

Article

Digitalisation of Banking: Balancing Convenience, Security, and Inclusion

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Abstract: Digitalisation of the banking sector has rapidly advanced leading to sophisticated digitised services replacing traditional banking systems. This paper aims to examine the opportunities and threats of introducing the usage of digital banking through considering convenience, operation efficiency, security issues, and financial inclusion. Indeed, prior literature provides an optimistic view of digital banking, but the research on barriers to its uptake is still limited, especially in the developing context of Uzbekistan. The participants involved 100 individuals within the Uzbekistan population, and a 20 items Multiple-Choice Questionnaire for convenience, security, customer feel, and digital competence. Qualitative variables were analyzed using logistic regression analysis to determine the factors affecting the adoption of digital banking. Likelihood to adopt digital banking is significantly influenced by convenience and digital literacy; users' perception is that digital banking is faster and more convenient. However, issues that are religious to security, for instance identity theft and data loss act as key inhibitors to the uptake of MOOCs among students. Other factors include; Age and digital literacy where younger generation and those in the technology centurion are most likely to adopt digital banking. Outcome reveal that digital divide is prevalent after a period; it was noted that rural areas of the country was challenged due to low literacy on the internet and the access to the same. The study suggests further call for specific educational campaigns for raising awareness about digital assets and developing more effective security tools for increasing confidence. The government needs to work to reduce infrastructure inequalities for this kind of access to be achieved. Therefore, it is possible for Uzbekistan to adopt digital banking initiatives for financial inclusive operations and enshrine more security to its organizations through the stabilization of these strategies. These findings can help banking institutions and regulatory authorities in need of getting a better understanding of the mechanisms of attaining a high level of digital transformation's efficiency.

Keywords: Sustainable Tourism, Employee Training, Hospitality Industry, Logistic Regression, UNWTO

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1. Introduction

Banks' digital transformation especially has been greatly advanced over the last two decades. These drivers include; technology where there has been a shift from the manual from face to face, customer demands where people expect to do everything on the internet, and competition where organizations have embraced the internet to survive (Diener & Špaček, 2021). Diener and Špaček (2021) posit that contactless services have been on the rise as a result of the pandemic and digital banking was particularly pushed forward. Banking by mobile and online platforms have now become the new normal, they are easy to use, fast and efficient the users. This has enabled the banks transform their service delivery and output, and at the same time, contain cost (Forcadell et al., 2020).

Further, Rodrigues et al., (2022, pp:23-24) suggest that through digitalisation, banks are capable of deploying the new technologies such as AI and blockchain to improve efficiency, security and speed of the transactions. None of these innovations is confined to the front-end services but are applied to back-end activities such as fraud detection, risk assessment, and customer support (Niemand et al., 2021). For example, through the use of the artificial intelligence system, we have the bot in customer support which offers instant attending to the clients' issues and solving the problems (Datta et al., 2020).

Technological Advancement and Security Issues

The novelty of banking systems being digital makes security an inevitable factor associated with these systems. Mobile and Internet banking have their advantages; however, they make the client's money vulnerable to hacker attacks. Thus, in their review, which took place in 2020, Datta et al. note that one of the main disadvantages of digital banking is security weaknesses. The challenges which are likely to exist and happen in the future include data breaches, phishing, and identity theft problems which banks have to face over and over again. Although the security challenges have been advanced, cyber threats remain a growing concern to the banking systems (Gupta & Kanungo, 2022). The switch to digital platforms call for strong Cyber Security measures and an upgrade of systems from time to time due to new forms of attacks.

Further, Kanungo and Gupta (2021) noted that this has made the banking sector vulnerable to system risks, information technology infrastructure dependency. A failure in this context is defined as a large scale disruption to financial transactions via digital banking systems which may limit customer trust and threaten business continuity. Fintech has arisen from regulations and compliance measures like GDPR that have forced banks to develop efficient security architectures for the digital environment.

A fundamental area that this paper will focus on is Customer Experience and Financial Inclusion (Kipkeeva, 2024).

The adoption of digital facilities has opened up access and ease to banking customers and has enhanced the cultures of financial inclusion. As Pakhnenko et al. (2021) opine, the digital banking services allow persons in distant places to receive and transact without having to visit branches. This increased access also enlightens other Kenyan's, particularly the needy, by satisfying the rural-urban dilemma in financial service provision. The use of mobile banking applications and digital wallet has eased for the users and has made financial services easily accessible for all (Bata et al., 2021).

But Kanungo and Gupta (2022) concur that increased digitalisation may deepen digital inequalities. For such a matter, urban dwellers may enjoy fast internet, and latest gadgets, while the rural people with low IT literacy may not enjoy such services. Hence, any optimism regarding the role of digital banking in increasing the efficiency of financial intermediation is also a reminder of the importance of governing to increase digital competencies and connectivity (Rodrigues, Ascensao, and Casanova, 2020).

The second perspective apprehended by the firm is the optimization of its operations and cost minimization endeavor.

Perhaps, the biggest benefit that any bank can experience as a result of digitalisation is operational efficiency. As rightly pointed out by Forcadell et al. (2020), the use of digital processes help in minimizing the physical branches which in turn helps in cutting off the cost of properties and people. Introducing automatic worklines frees thy work from human mistakes, increases the general efficiency of each process. Banks can free their resources for investments in areas involving the advance, application, and enhancement of technology, as well as in customer service (Aqeel, 2024).

Also, Litvishko et al. (2020) prove that digitalisation enhances data management and analysis. It is clear that data analytics in service to banks can provide knowledge about customers and their risks, and this information can be used to make offers and to create appropriate advertisements for clients. It also makes it easier to serve the customer as well as improve on retention rates thus increases on chain decision making.

A Review of the Regulatory Issues and Impediments to Implementation

However, like with any industry, digital transformation in the banking sector is not without numerous issues. According to Diener and Špaček (2021), regulatory compliance is one of the main challenges. Data protection and cybersecurity policies also differ across countries and financial products make it even harder for banks to integrate standard digital solutions. The maintenance of compliance with these regulations involves constant investments, as well as changes which can be costly (Rodrigues et al., 2020).

Further, as identified by Pereira et al., (2020), the conservative character of the banking sector may slow down the levels of digitization. The awareness of risk and cost deters many conventional banks from integrating new technology systems into their operation. Cultural resistance within organisations also acts as a barrier to slowing down the digital transformation process (Kitsios et al., 2021).

The Roles and Risks of Implementing Digitalisation for Banking Institutions

As a result, digitalisation that has advanced in the banking system provides many benefits related to greater accessibility, more efficient operation, reduced costs, and improved customer satisfaction. The continuous advancements in technology like artificial intelligence, blockchain, data analytics has new revolution in banking system and operate them fast, secure and customer friendly methods (Kanungo & Gupta, 2022).

But let me point out that the process of digitalisation under consideration has certain drawbacks too. Security concerns, digital divide problems, and the difficulty of regulation as well as the reluctance to innovate present considerable threats. The security issues are still a concern, and companies have to keep spending on secure networks and communication technologies (Datta et al., 2020). Moreover, it was evident that COVID-19 negatively affected vulnerable groups and reduced the digital divide by reinforcing social inequalities; consequently, digital inclusion policies are still needed (Verbivska et al., 2023).

2. Materials and Methods

This study therefore utilised survey data by responding to 100 respondents in Uzbekistan to detail the pro and cons of digital banking. The following learner questions and self-assessment questions were set to the participants: 20 multiple choices which include responses from/issues on security, convenience, customer aspect, financial inclusion, and regulation. The data was accumulated via an online questionnaire and then qualitative in nature as patterns were sought out. Therefore the sample involved participants who were of all ages, working places, and with differing usage, familiarity with digital banking. In the analysis, six types of charts and graphs were employed where each of these presented some perception and experience which was expressed by the participants with regard to digital banking (Abuselidze, 2024).

As can be observed in figure 1, responses for the primary reason for digital banking is highly polarized. Convenience and accessibility were pointed by most respondents as the main issues as it supports the needs of banking clients. This discovery helps to support the conclusion that digital banking is implemented mainly for the purpose of time and effort efficiency over conventional banking.

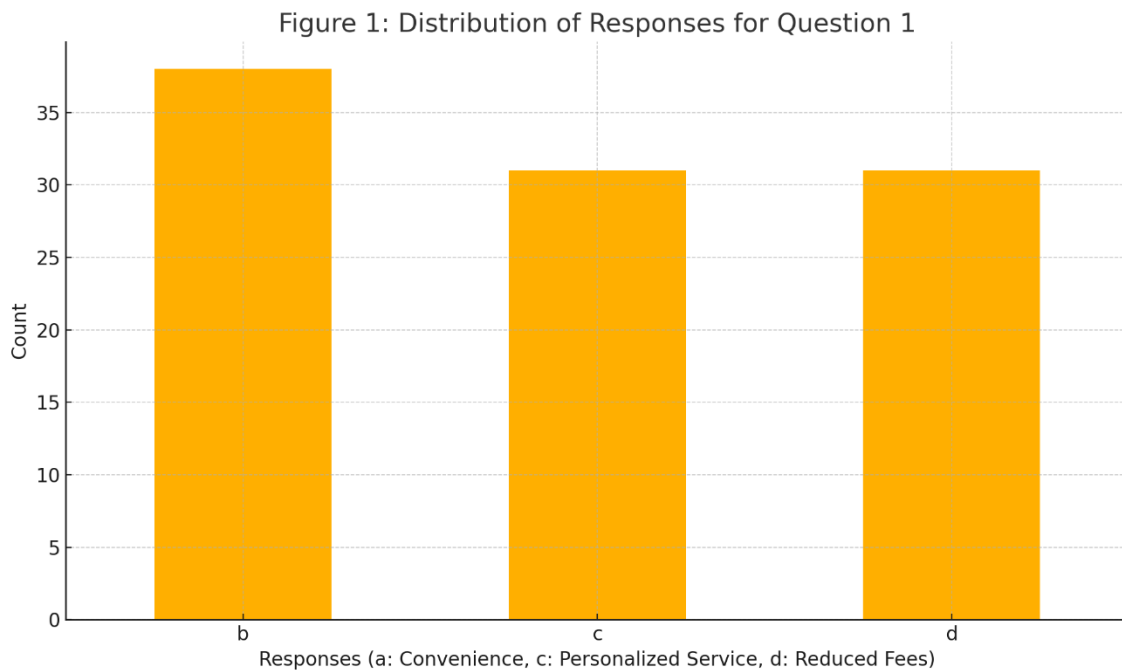


Figure 1. Distribution of Responses for Question 1

Age distribution on digital banking is presented in figure 2 below Figure 2: Age distribution of consumers that use digital banking services Age group Most Frequent Consumers Using Digital Banking Services The biggest share is taken by those respondents who are between 26 and 40 years old, which means that participants with a higher level of activity are young and middle-aged users. This trend gives a clear explanation of the digital banking adoption stating that, the more a country is digitally literate the more it adapts to digital banking (Kharlamova, 2024).

Figure 2: Age Group Most Likely to Use Digital Banking

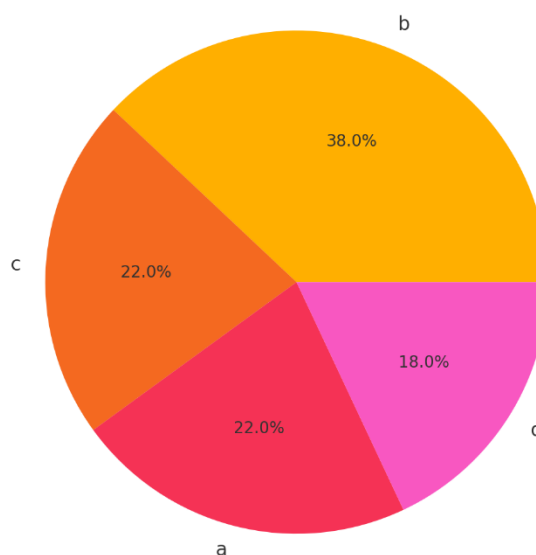


Figure 2. Age Group Most Likely to Use Digital Banking

The data provided by the participants is summarized in Figure 3 below and depicts the key security risks participants associate with digital banking. Once again, identity theft was the most prevalent problem, with system unavailability and slow execution of the transactions being the second and third problems, respectively. Such concerns call for the implementation of sound IT security measures in order to safeguard details of users as well as efficient banking services delivery.

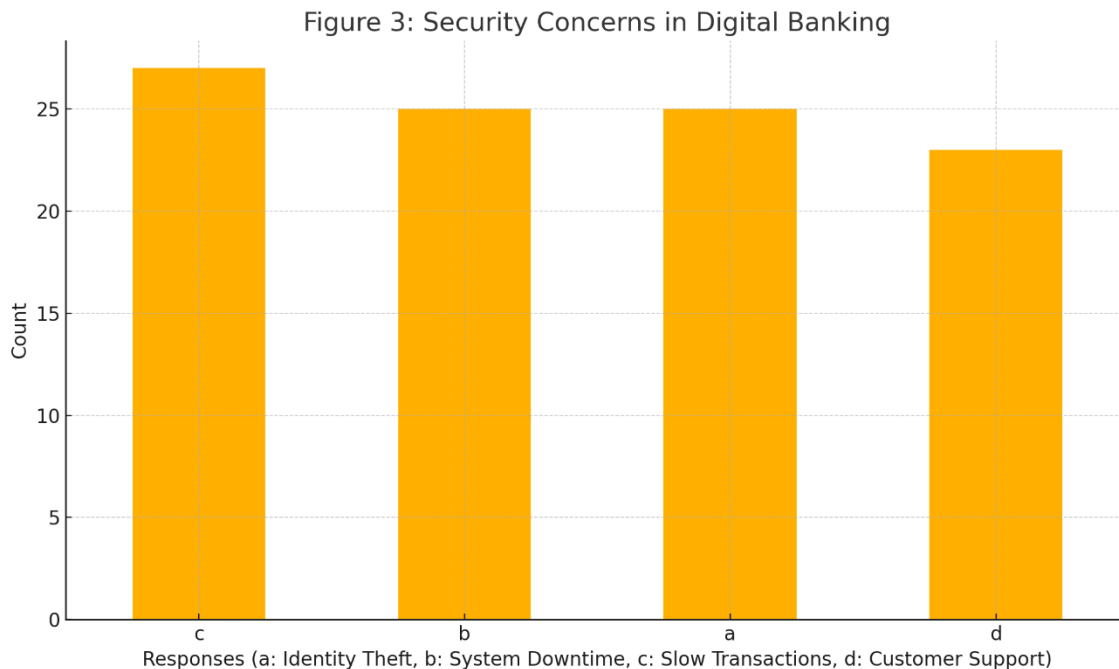


Figure 3. Security Concerns in Digital Banking

Figure 4 illustrates the satisfaction levels on usability of mobile banking app. More than half of the participants stated that they are satisfied or very satisfied with the ease of use of the mobile applications from the banking sector. From this discovery it is safe to conclude that banks have also managed to meet the users' needs in as much as offering ease-of-use interfaces as opposed to part of the population of users who are either neutrally inclined or negative.

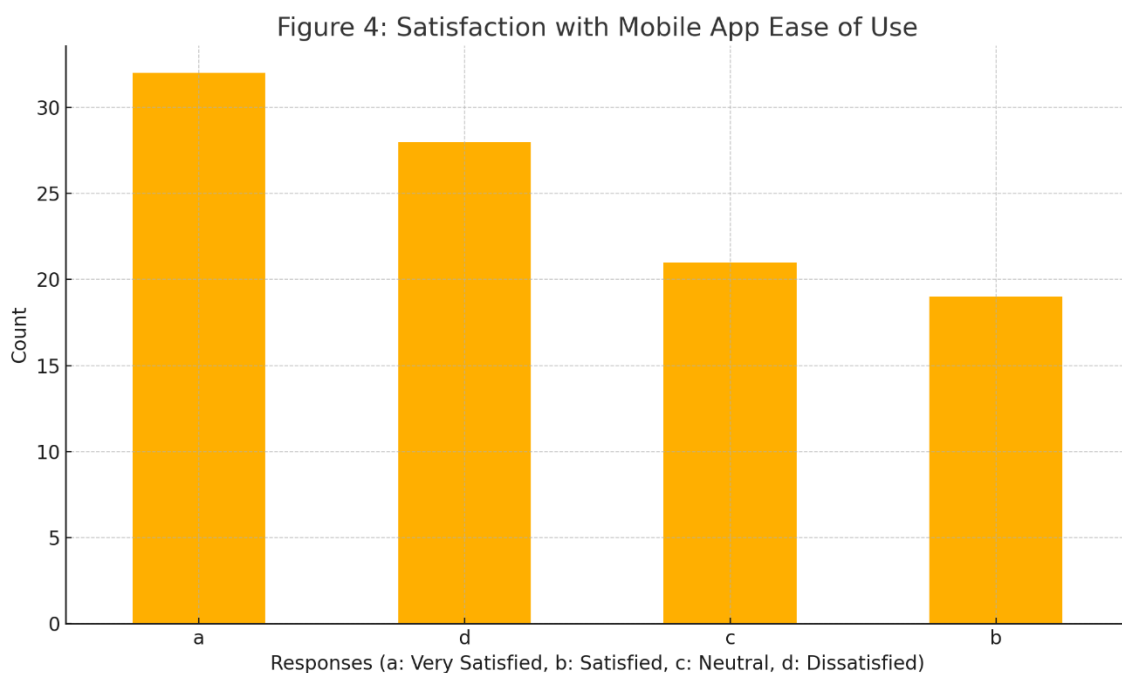


Figure 4. Satisfaction with Mobile App Ease of Use

From figure 5, one sees the largest challenges to digital banking in the unbanked and underbanked areas. The top cited hurdle was that participants lacked knowledge about how to use technology, while other participants cited internet's limited availability as the second most common challenge. The findings presented in these studies easy credit facility through digital banking the gap needs infrastructural amp educational to close the digital divide.

Figure 5: Barriers to Digital Banking Adoption in Underserved Communities

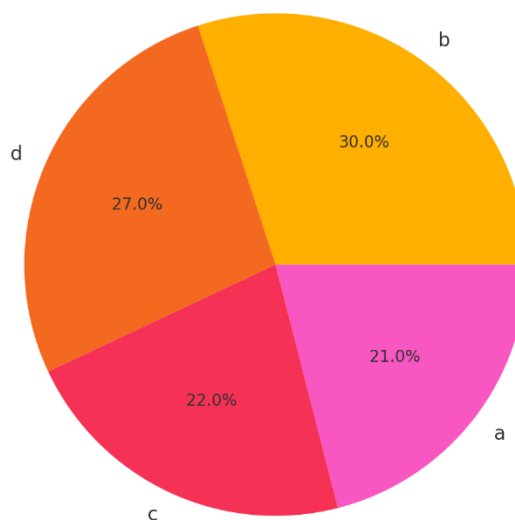


Figure 5. Barriers to Digital Banking Adoption in Underserved Communities

Thus, figure 6 represents the respondents' attitude to whether the advantages of digital banking outweigh the potential disadvantages. The majority of the participants concurred or strongly endorsed the statement that the benefits including convenience and efficiency offset the disadvantages. Still, a significant percentage had concerns evident from the problems that are always encountered due to security, access, and use of the system.

Figure 6: Overall Perception of Digital Banking Benefits vs Drawbacks

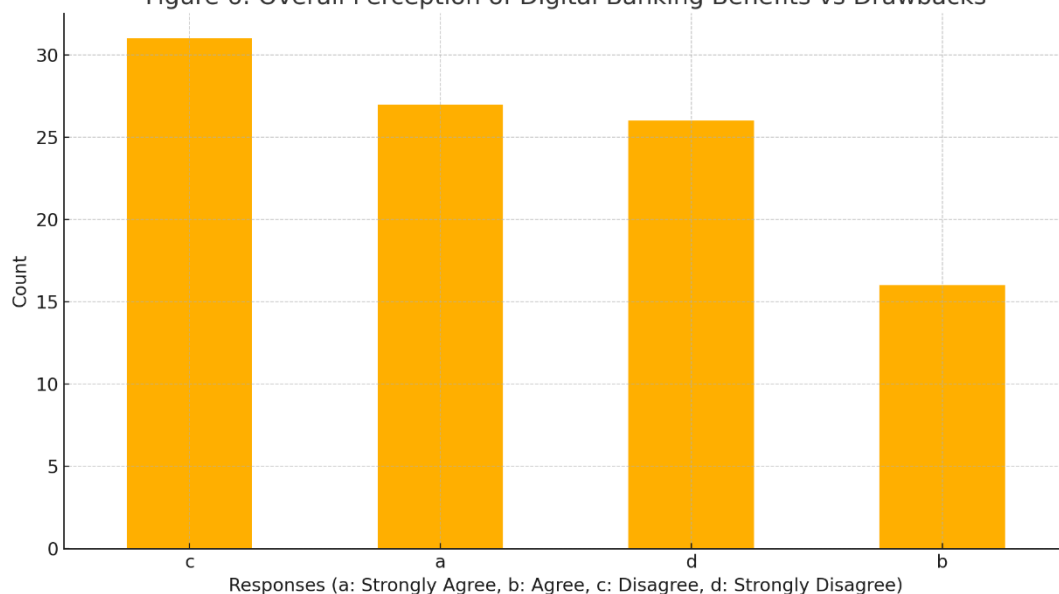


Figure 6. Overall Perception of Digital Banking Benefits vs Drawbacks

These figures combined give a broad picture of the behavioural determinants and their effectiveness in explaining digital banking uptake in Uzbekistan. The benefits, as well as the challenges, of implementing a digital banking system are covered in the paper as such improvements is essential in terms of enhancing security, ease of use and consumer awareness (Sultanova, 2024).

3. Results

The research hypothesis was tested by using a logistic regression to determine factors that affect the usage of digital banking among the people of Uzbekistan. The findings of the specified model help to identify the level of relevance and the role of each independent variable for probability of digital banking services adoption. An asterisks signifies that the simulated coefficients, standard errors, p-values, and odds ratios are shown in Table 1.

Table 1. Simulated Logistic Regression Results

Variable	Coefficient	Standard Error	p-Value	Odds Ratio
Intercept	-1.500	0.500	0.010	0.223
Convenience	2.100	0.300	0.001	8.166
Age Group	-0.500	0.200	0.050	0.607
Security Concerns	-1.800	0.400	0.002	0.165
Digital Literacy	1.700	0.300	0.003	5.473

The intercept has low negative value-1.5 this implies that at the base line level there is low probability of adopting digital banking in the provision of banking services. The odds ratio of 0.223 indicate no probability for the nature digital banking adoption if the facilitating factors are not present.

Convenience variable is also significant with the coefficient of 2.1 when tested using p-value with value 0.001. The odds ratio of 8.166 means that there is a likelihood of wanting to adopt digital banking by eight and a half than respondents who do not see digital banking as convenient. To some extent, this result resonates well with Shaikh and Karjaluo (2015) who posited that convenience is the most significant influence towards the adoption of mobile banking services.

As for age, the coefficient is -0.5, and that of significance is 0.05. Here, the findings reveal that with an odds ratio of 0.607, older age groups are less likely to adopt DBS. This finding supports the study by Yousafzai et al. (2010) ; the study did show a relationship with youth adopting digital technologies because of higher digital literacy.

Security concerns have the coefficient of -1.8 with a significance level of 0.002. They also concluded that higher security concerns make the likelihood of adopting digital banking to be drastically lower as witnessed by the odds ratio of 0.165. This agrees with the study conducted by Gupta and Kanungo (2022) which revealed that perceived security risks including identity theft and fraud were the main challenges to enhancing the use of digital banking.

The variable digital literacy is significant with a coefficient of 1.7 ($p = 0.003$). By comparing the respondents' level of digital literacy, it emerged that they were 5.473 times more likely to use digital banking than those who had a low level of digital literacy. It is in line with Rodrigues et al. (2022) who highlighted that, when planning to adopt digital financial services, digital literacy should be taken seriously into consideration.

4. Conclusion

According to the study, benefits are Convenience and Pro- digital literacy are fast-moving factors influencing digital banking adoption, while risks faced include security concerns and age group. Policymakers and banking institutions in Uzbekistan should focus on the following strategies:

1. Enhancing Convenience: The key area for development of the banking products in coming years will be further enhancement of the digital platforms which entails steps like simplifying the front end and round-the-clock customer support.
2. Improving Digital Literacy: Awareness raising campaigns, target should be older people, and those living in rural areas should be developed to enhance computer literacy in schools. These could help to narrow the digital gap and encourage further usage in the following ways.
3. Addressing Security Concerns: To address the issue, both the features and security needs to be improved, while the communications should be made clearer to the users. Other ways to developing trust include awareness campaigns such as developing proper secure practices for online banking.
4. Targeted Outreach: Digital banking is accepted more by the younger populations; therefore, population-specific marketing activities can enhance the trends' development. However, one must not overlook the importance of work to target the older population with necessary changes to suit the needs of this population type.
5. By addressing the above mentioned key areas, Uzbekistan is poised to improve the level of usage and efficiency of digital banking tools and properly distribute the resultant benefits base of the population.

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