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FUNDAMENTALS OF INNOVATION IN MODERN BANKING SERVICES

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Abstract: *In today's constantly evolving technological world, banks need to implement modern innovations to remain competitive in banking environment and meet the growing needs of their customers. Innovative advancements help banks digitize their banking services, operations and management, improve efficiency, productivity and functionality, reduce costs, create new banking products and improve existing ones. In addition to their countless benefits, innovations also create numerous potential risks and challenges for banks.*
Using a mixed research methodology, this article examines the main types of innovation implemented by banks in banking services and management, highlights their main characteristics and analyzes their common benefits and challenges. Demographic analysis part of the article explores the number of users of digital banking services worldwide and the factors influencing their adoption of modern innovations. Based on the findings of this article, the conclusion part offers brief recommendations to banks for the effective implementation of modern innovations and maximizing their benefits.

Keywords: *banking innovation, innovative banking services, incremental innovation, disruptive innovation, substantive innovation*

1. INTRODUCTION

Until the 20th century, the primary activity of banks was accepting deposits and granting loans to individuals and legal entities. But, the invention of the computer in the 1960s and subsequent technological advances revolutionized all sectors, including finance and banking. They enabled banks to expand their operations and create new banking services.

Modern innovative technologies bring countless benefits to banks, improving their efficiency, productivity, and functionality, and making banking services more accessible to customers. However, there are several innovation strategies in the banking industry and banks should analyze and decide what type of innovation should be implemented to stay ahead of competitors. (Campanella & Peruta, 2020).

The purpose of this article is to explore the main types of innovation in the banking sector, analyze the benefits and challenges of innovative banking services, and provide a detailed overview of how they are reshaping the banking environment.

2. Types of Innovation in Modern Banking Services

Innovation in banking refers to the creation of new services, products, or processes that enhance the existing banking experience. It is essential for meeting growing customer needs, improving efficiency and remaining competitive in the banking environment. Below are examples of the main types of innovation implemented by banks to achieve different goals.

Incremental Innovation in Banking Services

Incremental innovation plays an important role in improving banking services and products. Instead of developing completely new services and products, incremental innovation concentrates on existing ones. It gradually and continuously improves the functionality, efficiency and convenience of existing banking services. Incremental innovation has lower risks compared to other types of innovation strategies and allows banks to achieve noticeable results in a short period of time. (Ravi, 2021).

One of the main benefits of incremental innovation is the ability to facilitate customer access to banking services and products, meets their needs and increases customer satisfaction. From an internal banking management perspective, incremental innovation automates a large part of banking tasks, helps banks reduce operational costs and improve management processes.

The main purpose of incremental innovation is to enable banks to respond immediately to new emerging market trends, meet growing customer needs, maintain their competitiveness and gain a technological advantage over their competitors in the banking sector.

Mobile banking applications perfectly illustrate the incremental innovation approach of banks. They regularly update banking apps to improve performance, strengthen security methods, add new features and improve the interface to make it more user-friendly. (Parameswar & Dhir, 2023).

While incremental innovation helps banks reduce costs and optimize operational efficiency, implementing such minor technological improvements in banking management and services also requires financial investments. Moreover, with the constant growth of customer needs and expectations and the rapid evolution of technological advancements, incremental improvements alone may not always be sufficient. In such cases, banks need to implement more advanced innovations in order to achieve long-term profits.

Disruptive Innovation in Banking Services

Disruptive innovation fundamentally transforms the banking services landscape, brings new solutions to traditional services and drastically changes customer behavior. It introduces new banking services and financial products or creates cheaper, simpler, and more accessible alternatives to existing offerings. The primary objective of disruptive innovation is to offer banking services and products to underserved markets and people who are unbanked or live in remote regions and may not have access to conventional financial services. Typically, such innovation begins with limited market adoption and offers fewer features compared to existing services. However, over time, it gradually expands its offering, demonstrates its value, and attracts new customers. As customer acceptance of disruptive innovation increases and it gains traction in the market, innovation begins to disrupt traditional banking business models in the banking sector and challenge the dominance of banking institutions.

Neobanks are a classic example of disruptive innovation. These digital financial institutions allow customers to use banking services completely online, without visiting a bank branch. Unlike traditional institutions, neobanks operate only in digital format, without specific infrastructure or branches. By minimizing overhead expenses, they offer digital banking services with lower rates than traditional banking services. (World Bank, 2023).

Peer-to-peer (P2P) lending platforms are another example of disruptive innovation. These platforms offer direct lending and borrowing services to customers and disrupt traditional banking models in two ways: By removing intermediaries (banks) between individuals, P2P platforms offer more favorable interest rates for both lenders and borrowers. Secondly, these platforms facilitate access to credit for people who are not eligible for bank loans.

Despite its countless advantages, disruptive innovation also carries several risks. Although it aims to offer more innovative services, customers accustomed to traditional banking services may refuse to adopt new and unfamiliar services. Developing such innovative services and products also requires considerable financial investment. Project failure can result in heavy financial losses for the organization. (Sharma, 2022). Additionally, newly developed services may present security and regulatory issues that require special attention from service providers.

Substantive Innovation in Banking Services

Substantive innovation involves making major changes or improvements to existing banking services, products, management processes and banking business models to significantly improve productivity, efficiency and effectiveness. This type of innovation falls somewhere between incremental and disruptive innovation. Substantive innovation does not completely disrupt existing business models, but it brings more significant improvements than incremental innovation and exerts a stronger impact on the banking sector. (Kittiwat, 2023).

Substantive innovation often introduces new services, products, technologies or systems that improve the functionality and efficiency of banking operations, meets new customer expectations and brings additional value to the overall banking experience. It sometimes relies on customer feedback to improve banking services and products or find solutions to previously unmet needs.

One of the most shining examples of substantial innovation is the integration of Artificial Intelligence (AI) technologies in the banking. These technologies enable banks to predict potential risks and identify signs of fraud and suspicious transactions. AI-powered programs help banks analyze large volumes of data in a short time and speed up the decision making process. (World Bank, 2023).

Open Banking is another example of substantial innovation, which is reshaping the relationship between banks, customers and third-party service providers. Thanks to this technological innovation, banks securely share their customers' data (with their consent) with third-party service providers and enable them to create new banking services and financial products. These platforms then allow customers to access a wider range of financial services than those offered by banks. (Arnaboldi, 2021).

Substantive innovation is characterized by a deeper and broader transformative impact on banking services, products, or management. The development of such innovation takes considerable time and requires significant financial resources, but once introduced, it ensures long-term benefits and efficiency for banks. After the introduction, it is also necessary to train the bank staff, to teach them how to use the new technological advances correctly. To develop a substantial innovation, banks typically collaborate with other banks and financial institutions. By combining their resources and experience, banks and financial organizations accelerate the process of developing new technologies, share associated costs and maximize end results.

Open and Closed Innovations in Banking

The primary objective of each of the above-mentioned types of innovation is to improve banking services and management, as well as increase functionality and efficiency. However, there are also two sources of innovation in terms of banks obtaining these innovations: Open and closed.

Open innovation involves banks acquiring a new technology, application, or service from external sources, such as technology companies or other financial institutions. Acquiring from external sources allows banks to avoid research and development expenses and quickly access the latest innovations on the global market. However, innovation developed by third-party organizations sometimes do not offer banks exactly what they are looking for. Additionally, such innovation is more sensitive in terms of security and increases the risks of cyberattacks, data theft and financial losses. (Parameswar & Dhir, 2023).

Technological advancement developed by banks themselves are called Closed innovation. This innovation relies heavily on the internal resources of banks, which are developed based on the banks' ideas and research. (Balkon, 2022). Closed innovation helps banks develop innovation that meet their needs. Furthermore, these types of innovations are more secure because they are known and used only by the bank. However, developing closed innovation can be time-consuming and more expensive than open innovation.

3. Benefits of Innovation in Banking Services

From increased accessibility and efficiency to faster transactions and advanced features, innovation in banking services offer numerous advantages to both banks and customers. Here's a brief overview of the key benefits:

Accessibility and convenience. Innovative banking services such as mobile banking apps and online banking sites are available 24/7, anytime and anywhere, making them accessible and convenient for customers. With innovative advancements like live chat and robo-advisors, banks offer 24/7 customer support, resolving customer issues and answering their questions.

Transparency. Innovative banking technologies allow banks and customers to view the details of all transactions and financial operations. Customers can check their bank accounts and track the history of transactions. Transparency also helps banks identify fraud and suspicious activities. (Lin, Liu & Wei, 2023).

Cost efficiency. Innovation helps banks automate most of the processes, which helps them reduce costs by reducing the need for large numbers of bank personnel and physical bank branches. Reducing costs allows banks to offer banking services with lower fees.

Faster credit approval. Innovative advances such as AI and big data allow banks to collect relevant customer data, analyze it quickly and speed up the loan decision-making process. (Sharma, 2022).

New services and products. Innovation helps banks analyze market trends, identify unmet needs and develop new banking services and other financial products. It also allows banks to offer more personalized services to customers. (Harchekar, 2021).

Improved Financial Inclusion. With the help of innovative banking platforms, anyone with internet access can open a bank account, obtain a loan, and send and receive money, regardless of their location. By offering banking services to the unbanked people, innovative technologies help improve financial inclusion. (Indriasari, 2022).

4. Challenges of Innovation in Banking Services

Despite the numerous advantages that innovation brings to banking services and the banking environment, it also has a number of disadvantages. The following are the main challenges of innovative banking services:

Privacy concerns. Innovative banking services collect and store a significant amount of personal and financial data about customers. Although this data is used only to personalize financial services, customers are concerned about privacy and the risk of misuse of their personal data. (Revathi, 2019).

Security risks. Digital banking platforms are always under attack from fraudsters and cybercriminals. Although banks use advanced security methods to protect themselves and their customers, the risk of manipulation and hacking remains. Cybercriminals' access to digital banking systems can lead to financial losses for banks and their customers.

Technical problems. Innovative banking services depend heavily on technology and failures, downtime or bugs in banking system can prevent customers from accessing banking services.

High implementation costs. Innovations improve the efficiency, functionality and productivity of banks. However, developing or acquiring modern innovative achievements is very expensive. Due to these high costs, many banks postpone or refuse to implement the latest technological innovations. (Valverde, 2019).

Customer experience issues. Customers accustomed to traditional services may struggle to adopt and use innovative banking services. Additionally, online customer support may sometimes be unable to resolve more complex issues, which can lead to frustration.

Digital exclusion. While innovative banking services promote financial inclusion, they also drive digital exclusion. People without access to technology and the internet are unfortunately excluded from the benefits of modern banking services. (Indriasari, 2022).

5. Methodology

This article employs a qualitative research approach to study the types of innovation in modern banking services, assess their benefits and challenges, and analyze the demographic adoption of digital banking services across the globe.

A literature review was conducted to write this article using relevant academic articles, books, and journals. In addition, information is collected from both academic and industry sources including reports, regulations, customer surveys and comments from banking professionals to analyze the benefits and challenges of innovation.

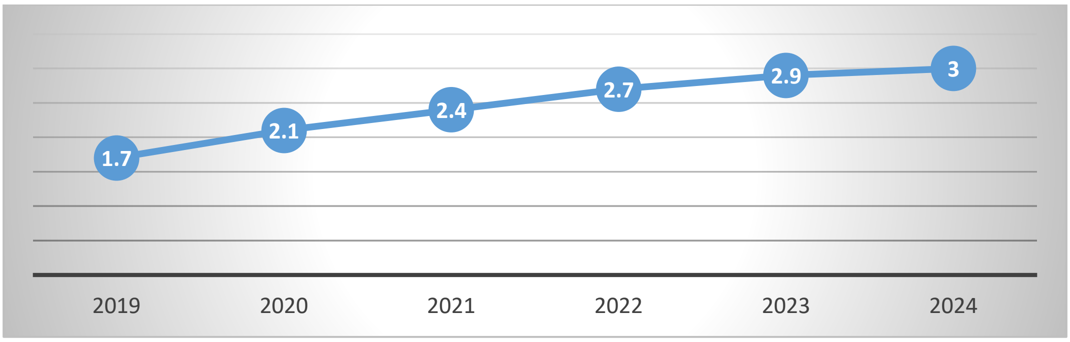
The demographic analysis of digital banking services was conducted using statistical data from official sources such as the World Bank, International Monetary Fund (IMF), and various national banks of the countries. These data were used to study the adoption of digital banking services across key demographic variables including age, education level, income level, etc. However, the lack of detailed data on the adoption of digital banking services in developing countries is a major limitation of this study.

Although this article does not rely on primary data collection, it provides a comprehensive overview of the existing knowledge on innovation in modern banking services.

6. Results - Demographic Analysis of Innovative Banking Services

From a customer perspective, the primary banking innovation is digital banking services, which directly influence their behavior. This part of the article analyzes the demographic structure of innovative digital banking services, focusing on socioeconomic factors.

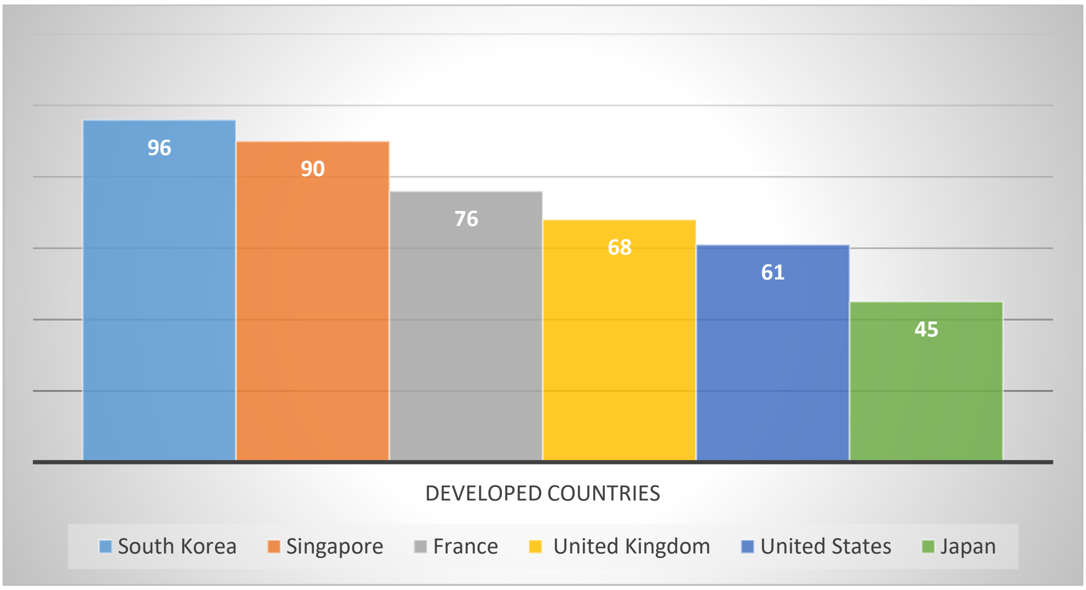
Figure 1: *Number of digital banking users 2019-2024 (in billions)*



Source: World Bank and IMF reports.

As shown in Figure 1, the number of users of modern digital banking services continues to grow worldwide every year. Especially during the Covid-19 pandemic, lockdowns have boosted the use of these services. By 2024, more than 3 billion people use at least one digital banking service during the year.

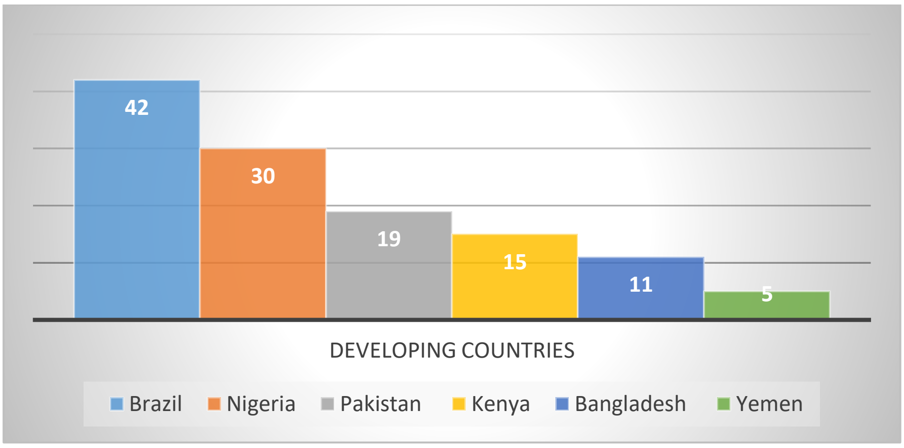
Figure 2: *Percentage of adults using digital banking services in developed countries (2024)*



Source: World Bank and official websites of banks.

The percentage of the adult population using innovative banking services is generally higher in developed countries. (Figure 2). A Higher HDI, strong technological infrastructure, higher income and literacy levels are the main factors that positively influence the adoption rate of innovative advances by the population.

Figure 3: *Percentage of adults using digital banking services in developing countries (2024)*



Source: World Bank and official websites of banks.

Figure 3 shows that the adoption rate of innovative banking services among adults in developing countries is significantly lower than in developed countries. Factors such as weak technological infrastructure, poor internet quality, low incomes and poverty slow down the adoption of modern innovations.

Younger generations are the primary users of innovative banking services globally. According to a 2024 survey, 93% of Millennials and 81% of Gen Z use digital banking platforms for at least one financial service. While Gen Z customers adapt quickly to every innovation, Millennials are the main users of innovative banking services. Older generations favor traditional face-to-face banking services and the adoption rate of innovative services is relatively low among these customers.

Income level of customer has a direct impact on the adoption rate of innovative banking services. Higher-income individuals tend to use modern banking platforms more frequently and require a wide range of financial services, such as investment advice, wealth management or cryptocurrencies. (Brown & Nyarondia, 2023).

Education is another factor influencing customer behavior. More educated customers generally have better financial literacy, easily understand and use digital banking services, and quickly adopt new innovations.

7. DISCUSSIONS/CONCLUSIONS

Like other industries, modern innovation is transforming the traditional banking concept. Application of innovation in banking services improves their accessibility, makes them more convenient for customers, increases transparency and efficiency, and reduces costs for both banks and customers. (Lin, Liu & Wei, 2023). However, they also come with a number of challenges such as privacy, security and technical problems. These challenges require careful attention from banks and financial institutions.

The demographic analysis in this article reveals that several socioeconomic factors, such as quality of life, country infrastructure, education level and income level of customers influence their adoption of digital banking services. (Brown & Nyarondia, 2023). Moreover, analysis by customer age shows that older customers are more reluctant to use these services and prefer traditional banking methods.

But today, the banking industry is unimaginable without innovative advances. Every bank must implement innovation in banking services and management to remain competitive in the financial sector. To minimize the risks and problems associated with innovation, banks should follow these recommendations:

- Strengthen security mechanisms to protect data and prevent potential financial losses for both the bank and its customers.
- Regularly check innovative banking systems to identify errors, vulnerabilities, and potential risks.
- Implement 24/7 monitoring systems to prevent cyberattacks and detect suspicious transactions.
- Train bank employees on the proper use of technological devices and innovative programs used in the bank.
- Collaborate with other banks and financial institutions to share experiences in applied innovation and jointly find solutions to emerging threats and risks.

It is obvious that the future of everything is formulated by innovation advancements. Banks should always implement latest innovation in order to meet growing needs of customers and stay remain competitive in modern financial environment.

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