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Advancing Digital Banking in Albania: Trust, Financial Literacy and Regulatory Readiness in the FinTech Ecosystem

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ABSTRACT

Digital transformation is reshaping banking systems worldwide, yet the pace and depth of adoption remain uneven across emerging financial markets. Albania has made visible progress in electronic payments, online banking access and regulatory alignment with European digital finance standards; however, the transition from formal access to sustained digital banking adoption remains incomplete. This study examines the factors influencing digital banking and FinTech adoption in Albania, with a specific focus on consumer trust, financial literacy, perceived barriers and regulatory readiness. The paper applies a mixed-methods research design. Quantitative data were collected through a structured consumer survey with 151 respondents and analyzed through descriptive statistics and Spearman correlation analysis. Qualitative evidence was gathered through 15 semi-structured interviews with representatives from commercial banks, electronic money institutions, public institutions, regulators, sectoral organizations and academic experts. Thematic analysis was used to identify common institutional, technological and regulatory patterns. The findings show that digital banking services are widely accessible, but usage intensity remains moderate. Weekly and monthly use are more common than daily use, while trust, financial knowledge and perceived barriers significantly shape adoption patterns. The correlation analysis indicates a positive relationship between financial knowledge and digital banking use, and a negative relationship between perceived barriers and usage. Interview findings reveal six major themes: Digital transformation as a strategic priority, Bank-FinTech cooperation, regulatory adaptation, cybersecurity and data protection, financial education, and an optimistic but conditional outlook toward 2030. The study contributes to the literature on digital financial inclusion in emerging markets by integrating consumer-level evidence with institutional and regulatory perspectives. It argues that Albania's digital banking transition requires not only technological investment, but also trust-building, digital financial education, cybersecurity, regulatory innovation and stronger cooperation between banks, FinTech actors, regulators and academia.

Keywords: Digital Banking, FinTech, Financial Inclusion, Trust, Financial Literacy, Open Banking, Cybersecurity, Albania
JEL Classifications: G21, G28, O33, G53

1. INTRODUCTION

Digital transformation is reshaping contemporary financial systems through the expansion of digital banking, mobile payments, electronic money institutions, Open Banking and FinTech-based business models. These developments have created new opportunities for financial inclusion, operational efficiency, customer convenience and market innovation, while also introducing risks related to cybersecurity, consumer protection, data privacy, digital exclusion and regulatory adaptation (Arner et al., 2017; Gomber et al., 2017; Demirgüç-Kunt et al., 2022).

The financial sector has increasingly moved from a bank-centered model toward a broader digital ecosystem involving banks, FinTech firms, electronic money institutions, regulators, technology providers and, in some markets, BigTech actors. This transformation is supported by data-driven services, platform-based business models and regulatory initiatives such as Open Banking and digital operational resilience frameworks. As a result,

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digital finance is no longer limited to the provision of online banking services, but reflects a wider structural change in how financial services are designed, delivered, regulated and consumed (European Banking Authority [EBA], 2021; Gomber et al., 2017).

However, the availability of digital financial services does not automatically lead to sustained adoption. Previous studies show that the use of digital banking is influenced by perceived usefulness, perceived ease of use, trust, perceived risk, financial literacy and facilitating conditions (Davis, 1989; Venkatesh et al., 2003; Yousafzai et al., 2009). These factors are particularly relevant in emerging financial markets, where consumers may have access to mobile or internet banking but continue to rely on cash, physical branches or traditional payment habits due to security concerns, limited digital skills, low trust or perceived service complexity.

Digital financial inclusion should therefore be understood not only as access to financial services, but also as meaningful, safe and regular use. Evidence from the Global Findex database shows that account ownership and digital payments can support financial inclusion, but their impact depends on affordability, consumer protection, trust and users' ability to engage effectively with financial services (Demirgüç-Kunt et al., 2022). Similarly, the OECD emphasizes the importance of financial and digital financial literacy in enabling consumers to understand risks, make informed decisions and benefit from digital finance (OECD, 2023).

Albania provides a relevant case for examining this transition. In recent years, the country has made visible progress in the modernization of payments, expansion of online banking access and growth of electronic money institutions. Albania has also advanced toward closer alignment with European digital finance and payment standards, including developments related to SEPA, Open Banking and payment system modernization (Bank of Albania, 2024b). These developments indicate that Albania is becoming increasingly integrated into regional and European digital finance processes.

Despite this progress, digital banking adoption in Albania remains uneven. Consumer behavior continues to be shaped by trust, financial literacy, security concerns, technical barriers, perceived costs and a persistent preference for cash. The primary survey data used in this study show that although most respondents have access to a bank account and many use digital banking services, usage intensity remains moderate. Weekly and monthly use are more common than daily use, suggesting that Albania has progressed in terms of access, but the transition toward deeper and more routine adoption remains incomplete.

Institutional readiness is also central to this process. Banks and FinTech actors operate in an environment where technological innovation must be balanced with regulatory compliance, cybersecurity, data protection and consumer trust. Semi-structured interviews conducted for this study with representatives of banks, electronic money institutions, public institutions, regulators, sectoral organizations and experts indicate that digital transformation is now considered a strategic priority for the Albanian financial sector. At the same time, stakeholders emphasize the need for stronger cybersecurity, clearer regulatory frameworks, digital financial education and structured cooperation between banks, FinTech actors and regulators.

This paper analyzes Albania's digital banking and FinTech ecosystem through a mixed-methods approach that combines consumer-level survey evidence with institutional and regulatory insights. The study addresses the following research questions:

RQ1. What is the current level and intensity of digital banking adoption among consumers in Albania?

RQ2. How do trust, financial literacy and perceived barriers relate to the use of digital banking services?

RQ3. What institutional, technological and regulatory factors shape the development of Albania's digital banking and FinTech ecosystem?

RQ4. How can Albania move from increased digital access toward deeper, safer and more inclusive digital financial adoption?

The quantitative component is based on a structured survey with 151 respondents and uses descriptive statistics and Spearman correlation analysis. The qualitative component is based on 15 semi-structured interviews with representatives from commercial banks, electronic money institutions, public institutions, regulators, sectoral organizations and academic experts. This combination allows the study to connect consumer behavior with institutional and regulatory dynamics.

The paper contributes to literature in three main ways. First, it provides recent empirical evidence on digital banking use, trust, perceived barriers and financial literacy in Albania. Second, it integrates consumer-level findings with stakeholder perspectives, offering a broader view of the country's digital finance ecosystem. Third, it develops policy-oriented recommendations for strengthening digital financial inclusion, cybersecurity, Open Banking, Bank–FinTech cooperation, regulatory innovation and digital financial education.

2. LITERATURE REVIEW AND ALBANIAN CONTEXT

2.1. Digital Banking, FinTech and Consumer Adoption

Digital banking refers to the provision of banking and payment services through digital channels, including internet banking, mobile banking, electronic payments, digital wallets and other technology-enabled platforms. Compared with traditional branch-based banking, digital banking enables remote, faster and often lower-cost access to financial services. This transformation has been driven by technological innovation, changing consumer expectations and the growing role of data in financial decision-making (Gomber et al., 2017).

FinTech has further expanded the scope of digital finance by introducing new actors, business models and technological solutions into the financial ecosystem. FinTech firms are particularly active in areas such as payments, lending, personal finance, digital wallets, RegTech and InsurTech. Their emergence

has challenged traditional financial institutions, but it has also created opportunities for collaboration between banks and technology-driven firms, especially through Open Banking, APIs, embedded finance and platform-based financial services (Arner et al., 2017).

The digitalization of finance has also increased the strategic importance of data. Financial institutions increasingly rely on customer data, transaction histories and digital behavior to design products, assess risks and personalize services. While this data-driven ecosystem can improve efficiency and customer experience, it also creates new risks related to privacy, cybersecurity, algorithmic bias and consumer protection (OECD, 2023; Demirgüç-Kunt et al., 2022).

In emerging financial markets, digital banking and FinTech are often seen as instruments for expanding financial inclusion. Digital channels can reduce geographic barriers, lower transaction costs and reach consumers who are underserved by traditional banking networks. However, access to digital services does not automatically lead to adoption. The benefits of digital finance depend on infrastructure, affordability, consumer trust, financial literacy, regulatory capacity and the ability of institutions to manage operational and technological risks (Demirgüç-Kunt et al., 2022).

Consumer adoption of digital banking is commonly explained through technology adoption theories. The Technology Acceptance Model emphasizes perceived usefulness and perceived ease of use as key determinants of technology acceptance (Davis, 1989), while the Unified Theory of Acceptance and Use of Technology highlights performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh et al., 2003). In the context of digital banking, these factors relate to whether consumers perceive digital channels as useful, simple, accessible and supported by adequate infrastructure and customer assistance.

Beyond usefulness and ease of use, trust and perceived risk are central to digital banking adoption. Digital banking involves financial transactions, personal data and technological systems that consumers cannot physically observe. As a result, users must trust both the institution and the digital platform. Concerns about fraud, unauthorized access, transaction errors or data misuse may reduce adoption, even when digital services are technically available (Yousafzai et al., 2009; Featherman and Pavlou, 2003). For this reason, consumer adoption depends not only on the availability of digital banking platforms, but also on how safe, reliable and understandable consumers perceive them to be.

2.2. Trust, Financial Literacy and Perceived Barriers

Trust is one of the most important determinants of digital financial behavior. In banking, trust traditionally depends on institutional reputation, regulatory protection, service reliability and the perceived integrity of financial institutions. In digital banking, trust becomes more complex because consumers interact with platforms, applications, authentication systems and data processing mechanisms rather than only with bank employees. As a result, trust is built through secure systems, transparent communication, reliable customer support and consistent user experience.

Financial literacy also plays a critical role in adoption of digital banking. Individuals with higher financial literacy are more likely to understand banking products, compare costs, evaluate risks and make informed financial decisions. Digital financial literacy adds another layer, as consumers must also understand how to use digital platforms safely, recognize fraud attempts, protect personal data and manage online transactions responsibly (OECD, 2023). Without adequate financial and digital literacy, consumers may either avoid digital banking altogether or use it in ways that expose them to risks.

The literature on financial inclusion emphasizes that access to financial services is not sufficient if consumers lack the knowledge, confidence or trust needed to use them effectively. Account ownership or digital access may represent formal inclusion, but meaningful inclusion requires regular, safe and beneficial use of financial services (Demirgüç-Kunt et al., 2022). This distinction is particularly important for Albania, where access to banking services has improved, but digital usage patterns remain uneven.

Perceived barriers may include preference for cash, lack of trust, fear of fraud, high fees, technical problems, limited service availability, poor user experience and insufficient customer support. In cash-oriented economies, habits and cultural preferences can slow the adoption of digital payments and digital banking. Even when consumers have bank accounts or access to mobile banking, they may continue to prefer cash for daily transactions because it is familiar, immediate and perceived as more controllable.

2.3. Albania's Digital Finance and Regulatory Landscape

Albania's digital finance ecosystem has developed within a predominantly bank-centered financial system. Commercial banks remain the main providers of financial intermediation, payment services, card infrastructure and customer-facing digital platforms. According to Bank of Albania supervisory data, in 2024 the banking sector consisted of 11 active banks, with total assets of approximately ALL 2,091 billion, net profit of ALL 37.4 billion, a capital adequacy ratio of 19.8% and a non-performing loan ratio of 4.17%. Banking assets account for around 90% of GDP, confirming the central role of banks in the distribution and development of digital financial services in Albania (Bank of Albania, 2024a).

The importance of digital banking is also linked to the geographic structure of financial access. Physical banking infrastructure remains concentrated in urban areas, with 44.7% of bank branches located in Tirana and 68.6% concentrated in the five largest cities. This distribution creates a strong policy rationale for digital channels, which can help reduce access barriers for consumers outside major urban centers, particularly in rural and semi-urban areas where branch presence is more limited (Bank of Albania, 2024a).

Basic digital banking services are now widely available across the banking sector, but the level of digital maturity differs across

institutions. Bank of Albania data show that 9 out of 11 banks offer internet banking and 8 out of 11 offer mobile banking. However, more advanced digital payment infrastructure remains concentrated, with only 2 banks offering virtual POS services and 2 banks offering phone banking. This suggests that Albania has achieved broad availability of standard e-banking channels, while more advanced digital and merchant-facing services are still developing unevenly across the sector (Bank of Albania, 2024a).

At the payment-system level, Albania has recorded substantial progress since 2018, when the implementation of the National Retail Payments Strategy began. Electronic payments per adult increased from around 5 in 2018 to 29 in the most recent reporting period, exceeding the strategy's target of 10 payments per adult. Around 89.9% of cashless payments in the system are now performed electronically, without the physical presence of customers in bank branches. In addition, 47% of bank accounts are accessed online, while the number of online-accessed accounts has increased by 388% and transactions from these accounts by 296% compared to 2018 (Bank of Albania, 2025).

Card-based payments have become one of the main drivers of digital payment adoption. Albania has approximately 1.6 million payment cards in circulation, 88% of which are debit cards. Card payments account for around 67% of electronic payments, and the number of card payments has increased six fold since 2018. Although cards are still frequently used for ATM withdrawals, their use for payments has increased from 18% in 2018 to 52% in the most recent reporting period. Payment acceptance infrastructure has also expanded, with POS terminals increasing by 258% since 2018 and virtual POS terminals reaching 342, indicating gradual growth in e-commerce and online payment acceptance (Bank of Albania, 2025).

The Albanian payments ecosystem has also become more diversified through the entry of non-bank payment actors. Following the adoption of the Law "On Payment Services", the number of electronic money institutions increased from 2 to 11. These institutions now process around 30% of the total number of electronic payments, showing that electronic money institutions are becoming relevant actors in the payment ecosystem. Nevertheless, the market remains largely bank-led, as banks continue to dominate customer relationships, payment infrastructure, card issuance and digital banking platforms (Bank of Albania, 2025).

The regulatory framework has supported this transition through reforms aligned with European standards. Law No. 55/2020 "On Payment Services", which partially approximates PSD2, established the legal basis for payment institutions, electronic money institutions, transparency requirements, consumer protection and security standards for electronic payments (Republic of Albania, 2020). Law No. 100/2023 "On Payment Accounts with Basic Services" further strengthens financial inclusion by guaranteeing access to basic payment accounts and electronic payment functionalities (Republic of Albania, 2023). These reforms have improved the environment enabling for digital payments and FinTech-related services, although licensing, compliance, AML/KYC obligations and operational risk requirements continue to influence market entry and scalability, particularly for smaller providers.

Open Banking and SEPA-related developments represent important elements of Albania's current regulatory and infrastructural modernization. These developments are also aligned with broader European efforts toward instant payments and payment system modernization (European Central Bank, 2024). Two entities have been licensed to support the operationalization of Open Banking, while four additional non-bank entities are under review. Open Banking services have started to go live following testing with banks, indicating a gradual move toward structured data-sharing and third-party payment service models. In parallel, the political decision for Albania's entry into the SEPA schemes was taken on 21 November 2024, while banks started processing SEPA payments on 5 October 2025. According to Bank of Albania data, 67% of these payments are performed online, and the Bank of Albania has updated its systems to SEPA standards (Bank of Albania, 2025).

Evidence from commercial bank annual reports confirms that digital transformation is increasingly embedded in bank strategies. Large banks such as Raiffeisen Bank Albania and Banka Kombëtare Tregtare show advanced forms of bank-led digitalization, including mobile banking expansion, digital onboarding, digital lending, POS and e-commerce infrastructure, QR payments and integration with public service payments. Other banks, including Tirana Bank, Intesa Sanpaolo Bank Albania, Credins Bank and ABI Bank, reflect different digitalization trajectories, ranging from fully digital onboarding and mature mobile banking platforms to more incremental, compliance-driven and risk-controlled digital service models. Taken together, these cases show that digital banking in Albania is advancing, but at different speeds and through different institutional approaches (ABI Bank, 2024; Banka Kombëtare Tregtare, 2024; Credins Bank, 2024; Intesa Sanpaolo Bank Albania, 2024; Raiffeisen Bank Albania, 2024; Tirana Bank, 2024).

Despite this progress, several structural barriers remain. Albania's digital finance ecosystem is still strongly dependent on traditional banks, while independent FinTech and non-bank payment providers face constraints related to licensing, compliance costs, interoperability, access to banking infrastructure and consumer trust. Cash preference remains significant, particularly for small-value transactions and among consumers or merchants with limited digital literacy. In addition, the uneven geographic distribution of banking infrastructure, the concentration of advanced digital services among larger banks and persistent cybersecurity concerns continue to affect the depth and inclusiveness of digital adoption.

The Albanian case therefore reflects a dual reality. Payment modernization, online banking access, card usage, Open Banking and SEPA integration indicate clear progress toward a more digital financial system. At the same time, the transition remains largely bank-led and depends on the ability of regulators, banks

and FinTech actors to address trust, digital financial literacy, cybersecurity, interoperability and proportional regulation. For this reason, Albania's digital finance development should be understood not only as a technological transition, but also as an institutional and regulatory process shaped by market structure, consumer behavior and European integration.

2.4. Conceptual Framework and Research Expectations

This study conceptualizes digital banking adoption as a multidimensional process shaped by both consumer-level and institutional factors. At the consumer level, adoption is influenced by trust, financial literacy, perceived usefulness, perceived ease of use and perceived barriers. These factors determine whether individuals are willing and able to use digital banking services regularly, safely and confidently. At the institutional level, adoption depends on the availability and reliability of digital infrastructure, the maturity of banking platforms, cybersecurity capacity, regulatory readiness, consumer protection mechanisms and cooperation between banks and FinTech actors.

The conceptual framework is based on the assumption that digital access alone is not sufficient to ensure meaningful adoption. In the Albanian context, most consumers may have access to bank accounts and digital banking channels, but their actual use depends on whether they trust these services, understand how to use them and perceive them as secure, convenient and beneficial. At the same time, adoption is shaped by external conditions, including the quality of digital services, the expansion of electronic payment acceptance, regulatory clarity, Open Banking implementation and the ability of institutions to manage cybersecurity and operational risks.

Accordingly, the quantitative component of the study examines the relationships between three main consumer-level factors and digital banking use: trust, financial knowledge and perceived barriers. Trust and financial knowledge are expected to act as enabling factors, increasing the likelihood of more frequent use of digital banking services. In contrast, perceived barriers, such as preference for cash, security concerns, technical difficulties, lack of information and perceived costs, are expected to reduce digital banking usage.

The qualitative component complements this framework by examining the institutional and regulatory conditions that influence Albania's digital finance ecosystem. Interviews with banks, electronic money institutions, public institutions, regulators, sectoral organizations and experts are used to interpret how cybersecurity, Bank-FinTech cooperation, Open Banking, SEPA-related reforms, consumer education and regulatory adaptation shape the transition from digital access to deeper digital adoption.

Based on this framework, the study is guided by the following research expectations:

RE1: Higher levels of trust in digital banking services are expected to be positively associated with more frequent digital banking use.

RE2: Higher levels of financial knowledge are expected to be positively associated with more frequent digital banking use.

RE3: Higher levels of perceived barriers are expected to be negatively associated with digital banking use.

RE4: Institutional readiness, including cybersecurity, regulatory clarity and Bank-FinTech cooperation, is expected to support the transition from digital access to meaningful digital adoption in Albania.

3. METHODOLOGY

3.1. Research Design and Data Sources

This study applies a mixed-methods research design (Creswell and Plano Clark, 2018) to examine digital banking and FinTech adoption in Albania from both consumer and institutional perspectives. The mixed-methods approach was selected because adoption of digital banking is not only a matter of individual consumer behavior, but also a result of institutional readiness, regulatory frameworks, technological infrastructure and market dynamics. Combining quantitative and qualitative evidence allows the study to provide a more comprehensive understanding of the factors influencing digital banking use in an emerging financial market.

The quantitative component is based on a structured consumer survey designed to measure digital banking usage, trust, financial literacy, perceived barriers and future willingness to use digital financial services. The qualitative component is based on semi-structured interviews with key stakeholders from the banking sector, electronic money institutions, public institutions, regulatory bodies, sectoral organizations and academic experts. In addition, desk research and institutional data were used to contextualize the development of Albania's digital payments and FinTech ecosystem.

This methodological design is consistent with the objectives of the study, which aim to assess both the demand-side and supply-side conditions of digital banking adoption. The consumer survey captures individual-level perceptions and behavior, while the interviews provide institutional and regulatory insights into the broader digital finance environment.

3.2. Survey Instrument, Variables and Sample

The quantitative data were collected through a structured questionnaire administered to 151 respondents in Albania. The questionnaire focused on consumers' access to banking services, frequency of digital banking use, level of trust, perceived barriers, financial knowledge, experience with online payments and expectations regarding the future of digital banking.

The survey included demographic variables such as age, gender, education, employment status and place of residence. It also included questions related to bank account ownership, frequency of digital banking use, the impact of COVID-19 on digital banking behavior, trust in digital banking services, perceived security concerns, technical problems, preference for cash, and willingness to increase the use of digital financial services in the future.

The sample was dominated by younger, urban and relatively well-educated respondents. This profile is relevant for the study because digitally exposed consumers are more likely to provide meaningful insights into the use and perception of online and mobile banking services. At the same time, the sample structure is considered in the limitations section, as it may not fully represent the entire Albanian population, particularly older, rural or less digitally connected groups.

The descriptive analysis showed that 92.7% of respondents reported having an active bank account. Digital banking use was most frequent on a weekly basis, followed by monthly and rare use, while daily use remained lower. The survey also showed that the COVID-19 pandemic contributed to increased use of digital banking services for a large share of respondents. These descriptive findings provide the empirical basis for analyzing the transition from access to adoption in Albania.

The main dependent variable in the quantitative analysis is the frequency of digital banking use. This variable captures how often respondents use digital banking or online payment services. The main explanatory variables include trust in digital banking, financial knowledge and perceived barriers.

Trust refers to the extent to which respondents consider digital banking services to be reliable, safe and secure. Financial knowledge reflects respondents' self-assessed understanding of digital financial services and their ability to use such services effectively. Perceived barriers include obstacles such as preference for cash, lack of trust, fear of fraud, technical problems, perceived high fees, lack of information and limited-service usability.

Because several variables were ordinal or categorical in nature, non-parametric statistical methods were considered more appropriate than parametric correlation techniques. For this reason, Spearman's rank correlation coefficient was used to examine the relationships between trust, financial knowledge, perceived barriers and digital banking use.

Spearman correlation analysis was used to test the association between the main variables of interest. This method is suitable for ordinal data and does not require the assumption of normal distribution. It measures the strength and direction of monotonic relationships between variables.

The analysis focused on four main variables: Trust, financial knowledge, perceived barriers and digital banking use. The results showed a positive relationship between financial knowledge and digital banking use, indicating that respondents with higher financial knowledge are more likely to use digital banking services. Trust was also positively related to digital banking use, although the relationship was weaker compared to financial knowledge. In contrast, perceived barriers were negatively related to usage, meaning that higher perceived barriers are associated with lower use of digital banking services.

These results support the conceptual assumption that digital banking adoption depends not only on access to technology, but also on the level of consumer confidence, financial knowledge and perceived difficulty or risk associated with digital services.

3.3. Semi-Structured Interviews and Thematic Analysis

The qualitative component of the study is based on 15 semi-structured interviews conducted with representatives of key stakeholder groups in Albania's digital finance ecosystem. The interviewees included representatives from commercial banks, electronic money institutions and FinTech operators, public institutions, regulatory bodies, sectoral organizations and academic experts.

Semi-structured interviews were selected because they allow for consistency across respondents while also providing flexibility to explore specific institutional perspectives in greater depth. The interview guide covered topics such as the current state of digital banking in Albania, technological and institutional readiness, consumer trust, cybersecurity, data protection, Open Banking, SEPA, regulatory barriers, Bank-FinTech cooperation and future expectations for the sector.

The interviews aimed to complement the survey findings by providing institutional explanations for the patterns observed in consumer behavior. While the survey captured how consumers use and perceive digital banking, the interviews helped explain why certain barriers persist and what institutional or regulatory changes may be needed to support deeper adoption.

The interview data were analyzed using thematic analysis (Braun and Clarke, 2006). This method was used to identify recurring patterns, shared concerns and strategic priorities across different categories of stakeholders. The analysis followed an inductive approach, allowing themes to emerge from the interview material rather than imposing a predefined coding structure.

Six main themes were identified from the analysis. The first theme was that digital transformation is now considered a strategic priority for the Albanian financial sector. The second theme concerned the changing relationship between banks and FinTech actors, with cooperation increasingly replacing the traditional perception of competition. The third theme related to regulatory progress and the need for the regulatory framework to keep pace with innovation. The fourth theme focused on cybersecurity and data protection as essential foundations for consumer trust. The fifth theme identified financial and digital education as a major condition for broader adoption. The sixth theme reflected an optimistic but conditional outlook toward 2030, depending on continued reforms, investment, cybersecurity and institutional cooperation.

Thematic analysis was particularly useful for this study because it allowed research to capture the complexity of institutional perspectives and connect them to the quantitative findings from the consumer survey.

In addition to primary data collection, the study used desk research to contextualize Albania's digital banking and payments

ecosystem. Institutional reports, payment system data, regulatory documents and policy materials were reviewed in order to understand developments related to electronic payments, electronic money institutions, Open Banking, SEPA, payment modernization and financial inclusion.

This contextual analysis was necessary because digital banking adoption cannot be understood only through consumer behavior. It is also shaped by market structure, regulatory alignment, payment infrastructure, the role of electronic money institutions, and the level of integration with European payment systems. Desk research therefore supports the interpretation of both the survey and interview findings.

4. RESULTS AND ANALYSIS

4.1. Albania's Digital Finance Context

Before analyzing consumer-level survey findings, it is important to contextualize Albania's digital banking and payments ecosystem. In recent years, Albania has made measurable progress in the modernization of electronic payments, online banking access, card-based transactions and regulatory alignment with European payment standards. These developments show that the country has moved beyond the initial phase of digital financial infrastructure building and is increasingly connected to regional and European payment modernization processes.

The indicators presented in Table 1 show that Albania's digital finance infrastructure has developed significantly compared to 2018. The increase in electronic payments, online-accessed bank accounts, electronic money institutions and card-based transactions indicates that the technical and institutional foundations for digital banking are expanding. However, these developments should be interpreted together with consumer behavior, because infrastructure availability does not automatically lead to frequent, confident or inclusive digital banking adoption.

4.2. Respondent Profile and Digital Banking Usage

The quantitative component of the study is based on 151 survey responses. The demographic structure of the sample shows that respondents were predominantly young, urban and relatively well educated. More than half of the respondents belonged to the age group under 30 years old, representing 54.3% of the sample. The second largest group was composed of respondents aged 30-39 years old, representing 19.2% of the sample. This indicates that the survey captured the perceptions of a digitally exposed population segment that is likely to interact with online and mobile banking services.

In terms of gender distribution, female respondents represented 62.9% of the sample, while male respondents represented 35.8%. A small share of respondents preferred not to answer. Regarding place of residence, the sample was strongly urban, with 84.1% of respondents living in urban areas and 15.9% in rural areas. The education profile was also relatively high, as the majority of respondents reported having higher or postgraduate education.

Table 1: Albania's digital finance and payment system indicators

Indicator	Value/development
Banks operating in the market	11 banks
Electronic money institutions	11 institutions
Electronic payments per adult	29 payments per adult
Electronic payments per adult in 2018	Around 5 payments per adult
Share of cashless payments performed electronically	89.9%
Bank accounts accessed online	47%
Increase in online-accessed accounts since 2018	388%
Increase in transactions from online-accessed accounts since 2018	296%
Cards in circulation	1.6 million
Share of debit cards in total cards	88%
Card use for payments	52%
Card use for payments in 2018	18%
Virtual POS terminals	342
Population owning at least one bank account	Around 78%
SEPA-related development	Albania entered the SEPA schemes jurisdiction in 2024; banks started SEPA payments in 2025

Source: Authors' compilation based on Bank of Albania payment system and payment modernization data (Bank of Albania, 2024b)

Table 2: Socio-demographic profile of survey respondents

Dimension	Category	Frequency	Percentage
Age group	Under 30	82	54.3
	30-39	29	19.2
	40-49	25	16.6
	50-59	10	6.6
	60+	5	3.3
Gender	Female	95	62.9
	Male	54	35.8
	Prefer not to answer	2	1.3
Residence	Urban	127	84.1
	Rural	24	15.9

Source: Authors' survey data

Table 3: Banking access and digital banking usage

Indicator	Category	Frequency	Percentage
Bank account ownership	Yes	140	92.7
	No	11	7.3
Frequency of digital banking use	Every day	20	13.2
	Every week	50	33.1
	Every month	35	23.2
	Rarely	35	23.2
	Never	11	7.3

Source: Authors' survey data

Table 4: Impact of COVID-19 on digital banking use

Reported impact	Frequency	Percentage
Increased significantly	60	39.7
Increased somewhat	60	39.7
No change	30	19.9
Decreased	1	0.7

Source: Authors' survey data

Table 2 presents the socio-demographic profile of the survey respondents. The sample is predominantly young and urban, which

Table 5: Spearman correlation matrix

Variable	Trust	Financial knowledge	Perceived barriers	Digital banking use
Trust	1.000	0.323	−0.335	0.293
Financial knowledge	0.323	1.000	−0.419	0.502
Perceived barriers	−0.335	−0.419	1.000	−0.489
Digital banking use	0.293	0.502	−0.489	1.000

Spearman's rho coefficients are reported (n=151). All correlations were statistically significant at $P<0.001$ (two-tailed). Positive values indicate a positive association between variables, while negative values indicate an inverse association

Table 6: Main themes emerging from semi-structured interviews

Theme	Core finding	Relevance for albania
Digital transformation as a strategic priority	Banks, institutions and FinTech actors consider digitalization necessary for competitiveness and modernization.	Digital banking is no longer optional but part of Albania's financial sector development.
Bank-FinTech cooperation	FinTech actors are increasingly viewed as partners rather than direct competitors.	Cooperation can accelerate innovation and improve customer-oriented services.
Regulatory adaptation	Regulatory progress is visible, but innovation often moves faster than regulation.	Albania needs clearer procedures, stronger coordination, Open Banking implementation and possibly a regulatory sandbox.
Cybersecurity and data protection	Cybersecurity is viewed as a foundation of consumer trust.	Digital adoption depends on secure platforms, data protection and fraud prevention.
Financial and digital education	Financial literacy remains a major barrier to broader adoption.	Targeted digital financial education is needed for youth, older consumers, rural communities and small businesses.
Optimistic outlook toward 2030	Stakeholders expect growth in Open Banking, instant payments, AI and digital payments.	Future progress depends on regulation, investment, cybersecurity and institutional cooperation.

Source: Authors' thematic analysis based on semi-structured interviews

is relevant for interpreting digital banking adoption because these groups are generally more exposed to digital technologies and online financial services.

As shown in Table 2, the sample is predominantly young and urban, with 54.3% of respondents under the age of 30 and 84.1% living in urban areas. Female respondents represent 62.9% of the sample. This profile provides useful insights into consumers who are relatively well positioned to use digital banking services, but it also requires caution when generalizing the findings to older, rural or less digitally connected population groups.

Table 3 links formal banking access with the frequency of digital banking use. This distinction is important because the study does not only examine whether consumers have access to banking services, but also whether they use digital channels frequently.

The results show that 92.7% of respondents have an active bank account, indicating a high level of formal access to banking services among the surveyed population. However, daily digital banking use remains relatively limited at 13.2%. Weekly use is the most common pattern, reported by 33.1% of respondents, followed by monthly and rare use. This confirms that Albania's digital banking transition is not primarily an access problem, but an adoption-intensity problem.

This pattern supports the central argument of the study: Albania is moving from access toward adoption, but the transition is not yet complete. Digital banking services are available and used by a large share of respondents, yet they have not fully replaced traditional banking behavior or cash-based habits. In this sense, digital banking appears to function as a complementary channel rather than the dominant mode of financial interaction for many consumers.

4.3. Trust, Financial Literacy, Barriers and Future Use

The COVID-19 pandemic had a visible impact on digital banking behavior. The survey findings show that approximately 80% of respondents reported an increase in their use of digital banking services during or after the pandemic period. Specifically, 39.7% stated that their use increased significantly, while another 39.7% reported that it increased to some extent. Only 19.9% reported no change, and a very small share reported a decrease. Table 4 summarizes the reported impact of COVID-19 on respondents' digital banking use.

These findings are consistent with broader international literature, which shows that the pandemic accelerated the adoption of digital channels in financial services. In the Albanian context, COVID-19 appears to have acted as a behavioral trigger, encouraging consumers to use digital banking services more frequently due to mobility restrictions, health concerns and the need for remote access to financial services.

However, the results also suggest that pandemic-driven adoption does not automatically lead to deep or permanent digital transformation. Although usage increased, the frequency data show that daily use remains relatively low. This means that while COVID-19 accelerated exposure to digital banking, long-term adoption still depends on trust, usability, financial literacy, service quality and perceived security.

Trust plays a central role in digital banking adoption. The survey findings indicate that respondents generally reported medium to high levels of trust in digital banking services. However, this trust is not fully consolidated. A considerable share of respondents, approximately 37%, reported having experienced problems when using digital banking services. These problems were mainly related to technical errors, security concerns, service interruptions or fear of fraud.

The main perceived barriers identified by respondents include preference for cash, lack of trust, security concerns, technical problems, perceived high fees and complexity of digital banking platforms. These barriers show that digital banking adoption is influenced not only by the availability of services, but also by the perceived safety, simplicity and reliability of those services.

The persistence of cash preference is particularly important in Albania. Even when consumers have access to banking services and digital channels, cash may continue to be perceived as more familiar, immediate and controllable. This suggests that digital banking adoption requires more than technological infrastructure. It also requires behavioral change, trust-building and financial education.

Financial literacy emerged as one of the most important factors influencing digital banking adoption. The survey findings show that a large majority of respondents recognized the importance of financial education in shaping the use of digital financial services. Around 80% of respondents acknowledged that financial literacy plays an important role in the adoption of digital banking.

Respondents also expressed a generally positive view of the future of digital banking in Albania. Approximately 74% of respondents evaluated the future of digital banking positively, while 76.8% expressed willingness to increase their use of digital financial services in the future. These results suggest that there is significant potential for further growth in digital banking adoption, provided that consumer concerns and perceived barriers are addressed.

The findings indicate that consumers are not necessarily resistant to digital banking. Rather, they require stronger trust, clearer information, better security, improved platforms and broader acceptance of digital payments by businesses and institutions. This creates a favorable basis for policy and institutional interventions aimed at deepening digital financial inclusion.

4.4. Correlation Analysis

Spearman correlation analysis was used to examine the relationships between trust, financial knowledge, perceived barriers and digital banking use. This method was appropriate because several variables were ordinal and did not require the assumptions of parametric correlation analysis.

The results show a positive relationship between financial knowledge and digital banking use. The correlation coefficient between financial knowledge and use was $P = 0.502$ ($P < 0.001$, $n = 151$), indicating a moderate positive association. This means that respondents with higher levels of financial knowledge were more likely to use digital banking services more frequently.

Trust was also positively associated with digital banking use, with a correlation coefficient of $P = 0.293$ ($P < 0.001$, $n = 151$). Although this relationship is weaker than the relationship between financial knowledge and use, it still indicates that higher trust is linked to more frequent use of digital banking services.

In contrast, perceived barriers were negatively associated with digital banking use, with a correlation coefficient of $P = -0.489$ ($P < 0.001$, $n = 151$). This indicates that respondents who perceived more barriers were less likely to use digital banking services frequently. The negative association between barriers and usage supports the argument that perceived obstacles such as lack of trust, preference for cash, security concerns, technical issues and perceived costs reduce digital banking adoption. The full Spearman correlation matrix is presented in Table 5.

Overall, the correlation results support the conceptual framework of the study. Financial knowledge and trust act as enabling factors, while perceived barriers act as limiting factors. These findings suggest that policies aimed at increasing digital banking adoption should not focus only on technology, but also on consumer education, trust-building and reduction of practical and psychological barriers.

4.5. Stakeholder Perspectives from Interviews

The qualitative component of the study provided institutional and regulatory explanations for the patterns observed in the consumer survey. The analysis of 15 semi-structured interviews identified six main themes.

The first theme is that digital transformation is now considered a strategic priority for Albania's financial sector. Representatives of banks, public institutions and FinTech actors agreed that digitalization is no longer simply a technological option, but a necessary condition for competitiveness, efficiency and modernization. Banks emphasized investment in mobile platforms, internet banking, process automation and customer experience, while public institutions linked digital transformation to formalization, transparency and alignment with European standards.

The second theme concerns the evolving relationship between banks and FinTech actors. The interviews indicate that the traditional perception of FinTech as a direct competitor to banks is gradually being replaced by a more cooperative model. Banks increasingly view FinTech actors as potential partners for innovation, while FinTech operators see cooperation with banks as a way to gain infrastructure, credibility and market reach. This suggests that the future of digital finance in Albania may depend more on Bank-FinTech cooperation than on direct competition.

The third theme relates to regulatory progress and regulatory adaptation. Interviewees acknowledged that Albania has made progress in aligning its legal and regulatory framework with European standards, particularly in relation to payment services, SEPA, Open Banking and financial digitalization. However, they also emphasized that innovation often moves faster than regulation. Several interviewees highlighted the need for clearer procedures, stronger institutional coordination, API standardization, electronic identity development and the possible introduction of a regulatory sandbox.

The fourth theme focuses on cybersecurity and data protection. Across interviews, cybersecurity was described as a fundamental

condition for consumer trust and digital banking adoption. Stakeholders emphasized that cyber risks, phishing, fraud, data breaches and operational vulnerabilities can directly affect consumer confidence. Therefore, cybersecurity should be treated not only as a technical issue, but as a strategic component of digital financial development.

The fifth theme is financial and digital education. Almost all categories of interviewees identified financial literacy and digital skills as essential conditions for broader digital banking adoption. Banks noted that younger consumers tend to adopt digital channels more easily, while older or less digitally skilled groups continue to prefer physical branches. FinTech actors also emphasized that some consumers remain hesitant because they do not fully understand digital payments, online security or the benefits of digital financial services.

The sixth theme concerns the future outlook toward 2030. Interviewees were generally optimistic about the future of digital banking and FinTech in Albania. They expected further expansion of Open Banking, instant payments, artificial intelligence, electronic payments, regional integration and Bank-FinTech cooperation. However, this optimistic outlook was conditional on continued regulatory reform, investment in technology, cybersecurity, financial education and institutional cooperation. Table 6 summarizes the main themes emerging from the semi-structured interviews.

4.6. Integrated Interpretation of Findings

The integration of quantitative and qualitative findings provides a more complete understanding of digital banking adoption in Albania. The survey results show that consumers have broad access to banking services and a generally positive attitude toward digital banking, but usage intensity remains moderate. Financial knowledge and trust are positively associated with digital banking use, while perceived barriers reduce usage.

The interview findings explain why these patterns persist. Institutional stakeholders confirm that digital transformation is advancing, but also emphasize that adoption depends on trust, cybersecurity, education, regulation and cooperation. This means that Albania's digital banking transition cannot be understood only as a matter of consumer choice or technological availability. It is shaped by the interaction between consumer readiness, institutional capacity and regulatory development.

Taken together, the results suggest that Albania has entered a new phase of digital financial development. The basic conditions for digital banking adoption are increasingly present, but deeper adoption requires targeted interventions. These include improving digital financial literacy, strengthening cybersecurity and data protection, reducing perceived barriers, improving platform usability, promoting electronic payments, supporting Open Banking and encouraging structured cooperation between banks, FinTech actors, regulators and academia.

5. DISCUSSION AND POLICY IMPLICATIONS FOR ALBANIA

5.1. From Digital Access to Meaningful Adoption

The findings of this study show that Albania has made important progress in expanding access to digital banking and electronic payment services, but the transition from access to meaningful adoption remains incomplete. The high level of bank account ownership among respondents indicates that formal access to banking services is widespread. However, the frequency of digital banking use suggests that digital channels are not yet the dominant mode of financial interaction for many consumers.

This distinction between access and adoption is central to understanding digital financial transformation in emerging markets. Access refers to the availability of financial services, while adoption implies regular, confident and meaningful use. The results of this study show that many consumers use digital banking services, but mainly on a weekly or monthly basis rather than daily. This means that digital banking is increasingly present in Albania, but it still functions as a complementary channel rather than a full replacement for traditional banking practices.

This finding is consistent with the literature on digital financial inclusion, which argues that account ownership and digital access do not automatically generate inclusive financial outcomes. Meaningful inclusion requires that consumers have the knowledge, trust, confidence and practical ability to use digital services safely and effectively (Demirgüç-Kunt et al., 2022; OECD, 2023). In the Albanian context, this implies that policy and institutional efforts should move beyond expanding access and focus more strongly on deepening actual usage.

5.2. Trust, Financial Literacy and Cash-Based Habits

Trust emerged as one of the key factors influencing digital banking adoption. The survey results show a positive relationship between trust and digital banking use, while the interview findings confirm that trust is closely connected to cybersecurity, data protection, service reliability and institutional credibility. This supports previous research showing that trust plays a multidimensional role in internet and digital banking adoption (Yousafzai et al., 2009).

In digital banking, trust is more complex than in traditional banking. Consumers must trust the bank, the digital platform, the authentication process, the transaction system and the protection of personal data. A single technical failure, security incident or negative user experience may reduce confidence and discourage further use. For this reason, trust-building should be treated as a strategic priority, not only as a communication issue.

For Albania, this means that banks and FinTech actors should invest not only in digital platforms, but also in transparent communication, customer support, fraud prevention, user education and visible security standards. Regulators should also play an active role by strengthening consumer protection frameworks and communicating clearly about the rights and responsibilities of users in digital financial environments.

The positive relationship between financial knowledge and digital banking use is one of the most important findings of this study. The Spearman correlation analysis showed that financial knowledge had the strongest positive association with digital banking usage among the variables examined. This indicates that consumers who better understand digital financial services are more likely to use them frequently.

This result has important policy implications. Digital banking adoption cannot be separated from financial literacy and digital skills. Consumers need to understand not only how to use mobile or internet banking platforms, but also how to assess risks, recognize fraud, compare costs, protect personal data and make informed decisions. Without these skills, digital finance may create exclusion or vulnerability instead of empowerment.

The interview findings reinforce this point. Stakeholders from banks, public institutions and FinTech actors repeatedly identified financial and digital education as a major condition for broader adoption. Younger consumers may adopt digital services more easily, but older, rural or less digitally skilled groups may continue to rely on physical branches or cash transactions. This suggests that Albania needs targeted digital financial education programs for different population groups, including youth, elderly consumers, rural communities, women, small businesses and vulnerable groups.

Perceived barriers were negatively associated with digital banking usage. Respondents who reported more barriers were less likely to use digital banking services frequently. These barriers include preference for cash, lack of trust, fear of fraud, technical problems, perceived costs and platform complexity. This finding is important because it shows that digital banking adoption is limited not only by infrastructure, but also by behavioral, psychological and practical obstacles.

The persistence of cash remains a major challenge. In many emerging economies, cash is not only a payment instrument but also a habit, a trust mechanism and a way of maintaining control over transactions. In Albania, the preference for cash is linked to informality, consumer habits, limited acceptance of electronic payments in some businesses and concerns about costs or security. Therefore, reducing cash dependency requires a combination of incentives, infrastructure, enforcement, education and trust-building.

Policies aimed at reducing cash use should not be limited to restrictions or formal requirements. They should also make digital payments easier, cheaper, safer and more widely accepted. Banks, FinTech actors and public institutions should work together to expand digital payment acceptance, improve user experience, reduce transaction costs where possible and increase consumer confidence in electronic payments.

5.3. Bank-FinTech Cooperation, Open Banking and Regulatory Readiness

The interview findings show that the relationship between banks and FinTech actors in Albania is gradually moving from competition toward cooperation. This is an important development for the future of digital finance. Banks have regulatory experience, customer bases, infrastructure and institutional trust, while FinTech actors can provide technological agility, innovation, user-centered design and specialized solutions.

Bank-FinTech cooperation can support the development of new products, faster payment solutions, digital wallets, improved customer interfaces, data-driven services and financial inclusion tools. However, cooperation requires clear rules, interoperability, technical standards, data protection and regulatory clarity. Without these conditions, partnerships may remain limited or fragmented.

By allowing secure and consent-based access to financial data through APIs, Open Banking can promote competition, innovation and consumer choice. However, its success depends on strong cybersecurity, standardized APIs, consumer awareness and trust. For Albania, Open Banking should be developed not only as a legal requirement, but as part of a broader digital finance strategy that connects banks, FinTech actors, regulators and consumers. The study also highlights the importance of regulatory readiness in supporting digital banking and FinTech development. Interviewees acknowledged that Albania has made progress in payment modernization and alignment with European standards. However, they also emphasized that regulation must keep pace with technological innovation. The challenge for regulators is to balance innovation with stability and consumer protection. Overly restrictive regulation may slow FinTech development, while weak regulation may expose consumers and institutions to cyber risks, fraud, operational failures or data misuse. For this reason, regulatory innovation is needed.

For Albania, regulatory readiness should focus on several priorities: Cybersecurity, data protection, electronic identity, API standardization, Open Banking implementation, consumer protection, licensing procedures for innovative financial services and institutional coordination. These areas are essential for building a safe and innovation-friendly digital finance ecosystem.

5.4. Cybersecurity, Consumer Protection and Digital Inclusion

Cybersecurity and data protection were among the strongest themes emerging from the interviews. This is consistent with the survey findings, where security concerns and fear of fraud appear among the main barriers to digital banking adoption. In digital finance, cybersecurity is directly linked to consumer trust (Cele and Kwenda, 2025). If users do not believe that their money and personal data are safe, they are less likely to adopt digital banking services.

Cybersecurity should therefore be understood as a foundation of digital financial inclusion. It is not only a technical responsibility of banks or IT departments, but a systemic requirement involving banks, FinTech firms, regulators, public institutions and consumers. Strong cybersecurity standards, incident response mechanisms, user authentication, fraud monitoring and public awareness campaigns are necessary to protect the integrity of digital financial services.

Data protection is equally important. As digital banking and Open Banking expand, more consumer data will be collected, processed and shared. This creates opportunities for personalized services and innovation, but also increases risks related to privacy, misuse and unauthorized access. Albania's digital finance strategy should therefore ensure that innovation is built on privacy-by-design, data minimization, transparency and consumer consent.

Based on the findings, several policy implications can be identified.

First, Albania should strengthen digital financial education as a national priority. Financial literacy programs should include practical modules on mobile banking, online payments, fraud prevention, data protection, digital budgeting and consumer rights.

Second, banks and FinTech actors should focus on trust-building. This includes improving platform reliability, communicating security measures clearly, simplifying user interfaces, strengthening customer support and responding quickly to technical problems.

Third, regulators should support innovation through clearer procedures, Open Banking implementation, API standardization and consideration of a regulatory sandbox. These measures would reduce uncertainty and create a safer environment for digital financial innovation.

Fourth, cybersecurity and data protection should be treated as strategic pillars of digital finance. Strong standards and public awareness are necessary to ensure that consumers feel safe using digital services.

Fifth, Albania should promote Bank-FinTech cooperation. Partnerships between traditional financial institutions and FinTech actors can improve service delivery, expand inclusion and accelerate innovation.

Sixth, digital payment acceptance should be expanded across businesses and public services. Wider acceptance of electronic payments can reduce cash dependency and encourage more frequent digital banking use.

Overall, the findings suggest that Albania's digital banking transition requires a coordinated ecosystem approach. Technology alone is not sufficient. The next stage of digital financial development depends on the combined strengthening of consumer trust, financial literacy, cybersecurity, regulatory readiness and institutional cooperation.

6. CONCLUSION, RECOMMENDATIONS AND FUTURE RESEARCH

6.1. Conclusion

This study examined digital banking and FinTech adoption in Albania by combining consumer survey evidence with institutional and regulatory perspectives. The findings show that Albania has made visible progress in the development of digital banking, electronic payments and payment system modernization. However, the transition from access to sustained and intensive digital banking adoption remains incomplete.

The quantitative findings indicate that most respondents have access to formal banking services, and many use digital banking channels. Nevertheless, usage intensity remains moderate, with weekly and monthly use being more common than daily use. This suggests that digital banking is increasingly present in consumer behavior, but it has not yet fully replaced traditional banking practices or cash-based habits.

The study also confirms the importance of trust, financial literacy and perceived barriers in shaping digital banking adoption. Financial knowledge showed the strongest positive association with digital banking use, while trust was also positively related to usage. In contrast, perceived barriers were negatively associated with digital banking use. These results suggest that digital banking adoption is not determined only by the availability of digital platforms, but also by consumers' ability, confidence and willingness to use them.

The qualitative findings provide a broader institutional explanation of these patterns. Stakeholders from banks, FinTech and electronic money institutions, public institutions, regulators, sectoral organizations and academia identified digital transformation as a strategic priority for Albania's financial sector. At the same time, they emphasized the need for stronger cybersecurity, data protection, financial education, regulatory clarity and structured cooperation between banks, FinTech actors and regulators.

Overall, the study argues that Albania is entering a new phase of digital financial development. The country has already made progress in building access and infrastructure, but the next stage requires deeper adoption, stronger trust, safer digital environments, improved consumer skills and more innovation-friendly regulation.

6.2. Recommendations

Based on the findings, the paper proposes several recommendations for policymakers, regulators, banks, FinTech actors and academic institutions.

First, Albania should strengthen digital financial literacy at national level. Financial education should not be limited to general banking concepts, but should include practical knowledge on digital payments, mobile banking, online security, fraud prevention, data protection, digital budgeting and consumer rights. Targeted programs should be developed for youth, older consumers, rural communities, women, small businesses and vulnerable groups.

Second, banks and FinTech actors should prioritize trust-building. This requires secure and user-friendly platforms, transparent communication, clear information on fees and risks, rapid response to technical problems, effective customer support and visible fraud-prevention mechanisms. Trust should be treated as a core element of digital banking strategy.

Third, cybersecurity and data protection should be strengthened as strategic pillars of digital finance. Banks, FinTech firms,

regulators and public institutions should cooperate to improve cyber resilience, incident response, public awareness and data protection practices. As Open Banking and data-driven financial services expand, privacy-by-design and consumer consent should become central principles.

Fourth, Albania should support Bank-FinTech cooperation. Traditional banks and FinTech actors should be encouraged to develop partnerships that improve service delivery, expand digital payment options and increase financial inclusion. Cooperation can help combine the institutional credibility of banks with the technological agility of FinTech firms.

Fifth, the regulatory framework should continue to evolve in line with innovation. Regulatory authorities should consider clearer procedures for FinTech licensing, API standardization, electronic identity development, Open Banking implementation and regulatory sandbox mechanisms. These tools can help balance innovation, consumer protection and financial stability.

Sixth, electronic payment acceptance should be expanded across businesses and public services. Wider acceptance of digital payments can reduce reliance on cash, increase transaction transparency and support formalization. Public institutions can play an important role by promoting digital payments in public service delivery.

Seventh, universities and research institutions should remain active in the digital finance ecosystem. Academic research can support evidence-based policymaking, stakeholder dialogue, financial education and the development of future professionals in banking, FinTech and financial regulation.

6.3. Limitations and Future Research

This study has several limitations. First, the consumer survey included 151 respondents and does not claim to be nationally representative of the entire Albanian population. The sample was dominated by younger, urban and relatively educated respondents, which may influence the level of digital banking awareness and usage reported in the findings.

Second, the quantitative data are based on self-reported responses. Respondents' perceptions of trust, financial knowledge, barriers and frequency of use may not fully correspond to objective transaction data or actual digital banking behavior. However, perceptions remain important in adoption studies because they directly influence consumer decisions.

Third, the qualitative component was based on 15 semi-structured interviews. Although the interviews included a diverse group of stakeholders, they cannot capture every institutional perspective within Albania's financial ecosystem. Future studies may expand the number of interviews and include additional actors such as technology providers, merchants, consumer protection organizations and rural financial service users.

Fourth, the study provides a cross-sectional view of digital banking adoption. It captures perceptions and institutional insights during a specific period, but it does not measure changes over time. Given the rapid development of digital finance, longitudinal research would be valuable for understanding how consumer behavior and institutional readiness evolve.

Future research should expand the empirical scope of this study in several directions. First, a nationally representative survey would allow for more detailed analysis of digital banking adoption across different demographic and socio-economic groups. This would be particularly useful for comparing urban and rural populations, age groups, income levels, education levels and employment categories.

Second, future studies should examine actual transaction data, where available, in order to compare self-reported usage with real digital banking behavior. This would provide a more precise understanding of how frequently consumers use online banking, mobile banking, cards, digital wallets and other electronic payment instruments.

Third, more research is needed on digital financial literacy in Albania. Future studies could develop and test a digital financial literacy index, including knowledge of online banking, cybersecurity, fraud prevention, data privacy, digital payments and consumer rights.

Fourth, future research should explore the impact of Open Banking, SEPA integration and instant payments on Albania's financial sector. These developments may significantly reshape competition, payment costs, cross-border transactions, remittances and FinTech innovation.

Fifth, additional research is needed on vulnerable and underserved groups. Older consumers, rural communities, low-income groups and small informal businesses may face different barriers to digital banking adoption. Understanding these differences is essential for designing inclusive digital finance policies.

Finally, future studies could compare Albania with other Western Balkan countries. A regional comparative approach would help identify common challenges, policy lessons and opportunities for cooperation in digital finance, Open Banking, payment modernization and FinTech development.

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