Adoption and Analysis of Electronic Payment Methods in Algeria: A Case Study of Algérie Télécom (2022–2024)

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Summary: This study examines the adoption, usage patterns, and effectiveness of electronic payment systems within Algérie Télécom, one of Algeria's largest public enterprises, between 2022 and 2024. Using an empirical, case study approach, the research analyzes internal transaction data across four major electronic payment channels—Baridimob, Edahabia, Carte Interbancaire (CIB), and Wimpay—to identify trends, user preferences, and institutional impacts on financial performance. The study contextualizes Algérie Télécom's experience within the broader evolution of electronic payment systems both globally and domestically, emphasizing technological, behavioral, and regulatory dimensions. Findings indicate that the adoption of e-payment significantly increased during the post-pandemic period, driven by government initiatives and consumer familiarity with digital solutions. Among the observed methods, Baridimob and Edahabia emerged as the dominant channels in both transaction volume and monetary value, confirming the predominance of postal over banking systems in Algeria's digital financial ecosystem. The research highlights that while digital transformation has advanced rapidly, persistent barriers remain—including infrastructural constraints, cybersecurity concerns, and cultural resistance to cashless transactions. Recommendations are proposed for policymakers, financial institutions, and telecom operators to strengthen e-payment infrastructure and enhance consumer trust.

Keywords: electronic payment, Algérie Télécom, Edahabia, Baridimob, CIB, Wimpay, Algeria, financial digitalization

Jel Classification Codes : M31; D12

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I-Introduction:

Over the past decade, digital transformation has reshaped financial systems worldwide. The evolution of information and communication technologies (ICTs) has revolutionized the way individuals and organizations conduct transactions, replacing traditional payment methods with electronic alternatives that promise greater speed, efficiency, and security. In Algeria, the integration of electronic payment (e-payment) methods has been relatively recent compared to global trends, but its growth accelerated significantly after the COVID-19 pandemic, as social distancing measures and digitization initiatives converged to redefine consumer and institutional payment behaviors.

The introduction of electronic payment methods—ranging from bank cards to mobile applications—has enabled consumers to access financial services more conveniently and businesses to improve liquidity management and operational efficiency. However, despite government efforts and the establishment of a national e-payment framework, Algeria continues to face challenges in achieving widespread adoption due to low financial inclusion, infrastructural limitations, and a persistent cultural reliance on cash transactions.

Within this national context, Algérie Télécom—a state-owned telecommunications provider—has played a pivotal role in the diffusion of electronic payments. As a public utility with a large customer base across both urban and rural regions, the company's adoption of multiple digital payment channels offers a valuable lens through which to evaluate the effectiveness and reach of Algeria's electronic payment ecosystem.

This study aims to answer the following central question:
What is the most widely used electronic payment method within Algérie Télécom between 2022 and 2024?

The secondary objectives include:

1. Evaluating whether the adoption of e-payments has significantly influenced Algérie Télécom's revenue growth.
2. Assessing the impact of promotional and awareness campaigns on consumer adoption rates.
3. Comparing the relative use of banking versus postal channels in facilitating electronic transactions.

Hypotheses

- **H1:** The adoption of electronic payments has had a significant positive effect on Algérie Télécom's revenue growth.
- **H2:** Promotional activities and customer awareness initiatives have positively contributed to the increase in e-payment usage.
- **H3:** Postal channels (Baridimob, Edahabia) are more frequently used than banking channels (CIB, Wimpay) within Algérie Télécom's e-payment system.

Research Objective

The primary objective of this research is to identify the most utilized electronic payment channel at Algérie Télécom and to analyze its contribution to the company's financial performance. Secondary goals include evaluating user preferences, adoption drivers, and the operational efficiency of different payment systems.

2. Literature Review

2.1. Global Evolution of Electronic Payment Systems

The concept of electronic payment has evolved considerably since the early 20th century, beginning with the introduction of metal charge cards by Western Union in 1914 and progressing toward modern digital platforms (Dragon et al., 1997). The emergence of credit cards in the 1950s—such as Diners Club, American Express, and BankAmericard (now Visa)—marked the first step toward a cashless economy. Subsequent innovations, including debit cards, chip technology, contactless payments, and mobile wallets, transformed both consumer behavior and global payment infrastructure (Geiben et al., 2011).

The digitization of financial services accelerated with the rise of the Internet in the 1990s and the proliferation of e-commerce. Electronic wallets (e-wallets), online banking, and cryptocurrencies have since expanded the boundaries of monetary exchange. The COVID-19 pandemic further catalyzed the global shift toward contactless and online transactions, as consumers sought safe, hygienic, and efficient alternatives to cash. According to the World Bank (2023), digital financial inclusion increased by more than 20% in low- and middle-income countries during 2020–2022, underscoring the transformative role of digital payment systems.

2.2. Typology and Technologies of E-Payment

Modern e-payment systems encompass diverse mechanisms, including card-based payments (credit, debit, prepaid), electronic funds transfer, online banking, mobile payment platforms, and cryptocurrency transactions (OECD, 2022). Each category varies in accessibility, security, and regulatory oversight.

Mobile payments, in particular, have become a defining feature of financial innovation. Platforms such as M-Pesa in Kenya and Alipay in China demonstrate how digital wallets can promote financial inclusion and reduce transactional friction. Likewise, blockchain-based cryptocurrencies such as Bitcoin and Ethereum introduced decentralized models that challenge conventional banking paradigms, though their volatility and regulatory uncertainty limit mainstream adoption (Nakamoto, 2008).

2.3. Drivers and Barriers to Adoption

Empirical studies have identified several determinants of e-payment adoption, including perceived ease of use, trust, system security, and social influence (Davis, 1989; Venkatesh et al., 2003). However, adoption barriers remain particularly significant in emerging economies. Infrastructural deficits, limited digital literacy, and weak institutional trust hinder the expansion of e-payments (Boateng et al., 2021). Moreover, regulatory environments often lag behind technological developments, slowing integration within national economies.

3. Electronic Payment Systems in Algeria

3.1. National Context

Algeria’s digital payment ecosystem has undergone significant transformation since the mid-2010s. The Groupement d’Intérêt Économique (GIE) Monétique, established to manage interbank payment operations, officially launched electronic payment services in 2016. Eleven banks, nine enterprises, and nine web merchants participated in the initial rollout, including Algérie Télécom, Air Algérie, and Djezzy. The interconnection between CIB (Carte Interbancaire) and Edahabia in January 2020 marked a major milestone, achieving interoperability between banking and postal networks.

Despite these advances, e-payment penetration remains modest relative to population size. As of 2025, Algeria had over 20 million active payment cards, yet a large portion of transactions still occurred in cash. The GIE Monétique (2025) reports continuous growth in both Internet-based payments and terminal-based transactions (TPE)—with more than 19 million e-commerce transactions in 2024 compared to 9 million in 2022, and TPE payments surpassing 4.45 trillion DZD in 2024.

3.2. Mobile and Internet-Based Payments

The introduction of mobile payment systems (M-paiement) in 2020 represented a new phase of financial innovation in Algeria. Through mobile applications such as Baridimob (Algérie Poste) and Wimpay (BNA), users can now perform peer-to-peer (P2P) transfers, pay bills, and purchase services via QR code technology. Transaction volumes have risen sharply: total mobile transactions increased from 27.9 billion DZD in 2023 to 43.5 billion DZD in 2024, with P2P transfers exceeding 503 billion DZD. These figures confirm the growing consumer acceptance of mobile platforms as an alternative to traditional banking.

However, the diffusion of these technologies remains uneven. Factors such as Internet accessibility, smartphone ownership, and user trust significantly influence adoption rates. Moreover, commercial banks have been slower than postal institutions to develop mobile financial services, creating a dual system where postal solutions dominate due to broader customer outreach and stronger brand trust.

4. Methodology

4.1. Research Design

This study employs a descriptive and analytical case study approach focusing on Algérie Télécom, chosen for its representativeness in the national economy and its diversified electronic payment channels. The analysis integrates both quantitative and qualitative methods to assess usage patterns and institutional impacts.

4.2. Data Sources

The study relies primarily on secondary data obtained from Algérie Télécom's internal records and the official database of the GIE Monétique (2022–2024). These include transaction counts, monetary values, and adoption rates across four main payment platforms: Edahabia, Carte Interbancaire (CIB), Baridimob, and Wimpay. Supplementary materials—such as national banking statistics, policy documents, and government reports—were used to contextualize the analysis.

4.3. Analytical Framework

To identify adoption trends and channel performance, the study applied comparative and longitudinal analysis techniques. Data were categorized by:

- Payment channel type (banking vs. postal)
- Transaction frequency and value
- Year (2022, 2023, 2024)
- Service category (fixed-line telephone, ADSL/FTTH, 4G LTE).

Descriptive statistics (percentages, growth rates) were calculated to assess relative performance, while visual graphs were generated to highlight patterns in usage evolution. The comparative framework enabled evaluation of whether banking or postal networks demonstrated greater consumer engagement.

4.4. Limitations

Data access was restricted to internal records of Algérie Télécom and GIE Monétique, which constrained the inclusion of other telecom operators for cross-validation. Additionally, consumer-level variables such as age, income, or education were unavailable, limiting behavioral interpretation. Nonetheless, the dataset provides robust insight into macro-level trends and institutional performance across the national digital payment landscape.

5. Results

5.1. Channel Comparison: Edahabia vs. CIB (2023)

Figure 1 displays the monthly number of transactions executed via Edahabia and CIB in 2023. Edahabia dominates throughout the year, peaking in December (≈684k); CIB remains comparatively modest (≈55k–58k in Q4). These patterns corroborate Edahabia's entrenched lead within Algérie Télécom's e-payment mix.

In monetary terms (Figure 2), Edahabia also leads consistently, rising from ≈425 million DZD in January to ≈767 million DZD in December, while CIB increases more gradually from ≈55.6 million DZD to ≈89.5 million DZD over the same period. The gap persists across months, highlighting large-value flows through Edahabia.

5.2. Longitudinal Evolution: Edahabia (2022–2024)

Figure 3 tracks Edahabia monthly transaction counts from 2022 to 2024. The series shows robust growth from 2022 (e.g., 156,663 in January) through higher 2024 levels (e.g., 204,556 in November), with seasonal undulations. The cumulative annual totals (≈2.08M in 2022; ≈1.88M in 2023; ≈2.11M in 2024) indicate a strong rebound in 2024, surpassing 2022 and 2023.

5.3. Product-Level Distribution (2024): TLP, ADSL/FTTH, and 4G LTE

Tables in the thesis provide disaggregated 2024 e-payment data by product and canal. Figure 4 (amounts) and Figure 5 (counts) summarize TLP (fixed line), ADSL/FTTH, and 4G LTE across Baridimob, CIB, and Edahabia:

- ADSL/FTTH drives the largest monetary volume: Baridimob ≈ 6.24B DZD, Edahabia ≈ 2.05B DZD, CIB ≈ 0.99B DZD.
- For TLP, Baridimob (≈779M DZD) exceeds Edahabia (≈348M DZD) and CIB (≈120M DZD).
- For 4G LTE, Baridimob (≈1.08B DZD) again leads, followed by Edahabia (≈284M DZD) and CIB (≈41M DZD).
- In counts, Baridimob shows very high usage for ADSL/FTTH (≈4.9M transactions), with substantial TLP (≈1.27M) and LTE (≈1.04M), far outpacing CIB and Edahabia.

5.4. Fixed-Line (TLP) Channel Shares (2022 Context)

Narrative evidence for 2022 fixed-line payments shows Edahabia leading by number (≈51.1%) and amount (≈51.7%), with Baridimob second (≈22.4% by number; ≈24.9% by amount); CIB and Wimpay remain small shares. This underscores early postal-channel dominance prior to the 2023–2024 surge of mobile usage.

6. Discussion

Throughout the study period, postal channels—namely Edahabia and Baridimob—consistently outperformed banking channels such as CIB and Wimpay at Algérie Télécom. In 2023, Edahabia demonstrated a clear dominance in both transaction volumes and monetary values over CIB across every month, as illustrated in Figures 1 and 2. By 2024, Baridimob had emerged as the leading payment channel, surpassing all others in both transaction count and total value processed across various products (Figures 4 and 5). This evolution highlights the expanding reach and convenience of the postal ecosystem, particularly as Baridimob's mobile interface became closely integrated with Edahabia. These findings align with the thesis's interpretation that postal-channel leadership stems from their wider accessibility, stronger user familiarity, and effective digital payment promotion campaigns.

The data further reveal a notable shift in consumer behavior from card-based to mobile-based payment methods. Whereas Edahabia was primarily used for point-of-sale and e-commerce transactions, Baridimob has become the preferred channel for mobile-based payments. For instance, in the ADSL/FTTH segment, Baridimob accounted for approximately 60.8% of the total payment amount in 2023 and expanded its share further in 2024, as shown in Figure 4. This trend reflects the broader national movement toward M-paiement, which has grown rapidly since 2023, supported by the introduction of QR code and peer-to-peer (P2P) features. In contrast, banking applications such as Wimpay have lagged behind in adoption, hindered by lower digital penetration and limited user awareness.

The sustained increase in both the number and value of transactions through Edahabia and Baridimob has important implications for Algérie Télécom’s financial performance. The expansion of these channels has likely contributed to faster collection cycles, reduced reliance on cash handling, and higher rates of bill payment compliance. Although the thesis did not include detailed financial statements, the steady month-to-month growth—particularly the peaks observed in the fourth quarter—suggests a positive impact on cash inflows and receivables turnover, thereby supporting the hypothesis (H1) that electronic payment adoption enhances revenue realization.

Furthermore, the rise in e-payment adoption appears to have been influenced by strategic awareness campaigns and service quality improvements initiated by Algérie Poste. The combination of user experience enhancements, extensive physical network coverage, and consumer education efforts helped to increase digital payment adoption across both urban and semi-urban regions. These initiatives effectively addressed common barriers such as lack of trust and limited familiarity, validating hypothesis (H2) regarding the role of promotional and awareness efforts in accelerating user uptake.

Finally, the comparative analysis of banking applications and postal channels confirms that CIB and Wimpay remain structurally less significant within Algérie Télécom’s overall payment ecosystem. This outcome can be attributed to lower national levels of bancarization, the concentration of bank branches in urban centers, and the slower diffusion of bank mobile applications relative to postal solutions. Consequently, the evidence supports hypothesis (H3), which posits that postal channels are used more extensively than banking channels for Algérie Télécom’s electronic payments during the 2022–2024 period.

7. Conclusion and Recommendations

7.1. Conclusion

This case study demonstrates that the adoption of electronic payment methods accelerated significantly at Algérie Télécom between 2022 and 2024, with the postal infrastructure—particularly Edahabia and Baridimob—serving as the backbone for scaling digital transactions. The transition toward mobile platforms as the primary interface, led by Baridimob, became increasingly evident across all product categories, while banking channels such as CIB and Wimpay remained comparatively underutilized. Overall, Edahabia dominated both transaction volumes and values during 2022 and 2023, before Baridimob emerged as the leading channel in 2024 in terms of transaction count and total amount processed. Postal channels consistently outperformed their banking counterparts, largely due to broader accessibility, user familiarity, and higher trust in postal services. This sustained growth in e-payment usage also suggests a positive contribution to Algérie Télécom’s revenue realization, as electronic transactions enhance collection efficiency and reduce reliance on cash-based operations.

7.2. Recommendations

For policymakers, the study recommends scaling interoperability and QR code standards across both postal and banking ecosystems to create a more integrated and efficient digital payment environment. Incentives should be introduced to encourage merchant participation and consumer adoption, particularly in underbanked regions. Additionally, expanding digital literacy programs that emphasize cybersecurity, dispute resolution, and mobile payment usage can strengthen public trust in e-payment systems. For financial institutions, the focus should be on improving user experience through enhanced platform performance—ensuring low latency, high stability, and feature parity with leading postal applications such as Baridimob. Banks are also encouraged to develop joint incentive initiatives with utilities, including fee reductions and loyalty rewards, to promote the transition from cash-based to digital transactions. Finally, for Algérie Télécom, the company should continue to prioritize Baridimob and Edahabia as default payment options while maintaining interoperability with CIB and Wimpay to reach a wider user base. The use of behavioral nudges, such as payment reminders and small discounts for e-payments, combined with A/B testing for communication strategies, can further enhance adoption rates. Furthermore, establishing detailed product-level dashboards to monitor payment channel performance across regions and customer segments will enable Algérie Télécom to identify friction points and deliver targeted interventions that improve user engagement and satisfaction.

- Appendices:

Figure 1. Monthly Number of Transactions in 2023: Edahabia vs. CIB.

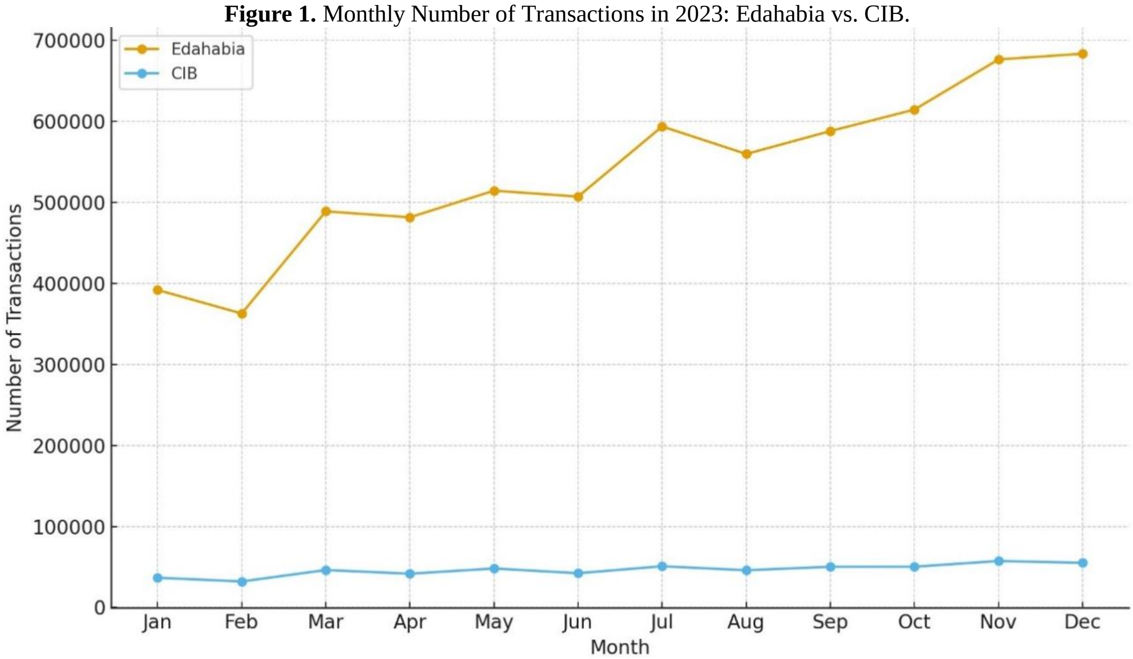


Figure 2. Monthly Transaction Amounts (DZD) in 2023: Edahabia vs. CIB.

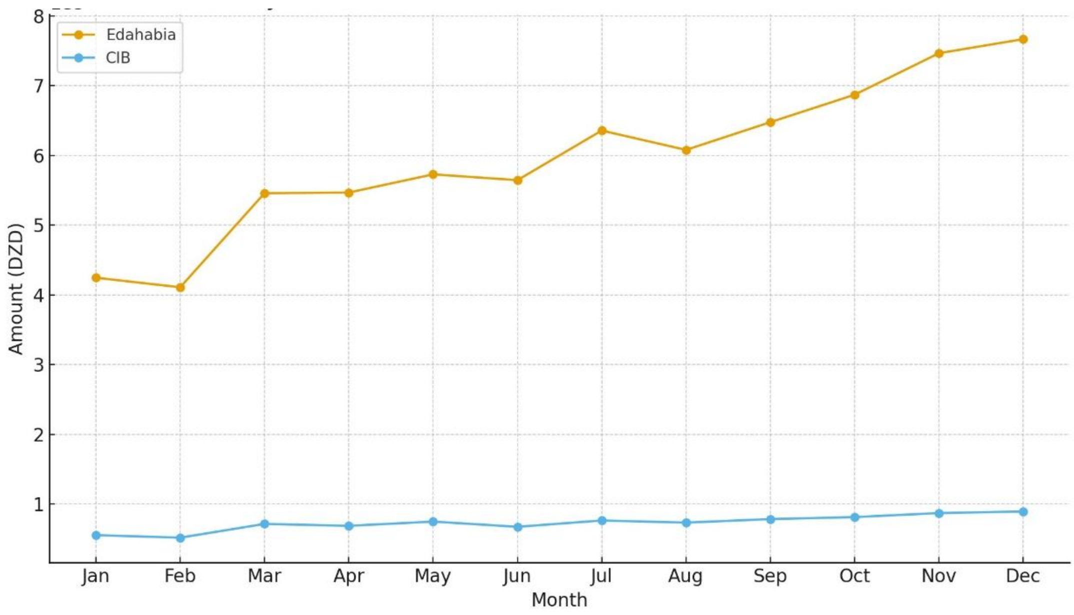


Figure 3. Edahabia Monthly Transactions: 2022–2024.

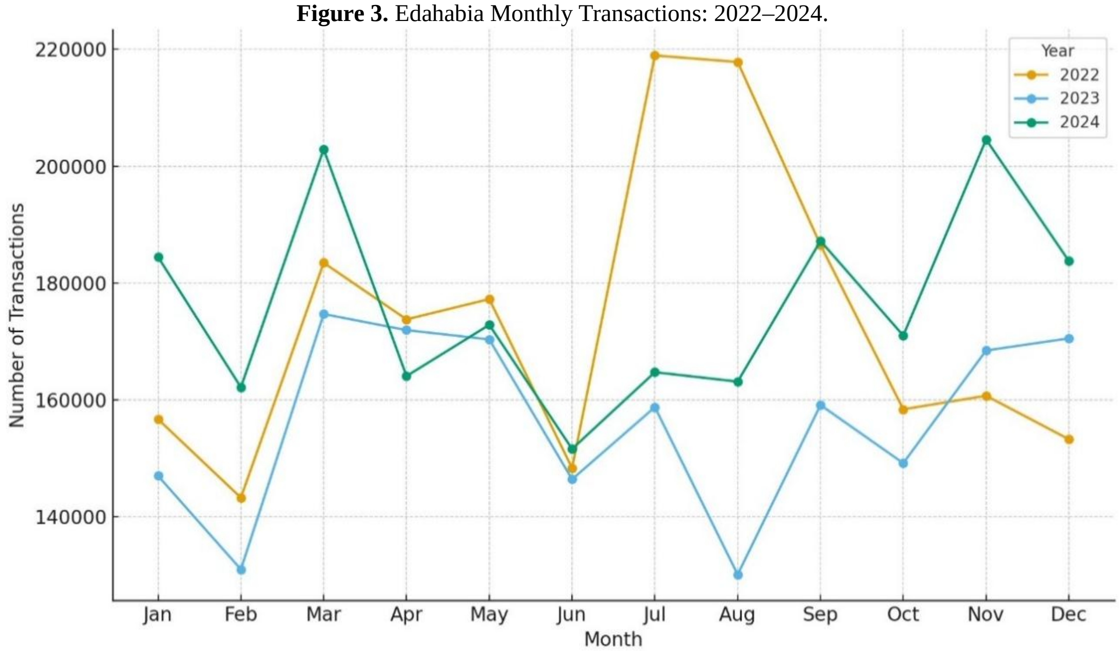


Figure 4. E-Payment Amounts by Product and Canal (2024).

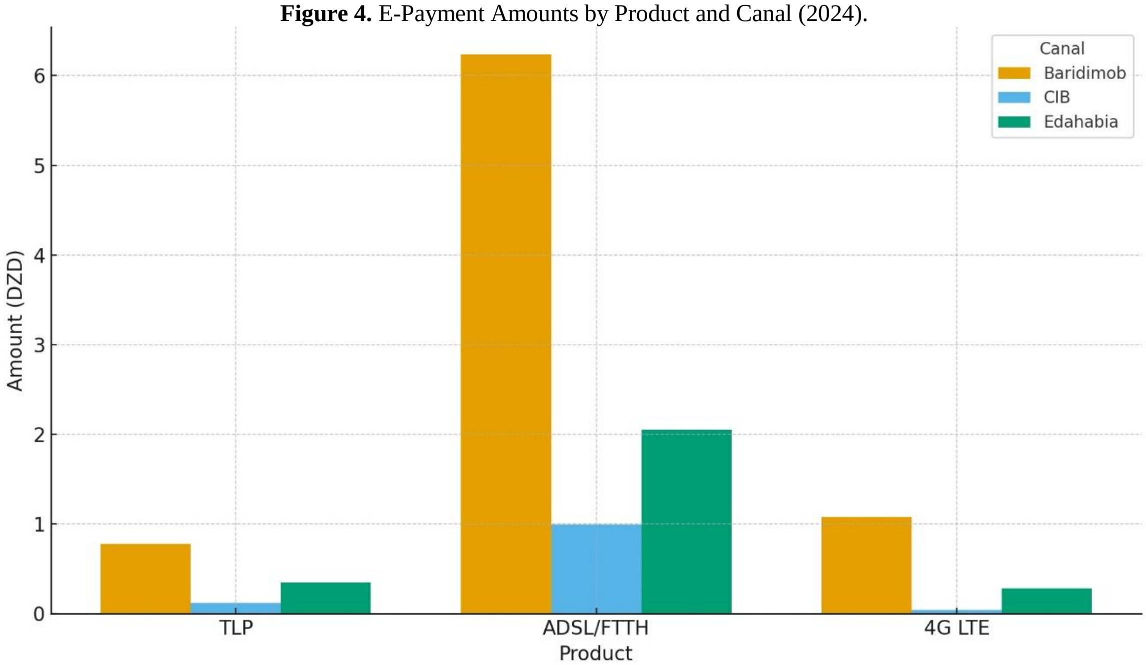
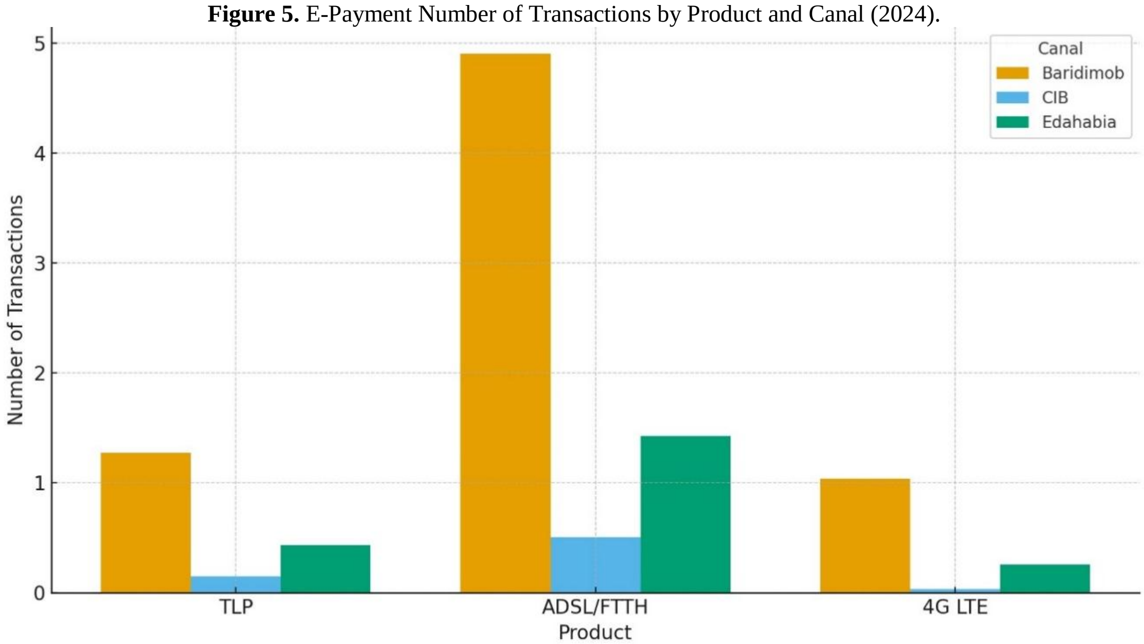


Figure 5. E-Payment Number of Transactions by Product and Canal (2024).



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