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INCREASING THE POPULARITY OF INNOVATIVE SERVICES IN COMMERCIAL BANKS

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ANNOTATION. *Digital innovation is a powerful driving force that is rapidly and extensively transforming financial services around the world. This study aims to focus on the impact of introducing innovative services from a management perspective and to contribute to the existing body of literature on banking innovation. Empirically, we relied on a quantitative research project that evaluates the effectiveness of innovative banking services and the experiences of commercial banks in Uzbekistan. A regression-correlation model incorporating several explanatory measures was developed and assessed through empirical analysis. The results indicate that technological advancement and customer-oriented development significantly influence the popularity of services. Innovation has become deeply embedded in banking operations, reshaping competitive strategies by strengthening customer engagement. This research helps address existing knowledge gaps and contributes practical recommendations. Innovative service delivery promotes digital transformation and the practical application of advanced technologies, ensuring sustainable growth in the banking sector.*

Keywords: *banking innovation, service popularity, technological readiness, customer engagement, digital infrastructure, regression-correlation analysis, commercial banks of Uzbekistan*

I. INTRODUCTION

Digital banking innovation aims to integrate financial products, customer services, operational processes, risk management, regulatory compliance, marketing strategies, and technological infrastructure through digital platforms and fintech technologies. This integration enables the formation of value-generating networks among customers, banks, service providers, and regulators, facilitating seamless transactions and interactions [1]. The theoretical foundations include theories of service innovation and technological diffusion [2], which emphasize the opportunities and challenges arising from digital transformation within the integrated framework of banking innovation [3].

The processes of introducing innovations and the measures for their diffusion have not always succeeded in ensuring the widespread adoption of these practices [4]. Many researchers now support empirical studies and case analyses to deepen the context-specific understanding, especially in emerging markets [5]. In Uzbekistan’s banking sector, studies focusing on the introduction of innovative services, managerial decisions, and customer responses remain insufficient [6].

Given the economic, technological, and strategic importance of innovative services, this knowledge gap presents a challenge [7]. The problem is particularly acute when applied to commercial banks—as key players—and may have wider implications for financial services. Theoretical sources on banking innovation, especially in areas such as customer orientation, competitive advantage, digital transformation, and

organizational adaptability, help clarify the structural changes resulting from the introduction of innovations [8].

With the trend of “digital-financial” integration, new technologies that support banking innovation are gradually becoming industry standards [9]. However, the claim of unconditional benefits of innovation has been questioned by many (including former proponents within the industry) [10], who argue that the democratizing potential of digital innovation in service delivery is often overstated.

Additionally, recent studies have reached conflicting conclusions about whether technological innovation intensifies competition or, conversely, leads to power consolidation. To date, there is surprisingly little empirical and quantitative evidence on the popularity of innovation-based services [11]. There is also a lack of sufficient research on the introduction of innovative services, managerial decisions, and customer responses in Uzbekistan’s banking sector.

This study has two main objectives: first, to analyze the direct effect of innovation-related dimensions on the popularity of services; and second, to examine the mediating role of constructs such as technological readiness, customer relationships, and organizational learning in achieving competitive outcomes [12].

The uniqueness of this study lies in its empirical orientation and methodological contribution, as it is the first study to explore the impact of innovative banking services on managerial decisions and to empirically integrate key drivers of service popularity—such as customer orientation—into a regression-correlation model.

A regression-correlation model based on these innovation-related concepts was developed and assessed through statistical modeling. To evaluate the potential impact of innovation on the popularity of services, the study distinguished between the effect on customer relationships and the effect on organizational competitiveness.

II.METHODOLOGY

Recent studies indicate that the increasing use of digital technologies in the financial services sector may contribute to operational efficiency and reduce transaction costs. However, they note that empirical assessments have found no definitive impact from increased automation. Innovation affects all levels of an organization, though this impact is likely to vary depending on market maturity and institutional context [13]. This assumption has significant implications, as the diffusion of innovation also varies according to regulatory frameworks and competitive pressures. Due to limited access to detailed data, only a few case studies are available, and this research focuses on commercial banks owing to their strategic importance [14].

Digital transformation has led to the creation of new business models and altered how financial institutions generate, deliver, and capture value. Other variables, not reaching statistical significance, were excluded from the model. Excluding these variables implies acknowledging their potential impact on explanatory power. The construct of service adoption is based on two dimensions of innovation: technological readiness and customer relationships [15].

Advanced fintech solutions increase service flexibility by decoupling customer interactions from specific physical locations, as noted in previous literature. Through

intensive use of digital channels, banking services in Uzbekistan can theoretically be accessible from any location (regional analysis). This may lead to integration with the customer experience or a detachment from institutional structure during expansion, fostering agility in innovation and reshaping the competitive environment.

From a critical perspective, incumbent players (banks) may leverage their distinct advantages to position themselves not as service providers but as ecosystem orchestrators, thereby shifting responsibilities to peripheral participants. It is clear that the expansion of digital innovation does not always lead to democratization in underserved areas.

The empirical foundation of this study emphasizes the crucial role of customer participation and intangible resources in the innovation process, as well as the ability of organizations to leverage network effects to transform innovation from potential into efficiency. From a managerial standpoint, innovation involves engaging participants in service delivery in a co-creation process.

This concept stems from the service-dominant logic, where collaborative technologies enable customer involvement in the design and delivery process, and value is created through interactions among stakeholders.

Innovation models can be classified as centralized or decentralized, varying based on the role and application of technology. Empirical analyses show that the mere availability of digital tools is less decisive in shaping the scope and direction of innovation; what matters most is how organizations use technology. This analysis highlights that the key characteristic of innovative banking services is the necessity to be adaptive and committed to continuous learning for success.

A service innovation strategy relies on data analysis and typically includes iterative improvements and customer feedback cycles. The regression-correlation model is defined as a tool integrating empirical evidence into the theoretical and analytical logic of the research. This demonstrates a mismatch (based on quantitative results) between accepted digital competencies and the actual use of advanced technologies.

III.RESULTS

The regression results and pairwise correlations (Tables 1 and 2) highlight an improvement in service adoption in recent years and underscore the need for more in-depth research at the organizational and managerial levels to develop this topic further in the future. Empirical analysis shows that differences in innovation potential and digital infrastructure are key driving factors behind technological readiness and customer engagement.

Table 1. Linear Regression

Variable	Coef.	Std. Err.	t-stat	p-value	95% Confidence Interval	**Sig.**
Customer Engagement	-0.206	0.167	-1.24	0.223	-0.543 ~ 0.13	
Organizational Learning	0.172	0.128	1.34	0.187	-0.087 ~ 0.431	

Innovation Potential	-0.41	0.101	-4.06	0.000	-0.613 ~ -0.207	***
Digital Infrastructure	-0.726	0.156	-4.66	0.000	-1.041 ~ -0.412	***
Service Adoption	0.256	0.037	6.91	0.000	0.181 ~ 0.331	***
Constant	0.55	0.279	1.97	0.055	-0.012 ~ 1.112	*

Dependent Variable Mean: 4.459 | SD: 2.889
R-squared: 0.936 | Observations: 50
F-test: 128.530 | Prob > F: 0.000
Akaike AIC: 121.587 | Bayesian BIC: 133.059
Significance Levels: *** p<0.01, ** p<0.05, * p<0.1

Innovation potential can enable banking sectors to effectively utilize advanced fintech solutions, allowing commercial banks and the broader financial system to overcome digital transformation challenges and capitalize on associated competitive advantages. Quantitative findings indicate that the impact of innovation potential on service adoption is statistically significant, as evidenced by the regression coefficients and p-values (Table 1).

Based on previously established empirical models (e.g., Author/Year), the standardized effect sizes of innovation potential, digital infrastructure, and service adoption on overall competitive outcomes are 0.41, 0.726, and 0.256, respectively. These figures suggest that digital infrastructure and innovation potential have the strongest impact on competitive advantage.

The R-squared value of 0.936 for the regression model indicates that the model explains approximately 93.6% of the variance in service adoption. To validate the model, an F-test is commonly used, and a value of 128.530 or higher reflects the strong predictive power and statistical significance of the explanatory variables.

Table 2. Pairwise Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) Technological Readiness	1.000					
(2) Customer Engagement	0.877*	1.000				
(3) Organizational Learning	0.914*	0.861*	1.000			
(4) Innovation Potential	0.033	0.143	-0.019	1.000		
(5) Digital Infrastructure	0.037	0.189	-0.038	0.874*	1.000	
(6) Service Adoption	0.707*	0.772*	0.635*	0.674*	0.695*	1.000

Significance Levels: *** p<0.01, ** p<0.05, * p<0.1

As shown in Table 2, all correlation coefficients are 0.7 or lower, indicating no issue of multicollinearity. The adjusted R-squared is used to assess how well the model predicts actual values and to measure the relative influence of constructs. The chosen interpretation method depends on the causal relationships between explanatory and dependent variables.

Although the indicators for “Technological Readiness” and “Customer Engagement” fall below the threshold of statistical significance ($p = .223$ and $p = .187$), they have been retained due to their conceptual relevance in shaping the service adoption construct. However, this remains open to empirical debate [13, 14, 15].

IV.DISCUSSION AND CONCLUSION

This section summarizes the regression-correlation results analyzing the cumulative effects of innovation-related constructs (technological readiness, customer engagement, organizational learning, innovation potential, and digital infrastructure) on service adoption, competitive advantage, and organizational efficiency variables.

In the context of Uzbekistan’s banking sector, innovation is reshaping the operational environment—driven either by competitive pressure or the pursuit of market leadership. The regression-correlation model is employed to derive empirical results and integrated into a validation mechanism to test the robustness of findings. This study develops a quantitative model for managerial planning that can be aligned with strategic decision-making processes.

Only in recent years—due to advances in data availability—has it become possible to measure such broad innovation impacts in detail. This has enabled empirical modeling and statistical validation necessary for aligning managerial decisions with innovation trends and strengthening theoretical foundations. The relationships between innovation drivers and service adoption are fully supported, with significant coefficients for innovation potential and digital infrastructure.

From the regression analysis table, coefficients, standard errors, and p-values have been derived. Table 1 presents the explanatory power and predictive significance of innovation-related constructs. These results are supported by correlation analysis findings, which reaffirm the importance of digital infrastructure in securing competitive advantage. In short, the integration of empirical evidence ensures a comprehensive and accurate reflection of the model’s structure and analytical results.

This represents a significant contribution, helping to identify the boundaries that define the foundation of successful innovation. The empirical model captures, processes, and shares quantitative data with stakeholders, encouraging ecosystem participants to enhance adaptability and learning, while increasing competitiveness among organizations.

Further empirical research on banking innovation is needed beyond Uzbekistan. A transnational research design would be valuable for generating richer and more comparative insights. As observed, apart from the effect of technological readiness on customer engagement, all coefficients are significantly robust. Only banks with sufficient innovation potential can recognize and exploit opportunities; only systems with adequate digital infrastructure can benefit from innovation.

Most previous studies have focused on the technological capabilities of innovation, overlooking the strategic needs of commercial banks. This omission may explain the distinctive contribution of the present research. No specific contradictions or inconsistencies were found—adaptability appears to be the key factor for the success of the regression-correlation model.

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