

The Role of Open Banking in Enhancing Competition and Innovation within the Algerian Retail Banking Marke

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Abstract: The banking sector suffers from slow growth in credit granted to the private sector (a decline to 18.8% in 2023) and the dominance of a cash culture, despite the noticeable acceleration in electronic payments. It asserts that Open Banking is the optimal solution for dismantling data monopolies and stimulating cooperation between banks and FinTech companies. Nevertheless, adoption efforts face fundamental challenges: the absence of a unified legal framework to regulate data sharing via APIs, privacy and security risks, and low digital awareness. Consequently, the study recommends expediting the implementation of specialized legislation, developing data protection laws, and adopting unified technical standards to ensure successful application.

Keywords: Retail Banking, Open Banking, Application Programming Interfaces (APIs), Algeria.

JEL Codes: G21, G23, O31, O33, D83.

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Introduction:

The global financial and banking sector is undergoing a profound structural transformation centered on comprehensive digitalization. This transformation has compelled traditional banks to re-evaluate their strategies and business models. The most significant catalyst for this change has been the rapid emergence of Financial Technology (FinTech) firms, which leverage modern technologies to deliver more efficient and transparent financial services to individual customers and small enterprises. This fierce competition has driven the industry toward adopting new collaborative models. These models have been crystallized in the concept of Open Banking, which represents the most prominent global regulatory trend for enhancing market dynamism.

Open Banking is a pivotal regulatory mechanism aimed at dismantling the monopoly of banking institutions over their customers' data. It enables clients to securely share their financial data with third parties via regulated Application Programming Interfaces (APIs). This framework encourages the entry of new competitors into the market, which supports service innovation and the customization of financial offerings to meet the needs of retail banking with greater precision.

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At the Algerian level, the digital transformation of the banking sector is accelerating, marked by a noticeable growth in electronic payment indicators. However, the market still suffers from low financial inclusion rates and the dominance of a cash culture. Efforts to adopt the Open Banking model face fundamental challenges related to the absence of a dedicated legal framework that specifies data sharing mechanisms and the liability of third parties. In addition to these regulatory obstacles, challenges related to customer acceptance, low digital awareness, and security risks emerge. Therefore, analyzing the expected role of Open Banking and how it can overcome these challenges becomes imperative for enhancing retail banking in the country.

Research Problem:

In light of the global trend towards dismantling banks' monopoly over financial data to foster financial innovation, and within the context of Algeria's efforts to accelerate the digital transformation of its financial sector, Open Banking emerges as a potential strategic tool. Therefore:

What is the expected role of Open Banking as a regulatory and technological mechanism in enhancing competition and innovation in the Algerian retail banking market, and what are the main challenges hindering this transformation?

Based on the preceding discussion, the following subsidiary questions can be raised:

- What are the fundamental components of retail banking in Algeria, and what is the current status of its key indicators?
- What is the concept of Open Banking and what are the most prominent models applied globally, and what is its regulatory status in Algeria?
- How can Open Banking contribute to enhancing competition and innovation in the Algerian retail banking market?
- What are the most significant regulatory and legal challenges, as well as the risks of customer acceptance, facing the implementation of the Open Banking model in Algeria?

Hypotheses:

The hypotheses of this research paper are the following:

- Open Banking plays a pivotal role in stimulating competition and innovation within the Algerian retail banking market by dismantling data monopolization and facilitating the entry of Financial Technology (FinTech) firms, despite the presence of regulatory impediments and risks related to customer acceptance and cybersecurity;
- The retail banking market in Algeria is characterized by the sluggish growth of its key indicators, particularly in the domain of credit granted to the private sector, notwithstanding the accelerating shift towards electronic payments;
- Open Banking leads to enhanced price and qualitative competition through increased transparency of financial information and the reduction of customer switching costs and barriers between banks;

- The absence of a specific regulatory framework for Open Banking and the low digital awareness among customers are considered the most significant challenges slowing down the full adoption of this model in Algeria.

Research Objectives

The objectives of this research are:

- To evaluate the current state and key indicators of the retail banking market in Algeria amidst the digital transformation;
- To analyze the mechanisms through which Open Banking contributes to fostering competition and generating innovative business models in retail financial services;
- To identify the most significant regulatory and security challenges related to customer data privacy, as well as the challenges associated with customer acceptance of the Open Banking model in Algeria.

Methodology

The study adopted the descriptive methodology to characterize the phenomenon under investigation (Retail Banking and Open Banking), and the analytical methodology through analyzing the key indicators of Retail Banking and Open Banking in Algeria. It also utilized the inductive framework to provide a future vision regarding the role of Open Banking. Furthermore, the research relied on the analysis of official statistical data issued by national bodies, international reports, and relevant academic studies.

Research Plan

To achieve the study's objectives and answer the raised problematic, the research has been divided into the following sections:

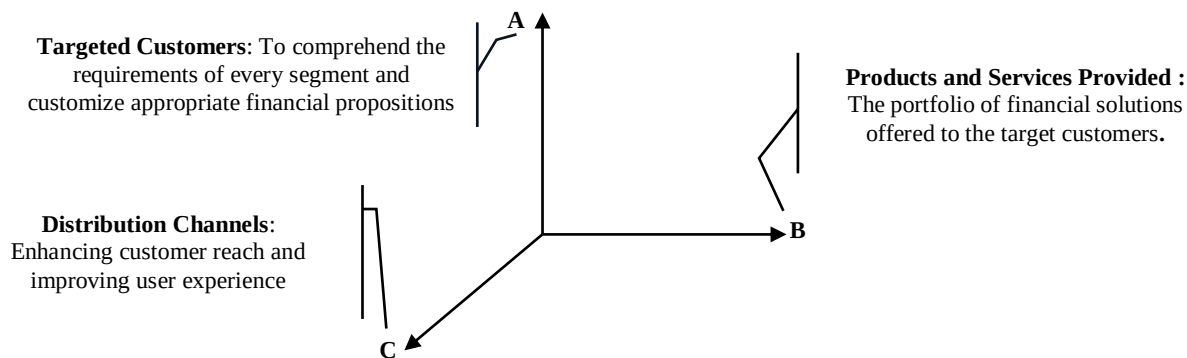
- Section One: The Conceptual Framework of Retail Banking and the Transition Towards Open Banking.
- Section Two: The Reality of Retail Banking and Key Indicators in Algeria.
- Section Three: Open Banking as a Mechanism to Enhance Competition in the Retail Banking Market.
- Section Four: Open Banking as a Catalyst for Innovation and New Business Models in Retail Banking.
- Section Five: Regulatory and Risk Challenges Related to Customer Acceptance of Open Banking Application in Algeria.
- Section Six: Future Outlook for the Application of this Model.

I. Core Components of Retail Banking

Retail banking is a set of financial services and products provided by banks to individuals and small businesses through various branches and electronic channels. Banks organize these activities according to three basic dimensions: targeted customers, products and services provided, and distribution channels (Timothy, Astrid, Beverly, Kevin, & Robard, 2007). It is

also referred to as consumer banking or personal banking, where the primary focus of retail banks is meeting the needs of individual customers and small enterprises. This includes providing essential banking services such as opening current or savings accounts, issuing debit or credit cards, and offering loans and mortgage financing. Retail banks also provide investment products, such as mutual funds, stocks, and bonds, to help customers grow their wealth (Jake & Oliver, 2023).

Fig No.1: The Core Dimensions of Retail Banking



Source: Developed by the authors.

The bank must precisely define the categories it aims to serve, then design a suitable portfolio of products and services that aligns with their needs, while simultaneously selecting the most efficient and effective channels for communicating with them and delivering those services. This integration among customer segmentation, product development, and the choice of distribution channels is what strengthens the bank's ability to reach its clients and enhances their experience in retail banking.

Table No.1: Key Indicators of Retail Banking in Algeria (2015-2024)

Key Indicator	Number of Bank Branches per 100,000 Adults	ATMs per 100,000 adults	Credit to Private Sector (% of GDP)	Percentage of Adults with an Account (%)
2018	5	9	20,3%	43,5%
2019	5	9	22%	43%
2020	5	9	22%	43,3%
2021	5	9	18,5%	44,1%
2022	5	8	18,2%	45%
2023	5	12	18,8%	46%

Source: Prepared by the researchers based on: www.fred.stlouisfed.org, www.data.worldbank.org.

The indicators for the period 2018–2023 reveal slow but continuous growth, supported by an increase in the percentage of adults holding accounts, which rose from 43.5% to 46%, paralleled by a noticeable shift towards digitalization. ATM density jumped to 12 machines per 100,000 adults in 2023, while the number of bank branches remained constant. Conversely, the banking sector's role in supporting the economy showed a contraction, as the credit extended to the private sector relative to the GDP sharply declined from 22% in 2020 to 18.8% in 2023, indicating an increasing reliance on individual services and highlighting challenges in financing economic growth.

II. The Regulatory Environment for Open Banking

There is no single technical definition of what Open Banking entails, yet there is a clear and growing consensus across the industry and regulatory bodies—not just financial regulators—that the increasing adoption of the Open Banking model presents opportunities for financial institutions and FinTech companies to gain deep insights from shared data, and has the potential to transform traditional banking (Nydia, 2019). Notwithstanding this definitional challenge, Open Banking represents a major shift that empowers customers to securely share their financial data with third parties via Application Programming Interfaces (APIs). This mechanism allows for the authorization of direct debits for goods and services, thus enhancing transparency and financial innovation. Globally, Open Banking has evolved within diverse regulatory frameworks that support this transformation (Francesco & Alan, 2024).

The Second European Payment Services Directive (PSD2) was designed to provide a legal basis for a unified payment market within the European Union, and to enhance integration among Member States in the field of electronic payments by creating a homogenized legislative framework that regulates Payment Service Providers (PSPs) and improves the level of consumer protection. It also aims to open up payment markets to new non-traditional bank entities, thereby increasing competition and innovation, ultimately granting customers broader choices and better prices. (www.eur-lex.europa.eu, s.d.)

Operationally, the Directive obliges providers of bank account services to open application programming interfaces (APIs) to third-party service providers, such as Account Information Service Providers (AISPs) and Payment Initiation Service Providers (PISPs), provided they obtain the necessary regulatory licenses, effectively establishing the concept of Open Banking. Furthermore, it imposes strict requirements for Strong Customer Authentication (SCA). Member States were given a deadline of January 13, 2018, to comply with its provisions, with full implementation of the related technical measures due by September 2019. (www.eur-lex.europa.eu, s.d.)

International reports indicate that the success of any Open Banking framework depends on the convergence of several elements (oecd, 2024): clear legislation regarding privacy and liability, technical standardization, effective supervision, and incentives for competitiveness and innovation. African and European experiences offer applicable lessons when designing an integrated Algerian framework.

As of 2023–2024, Algeria still lacks a dedicated legal framework for Open Banking, similar to PSD2. Simultaneously, there is an urgent need for legal and technical infrastructures that allow for secure data sharing via Application Programming Interfaces (APIs). However, during 2024–2025, the Bank of Algeria began issuing regulations aimed at accommodating digital banking services and electronic payment service providers. These are essential steps that pave the way for the potential emergence of Open Banking-like mechanisms in the future. Nevertheless, these regulations primarily focus on licensing requirements, monetary sovereignty, and consumer protection, rather than establishing a unified framework for data sharing via APIs.

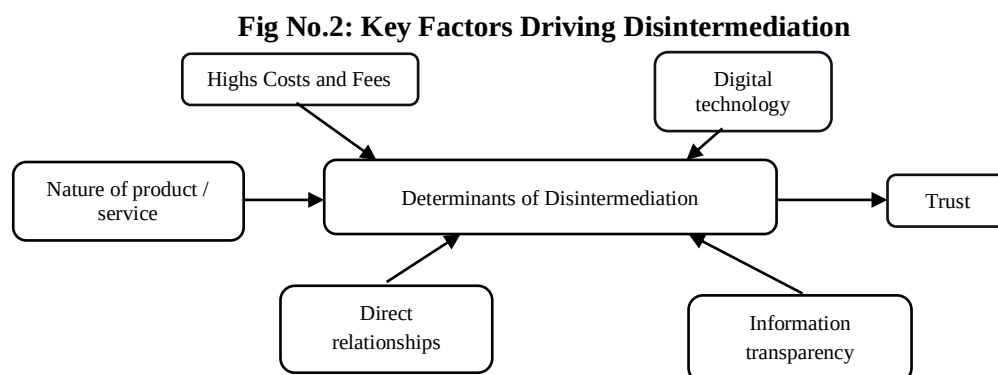
III. Open Banking as a Tool for Enhancing Competition

Open Banking is a pivotal regulatory mechanism for stimulating competitive dynamism within the financial and banking sector.

1. Data De-monopolization

Markets provide sellers with signals regarding demand trends, enabling them to direct their resources toward developing products that meet anticipated consumer needs. Intermediaries effectively assist in interpreting these signals, thanks to their closer proximity to buyers and their use of modern analytical tools. They thus contribute to determining the optimal product mix and adapting to market changes in a timely manner (George M, Stefan, & Robert M, 2002).

Conversely, users have an incentive to bypass the broker to save on the costs paid for their service. In other words, once users are successfully matched, they can disintermediate (or 'cut out the middleman') to conduct transactions directly with each other. This action deprives the broker of its positional advantages, leading to a loss of revenue or even the failure of the brokerage business model. Therefore, comprehending the determinants of disintermediation is of paramount importance for brokers and organizations in general .(Grace Gu , 2024)



Source: Developed by the authors.

The elimination of intermediaries primarily stems from financial considerations, as high costs and commissions lead to the erosion of profit margins and undermine pricing efficiency. Furthermore, digital technology contributes to providing less costly alternatives to intermediation, thereby enhancing the financial efficiency for market participants. Additionally, mutual trust and transparency in information flow reduce transactional risks and costs, which makes direct dealing between parties more economically feasible. Consequently, the financial motivation to bypass the intermediary is centered on maximizing returns and minimizing intermediation expenses.

2. Ease of Bank Switching

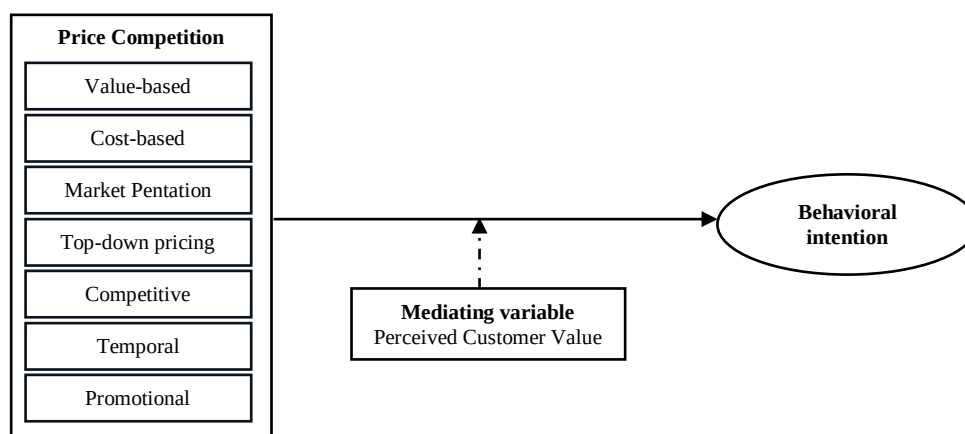
The study by Claire D. Matthews and Chris Moore (2008), titled 'Is Switching Banks Easy? Perception vs. Experience,' investigates the ease of customer transition between banks by comparing their preliminary perceptions with their actual experiences following the switch. The findings indicate that the majority of customers tend to overestimate the difficulty of changing banks, as the real-world experience demonstrates the procedures are simpler than anticipated. The research also reveals that psychological barriers and entrenched banking habits constitute the most significant impediment to the transfer, more so than technical or administrative

aspects. The study suggests that enhancing transparency and providing support during the transfer process can bolster inter-bank competition. It concludes that simplifying the switching mechanism and disseminating awareness about it contribute to strengthening market dynamism and the quality of banking services (Claire, Chris, & Malcolm John, 2008). This conclusion was further corroborated by the study presented by Szopiński, Tomasz, which asserts that financial consumer awareness plays a pivotal role in switching decisions, as individuals with higher awareness are inclined to compare offers and make more independent choices. They ultimately concluded that promoting financial literacy helps reduce customer inertia and intensify banking competition, positioning financial knowledge as a key competitive factor in the modern banking sector (Tomasz, 2021).

3. Price Competition

The findings of Michiel van Leuvensteijn, Jacob A. Bikker, Adrian A.R.J.M. van Rixtel, and Christoffer Kok Sørensen, which focused on measuring competition, indicate that competition tends to increase during periods of economic stability but recedes during times of financial crises due to elevated credit risk and weakened demand for loans. They further suggest that fostering price competition contributes to improved efficiency in capital allocation and mitigates systemic risk within the banking system, yet it may simultaneously reduce bank profit margins and heighten banks' sensitivity to shocks. (Michiel, Jacob, Adrian A.R.J.M, & Christoffer, 2011). Furthermore, the research paper presented by Nemanja Radić, Franco Fiordelisi, and Claudia Girardone noted that intense price competition led to a decline in profit margins, consequently driving banks to increase their investment risks to offset the lower returns. They also underscored the necessity of balancing the liberalization of competition with enhanced risk regulation to maintain the stability of the financial system (Nemanja, Franco, & Claudia, 2011).

Fig No.3: Pricing Competition Strategies



Source: Developed by the authors.

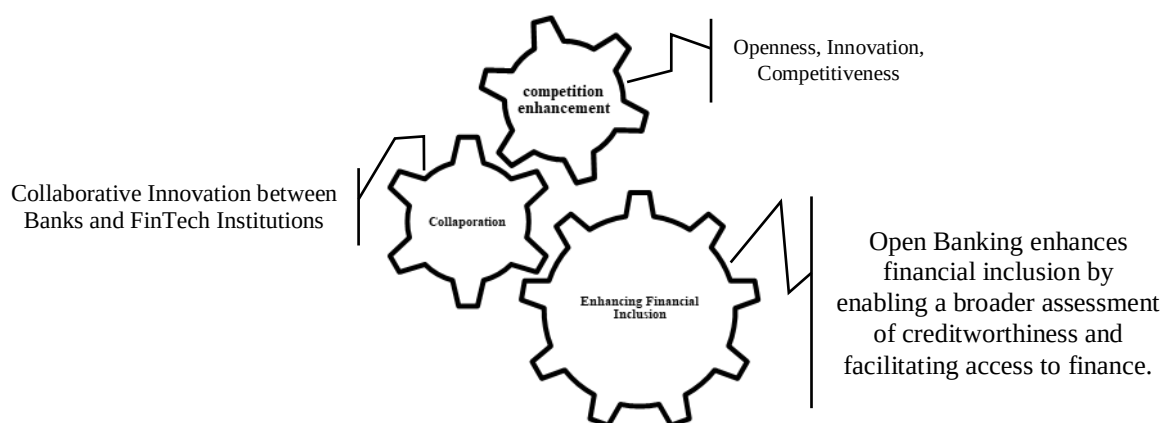
The choice of a specific competitive strategy financially impacts the banks' net profit margin and the size of their customer base (market share), which consequently determines the banks' ability to attract funding (customer deposits) and achieve rewarding returns on assets.

IV. Open Banking: A Catalyst for Retail Banking Innovation

Brett King emphasizes that Open Banking represents the model of banking everywhere, but not at the bank. He states that banking services become embedded and invisible in customers' daily lives (Brett, 2018). Similarly, advisory reports issued by Roland Berger provided in-depth strategic analyses of how financial institutions are responding to the Second Payment Services Directive (PSD2), noting that most banks are focused on regulatory compliance rather than seizing new strategic opportunities. (Roland, Adapt or die? Why PSD2 has so far failed to unlock the potential of Open Banking).

Reports from the World Bank and CGAP highlight the importance of Open Banking as a tool for achieving financial inclusion. This is accomplished by enabling external providers to offer innovative and cost-optimized services, especially for segments that are less engaged with banking services, thereby leading to increased market competition.

Fig No.4: Mechanisms for Stimulating Innovation in Retail Banking Services



Source: Developed by the authors.

The Open Banking model is customer-centric, positioning the client as its core by enabling the sharing of their financial data with explicit consent via Application Programming Interfaces (APIs), ensuring its secure flow between banks and other financial institutions. This integrated infrastructure facilitates strategic collaboration between banks and FinTech companies to deliver innovative and customized solutions. This secure data flow contributes to enhancing transparency, efficiency, and competition within the banking system, propelling the sector towards adopting a digital, inclusive, and interconnected banking paradigm.

V. Open Banking Business Platform Models

The most prominent emerging platform-based banking business models in the context of digital transformation and the shift towards Open Banking.

- **The Platform Model:** The bank adopts the Open Platform Model, providing an interactive environment to enable collaboration between itself and FinTech companies, thereby enriching the portfolio of services offered to customers via Application Programming Interfaces (APIs).

- **The Marketplace Model:** Under this model, the bank works to incorporate and display financial products and services offered by third parties (such as insurance solutions, loans, or investments) within its unified digital interface. This integration contributes to enhancing the bank's revenue diversification through fees or commissions charged on those services.
- **BaaS Model:** The bank adopts this model to offer its banking and technical infrastructure to external entities for a specified fee, thus transforming itself into an integrated banking services provider. This model enables non-financial companies to embed regulated banking services directly into their offerings.
- **Synergistic Partnership Model:** This model relies on strategic collaboration between banking institutions and FinTech companies with the aim of developing joint products that combine the credibility of the long-established banking sector with advanced technological innovation.
- **Data as a Value Driver Model:** This model relies on investing in the analysis of customer data (based on their explicit consent) to extract precise marketing insights and design tailored financial offerings that ensure high added value.

VI. Challenges, Risks, and Future Outlook

Open Banking represents a strategic opportunity to restructure the retail banking market in Algeria, as it works to stimulate competition and encourage innovation within the financial sector. Nevertheless, the implementation of this model faces fundamental challenges related to the regulatory framework and ensuring data protection, in addition to the requirements of raising the digital readiness of local banking institutions. Despite these obstacles, the future prospects of Open Banking remain promising in supporting efforts to enhance financial inclusion and improve the efficiency and quality of banking services.

1- Privacy Risks

With the accelerated deployment of electronic banking services and the emergence of new payment channels, the benefits of Open Banking are amplified, but they are accompanied by tangible privacy and security risks for customers. Official data and local indicators show a significant growth in the number of cards, electronic transactions, and the proliferation of mobile payments, which increases the volume of sensitive data exchanged between banks and digital service providers.

Table No.2: Electronic Payment Growth Indicators in Algeria (2018 – 2024)

years	Total number of ATMs	Online payment activity Total amount (DZD)	Mobile Payments Total amount (DZD)	Number of Integrated E-Merchants
2018	22	138495	332592583,3	1441
2019	71	141552	503870361,6	1621
2020	83	4210284	5423727075	3030
2021	153	6993135	11176475536	3053
2022	291	7490626	18151104424	3658
2023	475	8400869	32196672024	3848

Source: Prepared by the researchers based on

- (<https://giemonetique.dz/ar/chiffresAr>, s.d.)
- (<https://www.bank-of-algeria.dz/nombre-comptes-acti>, s.d.)

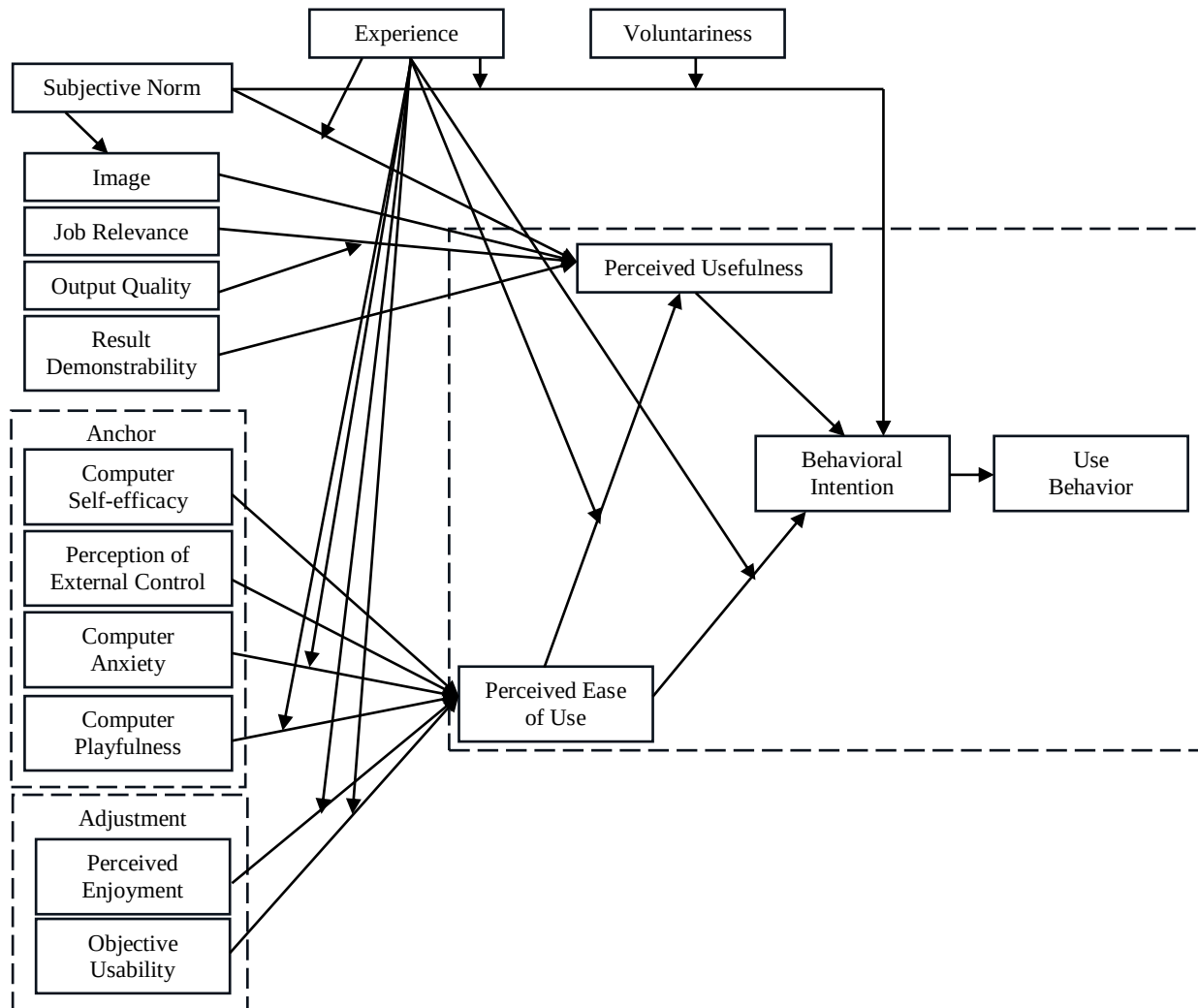
The data reveals exponential growth in banking digitization indicators, where the total number of ATMs has increased by approximately 2.7 times. Online payment transactions, in terms of their total value (in Algerian Dinars), recorded the biggest qualitative leap, reaching over 51.9 billion DZD in 2024, an increase exceeding 156 times compared to 2018. Furthermore, the number of integrated e-merchants has sharply increased by nearly 23-fold, underscoring the accelerating pace of transition towards e-commerce and open platforms.

The most significant risks facing bank customers include: the leakage or sale of customers' personal and financial data, cyber fraud attacks, the infiltration of banks' or third-party service providers' databases, and the poor management of access privileges when sharing data between banks and service providers (weak encryption, weak access controls). These risks directly impact banking trust and expose users to financial losses and privacy violations. (bank-of-algeria, 2023)

2- The Challenge of Customer Adoption/Acceptance

The Technology Acceptance Model (TAM), first introduced by Davis, is an extension and development of the Theory of Reasoned Action (TRA) proposed by Fishbein and Ajzen. It focuses on studying the psychological aspects of users toward technology adoption, based on their experiences and impressions regarding it. The model is fundamentally based on two main variables: Perceived Usefulness and Perceived Ease of Use, alongside two internal factors known as Behavioral Intention and Actual System Use. (S C W & A J Santoso, 2019)

Fig No.5: Technology Acceptance Model 3 (TAM 3)



Source: (S C W & A J Santoso, 2019)

The model explains the factors influencing a customer's behavioral intention to use a new system or technology. It incorporates the core variables of the Technology Acceptance Model (TAM), namely: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), which directly affect behavioral intention. Furthermore, the model integrates a wide range of external variables, such as experience, computer self-efficacy, functional fit, and subjective norm, which affect both Perceived Usefulness and Perceived Ease of Use, either directly or indirectly.

The level of confidence and actual usage of new banking technologies encourages banks to expand their digital services and develop more interactive applications. Furthermore, the rising customer acceptance of the Open Banking concept stimulates competition and innovation among financial and banking institutions and technology service providers. This contributes to enhancing the customer experience, promoting transparency, and ensuring secure and regulated data exchange within the financial and banking system.

Algerian banks face several challenges hindering customer acceptance of Open Banking, most notably:

- Low financial and digital awareness among a wide segment of customers, which limits their trust in sharing their banking data;
- Deficiencies in the technological infrastructure of some banks, coupled with poor integration between local banking systems and financial service providers;
- Absence of unified standards for Application Programming Interfaces (APIs), which makes data exchange between banks and financial institutions difficult.

3- Regulatory and Legal Challenges

Although Law No. 09-03 provides general consumer protection, it is a comprehensive law covering various goods and services. It lacks detailed, specialized provisions addressing the nature of modern financial services, such as instant transfers, services provided via smartphone applications, or the sale of complex financial products (financial derivatives). This leaves the application of principles like the 'Right to Warranty' or the 'Right to Information' to these services ambiguous. As for the Monetary and Banking Law (Law No. 23-09), it primarily focuses on banks' obligations concerning safety and vigilance, which are often linked to combating money laundering.

From a regulatory standpoint, there is currently no clear and detailed framework defining the rules of Open Banking, which creates a legal vacuum for regulating third-party providers and assigning liability between them and the banks.

The stringent vigilance measures (such as those stipulated in the Bank of Algeria's Note of February 2015, regarding the customer due diligence guidelines) may lead to complex procedures for the client, which contradicts the simplicity and speed of digital transactions, and may consequently lead to the financial exclusion of certain segments.

Digital financial services rely on the exchange of vast amounts of customers' personal and financial data. Although there are international efforts to enact personal data protection legislation, similar to the European Regulation (GDPR), the implementation of a comprehensive and robust data protection framework in the Algerian banking sector still faces a challenge.

4- Future Outlook for the Application of this Model

The banking sector is undergoing a major digital transformation, which has led to the emergence of new players—FinTech companies—that leverage modern technologies to deliver services more efficiently. They have focused on essential areas such as payments, lending, and investment management, adopting business models characterized by simplicity, transparency, and ease of customer acquisition. This challenge has forced Algerian banks to re-evaluate their strategies and investments to keep up with the digital pace. Despite the intense competition introduced by FinTech firms, there is ample room for cooperation between them and commercial banks, revolving around Open Banking, which is considered a pioneering initiative to boost competition and innovation. This model is based on the principle of regulated data sharing between banks and external service providers with the explicit consent of the customer, all conducted through secure programming interfaces. (Meriem, 2020)

Despite the progress made, the adoption of Financial Technology (FinTech) in Algeria faces significant structural and legal challenges that hinder its growth. The most prominent of these

obstacles include the absence of a comprehensive and dedicated regulatory framework for FinTech. Furthermore, the low rate of digital technology penetration and weak banking literacy constitute two fundamental barriers to the spread of new services. The Algerian economy is heavily dominated by a cash culture, which results in a very limited use of cards in payment transactions and a customer preference for cash withdrawals. Additionally, the financial inclusion rate remains low, limiting the potential base of beneficiaries of digital services. (Samra & Ouahiba, 2023)

Open Banking may contribute to enhancing its role by influencing retail banking in Algeria through the following:

- The entry of more digital institutions and banks, which could potentially lead to increased competition in retail banking services;
- Increased collaboration between banks and financial service providers to expedite the launch of API-driven services, thereby boosting product innovation, such as aggregated applications and expenditure management tools;
- Enhanced customer experience and data-driven personalization of offerings: Secure access to account data facilitates user-data-based services (financial advice, tailored credit), consequently elevating the quality of competition;
- Upgrading of infrastructure and standardized programming interfaces (APIs) as a result of competitive pressure; however, the pace of implementation will remain contingent upon the speed of regulatory updates and the establishment of trust;
- Obstacles impeding full impact: Privacy/security concerns, low digital literacy, and the absence of a unified operational framework for Open Banking will mitigate benefits unless continuous regulatory, educational, and technological efforts are maintained.

Conclusion

Although the traditional banking model has achieved growth in key digitalization indicators, such as the number of ATMs and the value of electronic payments, it still faces structural challenges in providing finance to the private sector and expanding effective financial inclusion. Consequently, there is an urgent need to adopt an advanced regulatory framework that ensures the concerted efforts of banks and FinTech companies to deliver customer-centric retail services, in line with global trends aiming to dismantle data monopolies and enhance market transparency.

Thanks to its mechanism based on secure data sharing through unified programmatic interfaces, it is the optimal solution for addressing these structural challenges. It is not merely a technological upgrade, but a strategic transformation that allows for the launch of new business models (such as the Marketplace Model and Banking-as-a-Service Model), directly contributing to the improvement of customer experience and the increase of loyalty. Nevertheless, the full impact of this model remains contingent on the capacity of monetary authorities and financial institutions to overcome the legislative vacuum, cybersecurity challenges, and low digital literacy among a wide segment of customers.

Results

The key results are summarized below:

- 1. Confirmation of Credit Growth Slowdown:** The retail banking market in Algeria is experiencing slow and uneven growth, evidenced by the sharp decline in credit granted to the private sector as a percentage of GDP, falling from 22% in 2020 to 18.8% in 2023. This underscores the urgent need for new mechanisms, such as Open Banking, to stimulate financing;
- 2. The Role of Open Banking in Competition and Innovation:** Open Banking has proven to be an effective tool for boosting competition, as it contributes to reducing customer switching barriers between banks, exposing market monopolies, and driving both price and non-price competition. Furthermore, it supports innovation by encouraging cooperation between banks and FinTech companies to launch customized products;
- 3. Legislative and Technical Challenges:** The most prominent impediment to the implementation of Open Banking in Algeria is the absence of a dedicated and unified legal framework to regulate data sharing via secure Application Programming Interfaces (APIs). Furthermore, existing laws (such as Law 23-09) primarily focus on security vigilance and may create complex procedures that conflict with the ease and fluidity of digital transactions;
- 4. Customer Acceptance and Risk Challenge:** The enormous growth in electronic payments (a 156-fold increase in value) faces significant challenges related to privacy risks and electronic fraud, in addition to customers' low financial and digital literacy, which hinders the actual adoption of the Open Banking model.

Recommendations and Suggestions:

Based on the resultant findings and identified challenges, the study recommends the following measures to enable Open Banking to effectively enhance retail banking in Algeria:

- 1. Expedite the establishment of a dedicated legal framework for Open Banking:** The Bank of Algeria must issue a specific regulation or instruction compelling banks to open unified and secure Application Programming Interfaces (APIs) to facilitate the entry of third parties into the retail banking market;
- 2. Enhancing Financial and Digital Literacy:** Financial institutions, in cooperation with the authorities, should launch educational programs to raise customers' level of confidence and knowledge regarding the advantages and risks of digital financial services;
- 3. Developing Personal Data Protection Legislation:** A dedicated and comprehensive data protection law, consistent with international standards, must be enacted to ensure customer confidence in sharing their sensitive financial information;
- 4. Adoption of Unified Technical Standards:** The Bank of Algeria must specify and adopt unified technical standards for Application Programming Interfaces (APIs) to ensure the security and integrity of data exchange between all financial institutions and digital service providers;
- 5. Investment in Digital Banking Infrastructure:** Public and private banks must invest intensively in modernizing their internal systems to ensure integration and their capacity to accommodate the complex requirements of Open Banking;

6. **Cooperation between Banks and FinTechs:** A regulatory framework should be established to provide tax incentives or licensing facilities for strategic cooperation between banks and FinTech companies, thus accelerating the pace of innovation in retail banking products;
7. **Streamlining Bank Switching Procedures:** Working to facilitate and minimize the administrative and technical barriers to the customer's transfer process between banks to foster dynamic competition in the retail banking market;
8. **Enhancing Information Security and Strong Customer Authentication (SCA):** All payment service providers and open financial service providers must be mandated to implement Strong Customer Authentication requirements to mitigate the risks of electronic fraud and data leakage;
9. **Regulatory Review of Due Diligence Procedures:** The Bank of Algeria must review and simplify the regulations pertaining to due diligence procedures (or Know Your Customer - KYC) within the scope of low-risk digital transactions, in order to avoid the complex procedures that may lead to financial exclusion for some segments of society.

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