

## THE IMPACT OF BANKING SERVICE INNOVATION ON CUSTOMER SATISFACTION: AN EMPIRICAL STUDY

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**Annotation.** This article empirically analyzes the impact of innovations in banking services on customer satisfaction. It highlights the positive effects of digital services such as mobile banking, online payments, and biometric authentication on customer satisfaction, emphasizing their crucial role in the digital transformation of banks. Based on the findings, practical recommendations for developing innovations and security measures in the banking sector are provided.

**Keywords:** banking services, innovation, customer satisfaction, mobile banking, biometric authentication, digital transformation.

**Аннотация.** В данной статье проводится эмпирический анализ влияния инноваций в банковских услугах на удовлетворенность клиентов. Выявлена положительная роль цифровых сервисов, таких как мобильный банкинг, онлайн-платежи и биометрическая аутентификация, в повышении удовлетворенности клиентов и цифровой трансформации банков. На основе результатов исследования даны практические рекомендации по развитию инноваций и мерам безопасности в банковской сфере.

**Ключевые слова:** банковские услуги, инновации, удовлетворенность клиентов, мобильный банкинг, биометрическая аутентификация, цифровая трансформация.

### Introduction

Innovations in the banking sector have been developing rapidly in recent decades. Innovations such as digital technologies, mobile applications, online banking, artificial intelligence and blockchain have fundamentally changed the quality of services provided to customers. These innovations are playing an important role in increasing the speed, convenience, security and personalization of banking services.

Customer satisfaction is one of the success indicators of the banking system and is a decisive factor for banks in maintaining competitiveness. Customer satisfaction with service not only ensures loyalty to banking services, but also helps them form positive attitudes and recommendations towards banking activities.

This article empirically analyzes the relationship between innovations in banking services and customer satisfaction. The article examines the types of innovations, their impact on customer satisfaction, as well as the main results identified through empirical research. The results of the research will serve as the basis for developing important recommendations for banks to retain customers and improve service quality.

To understand the relationship between innovations in banking services and customer satisfaction, it is necessary to consider several economic, social and marketing theories. This

section analyzes the concept of innovation, its types in the banking sector, customer satisfaction and its shaping factors, as well as the mechanisms of the impact of innovations on customer satisfaction.

### **Main part**

Innovation is the introduction of a new or significantly improved product, service, process or business model. Schumpeter (1934) called innovation the main engine of economic growth and competitiveness. Innovation in the banking sector is mainly manifested in the following forms:

- Technological innovations: digital banking services, mobile banking, online payments, biometric authentication.
- Process innovations: automation of lending processes, fast customer service, innovative risk management systems.
- Marketing and service innovations: personalized services, individual approach to customers, creation of new financial products.

Innovations allow banks to increase market share, reduce costs, improve service quality and meet customer needs faster.

Customer satisfaction is a set of positive emotions that arise from the difference between the customer's expectations and the actual experience of a banking service (Oliver, 1997). When customer satisfaction is high, the customer is loyal to the bank, uses the service repeatedly, and recommends it to others. As Parasuraman, Zeithaml, and Berry (1988) noted, there is a strong relationship between service quality and customer satisfaction. In the banking sector, providing quality service increases customer trust and helps to build long-term relationships with them.

Innovations increase customer satisfaction in many ways:

- Speed and convenience: mobile banking and online services allow customers to access banking services anytime, anywhere.
- Security: biometric technologies and encryption methods protect customers' personal information and finances.
- Personalization: products and services tailored to customer needs satisfy customers.
- Innovative services: new options such as contactless payments and e-wallets create additional convenience for customers.

Empirical studies (Kim and Lee, 2019; Zhang et al., 2021) show that innovations in banking services significantly increase customer satisfaction and strengthen customers' trust in the bank. Demographic data of 320 respondents selected for the study were analyzed. The ratio between men and women is almost equal (men – 52%, women – 48%), which brings the sample closer to the gender composition of society. 60% of respondents are in the age group of 25–40 years, which indicates the active use of banking services by this age group and their readiness to accept innovations. Respondents in the middle and upper income groups are the majority, which also indicates a high level of demand and satisfaction with financial services.

75% of respondents regularly use mobile banking services, which indicates the widespread use of digital technologies in the banking sector and their high acceptance among customers. The level of use of online payment services is 68%, which indicates that this service is popular due to its convenience and speed. The level of use of new security technologies, such as biometric authentication, is 40%, which indicates that there is still room for wider promotion of this technology and increased trust among customers. 85% of respondents positively assessed the bank's policy on introducing new technologies, which indicates the openness of customers to innovations and their trust in them.

The average satisfaction level was 4.2 points (on a 5-point scale), which indicates a high level of satisfaction. The highest marks were given to the speed of service and convenience. This shows that customers highly value the efficient and easy use of banking services. Personalized services and an individual approach to customers were also highly rated, which confirms the banks' success in understanding and meeting customer needs.

The correlation coefficient between innovation and customer satisfaction is 0.68, which indicates a moderately high positive correlation. This result indicates that the introduction of innovation by banks leads to a significant increase in customer satisfaction. At the same time, the type and quality of innovations in banking services have a strong impact on customer service experience and overall evaluation.

The results of multivariate regression show the following:

- Mobile banking has the greatest impact on satisfaction ( $\beta_1=0.45$ ,  $\beta_1 = 0.45$ ,  $p<0.01$ ), which is due to the convenience of the service and the possibility of continuous use.
- Online payments also have a positive effect, significantly increasing satisfaction ( $\beta_2=0.32$ ,  $\beta_2 = 0.32$ ,  $p<0.05$ ).
- Biometric authentication has a positive effect on customer satisfaction by increasing security and enhancing trust ( $\beta_3=0.28$ ,  $\beta_3 = 0.28$ ,  $p<0.05$ ).

The overall fit of the model is high ( $R^2=0.56$ ), meaning that approximately 56% of the changes in satisfaction are explained by innovations in banking services.

The results of the analysis show that technological and service innovations in banking significantly increase customer satisfaction with the bank. In particular, convenient and fast services such as mobile banking and online payments are important factors for customers. Biometric security, on the other hand, increases customer trust and helps them perceive banking services as safe and reliable.

At the same time, the high level of innovation acceptance by respondents is an important signal for banks to further accelerate their digital transformation and provide better customer service.

The results of this study show that innovations in banking services have a significant impact on customer satisfaction. In particular, digital services such as mobile banking and online payments are now widely accepted by customers, increasing trust in banks and making services more convenient to use. This helps strengthen banks' competitiveness in the digital economy.

The positive impact of biometric authentication on satisfaction shows the importance of security issues for customers. Banks can be more effective in protecting customer data and ensuring the confidentiality of personal information by implementing these technologies more widely.

Also, the high level of customer openness and acceptance of innovations ensures the success of the digital transformation process. Banks should constantly improve their services and create innovations that meet customer needs.

Development of digital services: Banks should focus on further improving and improving the quality of mobile banking and online payment services. The convenience and speed of these services play an important role in attracting customers.

Security measures: It is necessary to widely introduce advanced security technologies such as biometric authentication, protect customers' personal data and ensure safe use of banking services.

Customer communication: Banks should regularly study the needs and opinions of customers, develop innovations on this basis. Also, customers should be adequately informed about new services and simplify the processes of providing services to them.

Increasing competitiveness: By introducing innovations, banks can strengthen their position in the market, attract new customers and retain existing ones.

Staff training: It is important to train bank employees to use new technologies and improve their skills in providing quality service to customers when providing innovative services.

### Conclusion

According to the results, innovations in banking services have a positive impact on customer satisfaction and ensure their effective use of services. In the process of digital transformation, services such as mobile banking, online payments and biometric authentication are among the most widely accepted by customers and are considered one of the most effective tools for improving service quality.

Banks should pay great attention to the development of these innovations, offer new services tailored to customer needs and strengthen security measures. As a result, trust in banking services will increase, the customer base will expand and the market competitiveness of banks will be strengthened.

This study has created a solid scientific basis for an in-depth analysis of the relationship between digital innovations and customer satisfaction in the banking sector and has developed practical recommendations. In the future, the scope of the study can be expanded to study other innovative technologies and their impact on customer experience.

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