



Assessing the impact of service quality on customer behavior in the post digital transformation era

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Abstract. This paper aims to study the influence of banking service quality on customer behavior after digital transformation. Through the analysis of these influencing factors, the enlightenment to digital business is obtained, including business improvement and service enhancement.

The main tool of this study is questionnaire survey, with a total sample space of 5.05 million, 400 samples were actually collected, 400 valid questionnaires were issued, and specific factors were studied by quantitative analysis and statistical methods. This includes the analysis of the collected data. Through basic analysis, reliability analysis, validity analysis, correlation analysis and regression analysis, the validity of the questionnaire is good, and the influence of service duty factor, tangible asset factor, price factor, reception capacity factor, reliability factor, efficiency and trust scale on customer behavior is analyzed to find out the internal law between the independent variable and the dependent variable. Finally, the study found, service duty factor, tangible asset factor and price factor have a high impact on customer behavior, while reception capacity factor, reliability factor, efficiency and trust scale have a relatively low impact on customer behavior.

In addition, according to the impact of service quality on customers after digital transformation, this paper puts forward suggestions to improve customer service and enhance customer stickiness, which can provide reference for similar banks.

Keywords: Banking Service quality Model, Customer behavior, Digital transformation.

1 Introduction

In reference to the digital economy, we define the digital transformation of banks as: Adhering to the "customer-centric" service concept and relying on advanced digital technology, commercial banks constantly improve the system architecture, [1] optimize business processes, improve operation management, strengthen risk control, enrich the

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scene ecology, and provide customers with convenient, efficient, inclusive and safe diversified, customized and humanized financial products and financial services.

The digital transformation of banks is a trend and even a trend. In the process of the implementation of the digital construction model, banks need to advance the construction of their core capabilities simultaneously with the implementation of the model, and promote the construction of core capabilities through the implementation of the digital transformation model. Through core capacity building, improve the effectiveness of digital model landing. [2]

Therefore, from the perspective of customers, studying the impact of bank service quality on customer behavior after digital transformation can help banks understand the changes in customer demand, optimize the design and function of digital architecture, improve reliability coefficient, enhance competitiveness, and better meet customer demand. Commercial banks can extract valuable information from digitalization, deeply understand customer needs and behavior patterns, accurately locate the market, and formulate personalized marketing strategies. At the same time, it can promote reliability factors and product upgrades, and the improvement of reliability factors can improve customer price factors and word-of-mouth effects. To sum up, the research on the influencing factors of Guangxi commercial banks on customers' digital transformation can provide important theoretical guidance and practical reference for the sustainable development of the banking industry. [3]

2 Research Objective

To study the impact of bank service quality on customer behavior after digital transformation. (Take J Bank Guangxi Branch as an example).

Through the analysis of these influencing factors, the enlightenment for J Bank's digital business is drawn, including business improvement and service enhancement.

3 Research Hypotheses

The hypotheses of this study are as follows:

H1:Efficiency and trust scales are positively correlated to customer behavior in digital transformation.

H2:Reception capability is positively related to customer behavior in digital transformation.

H3:Tangible assets are positively correlated to customer behavior in digital transformation.

H4:Price is positively related to customer behavior in digital transformation.

H5:Service duty factor is positively related to customer behavior in digital transformation.

H6:Reliability factors are positively related to customer behavior in digital transformation.

4 Scope Of The Research

The population

By the end of 2023, the total number of monthly active mobile banking users of J Bank Guangxi Branch is about 5.15 million (J Bank official website, 2023).

Sample groups

This study takes the number of mobile phone users in Nanning as the total number. The Taro-Yamane formula is used to determine the sample size to conduct a sample survey, which is: $n = N/(1 + N(e^2))$, where n is the required sample size, N is the total capacity, and e is the allowable error or sampling error. Where e is 0.05. Then according to the formula, we can calculate the required sample size.

$n = 5050000 / (1 + 5050000(0.05^2)) = 399.96$. The final survey was 400 people. The sampling method is stratified sampling in probability sampling.

Questionnaires are distributed through Internet channels. Finally, 400 valid questionnaires were sorted out. The data studied in this paper will be analyzed according to these 400 data.

Research Variables

Independent Variable:

Efficiency and trust metrics

Reception capacity factor

Tangible assets factor

Price factor

Service duty factor

Reliability factor.

Dependent Variable:

Customer behavior: refers to the customer behavior of J Commercial Bank Guangxi Branch after digital transformation.

Scope Of Content

By summarizing relevant theories, this paper takes customer behavior under digital transformation as dependent variable and combines the actual situation of J Bank of China Guangxi Branch to study the influencing factors of efficiency and trust scale, reception capacity factor, tangible asset factor, price factor, Reliability factor and reliability factor. It is also assumed that these 6 influencing factors are positively correlated with customer behavior

Scope Of Time

The time range of this study is from July 2023 to January 2024.

5 Research Methodology

The Population And The Sample

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Research Instruments

Questionnaire Design

Based on the digital transformation environment of the banking industry, this paper applies the BSQ model to the digital transformation, constructs a customer behavior test project based on BSQ (see Table 1.), and designs a questionnaire project based on BSQ in combination with the actual scenario of the digital transformation of the case branch. [8]

Table 1. Questionnaire items designed based on the measurement of bank service quality BSQ model

Efficiency and trust scales[11]	Confidence	The digital transformation of the bank has improved the interactive efficiency of my relevant banking operations
	Identify loyal customers	
	Ensure customer privacy, good interaction	
	The price is relatively fixed	After the digital transformation of the bank, it is more convenient for me to interact with the online way, so as to choose this bank.
	The service will not be affected for my own reasons	
	Service personnel are trained	
	Understand customer needs	After the bank's digital transformation, it can better respond to the service requirements I need, which makes me choose this bank.
	The staff of the bank is harmonious between superiors and subordinates	After the digital transformation of the bank, it is very convenient for me to refer others to the bank for business through link sharing.
	Keeping your promise	
	Be reputable	
	Make customers feel safe	After the bank uses digital transformation, it can give me more accurate and timely feedback, so that I can choose this bank.
	No delay in service due to staff or system	
Customers can communicate effectively with the bank		
Reception capacity factor[12]	Number of ATMs to meet customer demand	The bank is in digital service and I can choose different password verification methods.
	Devices and services are constantly being innovated	

	There are more than enough tellers to handle business	The bank uses online services where I can choose from many different types of transactions.
	The wait will not be too long	With the digital transformation of the bank, I can keep up to date with the latest offers.
	The waiting line is fast	After the bank's digital transformation, I can use various products more conveniently.
Price factor	Contact customers only when necessary	I can select my own service manager online at the bank.
	A: There is a reasonable explanation for the charge	I think the bank's digital business charges are the most reasonable, so I always choose this bank..
	Fair fees	
	Reasonable overhead	The bank's digital system can clearly display my every charge, so I feel very transparent about the charges.
	Automatically seek better solutions for customers	After the bank's digital transformation, I prefer the bank's operating interface and service model.
Tangible ASSET FACTOR[13]	Clear operating instructions	After the bank's digital transformation, it can provide comprehensive and clear operating instructions.
	Easy online operation	After the digital transformation, I can operate most of the functions of mobile banking.
	Fast online process	After the bank's digital transformation, the approval of many businesses is very fast.
	Online service is efficient	Service efficiency will be significantly improved after the bank's digital transformation
Service duty factor[14]	Service in place	After the bank's digital transformation, the experience of AI customer service and manual service is very good.
		After the bank's digital transformation, it can minimize my time consumption.
	Services keep pace with The Times	I am reassured by the security safeguards in place for the business following the bank's digital transformation.
		After the bank's digital transformation, the VIP and online booking service experience is good.
Reliability factor	Service without error, can provide differentiated service	After the bank's digital transformation, there are many products that other banks do not have.
		The bank has a brand new service experience after its digital transformation.
	The system has a high degree of accuracy and can fully match the requirements of customers	The bank's digital transformation has enabled it to personalise its services to customers.
		The product range of the bank can fully meet my needs after the digital transformation.

We will get the details of the main questionnaire items from Table 1.

The customer behavior scale (Dependent variable) is designed as follows:

1. The service of this bank made me decide to choose it and would recommend it to others.

2. I use the bank's digital business regularly.

3. At this bank, I will use more digital business than traditional business.

The research methods of this paper are as follows: First, the questionnaire is constructed on the basis of BSQ model; Finally, on the basis of questionnaire survey and data collection, empirical analysis is carried out. [9]

Based on the traditional BSQ model, this paper studies the influence factors of digital transformation on customer behavior. Based on the actual characteristics of digital transformation, it is necessary to put forward the hypothesis and verification of six positive correlation factors. [10]

The object of sample extraction is the customer who uses the artificial intelligence products and services of commercial banks, so as to ensure the authenticity and effectiveness of the questionnaire as much as possible.

The first part of the questionnaire is the basic information of the respondents, a total of five questions are designed, including gender, age, occupation, education level, monthly salary. The respondents' basic information shows not only the use of AI products and services by commercial bank customers, but also the use of different digital financial products and services.

The second part of the questionnaire is about the scale of customer influence factors. The preliminary design of 25 questions, and the preliminary research. Low relevance questions are removed and high relevance questions are retained. The scale is based on a 5-level scale of 1 to 5 :5 means very unimportant, 4 means unimportant, 3 means fair, 2 means important, and 1 means very important.

IOC Assessment

The completed questionnaires are given to experts for measurement and evaluation to check the validity of the content. Someone with knowledge and expertise in the field of business research checked for security to match content coverage, linguistic accuracy, and consistency with the research objectives. A list of content validators (see Appendix A). Researchers used the IOC Index (Item Objective Congruence) with the following scoring characteristics:

+1 means that you want to make sure that the question is aligned with the research objectives.

0 Indicates that you are not sure if the question meets the research objectives.

-1 indicates that you are confident that these questions are not consistent with the research objectives.

The question items were selected using the judgement criteria of content validity, i.e. the calculated IOC index value must be greater than 0.6 ($IOC > 0.6$) (Pukkaew 2015). Therefore, we considered the question items to be consistent with the information to be measured.

Table 2. IOC Content Validity Checkers (Objective Consistency of Items)

Experts	Experts Qualification	Number (person)
Experts in the field of business administration	Academic or related institutions in business administration	1
Measurement and assessment by statistical experts	Independent scholars or university professors with strong reputations in statistics, measurement and research methods.	1
Experts in the field of purchasing intention research	Academic/management participation in purchasing intention studies	1

From Table 2. The researcher brings a draft questionnaire that has been edited by a qualified person. presentation of advisors considers the completeness again and bring it to the trial (try-out) with a group of people who are like the sample you want to study 30 people, then bring it to the reliability value. (Cronbach's alpha coefficient).

The researcher brings the defects from the experiment to the final improvement. to be printed as a complete questionnaire used to collect data for research.

3. Scoring criteria

The questions in this questionnaire were characterised by a 5-point Likert estimation scale, and the meanings of the scores and their implications are as follows:

- 1 indicates the highest level of agreement.
- 2 points were highly favourable.
- 3 indicates moderate agreement.
- 4 implies a low level of consent.
- 5 indicates the lowest level of agreement.

The explanatory criteria for the mean scores of the observed variables were categorised into the following five levels.

Validity analysis

Determination of Validity The researcher will check the content validity of each article to ensure that it meets the objectives of the study. Language clarity, wording and accuracy of the content will be checked by consulting 3 subject matter experts:

- + 1 When the expert or specialist is convinced that the question is consistent with the content.
- 0 When an expert or specialist is unsure if the question is consistent with the content.
- 1 When an expert or specialist is convinced that the question is inconsistent with the content.

Calculated by formula $IOC = \frac{\sum R}{N}$

IOC instead of indexing the consistency between queries. Research Objectives

$\sum R$ rather than the sum of experts or expert opinions.

N rather than the number of experts or specialists.

The index of congruence between the questionnaires was calculated and the value of the index of congruence (IOC) with the objectives of the study had to be greater than 0.6 From this it can be concluded that the content accuracy of the questionnaires was within acceptable standards for the collection of additional data.

Reliability analysis

The results of the data analysis are presented in Table 3.

Table 3. Questionnaire Cronbach's α

Variable Items	Sample size	N of Items	Cronbach's alpha
Efficiency and trust scales	400	5	0.867
Reception capacity factor	400	2	0.789
Price factor	400	3	0.826
Tangible assets Factor	400	4	0.880
Service duty factor	400	4	0.897
Reliability factor	400	4	0.862
Customer behavior factor	400	3	0.768
Total	400	25	0.931

From Table 3. questionnaire Cronbach's alpha, it can be seen that the Cronbach's alpha for Efficiency and trust scales is 0.867, Cronbach's alpha for Reception capacity factor is 0.789, Cronbach's alpha for Price factor is 0.826, Cronbach's alpha for Tangible assets Factor is 0.880, Cronbach's alpha for Service duty factor is 0.897, Cronbach's alpha for Reliability factor is 0.862, Cronbach's alpha for Customer behavior factor factor is 0.768, The reliability values of all the factors and the total factor of the questionnaire are more than 0.7, so it can be concluded that the questionnaire can be used to collect the real data and its reliability value meets the acceptance criteria.

In the research process, we first analyzed the reliability of the whole scale, and obtained that the Cronbach α coefficient of the whole scale was 0.764, indicating that the whole questionnaire had good reliability.

6 Results

In summary, service duty factor, tangible asset factor and price factor have a high impact on customer behavior, while reception capacity factor, reliability factor, efficiency and trust scale have a relatively low impact on customer behavior. According to the coefficient, the service duty factor has the greatest influence, and the reception capacity factor has the least influence.

Table 4. Evaluation of study hypotheses

Research Hypotheses	Relationship	β	P-Value	Accepted/Rejected
Hypotheses 1(H1):	E ---> C	.145	0.000	Accepted
Hypotheses 2(H2):	RC---> C	.096	0.000	Accepted
Hypotheses 3(H3):	P---> C	.167	0.000	Accepted
Hypotheses 4(H4):	T---> C	.160	0.000	Accepted
Hypotheses5(H5):	S---> C	.173	0.000	Accepted
Hypotheses 6(H6):	R---> C	.138	0.000	Accepted

As can be seen from the table 4, all hypotheses are valid, that is, the six independent variables are significantly correlated with the dependent variables.

7 Conclusion And Discussion

7.1 Conclusion

This paper analyzes the influence of bank service quality on customer behavior after digital transformation. Through pre-survey, invalid questionnaire options are deleted to obtain the final valid questionnaire. Then, basic information analysis, reliability analysis, validity analysis, correlation analysis and regression analysis are carried out. The results show that six factors, including service responsibility factor, tangible asset factor, price factor, reception capacity factor, reliability factor, efficiency and trust measure, have positive effects on customer behavior after digital transformation of commercial banks. Among them, service responsibility factor, tangible asset factor and price factor have a higher influence on customer behavior, while reception capacity factor, reliability factor, efficiency and trust scale have a lower influence on customer behavior.

7.2 Discussion

Based on theories related to customer service quality and the specific situation of the digital transformation of J Bank of China Guangxi Branch, this paper proposes a customer behavior research model and relevant hypotheses, and then tests whether the hypotheses are true through empirical research methods such as basic analysis, reliability analysis, validity analysis, correlation analysis and regression analysis. The results in the discussion process are as follows: [4]

Through the investigation and research on the Guangxi Branch of J Bank of China, on the one hand, after the digital transformation, the service responsibility factor, tangible asset factor and price factor applied in commercial banks have a more significant effect on customer behavior. The reason behind this is that after the digital transformation, the stronger the service capability of the bank, the more inclined customers are to the digital products and services that are easy to use; The more the service is in place, the more the digital products are favored by customers. On the other hand, reception capacity factor, reliability factor, efficiency and trust scale have relatively low influence on customer behavior. It shows that after the digital transformation, the reliability of products and services is greatly improved, business handling is fast and accurate, and there is little difference in reception scenarios and reception capabilities. Although it has a certain impact on customer behavior from the perspective of customers, the degree of impact is relatively low. [5]

In addition, other scholars believe that the goal of digital transformation of banks (Jin,2018) is customer-centric, business-centric, and digitalization is applied to solve business problems. And through business model innovation to improve capabilities. Therefore, banks should focus mainly on improving their services from the perspective of getting positive feedback from customers as quickly as possible. Then, there are

scholars who believe (Liu Xin, 2019) that the core of digital banking is a new production model. That is, by studying customer behavior to directly match the corresponding business innovation and business priorities, and build a way of operating directly around the customer. Moreover, at another level, some scholars (Kalyn, Li Dping, 2022) believe that influence must also include a certain coverage, that is, after analyzing the most important factors that change customers through statistical methods, service interface and marketing strategy are designed directly around these factors. [6]

To sum up, the research results of this paper can draw on the strengths and weaknesses of other scholars from the research perspective, and provide reference for the impact of service quality on customer behavior after digital transformation and how to change customer behavior. [7]

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