most important component, followed by profitability and growth of performance. The banking retail financial

performance measurement model fits well because Chi Square=0.032; df=21; p-value=0.986; Relative Chi-square=0.025; GFI=1.000; AGFI=1.000; TLI=1.005; CFI=1.000; RMR=0.002; RMSEA=0.000.

Service innovation consists of four components: service product innovation, service delivery innovation, service concept innovation, and customer interface innovation. From the perspective of element load, service product innovation is the most important component, followed by service concept innovation, service delivery innovation, and customer interface innovation. The service innovation measurement model fits well because Chi Square=0.163; df=21; p-value=0.251; Relative Chi-square=1.279; GFI=0.993; AGFI=0.986; TLI=0.998; CFI=0.996; RMR=0.0012; RMSEA=0.021.

The intelligent branch consists of four components: intelligent terminal data analysis, full self-service processing, intelligent terminal data collection, and differentiated configuration management. From the perspective of factor loading, intelligent terminal data analysis is the most important component, followed by intelligent terminal data collection, differentiated configuration management, and full self-service processing. The intelligent branch measurement model fits well because Chi Square=0.486; df=21; p-value=0.991; Relative Chi-square=0.014; GFI=1.001; AGFI=1.011; TLI=1.004; CFI=1.000; RMR=0.001; RMSEA=0.004.

To test hypothesis 1, it was tested that Service Innovation of commercial banks has a positive impact on the improvement of Banking Retail Financial Performance. The test results of hypothesis 1 concluded that Service Innovation of commercial banks has a positive impact on Banking Retail Financial Performance, with a statistical significance of 0.57 for the direct effect.

To test hypothesis 2, the Intelligent Branch of a commercial bank branch was tested to have a positive impact on the improvement of the bank's Banking Retail Financial Performance. The test results of hypothesis 2 concluded that the Intelligent Branch of a commercial bank branch has a positive impact on the bank's Banking Retail Financial Performance, with a statistical significance of 0.56 for the direct effect.

To test hypothesis 3, it was tested that Perceived Service Quality of commercial banks has a positive impact on the improvement of Banking Retail Financial Performance. The test results of hypothesis 3 concluded that Perceived Service Quality of commercial banks has a positive impact on Banking Retail Financial Performance, with a statistical significance of 0.53 for the direct effect. To test hypothesis 4, it was tested that Service Innovation of commercial banks has a positive impact on Perceived Service Quality. The test results of hypothesis 4 concluded that Service Innovation of commercial banks has a positive impact on Perceived Service Quality, with a statistical significance of 0.58 for the direct effect.

To test hypothesis 5, the Intelligent Branch of a commercial bank branch has a positive impact on Perceived Service Quality. The test results of hypothesis 5 conclude that the Intelligent Branch of a commercial bank branch has a positive impact on Perceived Service Quality, with a statistical significance of 0.51 for the direct effect.

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