

THE IMPACT OF DIGITALIZATION ON ORGANIZATIONAL PERFORMANCE: EVIDENCE FROM THE TURKISH BANKING SECTOR

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Abstract

Digitalization has transformed the banking industry by reshaping customer interactions, operational processes, and organizational decision-making systems. The rapid adoption of digital banking technologies, FinTech innovations, and automated decision-making (ADM) applications has created new opportunities for banks to improve efficiency, profitability, and competitiveness. This study examines the impact of digitalization on organizational performance in the Turkish banking sector from a decision-making perspective. Digitalization is conceptualized through two dimensions: The growing adoption of Digital Banking Services and the use of automated decision-making systems in banking operations. An explanatory sequential mixed-method research design was employed. In the quantitative phase, secondary banking sector data covering the period from 2011 to 2025 were analyzed using the Autoregressive Distributed Lag (ARDL) approach to investigate the relationship between digitalization indicators and profitability measures. In the qualitative phase, semi-structured interviews were conducted with senior banking professionals to explore managerial perceptions regarding digital transformation and automated decision-making. The findings reveal a positive relationship between digitalization and organizational performance. Increased digital banking activities, including mobile banking usage and transaction volumes, were associated with improved profitability. Qualitative findings further indicate that digitalization enhances organizational performance through operational efficiency, customer acquisition, process automation, and improved credit decision quality. The study also highlights the growing role of ADM systems in supporting risk assessment and lending decisions while emphasizing the continued importance of human oversight. The findings contribute to the literature by integrating FinTech adoption and automated decision-making within a single framework and providing evidence from an emerging banking market. The study concludes that digitalization represents a strategic capability that supports sustainable organizational performance in the banking sector.

Keywords: Automated Decision Making, Banking, Decision Making, Digitalization, Performance, Fintech, Organizational Performance, Profitability

JEL Classification: D70, G21, M10, M13, M14

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DİJİTALLEŞMENİN ÖRGÜT PERFORMANSINA ETKİSİ: TÜRK BANKACILIK SEKTÖRÜ UYGULAMASI

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Öz

Dijitalleşme, müşterilerin tutum ve davranışlarını, bankaların operasyonel süreçleri ve örgütsel karar alma mekanizmalarını yeniden şekillendirerek sektörü önemli ölçüde dönüştürmüştür. Dijital bankacılık teknolojilerinin, Fintek yeniliklerinin ve otomatik karar alma sistemlerinin hızlı biçimde benimsenmesi, bankaların verimliliğini, kârlılığını ve rekabet gücünü artırmaları için yeni fırsatlar yaratmıştır. Bu çalışma, dijitalleşmenin Türk bankacılık sektöründe örgütsel performans üzerindeki etkisini karar alma perspektifinden incelemektedir. Dijitalleşme, iki temel boyut üzerinden ele alınmaktadır: Dijital bankacılık faaliyet artışları ve bankacılık operasyonlarında otomatik karar alma sistemlerinin kullanımı. Çalışmada açıklayıcı sıralı karma yöntemi, araştırma deseni olarak kullanılmıştır. Nicel aşamada, 2011–2025 dönemini kapsayan ikincil bankacılık sektörü verileri, dijitalleşme göstergeleri ile kârlılık ölçütleri arasındaki ilişkiyi incelemek amacıyla Otoregresif Dağıtılmış Gecikme Modeli (ARDL) yaklaşımı kullanılarak analiz edilmiştir. Nitel aşamada ise üst düzey banka profesyonelleriyle yarı yapılandırılmış görüşmeler gerçekleştirilmiş ve yöneticilerin dijital dönüşüm ile otomatik karar alma süreçlerine ilişkin algıları araştırılmıştır. Bulgular, dijitalleşme ile örgütsel performans arasında pozitif bir ilişki olduğunu ortaya koymaktadır. Mobil bankacılık kullanımı ve işlem hacimleri başta olmak üzere dijital bankacılık faaliyetlerindeki artışın, kârlılığın iyileşmesiyle ilişkili olduğu görülmüştür. Nitel bulgular ayrıca dijitalleşmenin operasyonel verimlilik, müşteri kazanımı, süreç otomasyonu ve kredi karar kalitesinin iyileştirilmesi yoluyla örgütsel performansı artırdığını göstermektedir. Çalışma, otomatik karar alma sistemlerinin risk değerlendirmesi ve kredi verme kararlarını desteklemedeki artan rolünü de vurgulamakta; bununla birlikte insan denetiminin devam eden önemine dikkat çekmektedir. Bu çalışma, Finansal teknolojilerin uygulanarak benimsenmesi ile otomatik karar alma sistemlerinin etkisini tek bir analitik çerçevede birleştirerek ve geliştirmekte olan bir bankacılık piyasasından kanıtlar sunarak literatüre katkıda bulunmaktadır. Çalışma, dijitalleşmenin bankacılık sektöründe sürdürülebilir örgütsel performansı destekleyen stratejik bir yetkinlik olduğu sonucuna varmaktadır.

Anahtar Kelimeler: Bankacılık, Dijitalleşme, Fintek, Karar Vermek, Karlılık, Otomatik Karar Verme Süreçleri, Örgüt Performansı

JEL Sınıflaması: D70, G21, M10, M13, M14

Introduction

The rapid development of digital technologies has transformed industries, business models, and organizational processes worldwide. Internet technologies, mobile applications, artificial intelligence (AI), big data analytics, cloud computing, and financial technologies (FinTech) have changed how organizations create value and interact with customers. They have also affected how firms maintain their competitive advantage. The banking industry has been one of the sectors most influenced by this transformation. This is largely because banking is highly information-intensive and strongly dependent on technological infrastructure.

Digitalization refers to the integration of digital technologies into organizational activities, processes, and business models. Its main purpose is to improve efficiency, effectiveness, and value creation (Brennen & Kreiss, 2016). Digitalization goes beyond converting analog information into digital formats. It represents a broader strategic transformation. It allows organizations to redesign their operations and develop new ways of interacting with stakeholders. In banking, digitalization has moved from being a support function to becoming a strategic necessity. It now affects customer acquisition, payment systems, credit evaluation, risk management, and decision-making.

The COVID-19 pandemic further accelerated digital transformation in financial institutions. Restrictions on physical mobility and social distancing measures changed customer behavior. Consumers increasingly preferred online and mobile banking services instead of traditional branches. As a result, banks invested heavily in digital infrastructure and alternative distribution channels. Digital banking applications became essential for maintaining customer relationships. They also helped banks ensure operational continuity during and after the pandemic.

The growth of FinTech firms has also played a significant role in the transformation of banking. FinTech companies provide innovative financial services that challenge traditional banking models. Their services are often faster, more accessible, and more customer oriented. At first,

many banks viewed FinTech firms as competitors. Over time, however, they increasingly became strategic partners. Banks began to collaborate with, acquire, or invest in FinTech companies. These partnerships helped traditional banks improve service quality, operational efficiency, and customer experience. As a result, the distinction between traditional banking and technology-based financial services has become less clear.

At the organizational level, digitalization may influence performance through several mechanisms. First, digital technologies can reduce transaction costs. They can also improve operational efficiency by automating routine processes. Second, digital platforms allow banks to serve larger customer groups. They also make services available continuously and without geographical limitations. Third, digitalization supports the collection and analysis of large amounts of customer data. This can improve both strategic and operational decision-making. Therefore, organizations that successfully integrate digital technologies into their business models may achieve better performance than those that fail to adapt.

One of the most important developments linked to digitalization is the growing use of Automated Decision-Making (ADM) systems. These systems use algorithms, machine learning models, and artificial intelligence techniques. They may support or replace human decision-making in certain processes. In banking, ADM systems are increasingly used for fraud detection, customer segmentation, risk assessment, and credit evaluation. They can process large volumes of data in real time. This allows banks to make decisions more quickly and consistently. In some cases, these decisions may also be more accurate than those based only on human judgment.

Credit decision-making is a particularly critical area for ADM systems. Lending activities are among the main sources of profitability for commercial banks. At the same time, they are also a major source of risk. Traditional credit assessment often depends on human judgment, experience, and subjective evaluation. This may create inconsistencies and biases. ADM systems offer a different approach. They use predictive algorithms and

data-driven models to assess borrower risk and creditworthiness. These systems may improve efficiency and reduce operational costs. They may also improve the quality of lending decisions.

Despite the increasing importance of digitalization and automation, their relationship with organizational performance still requires further research. Previous studies have examined digital banking, mobile banking, and FinTech adoption. Many of these studies focus on specific aspects of banking performance. However, less attention has been given to the combined effect of FinTech integration and automated decision-making on organizational performance. This gap is particularly visible in emerging economies. In addition, many studies focus on technology adoption. Fewer studies examine how digitalization affects organizational structures, decision-making processes, and profitability at the same time.

Türkiye provides a relevant setting for examining these issues. Over the past decade, the Turkish banking sector has experienced rapid growth in digital banking, mobile transactions, and FinTech activities. Regulatory developments have also supported remote customer onboarding and digital credit allocation. They have increased access to financial services as well. As a result, Turkish banks have become more dependent on digital infrastructure and technology-based decision-making systems. These developments provide an important opportunity to examine the relationship between digitalization and organizational performance.

Against this background, the present study investigates the impact of digitalization on organizational performance in the Turkish banking sector. Digitalization is examined through two related dimensions. The first is the adoption of FinTech-related internal banking activities. The second is the use of automated decision-making systems in credit processes. Organizational performance is measured through profitability indicators that are commonly used in the banking literature.

The study uses an explanatory sequential mixed-method research design. The quantitative phase examines the relationship between digitalization (taken as digital banking activity increase in terms of volume) and bank performance using secondary sector-level data. The qualitative

phase provides further insights through interviews with senior banking professionals. These interviews focus on the role of automation and digital transformation in organizational decision-making.

The study makes three main contributions to the literature. First, it examines FinTech adoption and automated decision-making within the same framework. Second, it provides empirical evidence from the Turkish banking sector. This sector represents an emerging market that has experienced rapid digital transformation. Third, the study combines quantitative and qualitative methods. This allows for a more comprehensive understanding of how digitalization affects organizational performance and managerial decision-making.

The remainder of the paper is organized as follows. The next section reviews the literature on digitalization, FinTech, organizational performance, and automated decision-making. The methodology section then explains the mixed-method research design and analytical procedures. The findings from the quantitative and qualitative analyses are presented and discussed in the following sections. Finally, the study concludes with theoretical implications, managerial recommendations, limitations, and suggestions for future research.

1. Literature Review

1.1. Digitalization in the Banking Sector

Digitalization has emerged as one of the most influential forces shaping contemporary organizations. Advances in information and communication technologies have transformed the ways organizations create value, interact with stakeholders, and compete within increasingly dynamic environments. Although the concepts of digitization, digitalization, and digital transformation are often used interchangeably, they represent distinct but related processes.

Digitization refers to the conversion of analog information into digital formats. This process primarily focuses on transforming physical

data into electronic forms without fundamentally altering organizational processes. Digitalization, on the other hand, involves the integration of digital technologies into existing business processes to improve efficiency, productivity, and customer experience (Brennen & Kreiss, 2016). Digital transformation represents the most advanced stage of this evolution and involves a comprehensive reconfiguration of organizational structures, business models, and strategic objectives through digital technologies (Fichman et al., 2014).

The banking industry has been particularly affected by digitalization due to its reliance on information processing, transaction management, and customer interactions. Historically, banking operations were heavily dependent on physical branches, paper-based documentation, and face-to-face communication. However, technological developments have gradually shifted banking services toward electronic and mobile platforms. The introduction of Automated Teller Machines (ATMs), internet banking, and mobile banking applications marked important milestones in this transition.

The acceleration of digitalization has significantly altered customer expectations and banking practices. Modern customers demand immediate access to financial services, personalized solutions, and seamless user experiences across multiple channels. Consequently, banks have been compelled to redesign their service delivery models and invest heavily in digital infrastructures. Digital banking now enables customers to perform transactions, access financial products, apply for loans, and manage investments without visiting a physical branch.

The COVID-19 pandemic further accelerated digital transformation in banking. Social distancing measures and mobility restrictions encouraged customers to rely on digital channels for financial transactions. Financial institutions responded by expanding digital capabilities, enhancing cybersecurity measures, and increasing investments in technological infrastructure. As a result, digital banking became not only a competitive advantage but also a necessity for organizational survival.

Christodoulou et al. (2022) describe digital transformation as a multi-stage process that begins with digitization, progresses through digitalization, and culminates in the development of entirely digital business models. Within the banking industry, this progression has led to the emergence of digital-only banks and branchless banking models that challenge traditional banking structures. These developments have intensified competition while simultaneously creating opportunities for operational efficiency and market expansion.

Digitalization has also transformed organizational structures within banks. Decision-making processes have become increasingly centralized, supported by integrated information systems, data analytics platforms, and artificial intelligence applications. As a result, banks have reduced their dependence on branch-based operations while increasing investments in information technology, analytics, and digital innovation units. This structural transformation reflects a broader shift toward technology-driven organizational models capable of responding more effectively to environmental uncertainty and changing customer demands.

Consequently, digitalization is no longer viewed merely as a technological initiative but rather as a strategic capability that enables organizations to enhance competitiveness, improve operational performance, and achieve sustainable growth.

1.2. FinTech and Banking Performance

The emergence of Financial Technology (FinTech) has become one of the most significant developments associated with digital transformation in the financial sector. FinTech refers to technology-enabled innovations in financial services that improve the delivery, accessibility, and efficiency of financial products and services (FSB, 2016). These innovations encompass a wide range of applications, including digital payments, peer-to-peer lending, crowdfunding, blockchain technologies, robo-advisory services, and artificial intelligence-based financial solutions.

Initially, FinTech firms were perceived as disruptive competitors threatening the traditional banking industry. Their ability to offer faster, more convenient, and cost-effective services challenged established financial institutions. Unlike traditional banks, FinTech firms typically operate with lean organizational structures, lower overhead costs, and greater technological flexibility. These characteristics enable them to respond quickly to changing market conditions and customer expectations.

However, the relationship between banks and FinTech firms has evolved from competition toward collaboration. Many banks now view FinTech firms as strategic partners capable of enhancing innovation and accelerating digital transformation. Through partnerships, acquisitions, joint ventures, and co-development initiatives, banks have integrated FinTech capabilities into their operations.

Cheng and Qu (2020) distinguish between external FinTech and internal FinTech. External FinTech refers to independent technology-based financial firms operating in the marketplace, whereas internal FinTech involves the adoption of FinTech technologies within traditional financial institutions. Both forms contribute to organizational performance through improved efficiency, enhanced customer experiences, and expanded service offerings.

Several mechanisms explain how FinTech influences banking performance. First, FinTech solutions reduce transaction costs through automation and process optimization. Automated systems replace manual activities, reduce operational errors, and improve processing speed. These efficiencies contribute directly to cost reduction and profitability enhancement.

Second, FinTech facilitates financial inclusion by expanding access to financial services. Digital onboarding processes, mobile applications, and alternative credit assessment models enable banks to reach previously underserved customer segments. Increased customer acquisition contributes to revenue growth and market expansion.

Third, FinTech enhances customer experience through personalization and convenience. Big data analytics and artificial intelligence allow banks to tailor products and services according to individual customer preferences and behavioral patterns. Improved customer satisfaction strengthens loyalty and increases the likelihood of cross-selling and long-term relationships.

Fourth, FinTech supports innovation by enabling banks to develop new products and services. The integration of digital payment systems, digital lending platforms, and embedded finance solutions creates additional revenue streams and strengthens competitive positioning.

Empirical research supports the positive relationship between FinTech adoption and organizational performance. Studies indicate that digital innovation contributes to improved efficiency, enhanced profitability, and stronger market competitiveness. Lagna and Ravishankar (2021) argue that FinTech expands the scope of financial services while simultaneously improving accessibility and operational effectiveness. Similarly, numerous studies suggest that technology-driven innovation enables financial institutions to respond more effectively to evolving customer needs and market dynamics.

Nevertheless, FinTech adoption also introduces challenges. Increased technological complexity, cybersecurity risks, regulatory compliance requirements, and competitive pressures may create new organizational vulnerabilities. Therefore, successful FinTech integration requires strategic alignment, effective governance, and continuous investment in technological capabilities.

Overall, existing evidence suggests that FinTech represents a critical driver of organizational performance within the banking sector, contributing to efficiency gains, customer acquisition, innovation, and profitability.

1.3. Digital Banking and Organizational Performance

Digital banking represents one of the most visible manifestations of digitalization within financial services. It encompasses the delivery of banking products and services through digital channels such as internet banking, mobile banking applications, self-service kiosks, and other electronic platforms. Digital banking allows customers to access financial services regardless of location or time, thereby increasing convenience and service accessibility.

From an organizational perspective, digital banking contributes to performance through several pathways. First, digital channels significantly reduce operating costs. Transactions conducted through mobile, or internet banking platforms are substantially less expensive than those performed in physical branches. Lower transaction costs enable banks to improve efficiency while maintaining service quality.

Second, digital banking expands market reach. Traditional branch networks impose geographical limitations on customer acquisition and service delivery. Digital platforms eliminate many of these barriers, enabling banks to attract customers from broader geographical areas. This increased accessibility contributes to financial inclusion and revenue generation.

Third, digital banking enhances customer engagement. Digital platforms facilitate continuous communication between banks and customers through notifications, personalized recommendations, and real-time service interactions. Improved engagement strengthens customer relationships and increases customer retention rates.

Research examining the relationship between digital banking and financial performance reports positive outcomes. Mutua (2013) found a positive association between mobile banking adoption and banking sector growth in Kenya. Njoroge (2014) similarly reported that mobile banking applications positively influenced banks' financial performance. Kathuo et al. (2015) demonstrated that mobile banking utilization contributes positively to both asset and equity returns among commercial banks.

Within the Turkish context, Korkmazgöz and Ege (2020) investigated the relationship between mobile banking usage and banking performance. Their findings revealed positive relationships between digital banking indicators and profitability measures, suggesting that increased adoption of digital banking services contributes to improved organizational performance. Canatan and İpek, 2022, research, ‘The Effects of Mobile Banking Transactions on Net Profits of Bank’, built similar model and used ARDL to assess relation and found positive relation. Another study from Ergün, 2023, ‘The interaction between digitalization and profitability in Banking : ARDL Bound Test Approach’ made similar models and find positive results. (Canatan and İpek, 2022; Ergün , 2023)

Also recent studies such as; Deniz (2023), using data for the 2011–2022 period, examined the relationship between digital banking and bank performance through regression analysis and reported a positive effect of digitalization on banking performance. Similarly, Çizgici Akyüz (2023), based on quarterly data covering 2011Q1–2023Q2, found a positive relationship between digital banking activities and sectoral performance. Adopting a more dynamic econometric approach, Kurt Cihangir, Yenice, and Uğurlu (2024) employed the ARDL methodology for the 2007Q4–2023Q3 period and investigated the relationship among financial digitalization, bank performance, and risk across banks with different ownership structures, highlighting that the effects of digitalization may vary depending on bank characteristics.

In a related contribution, Doğan (2024) introduced an alternative measurement approach to digital transformation and demonstrated that its impact on financial performance may differ across bank types. Taken together, these studies confirm the relevance of digitalization for banking performance while also indicating that its effects are not necessarily uniform across institutions or periods.

The expansion of mobile banking has been particularly significant. Mobile devices have become the primary interface between customers and financial institutions. Mobile banking applications enable users to

conduct transfers, pay bills, apply for loans, manage investments, and access customer support services. As smartphone penetration continues to increase, mobile banking has become a vital component of banking strategies worldwide.

The growth of digital banking services also influences organizational structures. Banks increasingly shift resources from traditional branch operations toward technology development, cybersecurity, analytics, and digital innovation. This transformation reflects a broader strategic orientation toward technology-enabled value creation and operational efficiency.

Consequently, digital banking is widely regarded as a key determinant of organizational performance in modern banking environments. Its ability to reduce costs, enhance customer experiences, increase operational efficiency, and support business growth positions digital banking as a critical component of competitive advantage.

1.4. Automated Decision-Making in Banking

Automated Decision-Making (ADM) has emerged as a vital component of contemporary digital transformation initiatives. ADM refers to decision processes in which algorithms, machine learning models, and artificial intelligence systems generate recommendations or decisions with limited human intervention. These systems utilize large volumes of data to identify patterns, predict outcomes, and support organizational decision-making processes.

According to Kitchen (2017), ADM should be understood not only as a technological system but also as a socio-technical phenomenon shaped by interactions among technology, institutions, and human actors. Algorithms do not operate in isolation; rather, they are embedded within broader organizational and social contexts that influence their design, implementation, and outcomes.

In the banking sector, ADM applications are increasingly used for fraud detection, anti-money laundering compliance, customer segmentation, credit scoring, and risk management. Among these applications, credit decision-making represents one of the most strategically critical areas due to its direct impact on profitability and risk exposure.

Traditionally, credit decisions have relied on human judgment, experience, and subjective evaluations. While experienced credit officers may provide valuable insights, human decision-making is often influenced by cognitive limitations and behavioral biases. Hodgkinson et al. (2002) identify several biases that may affect managerial decisions, including overconfidence, optimism bias, and loss aversion. Such biases can lead to inconsistent or suboptimal lending decisions.

ADM systems address these limitations by employing data-driven decision models. Machine learning algorithms analyze historical data, identify predictive patterns, and generate risk assessments based on objective criteria. As a result, ADM systems often provide faster, more consistent, and potentially more accurate evaluations than traditional approaches.

A significant advantage of ADM lies in its ability to enhance financial inclusion. Traditional credit assessment methods frequently exclude individuals lacking formal credit histories. Machine learning models can utilize alternative data sources, including utility payments, digital transactions, and behavioral indicators, to evaluate creditworthiness (Kumar et al., 2021). This capability enables financial institutions to serve previously underserved populations.

Despite these benefits, ADM systems also raise important ethical and regulatory concerns. Algorithmic bias remains one of the most widely discussed challenges. If training data contain historical biases, algorithms may reproduce or even amplify discriminatory outcomes. Transparency and explainability represent additional concerns, particularly when complex machine learning models operate as “black boxes” whose decision logic is difficult to interpret.

Regulatory frameworks increasingly emphasize accountability and explainability in automated decision-making. The European Union's General Data Protection Regulation (GDPR) highlights individuals' rights to receive explanations regarding decisions significantly affecting them. Consequently, financial institutions must balance efficiency gains with requirements for transparency, fairness, and accountability.

Yoo (2010) further warns that extensive use of customer behavioral data may create privacy concerns if organizations fail to ensure adequate safeguards and informed consent. As financial institutions increasingly rely on data-driven decision systems, responsible governance becomes essential for maintaining trust and regulatory compliance.

Overall, ADM represents a transformative development within banking. When appropriately designed and governed, automated decision-making systems have the potential to improve operational efficiency, reduce risk, enhance financial inclusion, and contribute positively to organizational performance.

1.5. Research Gap and Hypothesis Development

Although previous studies have demonstrated positive relationships between digital banking adoption, FinTech innovation, and financial performance, important gaps remain in literature.

First, most studies examine digital banking, FinTech adoption, or automated decision-making independently rather than within an integrated framework. Second, limited empirical evidence exists regarding how these dimensions collectively influence organizational performance. Third, research focusing on emerging economies remains comparatively scarce despite their rapid adoption of digital financial technologies.

Furthermore, while existing studies have investigated the effects of mobile banking and digital channels on profitability, fewer studies have explored how automated decision-making systems contribute to organizational performance through improved credit decision processes.

This gap is particularly important because credit activities remain one of the most significant determinants of banking profitability and risk management effectiveness.

Although the relationship between digital banking and bank performance has been examined in the Turkish literature using different methodologies and time periods, a considerable proportion of existing studies assess digitalization primarily through internet and mobile banking indicators, with their analysis periods generally ending in 2023 or earlier. Moreover, studies that simultaneously investigate the dynamic short- and long-run effects of digitalization on financial performance and the organizational implications of technological transformation driven by artificial intelligence and automation remain limited. This study seeks to extend the existing literature by examining the short- and long-run effects of digitalization on the performance of the Turkish banking sector through an ARDL approach using up-to-date quarterly data covering the 2011–2025 period.

To address these gaps, the present study examines digitalization from two complementary perspectives: FinTech-driven digital banking activities and automated decision-making systems. Organizational performance is evaluated through profitability indicators commonly used in banking research.

Accordingly, the study investigates the following research questions:

RQ1: Do the growing adoption of Digital Banking Services positively influence organizational performance in Turkish Deposit Banks ?

The qualitative phase further explores:

RQ2: Do the usage of automated decision-making systems contribute to credit decision process performance and credit assesment quality ?

Based on the literature reviewed above, the study expects that increased digitalization, reflected through digital banking services and technology-enabled decision-making processes, will contribute positively to organizational performance.

2. Methodology

2.1. Research Design

This study adopts an **explanatory sequential mixed-method research design**, which combines quantitative and qualitative approaches in two consecutive phases. Mixed-method designs are particularly useful when researchers seek both statistical evidence and contextual understanding of a phenomenon (Creswell & Plano Clark, 2011).

In explanatory sequential designs, quantitative data are collected and analyzed first, followed by qualitative data collection and analysis to provide deeper explanations and interpretations of the quantitative findings.

The rationale for employing this design is that the impact of digitalization on organizational performance cannot be fully understood through quantitative indicators alone. While financial and operational data can reveal the existence of statistical relationships, qualitative insights from banking professionals provide a richer understanding of how digitalization and automated decision-making systems influence organizational practices and performance outcomes.

Accordingly, the study consists of two distinct but interconnected phases. The first phase utilizes quantitative methods to examine the relationship between digitalization indicators and banking performance. The second phase employs qualitative methods to explore managerial perceptions regarding the role of digitalization and automated decision-making systems in banking operations. The integration of findings from both phases enables a more comprehensive understanding of the research problem.

Figure 1. Research Design- Explanatory Sequential Design Flow



The explanatory sequential design strengthens the validity of the study by allowing findings obtained through one method to be supported and elaborated through another methodological perspective.

2.2. Research Context and Population

The study focuses on the Turkish banking sector, which has undergone significant digital transformation over the last decade. The sector represents an appropriate setting for examining the relationship between digitalization and organizational performance due to the rapid adoption of mobile banking, digital customer onboarding, automated lending systems, and FinTech partnerships.

The target population of the quantitative phase consists of deposit banks operating in Türkiye under the supervision of the Banking Regulation and Supervision Agency (BRSA) and represented by the Turkish Banks Association (TBA).

Participation banks, represented by the Participation Banks Association of Türkiye (TKBB), and development-investment banks were excluded from the quantitative analysis for several reasons. First, participation banks operate under different banking principles and regulatory frameworks. Second, development and investment banks primarily focus on corporate financing activities and therefore differ from retail-oriented commercial banks. Third, comprehensive digital banking statistics are more consistently available for deposit banks, making them more suitable for longitudinal analysis.

Consequently, *the unit of analysis for the quantitative phase is the Turkish deposit banks.*

For the qualitative phase, the unit of analysis consists of senior banking professionals involved in digital transformation, strategic planning, digital banking, risk management, and credit decision-making processes.

Figure 2. Licensed Banks in Türkiye



2.3. Quantitative Phase

2.3.1. Data Collection

The quantitative phase relies on secondary data obtained from publicly available sources, primarily the Turkish Banks Association (TBA), the Banking Regulation and Supervision Agency (BRSA), and sector reports.

The dataset covers the period from the first quarter of 2011 to the fourth quarter of 2025. This period was selected because detailed digital banking statistics became publicly available beginning in 2011.

Quarterly observations were used to maximize the number of data points and improve the robustness of the econometric analysis.

The study uses profitability measures as indicators of organizational performance. Following previous banking literature, organizational performance is represented through:

Average Return on Assets (AROA)

and

Average Return on Equity (AROE)

These indicators are widely used measures of banking profitability and efficiency.

Digital Banking Services are operationalized through several indicators reflecting the intensity of digital banking activities:

- Active Mobile Banking Customers
- Mobile Transfer Volume
- Mobile Payment Volume
- Mobile Investment Transaction Volume
- Mobile Credit Card Transaction Volume

These variables represent different dimensions of digital banking usage and collectively capture the degree of digitalization within the banking sector.

2.3.2. Variables

Dependent Variables

Average Return on Assets (AROA)

AROA measures the profitability generated from the bank's asset base and is calculated as the ratio of accumulated last 4 periods of net income to average total assets.

Average Return on Equity (AROE)

AROE measures profitability from shareholders' perspectives and is calculated as the ratio of accumulated last 4 periods of net income to average shareholders' equity.

Independent Variables

The independent variables represent digitalization-related activities:

- Active Mobile Customers (ACS)
- Transfer Volume (TRN)
- Payment Volume (PYT)
- Investment Transaction Volume (INV)
- Credit Card Transaction Volume (CCD)

These variables are widely used indicators of digital banking adoption and customer engagement. Logarithms (Ln) of Mobile Banking Data have been taken to make data smoother and more fit to ROA and ROE results. **EViews 12 software is used for analysis.**

2.4. Econometric Method

To investigate the relationship between digitalization and organizational performance, the study employs the **Autoregressive Distributed Lag (ARDL) Bounds Testing Approach** developed by Pesaran et al. (2001).

The ARDL approach offers several advantages.

First, it allows variables integrated at different orders, specifically I(0) and I(1), to be included within the same model.

Second, ARDL performs effectively with small sample sizes.

Third, the method enables the estimation of both short-run and long-run relationships simultaneously.

Finally, ARDL helps mitigate issues associated with omitted variable bias and unobserved heterogeneity by incorporating lagged values of variables into the model.

Given these advantages and the characteristics of the dataset, ARDL was considered the most appropriate analytical technique for the study.

The general form of the ARDL model is specified as follows:

$$Y_t = \alpha + \sum_{i=1}^p \beta Y_{t-i} + \sum_{j=0}^q \gamma X_{t-j} + \varepsilon_t$$

where:

- (Y_t) represents organizational performance,
- (X_t) represents digitalization variables,
- (ε_t) denotes the error term.

2.4.1. Stationarity Tests

Prior to estimating the ARDL model, stationarity properties of the variables were examined.

Two commonly used unit root tests were applied:

- Augmented Dickey-Fuller (ADF) Test
- Phillips-Perron (PP) Test

These tests determine whether variables are stationary at levels [I(0)] or become stationary after first differencing [I(1)].

Variables integrated at order I(2) are incompatible with the ARDL framework and were therefore not permitted in the analysis.

3.4.2. Lag Length Selection

The selection of optimal lag lengths is critical for ARDL estimation.

Following recommendations in the literature, lag lengths were determined using the Akaike Information Criterion (AIC).

The specification yielding the lowest AIC value was selected as the preferred model in Table 1 and 2.

Table 1. AROA AIC Lag Degree

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-48.39812	NA	3.14e-07	2.052759	2.275811	2.138534
1	372.1425	729.9950	1.58e-13	-12.45821	-10.89684*	-11.85778
2	425.5878	80.67208	8.62e-14	-13.11652	-10.21684	-12.00144
3	467.2374	53.43733	8.00e-14	-13.32971	-9.091728	-11.69999
4	501.2064	35.89178	1.15e-13	-13.25307	-7.676776	-11.10870
5	569.1232	56.38375*	5.88e-14	-14.45748	-7.542871	-11.79846
6	644.4162	45.45989	3.51e-14	-15.94023	-7.687313	-12.76656
7	737.4913	35.12268	2.58e-14*	-18.09401*	-8.502778	-14.40569*

Table 2. AROE AIC Lag Degree

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-170.2540	NA	3.12e-05	6.651096	6.874148	6.736871
1	248.3352	726.6077	1.69e-11	-7.786234	-6.224871*	-7.185809
2	302.9067	82.37205	8.83e-12	-8.487045	-5.587370	-7.371970
3	346.1004	55.41832	7.73e-12	-8.758505	-4.520518	-7.128780
4	381.2274	37.11538	1.06e-11	-8.725563	-3.149266	-6.581188
5	448.8124	56.10824*	5.51e-12	-9.917447	-3.002838	-7.258422
6	531.2847	49.79464	2.51e-12	-11.67112	-3.418201	-8.497447
7	629.5104	37.06628	1.52e-12*	-14.01926*	-4.428027	-10.33093*

* Indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level) FPE: Final prediction error

AIC: Akaike information criterion. SC: Schwarz information criterion. HQ: Hannan-Quinn information criterion

After Lag determination, AIC(Akaike information criterion) tests determine best lags, which is the smallest value, (7 in our study) per variable in our equations. EViews 12 Software has selected best models for our study. For AROA model **ARDL(7,7,6,3,7,3)** and AROE model **ARDL (2,0,1,7,7,5)** model has been selected.

2.4.3. Diagnostic Tests

Several diagnostic tests were conducted to evaluate model adequacy.

Serial Correlation

The Breusch–Godfrey Serial Correlation LM Test was employed to determine whether residuals were autocorrelated.

Heteroskedasticity

The Breusch–Pagan–Godfrey Test was used to assess whether residual variances remained constant across observations.

Residuals

Jarque - Bera test was used to check residuals are normally distributed.

Model Stability

CUSUM and CUSUMSQ tests were applied to evaluate parameter stability throughout the sample period.

Functional Form

The Ramsey RESET test was employed to examine potential specification errors.

Only models satisfying these diagnostic requirements were considered suitable for interpretation.

2.4.4. Cointegration and Error Correction Analysis

Following ARDL estimation, the Bounds Testing Procedure was applied to determine whether a long-run equilibrium relationship existed between digitalization and organizational performance.

The null hypothesis states that no cointegration relationship exists among the variables.

If the calculated F-statistic exceeds the upper critical bound, the null hypothesis is rejected, indicating the existence of a long-run relationship.

When cointegration is confirmed, an Error Correction Model (ECM) is estimated to examine short-run dynamics.

The ECM coefficient reflects the speed at which deviations from long-run equilibrium are corrected.

An error correction coefficient that is negative and statistically significant indicates that short-run disequilibria converge back toward long-run equilibrium over time.

2.5. Qualitative Phase

2.5.1. Participants and Data Collection

The qualitative phase was designed to explain and enrich the findings obtained from the quantitative analysis.

Data were collected through semi-structured interviews with senior banking professionals, including executives responsible for digital banking, strategy, risk management, marketing, and credit operations.

Purposive sampling was used to select participants possessing substantial experience in digital transformation initiatives and automated decision-making systems.

Semi-structured interviews were preferred because they allow researchers to maintain consistency across interviews while also providing flexibility to explore emerging themes.

Interviews focused on:

- Digital transformation strategies
- FinTech integration

- Automated credit decision systems
- Organizational performance outcomes
- Opportunities and challenges associated with digitalization

From both Public and Private bank managers, mostly working in division of marketing and digital banking, interviews were conducted. Total of 12 managers perspectives on digitalization and its effects were taken. List about interviews summaries are given below table.

Details of Interviewees

Participant	Bank Type	Title of Interviewee	Bank Division of Interviewee	Interview Intervals
Int_#1	Public Bank	Asst.G.M.	Marketing	51:17
Int_#2	Public Bank	Head	Digital Banking	58:01
Int_#3	Public Bank	Head	Digital Transformation	01:08:15
Int_#4	Public Bank	Manager	Marketing	45:17
Int_#5	Public Bank	Head	Digital Banking	58:29
Int_#6	Private Bank	GM		57:58
Int_#7	Private Bank	Head	Digital Banking	Via Email
Int_#8	Private Bank	Head	Digital Banking	58:57
Int_#9	Private Bank	Head	Digital Banking	01:10:17
Int_#10	Private Bank	Head	Retail Credits	01:18:54
Int_#11	Digital Bank	GM		53:47
Int_#12	Digital Bank	Asst.G.M.	Digital Banking	55:44

2.5.2. Data Analysis

Interview recordings were transcribed and prepared for analysis.

The study employed **qualitative content analysis** to identify recurring patterns, concepts, and themes within the interview data (Miles & Huberman, 1994).

Coding was conducted through an iterative process involving:

1. Initial coding
2. Category development
3. Theme generation
4. Interpretation

To support systematic analysis, the data were organized and coded using **MAXQDA** software.

The qualitative findings were subsequently compared and integrated with quantitative results to provide a comprehensive interpretation of the impact of digitalization on organizational performance.

2.6. Validity, Reliability, and Trustworthiness

Several procedures were implemented to enhance the rigor of the study.

For the quantitative phase, reliability was supported using official sector data obtained from reputable institutions, including TBA and BRSA.

For the qualitative phase, credibility was strengthened through careful transcription, systematic coding procedures, and continuous comparison of emerging themes with interview data.

The integration of quantitative and qualitative findings also contributed to methodological triangulation, enhancing the overall trustworthiness and robustness of the research conclusions.

3. Findings

3.1. Quantitative Findings

3.1.1. Descriptive Statistics

Table 3 presents the descriptive statistics of the variables used in the study.

Table 3. Descriptive Statistics of Variables

VARIABLE	OBS	MEAN	STD.DEV.	MIN	MAX
AVG_ROE	60	17.40472	7.916186	9.634563	38.59037
AVG_ROA	60	1.748459	0.668974	0.91708	3.606753
VOL_LN_TRANSFER	60	12.77847	2.985945	6.950705	17.35633
VOL_LN_INVESTMENT	60	12.12003	2.83444	6.600174	16.29453
LN_ACTIVECUSTOMER	60	16.72946	1.840071	12.34737	18.65653
VOL_LN_PAYMENT	60	9.535648	3.298274	2.383694	14.23846
VOL_LN_CREDITCARD	60	10.46224	2.999814	4.251255	15.16154

The descriptive results indicate a substantial increase in digital banking activities throughout the study period. Active mobile banking customers, transfer volumes, payment transactions, investment transactions, and credit card transaction volumes demonstrated a continuous upward trend between 2011 and 2025. This growth reflects the increasing adoption of digital banking services within the Turkish banking sector.

Profitability indicators also exhibited fluctuations throughout the sample period. While periods of economic uncertainty affected profitability levels, the overall trend suggests that banks maintained positive performance despite changing market conditions.

These descriptive findings provide preliminary evidence that the expansion of digital banking activities coincided with improvements in organizational performance.

3.1.2. Unit Root Test Results

Prior to estimating the ARDL model, stationarity properties of the variables were examined using Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests.

The results revealed that some variables were stationary at levels [I(0)], whereas others became stationary after first differencing [I(1)]. (Table 4)

Since no variable was integrated at the second order [I(2)], the dataset satisfied the assumptions required for the application of the ARDL Bounds Testing approach.

Table 4. Unit Root tests Results of Variables

VARIABLE	Variable Proxy	UNIT ROOT
AVG_ROA(Y1)	AROA	I(1)
AVG_ROE(Y2)	AROE	I(1)
VOL_LN_TRANSFER(X1)	TRN	I(0)
VOL_LN_INVESTMENT(X3)	INV	I(0)
LN_ACTIVECUSTOMER(X5)	ACS	I(0)
VOL_LN_PAYMENT(X2)	PYT	I(0)
VOL_LN_CREDITCARD(X4)	CCD	I(1)

Therefore, ARDL estimation was considered appropriate for further analysis.

3.1.3. ARDL Long-Run Results

The ARDL Bounds Test results confirmed the existence of a long-run relationship between digitalization indicators and banking performance.

Table 5. Long Run Bounds Test AROA Equation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CREDIT_CARDS	0.991008	0.315479	3.141278	0.0072
INVESTMENTS	-1.463317	0.333619	-4.386188	0.0006
PAYMENTS	-0.365683	0.396745	-0.921707	0.3723
TRANSFERS	0.841905	0.440153	1.912757	0.0765
ACTIVE_CUSTOMER	0.054502	0.203626	0.267655	0.7929
EC = AROA - (0.9910*CREDIT_CARDS -1.4633*INVESTMENTS -0.3657*PAYMENTS + 0.8419*TRANSFERS + 0.0545*ACTIVE_CUSTOMER)				

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	6.272464	10%	2.26	3.35
Actual Sample Size	53		Finite Sample: n=55	
		10%	2.393	3.583
		5%	2.848	4.16
		1%	3.928	5.408

Table 6. Long Run Bounds Test AROE Equation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CREDIT_CARDS	16.54887	6.785770	2.438761	0.0222
INVESTMENTS	-13.19293	4.157352	-3.173397	0.0040
PAYMENTS	-44.75263	8.311348	-5.384521	0.0000
TRANSFERS	34.98863	12.21349	2.864752	0.0083
ACTIVE_CUSTOMER	24.16769	6.342085	3.810685	0.0008
EC = AROE - (16.5489*CREDIT_CARDS -13.1929*INVESTMENTS -44.7526 *PAYMENTS + 34.9886*TRANSFERS + 24.1677*ACTIVE_CUSTOMER)				

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	8.750986	10%	2.26	3.35
Actual Sample Size	53		Finite Sample: n=55	
		10%	2.44	3.60
		5%	2.90	4.21
		1%	3.96	5.58

The calculated F-statistic exceeded the upper critical bound value, indicating cointegration among the variables. (Table 5 and 6)

The long-run coefficients suggest that digital banking activities contribute positively to organizational performance.

Specifically:

- Active mobile banking customer growth positively influenced profitability.
- Transfer transaction volume exhibited a positive and statistically significant relationship with performance.
- Payment transaction volume contributed a negative effect to profitability.
- Credit card transaction volume showed a positive effect on performance.
- Investment transaction volume demonstrated a negative relationship with profitability.
- The reason behind negative effect of investment and payment transactions, may be these transactions do not make banks profitable as much as other banking activities. Such as when a customer buys an investment product, banks do not get commission according to competition in digital banking. And investment gain is totally a profit for customers; for payments banks do not get commission from transactions for same competition reasons.
- Furthermore, since distinct categories of mobile banking transactions are included simultaneously in the model, the negative coefficients may also reflect a composition effect, whereby increases in payment and investment transactions, relative to more revenue-generating digital activities, are associated with lower marginal profitability. This interpretation is consistent with the mixed evidence in the existing literature, where some studies report positive associations between digital banking and performance, while others identify negative or heterogeneous effects depending on bank characteristics, ownership structures, and the measures used to capture digitalization (Canatan İpek, 2022; Ergün, 2023; Çizgici Akyüz, 2023; Kurt Cihangir et al., 2024; Doğan, 2024).

- On the other hand, credit card volume transactions, transfers create current deposit in bank accounts which are cost free for banks. And Banks invest these current money on behalf of their investments. Also having more active customers via digital banking is also cost free for banks. They do not pay any operating expenses while digital on boarding. These may be the main reasons behind the statistical results.

Overall, the findings indicate that increased digital banking activity is associated with improved organizational performance.

These results support previous studies suggesting that digitalization enhances efficiency, customer acquisition, and revenue generation within the banking sector.

3.1.4. Error Correction Model (Short-Run Results)

The Error Correction Model (ECM) was estimated to examine short-run dynamics.

Table 7. ECM test for Cointeq(-1) AROA Equation

ARDL Error Correction Regression (ECM)				
Dependent Variable: D(AVG_ROA)		Selected Model: ARDL(7, 7, 6, 3, 7, 3)		
Case 3: Unrestricted Constant and No Trend		Included observations: 53		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq(-1)*	-1.079518	0.151051	-7.146732	0.0000

t-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
t-statistic	-7.146732	10%	-2.57	-3.86
		5%	-2.86	-4.19
		2.50%	-3.13	-4.46
		1%	-3.43	-4.79

Table 8. ECM test for Cointeq(-1) AROE Equation

ARDL Error Correction Regression (ECM)				
Dependent Variable: D(AVG_ROE)		Selected Model: ARDL (2, 0, 1, 7, 7, 5)		
Case 3: Unrestricted Constant and No Trend		Included observations: 53		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq (-1)*	-0.365531	0.046050	-7.937701	0.0000

t-Bounds Test		<i>Null Hypothesis: No levels relationship</i>		
Test Statistic	Value	Signif.	I(0)	I(1)
<i>t-statistic</i>	-7.937701	10%	-2.57	-3.86
		5%	-2.86	-4.19
		2.50%	-3.13	-4.46
		1%	-3.43	-4.79

The error correction term was found to be negative and statistically significant, confirming the existence of a stable long-run equilibrium relationship. (Table 7 and 8)

The coefficient indicates that deviations from equilibrium are gradually corrected over time.

Short-run coefficients reveal that certain digital banking activities have an immediate impact on profitability, particularly transfer and payment transactions.

These findings suggest that digitalization influences organizational performance not only in the long term but also through short-term operational improvements.

3.1.5. Diagnostic and Stability Tests

The results of the Breusch-Godfrey, Breusch-Pagan-Godfrey, Jaque-Bera Normality, Ramsey RESET, and CUSUM tests indicate that the estimated models satisfy the necessary econometric assumptions.

Table 9. Autocorrelation test for Residuals- AROA Equation

Breusch-Godfrey Serial Correlation LM		CASE 3	AROA
<i>Null hypothesis: No serial correlation at up to 7 lags.</i>			
F-statistic (2 Lags)	3.763916	Prob. F(2,12)	*0.0538
F-statistic (7 Lags)	3.649600	Prob. F(7,7)	*0.0546

Table 10. Autocorrelation test for Residuals- AROE Equation

Breusch-Godfrey Serial Correlation LM Test:		CASE 3	AROE
<i>Null hypothesis: No serial correlation at up to 4 lags</i>			
F-statistic (2 Lags)	1.793476	Prob. F(2,23)	*0.1889
F-statistic (4 Lags)	2.692630	Prob. F(4,21)	*0.0590

Since $F > 0.05$ we state that there is no serial correlation in 2nd / 4th / 7th lag of these equations. Lags are chosen in accordance with models that have dependent variable lag lengths.

Lastly, we applied **Heteroskedasticity test**. Breusch-Pagan-Godfrey for both equations.

Table 11. Heteroskedasticity test for Residuals- AROA Equation

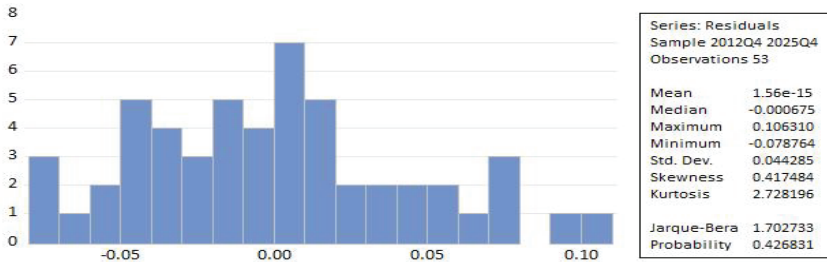
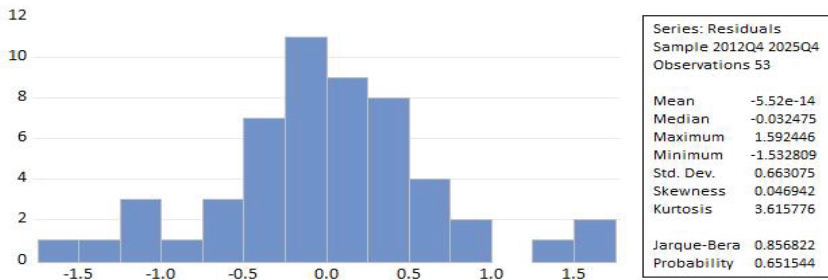
Heteroskedasticity Test: Breusch-Pagan-Godfrey		AROA	
Null hypothesis: Homoskedasticity			
F-statistic	0.743385	Prob. F(38,14)	0.7723
Obs*R-squared	35.43730	Prob. Chi-Square(38)	0.5886
Scaled explained SS	2.136624	Prob. Chi-Square(38)	1.0000

Table 12. Heteroskedasticity test for Residuals- AROE Equation

Heteroskedasticity Test: Breusch-Pagan-Godfrey		AROE	
Null hypothesis: Homoskedasticity			
F-statistic	1.003689	Prob. F(27,25)	0.4983
Obs*R-squared	27.56794	Prob. Chi-Square(27)	0.4335
Scaled explained SS	8.022379	Prob. Chi-Square(27)	0.9999

Results of both tests are $F > 0.05$. so we conclude that there is no Heteroscedasticity for both equations. These tests have established circumstances for regression analysis and have successfully passed evaluations.

For residual tests, we have normality test. Heteroskedasticity Test and Serial Correlation tests.

Table 13. Normality Distribution test for Residuals- AROA Equation**Table 14. Normality Distribution test for Residuals- AROE Equation**

For both equations Jarque-Bera test is applied. since $P>0.05$. residuals distributed normally. We have provided conditions.

Table 15. Ramsey Test Results for AROA Equation

AROA MODEL	Value	df	Probability	
t-statistic	0.856291	13	0.4073	
F-statistic	0.733235	(1. 13)	0.4073	F>0.05
Likelihood ratio	2.908081	1	0.0881	

Table 16. Ramsey Test Results for AROE Equation

AROE MODEL	Value	df	Probability	
t-statistic	0.395410	24	0.6960	
F-statistic	0.156349	(1. 24)	0.6960	F>0.05
Likelihood ratio	0.344150	1	0.5574	

Since $F> 0.05$ we conclude that according to Ramsey tests both equations are stable.

Table 17. Cusum Test Results for AROA Equat

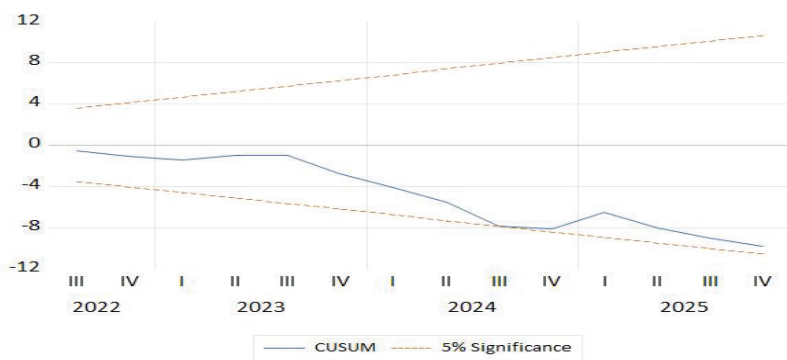
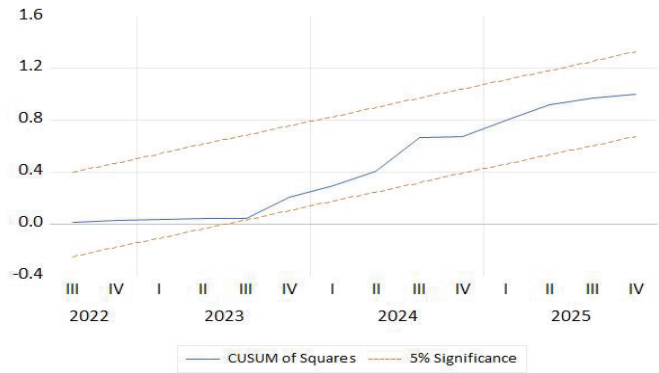


Table 18. Cusum Square Test Results for AROA Equation



Since both lines are with in corridor this AROA is stable.

Table 19. Cusum Test Results for AROE Equation

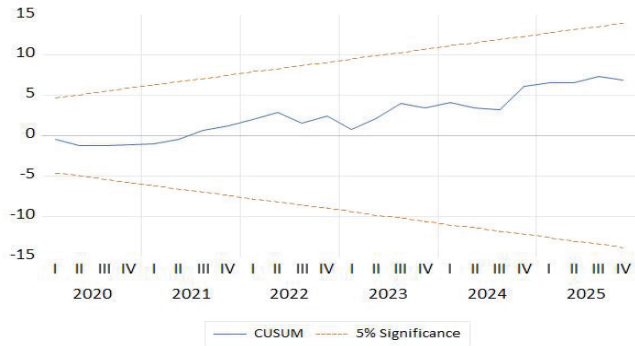
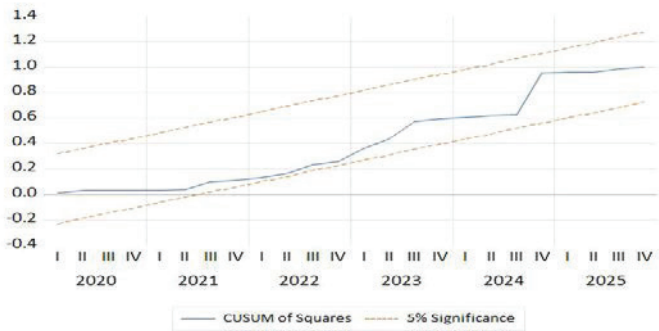


Table 20. Cusum Square Test Results for AROE Equation



Since both lines are within the corridor this AROE equation is stable.

No significant autocorrelation or heteroskedasticity problems were detected.

Furthermore, CUSUM and CUSUMSQ statistics confirmed parameter stability throughout the sample period.

Therefore, the estimated ARDL models can be considered statistically reliable and robust.

3.2. Qualitative Findings

Theme 1: Digitalization as a Strategic Necessity

A dominant theme emerging from the interviews was the perception that digitalization is no longer optional but essential for competitiveness.

Participants emphasized that customer expectations have fundamentally changed and that digital channels have become the primary point of interaction between banks and customers.

Several participants indicated that digitalization enables banks to serve larger customer bases while maintaining operational efficiency.

One senior manager explained:

“Customers now expect banking services to be available anytime and anywhere. Digitalization is no longer a competitive advantage; it is a basic requirement.”

This finding supports the quantitative evidence showing a positive relationship between digital banking activity and organizational performance.

Theme 2: FinTech as a Collaborative Partner

Contrary to earlier perceptions of FinTech firms as competitors, most participants described FinTech companies as strategic partners.

Interviewees highlighted collaborations in:

- Payment systems
- Customer onboarding
- Credit scoring
- Data analytics
- Fraud detection

Participants argued that FinTech partnerships enable banks to accelerate innovation while reducing development costs.

A frequently recurring idea was that banks no longer attempt to develop every technological solution internally.

Instead, they increasingly adopt collaborative innovation models.

Theme 3: Automated Decision-Making Improves Credit Processes

The most frequently discussed topic was the role of automated decision-making systems in credit assessment.

Participants consistently emphasized three major advantages:

1. Faster decisions
2. Greater consistency
3. Lower operational costs

Interviewees reported that automated systems significantly reduce processing times for retail credit applications.

One participant stated:

“A loan application that previously required hours or even days can now be evaluated within minutes.”

Managers also highlighted the ability of algorithms to evaluate larger volumes of customer data than human credit officers.

These findings complement the quantitative evidence by illustrating the mechanisms through which digitalization improves organizational performance.

Theme 4: Human Judgment Remains Necessary

Despite positive perceptions of ADM systems, participants rejected the idea of fully autonomous decision-making.

Interviewees emphasized the importance of human oversight, particularly for:

- Large commercial loans
- Exceptional cases
- High-risk customers
- Regulatory compliance

Several participants argued that automated systems should support rather than replace human decision-makers.

This finding suggests that hybrid decision models may represent the most effective approach for banks.

Theme 5: Challenges of Digitalization

Although participants viewed digitalization positively, several challenges were identified.

The most common concerns included:

- Cybersecurity risks
- Data privacy regulations
- Algorithmic bias
- Customer trust
- Integration costs

Participants stressed that successful digital transformation requires substantial investments in technology, governance, and employee training.

These concerns highlight the importance of balancing efficiency gains with ethical and regulatory considerations.

3.3. Integration of Quantitative and Qualitative Findings

The qualitative findings support the quantitative results.

While the quantitative phase demonstrates a statistically significant positive relationship between digitalization and organizational performance, the qualitative phase explains how this relationship emerges in practice. An important codes is given below in Figure 5.

Interview participants consistently identified:

- operational efficiency,
- customer acquisition,
- process automation,
- improved credit decisions,

as the primary mechanisms through which digitalization contributes to profitability.

Furthermore, the qualitative findings reveal that automated decision-making systems represent an increasingly important dimension of digital transformation within the banking sector. Taken together, the results suggest that digitalization contributes positively to organizational performance not only through technological adoption but also through organizational learning, process redesign, and enhanced decision-making capabilities.

and operational mechanisms underlying this relationship. In particular, the experiences and observations of senior banking professionals support the quantitative evidence by emphasizing that digital transformation has contributed to improvements in operational efficiency, service accessibility, transaction speed, customer experience, and data-driven decision-making. These areas of agreement strengthen the interpretation of the quantitative results, as the qualitative evidence helps explain how and through which organizational processes digitalization may influence banking performance. Thus, rather than representing two independent strands of analysis, the quantitative and qualitative components reinforce each other and provide a more comprehensive understanding of the effects of digital transformation within the Turkish banking sector.

At the same time, the qualitative findings add important contextual dimensions that cannot be fully captured by the quantitative indicators used in the empirical model. While the quantitative analysis measures digitalization primarily through observable mobile banking indicators, the interviews reveal that banks' digital transformation also encompasses broader areas such as artificial intelligence, automation, cybersecurity investments, technological infrastructure, FinTech collaborations, and technology-related mergers and acquisitions. The convergence between the two sets of findings therefore lies primarily in their shared recognition of digitalization as an important driver of organizational and operational transformation, whereas the qualitative evidence extends the quantitative results by highlighting dimensions that remain difficult to measure because of limited and non-standardized data availability. This complementarity represents an important strength of the mixed-method approach, as the quantitative analysis identifies broader empirical patterns and relationships, while the qualitative findings provide contextual explanations and reveal mechanisms and dimensions of digital transformation that cannot be adequately represented by conventional numerical indicators alone.

4. Discussion

4.1. *Digitalization as a Driver of Organizational Performance*

The findings of this study indicate that adoption of Digital Banking services positively influences organizational performance in the Turkish banking sector. Both the quantitative and qualitative results suggest that increased digital banking activity contributes to improved profitability and operational effectiveness. These findings are consistent with previous studies that reported positive relationships between digital banking adoption and financial performance (Ahiadorme, 2018; Kathuo et al., 2015; Korkmazgöz & Ege, 2020; Canatan İpek, 2022; Ergün, 2023; Çizgici Akyüz, 2023; Kurt Cihangir et al., 2024; Doğan, 2024).

One explanation for this relationship is the ability of digital technologies to reduce transaction costs and improve operational efficiency. Traditional banking operations require extensive branch networks, physical infrastructure, and human resources. Digital channels enable banks to provide similar services at significantly lower costs while serving larger customer populations. Consequently, digitalization enhances scalability and improves resource utilization.

The findings also support the broader digital transformation literature, which argues that digital technologies create value by enabling organizations to redesign processes and improve responsiveness to environmental changes (Brennen & Kreiss, 2016; Fichman et al., 2014). Within the banking sector, digitalization appears to function not merely as a technological innovation but as a strategic capability that strengthens organizational adaptability and competitiveness.

4.2. *The Strategic Role of FinTech Integration*

A second important finding concerns the role of FinTech in enhancing organizational performance. Interview participants consistently emphasized the importance of collaboration between traditional banks and FinTech firms. This finding reflects a significant shift from earlier views that portrayed FinTech companies primarily as competitors.

The results support the argument that contemporary banking ecosystems increasingly rely on collaborative innovation. Rather than developing every technological capability internally, banks leverage the expertise and agility of FinTech firms to accelerate innovation and improve service delivery. This observation aligns with Cheng and Qu's (2020) distinction between external and internal FinTech and supports previous research suggesting that FinTech integration contributes positively to organizational effectiveness.

The findings further suggest that FinTech adoption facilitates customer acquisition, improves customer experience, and supports the development of new financial products. These benefits contribute directly to organizational performance by generating additional revenue streams and strengthening customer relationships.

From a strategic management perspective, FinTech partnerships may also be interpreted through the Resource-Based View (RBV) of the firm. FinTech collaborations provide access to technological capabilities that may be difficult or costly for banks to develop independently. Consequently, these partnerships can serve as valuable organizational resources that contribute to sustained competitive advantage.

4.3. Automated Decision-Making and Credit Performance

One of the most significant contributions of this study is its examination of Automated Decision-Making (ADM) within the context of organizational performance.

The quantitative findings demonstrate that digitalization positively influences profitability, while the qualitative findings provide insight into the mechanisms through which this effect occurs. Interview participants consistently highlighted faster decision-making, increased consistency, and improved efficiency as major benefits of ADM systems.

These findings support Kitchin's (2017) argument that ADM should be viewed as a socio-technical system rather than merely a technological

tool. The effectiveness of automated decision-making depends not only on algorithmic capabilities but also on how organizations integrate these systems into existing processes and decision structures.

In particular, the findings suggest that ADM systems improve credit decision quality by reducing reliance on subjective human judgment. Traditional credit evaluation processes are often influenced by cognitive biases, including overconfidence, optimism bias, and loss aversion (Hodgkinson et al., 2002). Automated systems mitigate these limitations by applying consistent decision rules across large datasets.

The findings also support previous studies arguing that machine learning-based credit assessment models can improve risk prediction and expand financial inclusion (Kumar et al., 2021; Mhalanga, 2021). By incorporating alternative sources of information, ADM systems enable financial institutions to evaluate customers who may have been excluded by traditional credit assessment methods.

Consequently, the positive relationship observed between digitalization and organizational performance may partly be explained by improvements in credit allocation efficiency and risk management practices.

4.4. Human Oversight and Algorithmic Governance

Although participants viewed ADM systems positively, the findings also reveal important limitations. Most interviewees rejected the notion of fully autonomous decision-making and emphasized the continued importance of human oversight.

This finding supports emerging research suggesting that hybrid decision-making models may be more effective than either purely human or purely algorithmic approaches. While algorithms excel at processing large volumes of information and identifying patterns, human decision-makers remain valuable in situations involving ambiguity, ethical considerations, and exceptional cases.

The results therefore challenge simplistic assumptions that digital transformation necessarily leads to complete automation. Instead, they suggest that successful digitalization requires a balance between technological efficiency and human judgment.

The importance of this balance becomes particularly evident when considering issues of transparency, accountability, and explainability. Financial institutions operate within highly regulated environments where decisions affecting customers must often be justified and documented. Human oversight helps ensure compliance with regulatory requirements while maintaining customer trust.

4.5. Ethical and Regulatory Implications

The findings also highlight several ethical and regulatory challenges associated with digitalization and ADM systems.

Participants expressed concerns regarding cybersecurity, data privacy, algorithmic bias, and customer trust. These concerns are consistent with previous literature emphasizing the risks associated with increased reliance on data-driven technologies.

Yoo (2010) warned that the growing use of customer behavioral data raises significant privacy concerns, particularly when customers are unaware of how their information is collected and utilized. Similarly, algorithmic bias remains a major concern because machine learning systems may reproduce historical inequalities embedded within training datasets.

These issues have become increasingly important considering regulatory frameworks such as the General Data Protection Regulation (GDPR), which emphasize transparency and accountability in automated decision-making processes. Financial institutions must therefore balance efficiency gains with ethical responsibilities and legal obligations.

The findings suggest that effective governance mechanisms will become increasingly important as banks continue expanding the use of artificial

intelligence and automated decision systems. Transparency, explainability, and fairness should be viewed not merely as compliance requirements but as strategic necessities for maintaining organizational legitimacy and customer trust.

4.6. Theoretical Contributions

This study contributes to the literature in several ways.

First, it extends existing research by examining digitalization through two interconnected dimensions: Digital banking activities and automated decision-making systems. Previous studies have focused on these phenomena separately. The present findings demonstrate that both dimensions contribute to organizational performance and should be examined within an integrated framework.

Second, the study contributes empirical evidence from an emerging economy characterized by rapid digital transformation. Much of the existing literature focuses on developed financial markets, creating a need for evidence from different institutional contexts.

Third, the explanatory sequential mixed-method design provides a more comprehensive understanding of the relationship between digitalization and organizational performance. While quantitative analysis establishes the existence of a positive relationship, qualitative findings explain the organizational mechanisms underlying this relationship.

Finally, the study supports the view that digitalization should be understood not solely as a technological process but as an organizational transformation involving structural change, process redesign, and new forms of decision-making.

Conclusions

The purpose of this study was to investigate the impact of Digital Banking Services adoption on organizational performance in the Turkish banking sector. Specifically, the study examined digitalization from two complementary perspectives: the adoption of digital banking and the increasing use of Automated Decision-Making (ADM) systems in banking operations, particularly credit assessment processes.

To achieve this objective, an explanatory sequential mixed-method research design was employed. The quantitative phase examined the relationship between digitalization indicators and organizational performance using sector-level secondary data and ARDL analysis, while the qualitative phase explored managerial perceptions through semi-structured interviews with senior banking professionals.

The quantitative findings revealed a positive and statistically significant relationship between digitalization and organizational performance. Indicators of digital banking activity, including mobile banking customer growth and transaction volumes, were associated with improved profitability measures. These findings suggest that digitalization contributes to banking performance by increasing efficiency, reducing operating costs, and expanding customer access to financial services.

The qualitative findings further supported these results and provided deeper insights into the mechanisms underlying this relationship. Participants consistently emphasized that digitalization has become a strategic necessity rather than a discretionary choice. Interviewees highlighted the role of digital technologies in improving customer experience, accelerating service delivery, enhancing operational efficiency, and supporting organizational agility.

The findings also demonstrate that FinTech firms have evolved from being perceived as a competitive threat to becoming an important strategic partner for traditional banks. Collaborative relationships between banks and FinTech firms appear to facilitate innovation, improve service quality, and strengthen organizational capabilities.

Most importantly, the study revealed the growing significance of Automated Decision-Making systems within banking operations. Participants reported that ADM systems contribute to faster, more consistent, and more data-driven credit decisions. These systems improve operational efficiency while supporting more effective risk assessment and customer evaluation processes.

Overall, the findings suggest that digitalization positively influences organizational performance through multiple channels, including process automation, customer acquisition, innovation, operational efficiency, and enhanced decision-making capabilities. Consequently, digitalization should be viewed as a strategic organizational capability that contributes directly to long-term competitiveness and performance.

Managerial Implications

The findings of this study generate several important implications for banking executives and decision-makers.

First, managers should recognize that digitalization is no longer limited to technology departments. Instead, digital transformation should be integrated into organizational strategy and supported by senior leadership. Successful digitalization requires alignment between technological investments, organizational structures, and business objectives.

Second, banks should continue investing in digital banking platforms and customer-facing technologies. The positive relationship identified between digital banking activities and organizational performance suggests that investments in mobile banking, digital onboarding, and self-service technologies can generate substantial organizational benefits.

Third, financial institutions should strengthen collaboration with FinTech firms. Strategic partnerships allow banks to access innovative technologies more rapidly and efficiently than developing all capabilities internally. Such collaborations may accelerate digital transformation while reducing implementation risks and costs.

Fourth, managers should consider expanding the use of Automated Decision-Making systems, particularly in operational areas where large volumes of structured decisions are required. Credit assessment, fraud detection, customer segmentation, and risk management represent areas where ADM systems may generate significant efficiency gains.

However, managers should avoid viewing automation as a complete substitute for human expertise. The findings indicate that hybrid decision-making systems, combining algorithmic capabilities with human oversight, may provide the most effective approach. Human judgment remains critical for addressing exceptional cases, ethical dilemmas, and complex strategic decisions.

Finally, organizations should establish robust governance mechanisms to manage risks associated with artificial intelligence and automated decision-making. Transparency, explainability, fairness, and accountability should be incorporated into digital transformation strategies to maintain customer trust and regulatory compliance.

Policy Implications

The findings also carry implications for regulators and policymakers.

As digital banking and automated decision-making become increasingly widespread, regulatory frameworks must evolve accordingly. Policymakers should encourage innovation while simultaneously ensuring consumer protection, privacy, and fairness.

Particular attention should be given to issues related to algorithmic transparency and accountability. Regulatory authorities may need to develop clearer guidelines regarding the use of artificial intelligence in financial decision-making processes.

The results further suggest that digitalization contributes to financial inclusion by expanding access to financial services. Policymakers should therefore continue supporting digital financial ecosystems and regulatory environments that encourage innovation while safeguarding public interests.

In addition, cooperation among regulators, financial institutions, technology firms, and academic researchers may help develop best practices for responsible AI adoption within the banking sector.

Limitations of the Study

Despite its contributions, the study has several limitations.

First, the quantitative analysis was conducted using sector-level data rather than individual bank-level data. Although sector-level indicators provide valuable insights, bank-specific analyses may reveal additional variations across institutions.

Second, the study focused primarily on deposit banks operating in Türkiye. Consequently, the findings may not be directly generalizable to participation banks, development banks, investment banks, or financial institutions operating in different regulatory environments.

Third, organizational performance was measured through profitability indicators. While profitability represents an important dimension of performance, future studies may incorporate additional measures such as customer satisfaction, innovation performance, operational efficiency, or sustainability outcomes.

Fourth, the qualitative phase relied on interviews with a limited number of senior banking professionals. Although participants possessed substantial expertise, broader stakeholder perspectives may provide additional insights into digital transformation processes.

Fifth, the rapidly evolving nature of digital technologies means that the effects of artificial intelligence, machine learning, and FinTech innovation may continue to change over time. Therefore, the findings should be interpreted within the specific technological and institutional context of the study period.

Finally, main limitations of this study concerns the measurement of digitalization. Due to data availability constraints, digital banking is

primarily proxied by indicators related to mobile banking activities. Although mobile banking represents an important dimension of digital transformation in the banking sector, it captures only a limited part of the broader digitalization process. Other significant components, including investments in artificial intelligence, cybersecurity technologies, digital infrastructure, FinTech partnerships, mergers and acquisitions involving technology-oriented firms, and the acquisition of FinTech companies, could not be incorporated into the empirical analysis because consistent and comparable time-series data are not publicly available. In addition, banks do not disclose sufficiently detailed and standardized information regarding the scale, composition, and allocation of their technology investments. This makes it difficult to distinguish between different forms of digital investment and to classify expenditures according to their specific technological purposes. Consequently, the digitalization variable used in this study should be interpreted as a partial proxy rather than a comprehensive measure of banks' overall digital transformation. Future research (explained in detail in next section) could address this limitation by developing broader digitalization indices that combine mobile and internet banking indicators with firm-level data on technology expenditures, artificial intelligence adoption, cybersecurity investments, and FinTech-related strategic activities.

Directions for Future Research

Several opportunities exist for future research.

First, future studies could examine individual banks rather than sector-level aggregates to identify differences in digital transformation strategies and performance outcomes. This may include investments on digitalization(if given in annual reports of banks and financial firms) , merger /acquisitions to fintech firms or small sized banks and more granule data for digitalization index forced by authorities to banks and financial institutions. These studies also give ideas and new diversified strategies to bank upper management on their decision making on investing to digitalization and digital firms.

Second, comparative studies across countries could investigate how institutional environments influence the relationship between digitalization and organizational performance.

Third, researchers may explore the impact of digitalization on non-financial dimensions of performance, including customer satisfaction, employee productivity, innovation capacity, and organizational resilience.

Fourth, future research could investigate specific applications of artificial intelligence, such as explainable AI, machine learning-based credit scoring, fraud detection systems, and generative AI tools within financial services.

Fifth, longitudinal studies could examine how digital transformation strategies evolve over time and how organizations adapt to emerging technologies and regulatory requirements.

Finally, future research may explore the ethical implications of automated decision-making in greater depth, particularly regarding algorithmic fairness, transparency, accountability, and customer trust.

Final Statement

In conclusion, this study demonstrates that digitalization represents a significant driver of organizational performance within the banking sector. Through the integration of digital banking technologies, FinTech innovations, and automated decision-making systems, banks can enhance operational efficiency, strengthen customer relationships, improve decision quality, and increase profitability. As digital transformation continues to reshape financial services, organizations that successfully combine technological innovation with effective governance and human expertise are likely to achieve sustainable competitive advantage in an increasingly digital economy.

This study has Ethic Approval taken from Yeditepe University on 27.06.2024. No.53 decision permission and complies with the research and publication ethics.

The authors declare that they have contributed equally to the article.

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Geniřletilmiř zet

Bu alıřma, dijitalleřmenin Trk bankacılık sektr zerinde rgtsel performans etkisini, karar alma sreleri perspektifinden, incelemektedir. Gnmzde bankacılık sektr, dijital teknolojilerin hızlı geliřimiyle birlikte nemli bir dnřm srecinden gemektedir. Mobil bankacılık, internet bankacılıęı, FinTech uygulamaları, yapay zek destekli sistemler ve otomatik karar alma mekanizmaları bankaların hem mřterileriyle kurdukları iliřkiyi hem de i operasyonel srelerini yeniden řekillendirmektedir. Bu dnřm, bankaların daha hızlı, daha verimli ve daha rekabeti hizmet sunmalarına olanak tanımakta; aynı zamanda krlılık, mřteri kazanımı, sre otomasyonu ve karar kalitesi gibi rgtsel performans gstermeleri zerinde etkili olmaktadır.

alıřmanın temel amacı, dijitalleřmenin bankaların rgtsel performansını nasıl etkiledięini ortaya koymaktır. Bu ama doęrultusunda dijitalleřme iki ana boyut zerinden ele alınmıřtır. İlk boyut, artan dijital bankacılık faaliyetleridir. Bu kapsamda mobil bankacılık kullanımı, dijital iřlem hacimleri ve dijital kanallar aracılıęıyla gerekleřtirilen bankacılık faaliyetleri dikkate alınmıřtır. İkinci boyut ise bankacılık operasyonlarında kullanılan otomatik karar alma sistemleridir. zellikle kredi deęerlendirme, risk analizi, mřteri profillemeye ve kredilendirme kararları gibi alanlarda kullanılan algoritmik ve veri temelli karar mekanizmaları bu boyut ierisinde deęerlendirilmiřtir. Bylece alıřma, yalnızca dijital bankacılık hizmetlerinin yaygınlařmasına deęil, aynı zamanda karar alma srelerinde dijital sistemlerin artan rolne de odaklanmaktadır.

Arařtırmanın kapsamı Trk bankacılık sektr ile sınırlandırılmıřtır. Trkiye gibi geliřmekte olan bir ekonomide bankacılık sektrnn dijital dnřm srecini incelemek, alıřmanın nemli katkılarından birini oluřturmaktadır. Trk bankacılık sektr, son yıllarda dijital bankacılık uygulamalarının yaygınlařması, mobil bankacılık kullanıcı sayısının artması ve FinTech ekosisteminin geliřmesiyle dikkat ekmektedir. Bu nedenle alıřma, dijitalleřmenin yalnızca teknolojik bir yenilik deęil, aynı zamanda rgtsel performansı destekleyen stratejik bir yetkinlik olduęunu gstermeyi amalamaktadır.

Çalışmada açıklayıcı sıralı karma yöntem araştırma deseni kullanılmıştır. Bu yöntem, önce nicel verilerin analiz edilmesini, ardından elde edilen bulguların nitel verilerle daha ayrıntılı biçimde açıklanmasını içermektedir. Araştırmanın nicel aşamasında, 2011–2025 dönemini kapsayan ikincil bankacılık sektörü verileri analiz edilmiştir. Bu dönemin seçilmesi, dijital bankacılık uygulamalarının Türkiye’de önemli ölçüde geliştiği ve bankacılık sektöründe dijital dönüşümün hız kazandığı yılları kapsamı bakımından önemlidir. Nicel analizde Otoregresif Dağıtılmış Gecikme Modeli, yani ARDL yaklaşımı kullanılmıştır. ARDL yöntemi, dijitalleşme göstergeleri ile kârlılık ölçütleri arasındaki kısa ve uzun dönemli ilişkileri incelemek amacıyla tercih edilmiştir. Bu aşamada dijital bankacılık faaliyetleri ile bankaların kârlılık performansı arasındaki ilişki araştırılmıştır.

Araştırmanın nitel aşamasında ise üst düzey bankacılık profesyonelleriyle yarı yapılandırılmış görüşmeler gerçekleştirilmiştir. Bu görüşmelerin amacı, nicel bulguları desteklemek ve bankacılık sektöründeki yöneticilerin dijital dönüşüm, FinTech uygulamaları ve otomatik karar alma sistemlerine ilişkin algılarını daha derinlemesine anlamaktır. Yarı yapılandırılmış görüşme yöntemi, katılımcılara belirli temalar etrafında görüşlerini açıklamaya fırsatı sunmuş ve dijitalleşmenin örgütsel performansa nasıl yansıdığı konusunda daha kapsamlı bilgiler elde edilmesini sağlamıştır. Bu aşamada özellikle operasyonel verimlilik, uzaktan müşteri kazanımı, süreç otomasyonu, kredi karar kalitesi ve personel ile şube verimliliği denetiminin önemli gibi konular öne çıkmıştır.

Çalışmanın bulguları, dijitalleşme ile örgütsel performans arasında pozitif bir ilişki olduğunu göstermektedir. Nicel analiz sonuçlarına göre, mobil bankacılık kullanımı ve dijital işlem hacimlerindeki artış, bankaların kârlılık göstergeleriyle olumlu yönde ilişkilidir. Bu durum, dijital kanalların bankalar için yalnızca alternatif hizmet sunum araçları olmadığını, aynı zamanda finansal performansı destekleyen önemli unsurlar olduğunu ortaya koymaktadır. Dijital bankacılık faaliyetleri, işlem maliyetlerini azaltmakta, hizmet hızını artırmakta ve müşteri erişimini kolaylaştırmaktadır. Bu gelişmeler de bankaların verimlilik ve kârlılık düzeylerine katkı sağlamaktadır.

Nitel bulgular ise dijitalleşmenin örgütsel performansı çeşitli mekanizmalar aracılığıyla güçlendirdiğini göstermektedir. Bankacılık profesyonellerine göre dijitalleşme, operasyonel süreçleri hızlandırmakta, manuel iş yükünü azaltmakta ve hizmet kalitesini artırmaktadır. Ayrıca dijital kanallar sayesinde bankalar daha geniş müşteri kitlelerine ulaşabilmekte ve müşteri deneyimini iyileştirebilmektedir. Otomatik karar alma sistemleri ise özellikle risk değerlendirmesi ve kredi kararlarında daha hızlı ve veri temelli kararlar alınmasına katkı sağlamaktadır. Bununla birlikte çalışma, bu sistemlerin tamamen insan kararının yerini almaması gerektiğini de vurgulamaktadır. Uzman görüş ve müdahale, etik değerlendirme, şeffaflık ve sorumluluk açısından hâlâ kritik öneme sahiptir. Özetle hibrit bir kredi tahsis ve kullandırım yönetimi öne çıkmaktadır.

Sonuç olarak bu çalışma, dijitalleşmenin Türk bankacılık sektöründe örgütsel performansı destekleyen önemli bir stratejik yetkinlik olduğunu ortaya koymaktadır. Dijital Bankacılık Hizmetleri ve otomatik karar alma sistemlerinin birlikte ele alınması, çalışmanın literatüre katkısını güçlendirmektedir. *Araştırma, dijitalleşmenin yalnızca teknolojik bir dönüşüm değil, aynı zamanda bankaların sürdürülebilir performans elde etmelerinde etkili olan yönetsel ve stratejik bir nitelik olduğunu göstermektedir.*