

Decoding Cross-Border Payment Flows in Sub-Saharan Africa: A High-Frequency Analysis of Granular Platform Data

G20 Conference Submission

26 Sept 2025

Pedro Arnt*, Pardon Mujakachi*, Matthew Sharp (PhD)[†] & Samantha Torrance (PhD)^{†1}

Abstract

This paper analyses cross-border payment flows in Sub-Saharan Africa (SSA) by leveraging high-frequency, granular transaction data from dLocal, a rapidly growing payment platform that connects global merchants with local payment methods across emerging markets. Focusing on pay-in transactions in Kenya, Nigeria, and South Africa from November 2023 to March 2025, we conduct a detailed economic analysis of both payment behaviours and the structure of digital consumption. The findings reveal deeply heterogeneous digital economies. In terms of payment methods, the data confirms well-established patterns: Kenya is defined by high-volume, low-value mobile money transactions, South Africa by a mature card-based system, and Nigeria by a dynamic mix of instant bank transfers and surging digital wallet adoption. This payment infrastructure facilitates distinct consumer spending patterns on the platform: South Africa's activity is dominated by e-commerce, Nigeria's by entertainment and streaming services, and Kenya's by foundational spending on telecoms and communication services. We further demonstrate how this data can capture nuanced behavioural responses to policy shocks and connectivity disruptions, illustrated by a detailed case study of Kenya, where proposed tax changes and internet disruptions in mid-2024 led to immediate, observable shifts in mobile money usage and a surge in VPN-related spending. Methodologically, this paper demonstrates the value of proprietary payments data in complementing official statistics, offering timely, granular insights that align in direction with broader system-level benchmarks while highlighting platform-specific nuances such as average transaction values and merchant category mixes. Substantively, the results provide actionable intelligence for policymakers and businesses seeking to foster a more resilient and inclusive digital economy in SSA.

Keywords: cross-border payments, digital economy, Sub-Saharan Africa, mobile money, financial inclusion, real-time data analysis

JEL Classification: E42, O16, O33, O55

^{1*} dLocal [†] Access Partnership. Correspondence: matthew.sharp@accesspartnership.com

1. Introduction

Sub-Saharan Africa's (SSA) digital economy is in a state of rapid and profound transformation, building on a history of mobile technology leapfrogging that has reshaped societies and economies over the past two decades (Aker & Mbiti, 2010; World Bank, 2023). As internet penetration deepens and a youthful, digitally-native population comes of age, new patterns of commerce, communication, and consumption are emerging. For policymakers, development institutions, and businesses, understanding these dynamics is a first-order priority. Yet, the very speed of this change often outpaces the cadence of traditional economic data collection. Official statistics from central banks and national bureaus, while essential for macroeconomic oversight, are often aggregated and published with a significant lag, making it difficult to capture the granular, high-frequency dynamics that define these burgeoning digital markets. This information gap can hinder the design of effective, evidence-based policies for everything from financial inclusion and tax administration to infrastructure investment and trade facilitation.

This paper seeks to address this gap by demonstrating the analytical power of a novel data source: proprietary, "organic" transaction-level data from a private payment service provider (PSP), which can offer a powerful complement to traditionally "designed" government data (Einav & Levin, 2014). We leverage a unique dataset from dLocal, a leading cross-border payment platform, to illuminate the economic activity flowing into key SSA markets. By analysing the digital footprints of actual consumer transactions, we can observe not only which payment methods are preferred, but also what goods and services are being purchased, and how these behaviours shift in real-time in response to market innovations and external shocks.

The core of this paper is a comparative analysis of three of SSA's economic powerhouses – Kenya, Nigeria, and South Africa – between November 2023 and March 2025. These countries were chosen not only for their materiality and data richness on the dLocal platform but also because they represent three distinct and important archetypes of payment system development in Africa, providing an invaluable opportunity for comparative analysis. Examining these leading markets in tandem allows us to move beyond a monolithic view of the continent and uncover the heterogeneous realities of its key economic regions.

Our analysis proceeds as follows: Section 2 provides background on the dLocal platform. Section 3 details the data and methodology used in our analysis. Section 4 presents summary statistics and further outlines the rationale for our country focus. Section 5 delivers our key empirical findings, examining both the nuanced preferences for different payment methods and the spending patterns across diverse merchant categories. Section 6 provides a deep-dive case study of Kenya, illustrating how platform data can reveal immediate consumer reactions to policy proposals and political events. Finally, the paper discusses the policy relevance of these findings and concludes by reflecting on the value of this data-driven approach for understanding and shaping the future of Africa's digital economy.

The contribution of this paper is twofold. Methodologically, it serves as a case study on the value of harnessing proprietary payments data for public policy and economic analysis, offering a model that could be replicated in

other emerging markets. Substantively, it provides concrete, policy-relevant insights into the structure and dynamism of some of Africa's most important digital economies, offering a more textured understanding of consumer behaviour than has previously been possible.

2. The Role of Payment Platforms in Emerging Markets

The dataset for this study is provided by dLocal, a payment-technology company founded in 2016 that operates as a cross-border payment facilitator for global merchants in emerging markets. The core function of such platforms is to abstract away the complexity of fragmented payment landscapes. Through dLocal's platform, for instance, a global merchant can use a single API² connection to accept payments from consumers across more than 40 countries in Africa, Asia, and Latin America, instead of building bespoke integrations for dozens of country-specific payment methods. This model radically simplifies international e-commerce by overcoming a critical friction point: the inability of many global businesses to accept the locally preferred payment methods that dominate emerging markets, such as mobile money, domestic card schemes, and real-time bank transfers (McKinsey & Company, 2022).

dLocal's two flagship services are 'Pay-ins', which allow global merchants to collect local-currency payments from end-users, and 'Pay-outs', which enable businesses to disburse funds locally. This bi-directional "payments plumbing" is essential for a wide range of digital business models, from e-commerce marketplaces and subscription services to gig-economy platforms and remittance providers (dLocal, 2024). This study focuses exclusively on pay-in data, as it most directly reflects consumer spending patterns on goods and services from international merchants.

Africa is a strategic growth pillar for dLocal and a key region for analyzing these trends. After securing payment-service-provider licences from the Central Bank of Kenya and the National Bank of Rwanda in May 2023 – adding to earlier approval in Nigeria – dLocal can now process and settle fully domestic transactions in over a dozen Sub-Saharan markets (TechCabal, 2023). The platform's integration with ubiquitous mobile money schemes like M-Pesa, Orange Money, and MTN MoMo is particularly crucial, as it provides a bridge between the global digital economy and the local payment methods that are often the primary financial touchpoint for millions of consumers (GSMA, 2024). By navigating the complex web of local regulations and payment integrations, such platforms play a pivotal role in widening digital commerce corridors into and across the continent.

3. Data and Methodology

The data received encompasses both pay-in (collections from consumers) and pay-out (disbursements to users) transactions across 14 SSA markets. This paper, however, deliberately focuses its analysis exclusively on pay-in flows. This choice is made because pay-ins most directly capture consumer spending on goods and services from

² API stands for Application Programming Interface. It is a set of defined rules and protocols that allows different software applications to communicate with each other, acting as an intermediary to process data transfers between systems.

international merchants, a key facet of the digital economy that is central to this research.

The data is structured as a cross-tabulation aggregated by key dimensions including country, merchant, payment method, currency, and time period (monthly and quarterly), providing both transaction volumes and financial values in USD and local currencies. It includes traditional instruments like Visa and Mastercard, as well as locally prevalent methods such as mobile money. It is important to reiterate that this data is illustrative, not exhaustive. As it represents transactions processed through a single (albeit significant) payment platform, it reflects the activity of dLocal's specific portfolio of merchants and their consumer bases, rather than the entire national payment landscape. The conclusions drawn are therefore not about absolute market sizes but about the behaviours and relative preferences of a distinct and growing user base engaging with global online merchants. However, the data's high frequency and granularity offer significant value in uncovering specific trends, market dynamics, and behavioural responses that are often unobservable in national-level statistics (Einav & Levin, 2014).

To prepare the data for analysis, several processing steps were undertaken. Given the diverse and global nature of the merchants, a consistent classification into standardized merchant categories (e.g., E-commerce, Entertainment, Financial Services) was required. This was achieved through a machine-learning-assisted process, leveraging a large language model to research each merchant and assign it to a relevant category, ensuring a scalable and uniform classification system. Furthermore, standard data cleaning procedures were applied, including the removal of negative transaction values (likely representing refunds) and the trimming of extreme outliers at the 0.001% level to ensure the analysis is robust to data entry errors. The resulting analytical dataset comprises over 170,000 rows of aggregated pay-in transaction data. The analytical methodology is primarily descriptive and comparative, focusing on identifying and interpreting trends in payment volumes and values. A key component of the analysis involves correlating these observed trends with documented external events, such as regulatory changes or episodes of political unrest, to demonstrate the capacity of high-frequency data to serve as a real-time economic indicator.

4. Summary Statistics and Country Focus

An overview of transaction metrics across the dLocal platform reveals a cross-border payment landscape in SSA characterised by dynamic but highly concentrated growth. The data in **Table 1** summarizes key metrics, providing the empirical basis for the paper's strategic focus.

The growth figures point to a rapidly expanding market for the platform's services. South Africa, the most established market in the sample, demonstrates impressive YoY growth of 125%, indicating that even mature markets have significant capacity for further digital payment adoption. Smaller, emerging corridors on the platform show even more dramatic growth trajectories; Ghana, for example, exhibits a YoY growth rate of 891%. While the astronomical growth figures for countries like Zambia and Cameroon reflect a very low initial base, the overall trend is one of robust expansion. The 'Recent Growth Momentum' metric, which compares the last six months to the historical average, suggests this growth is not only strong but also accelerating in many

markets, including South Africa (56%) and Nigeria (32%).

This growth, however, is not evenly distributed. As visualised in the choropleth map in **Figure 1**, transaction values are heavily concentrated in a few key economic hubs. This concentration guides the analytical focus of this paper, which centres on **South Africa, Nigeria, and Kenya**, for three primary reasons:

1. **Materiality:** These three countries collectively account for over 97% of the total transaction value processed on the platform within this sample. South Africa is the dominant market (78.16%), followed by Nigeria (17.14%) and Kenya (1.73%). Focusing on these markets ensures the analysis is grounded in the most economically significant corridors.
2. **Market diversity:** The top three countries exhibit a more diversified merchant landscape, as proxied by the number of unique merchants. Nigeria (58 merchants) and South Africa (44 merchants) have the most varied merchant portfolios, followed by Kenya (20). This provides a richer basis for analysing trends across different sectors, whereas the single-digit merchant counts in other nations would limit the scope of such analysis.
3. **Comparative regional analysis:** Selecting these three nations allows for a compelling comparative study of SSA's key regional economic hubs and their distinct payment system archetypes. This approach enables a nuanced analysis that moves beyond a monolithic view of the continent, providing insights into the heterogeneous development paths of its most important digital economies.

Table 1: Summary of Key Pay-in Metrics by Country

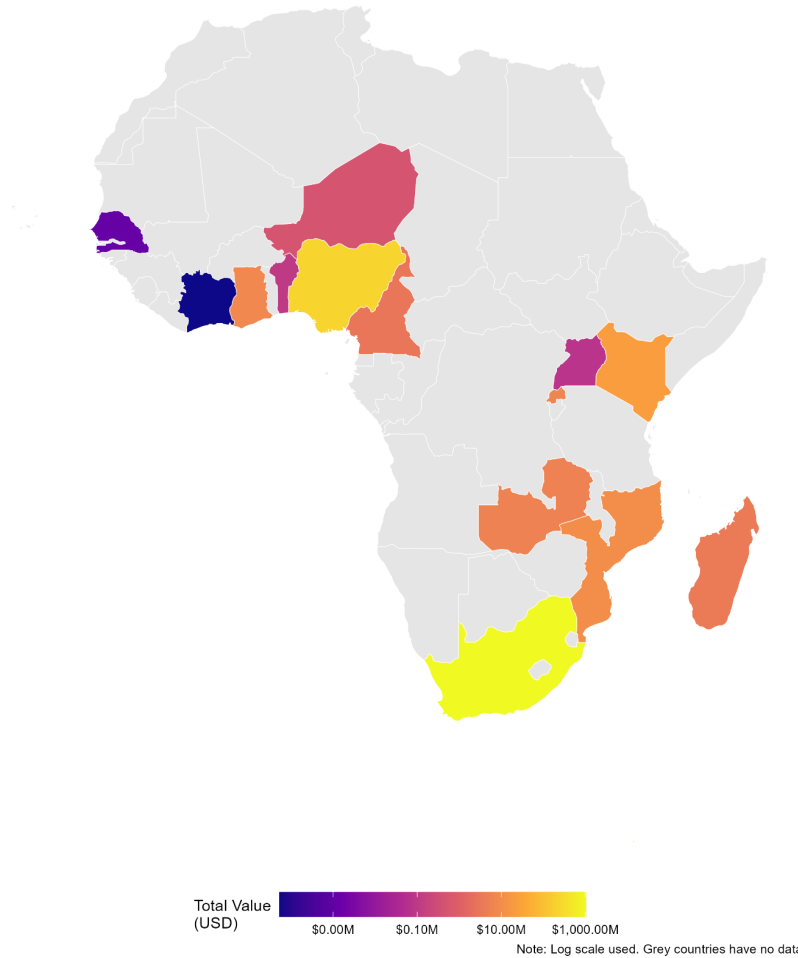
Country Name	Total Value (USD, 12m)	Share of Total Value (%)	Avg. YoY Growth (%) ¹	Recent Growth Momentum (%) ²	Unique Merchants
South Africa	1,022,468,162	78.16	124.96	56.31	44
Nigeria	224,234,781	17.14	30.26	32.47	58
Kenya	22,643,478	1.73	96.00	30.73	20
Mozambique	10,331,322	0.78	57.59	11.43	2
Ghana	7,440,095	0.56	891.13	244.05	7
Rwanda	6,539,301	0.50	119.43	34.31	2
Zambia	5,433,069	0.41	164,342,938.50	145.58	2
Madagascar	3,782,986	0.28	NA	54.22	2
Cameroon	3,050,544	0.23	1,919,659.93	56.04	3

¹ Average Year-over-Year Growth compares the same months across different years (e.g., Jan 2024 vs Jan 2023) to eliminate seasonal effects.

² Recent Growth Momentum compares the average growth rate of the most recent 6-month period to the overall historical average (excluding the recent period) to indicate acceleration or deceleration.

Figure 1: Cross-Border Payment Values in Africa

Total USD value in the last 12 months (May 2024-April 2025)



5. Key Insights from Granular Payments Data

The granular, high-frequency nature of the dLocal dataset allows for a deep and timely analysis of payment behaviours that would be impossible with traditional, aggregated statistics. This section delves into the empirical findings, focusing first on the distinct payment method preferences across the three focus countries and how these evolve over time. It then examines the structure of consumer spending by analysing the market share of different merchant categories. Together, these analyses provide a textured view of the digital economic activity occurring on the platform.

5.1. Revealing Nuanced Payment Preferences

An analysis of the payment method mix by transaction value, as shown in the static snapshot for April 2025

(**Figure 2**), reveals deeply embedded structural differences in the illustrative payment ecosystems of Kenya, Nigeria, and South Africa. This is further illuminated by the time-series data in **Figure 3**, which illustrates the dynamic evolution of these preferences over the 18-month observation period.

South Africa exemplifies a mature, bank-led payment system. As seen in Figure 2, the market on the dLocal platform is overwhelmingly dominated by card payments, with Debit and Credit Cards together constituting the vast majority of transaction value. Figure 3 reinforces this, showing the market share of credit cards remaining remarkably stable at over 20% throughout the period. This stability is characteristic of a mature market with entrenched consumer habits and a well-developed card infrastructure, creating a degree of path dependency that slows the adoption of alternative payment methods (PASA, 2023).

Kenya's market is the archetypal mobile-first economy. Figure 2 shows that Digital Wallets (mobile money) are the unequivocal leader, accounting for approximately 60% of transaction value on the dLocal platform. This aligns with extensive research highlighting how mobile money has become deeply integrated into Kenya's daily economic life, serving as a primary financial interface for a large segment of the population (Jack & Suri, 2014; GSMA, 2024). The time-series data in Figure 3 highlights both the dominance and the sensitivity of this method. While consistently leading, its market share experienced a sharp dip from ~60% to below 40% in mid-2024. This drop, explored in detail in Section 6, directly correlates with public debate over proposed tax hikes, demonstrating how high-frequency platform data can detect immediate consumer reactions to policy uncertainty.

Nigeria presents the most dynamic and hybrid ecosystem of the three. While bank-led payments are significant, the most compelling story in Figure 3 is the evolution of Digital Wallets and Bank Transfers. The share of Bank Transfers is both significant and highly volatile, peaking at over 20%, which reflects the systemic importance and widespread use of the NIBSS Instant Payments (NIP) system for commerce (NIBSS, 2024). Simultaneously, the Digital Wallet category exhibits a classic technology adoption S-curve, rising from a low base to nearly 20% by the end of the period. External benchmarks are consistent: according to the Worldpay Global Payments Report 2025, digital wallets accounted for 19% of Nigerian e-commerce transaction value in 2024 (Worldpay/FIS, 2025). This dual strength suggests a market in rapid transition, where a robust real-time bank transfer network coexists with a burgeoning and competitive fintech scene driving wallet adoption. This finding aligns with reports highlighting Nigeria as a major hub for fintech investment and innovation in Africa (Briter Bridges, 2023).

The time-series data also reveals an interesting cross-cutting trend in the **Debit Card** category. While the absolute market share differs by country, the trend lines for debit cards in Figure 3 are relatively stable and less volatile compared to other methods like bank transfers in Nigeria or digital wallets in Kenya. This suggests that debit cards may serve as a foundational, baseline digital payment instrument for online consumption across these diverse markets, even as more specialized or locally dominant methods capture specific segments of the market or experience more dynamic shifts.

Figure 2: Payment Method Mix Comparison - April 2025

Payment Method Mix Comparison - April 2025

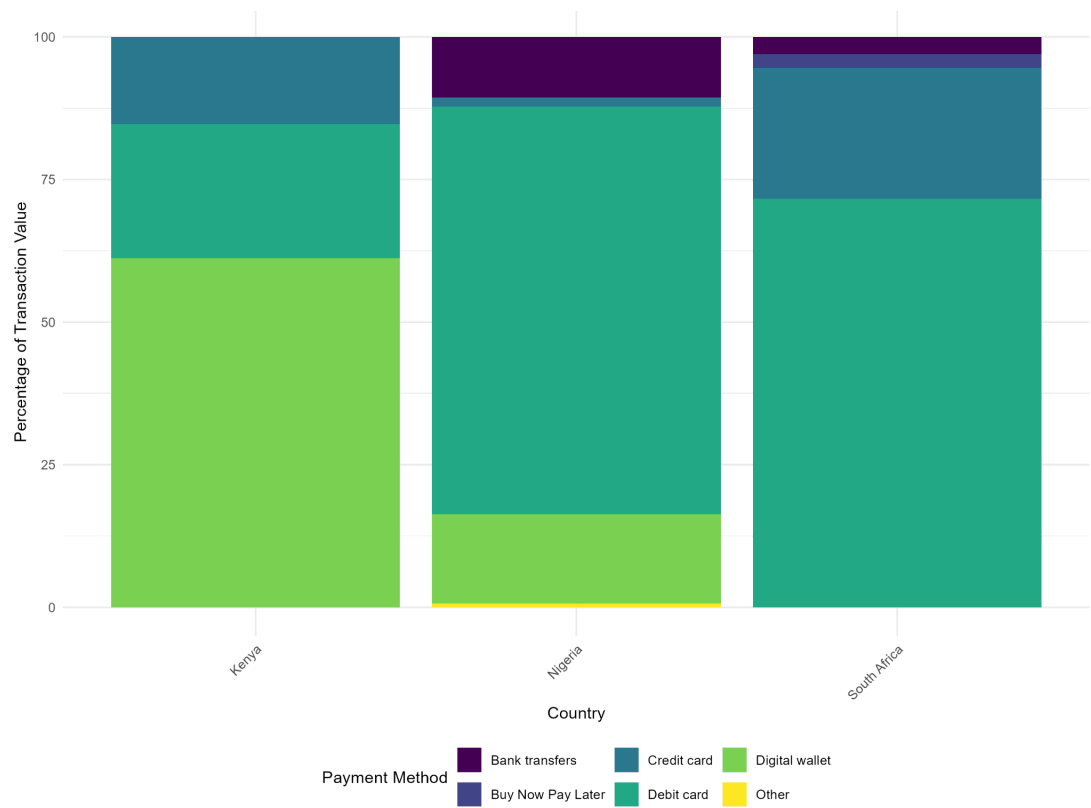
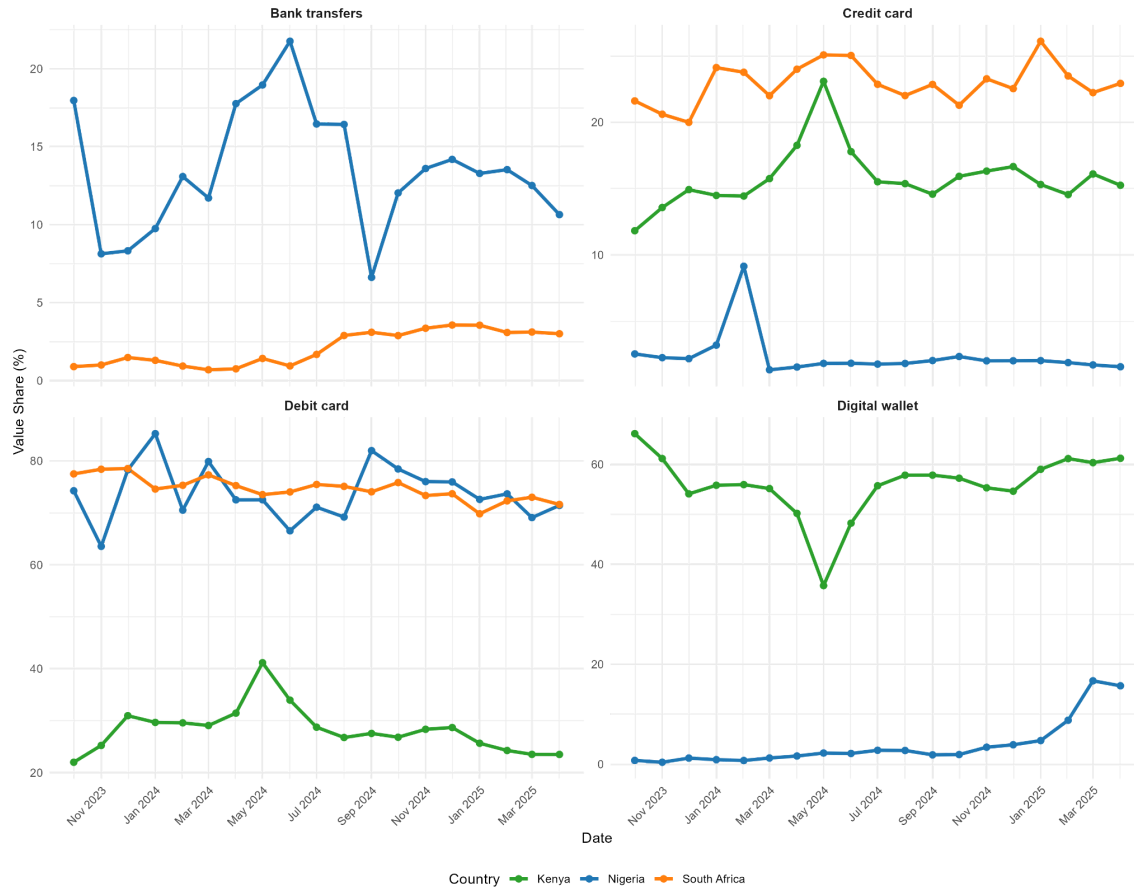


Figure 3: Comparison of Key Payment Method Trends

Value share (%) for Digital Wallets, Cards and Bank Transfers



5.2. Analysis of Average Transaction Values

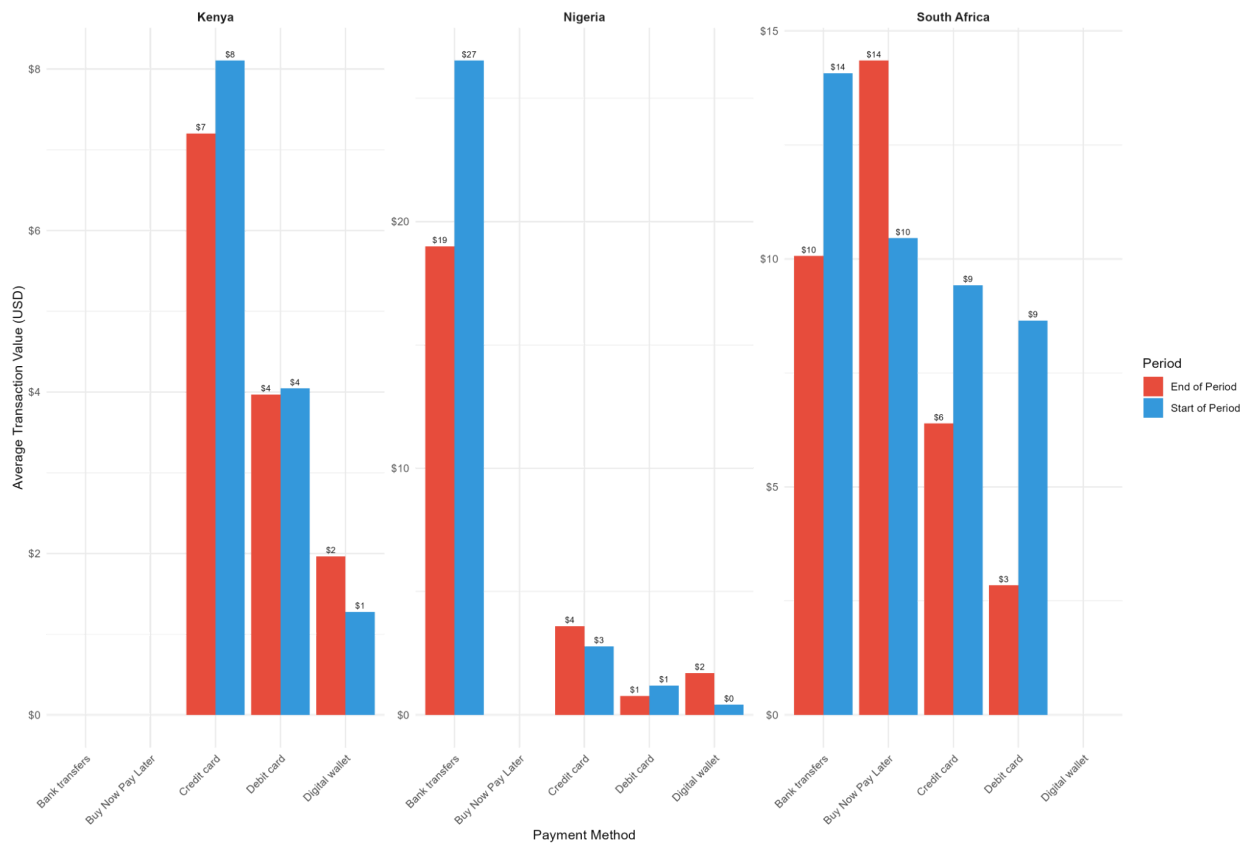
Figure 4 complements the market share analysis by examining the average transaction value (ATV) for key payment methods, comparing the start (November 2023) and end (April 2025) of the observation period. This metric offers crucial insights into the evolving economic use-cases for different payment instruments. Across all three markets, the observed payment methods conform to distinct economic roles, largely consistent with established literature on payment choice. Methods such as Bank Transfers and Buy Now, Pay Later (BNPL) consistently exhibit the highest ATVs. This is expected, as these instruments are typically used for larger, less frequent purchases, such as high-value e-commerce or installment-based financing for consumer goods (McKinsey & Company, 2022). Conversely, the low ATV for Digital Wallets in Kenya (around \$1.50-\$2.00) is a hallmark of a mature mobile money market where the instrument is deeply integrated into daily life for

micro-transactions, such as transport fares, small vendor payments, and bill payments, effectively serving the "long tail" of the economy (Jack & Suri, 2014). This pattern of low-value, high-frequency use is a key factor in driving financial inclusion among populations that may have been excluded from the formal banking system.

The changes in ATV over the 18-month period reveal market-specific dynamics. In **Kenya**, the most notable change is the decrease in the ATV for Digital Wallets from approximately \$2.00 to \$1.50. This trend likely reflects two concurrent phenomena. Structurally, as the mobile money ecosystem matures and the base of both users and accepted merchants broadens, the payment method is increasingly used for smaller, everyday micro-transactions, which naturally lowers the average value. Superimposed on this long-term trend is the acute behavioural response to the proposed 2024 Finance Bill; the sharpness of the decline observed during this period supports the hypothesis that consumers also reacted to anticipated tax hikes by shifting to smaller-value transactions to minimize fee impacts (explored in Section 6). In **Nigeria**, there was a dramatic increase in the ATV for Bank Transfers, which grew from roughly \$20 to over \$27. This pattern aligns with the broader trend observed in NIBSS Instant Payments (NIP), where both transaction volumes and values surged in 2023–24, suggesting that higher-ticket commerce is increasingly migrating to real-time transfers (BusinessDay, 2024). This suggests growing trust and adoption of the NIP system for higher-value commerce, moving beyond its initial P2P use-cases. In **South Africa**, while instruments like Bank Transfers and BNPL command high ATVs, most methods, including credit and debit cards, experienced a modest decline in average value. This may be indicative of two overlapping forces: first, macroeconomic headwinds that constrained discretionary spending power in 2024–25 (South African Reserve Bank 2024); and second, the broadening use of cards for more routine, lower-ticket online purchases, as suggested by merchant studies showing universal acceptance of cards but rising consumer adoption of alternative low-cost payment channels (World Wide Worx, 2025). Overall, the evolution of ATVs illustrates that, beyond market share, the *way* in which consumers use each payment method is highly dynamic and sensitive to both policy signals and economic conditions.

Figure 4: Average Transaction Values for Different Payment Methods

Average Transaction Values: Start vs End of Period by Country



5.3. Analysis of Digital Consumption Patterns by Merchant Category

An analysis of spending across merchant categories provides a granular view into the structure of the digital economies in Kenya, Nigeria, and South Africa. It is important to emphasise that these figures reflect activity on the dLocal platform and therefore illustrate the consumption patterns of its specific user base and merchant portfolio, and not the full national digital economy. Still, they yield valuable insights into archetypal trajectories of digital commerce. The ability for consumers across these markets to seamlessly pay for services ranging from Corporate & B2B SaaS to Education & Professional Development highlights a key impact of integrated payment platforms: they expand access to a global marketplace of tools for productivity and learning, translating digital inclusion into tangible economic participation. At a macroeconomic level, the adoption of digital services is a significant driver of economic growth, creating new markets and boosting productivity across various sectors of the economy (Hjort & Poulsen, 2019; Myovella et al., 2020).

The market share snapshot in **Figure 5**, combined with the time-series data in **Figure 6**, allows for a rigorous

cross-country comparison of both the scale and nature of digital commerce on the platform. The absolute levels of monthly spending differ dramatically, with **South Africa's** leading category fluctuating between approximately \$30M and \$90M USD, an order of magnitude higher than the leading categories in **Nigeria** (~\$5M-\$15M) and **Kenya** (~\$0.5M-\$1.2M). This underscores the vast differences in market size for the types of cross-border digital commerce captured by the platform. Beyond scale, the market structures are fundamentally different, revealing different stages of digital maturation:

- **South Africa's** spending profile reflects a scaled e-commerce market. The volatility seen in Figure 6 for the 'E-commerce & Online Marketplaces' category, with its significant peaks and troughs, is characteristic of a mature retail market, likely reflecting seasonality, major sales events (e.g., Black Friday), and sensitivity to broader macroeconomic trends affecting high-value consumer spending.
- **Nigeria's** profile is one of dynamic diversification. While Figure 5 shows a concentration in 'Entertainment & Streaming Services' on dLocal, the temporal data in Figure 6 reveals 'E-commerce & Online Marketplaces' on a strong upward trajectory. This transition from digital content consumption towards online retail signifies a broadening and maturing of Nigeria's digital economy.
- **Kenya** is distinct in that its digital spending on dLocal is heavily anchored by 'Telecoms, Internet & VPNs'. Figure 6 reinforces the findings from Figure 5, showing this consumption category on a powerful and steady upward trend that far outpaces other sectors.

This case of high spending on connectivity in **Kenya** warrants a closer look, as it demonstrates how platform data can capture nuanced responses to both market and political events. The spending surge that began in mid-2023 and peaked in mid-2024 was driven by several concurrent factors. On the supply side, the entry of new internet service providers like Starlink expanded connectivity options, while dLocal obtaining its Central Bank of Kenya license in May 2023 made it easier for global merchants to accept local payments, boosting usage (Connecting Africa, 2025; Electronic Payments International, 2023). On the demand side, concerns over internet freedom, fueled by events like the temporary blocking of Telegram in November 2023, encouraged proactive VPN adoption. This demand was acutely amplified during the June 2024 Finance Bill protests, when internet disruptions led to a reported surge in VPN use to maintain access to information (Media Council of Kenya, 2024). The high-frequency spending data captures the financial footprint of this complex interplay between market innovation and citizens' assertions of their digital rights.

Figure 5: Market Share of Merchant Categories

Percentage of total transaction value (categories with ≥1% share)

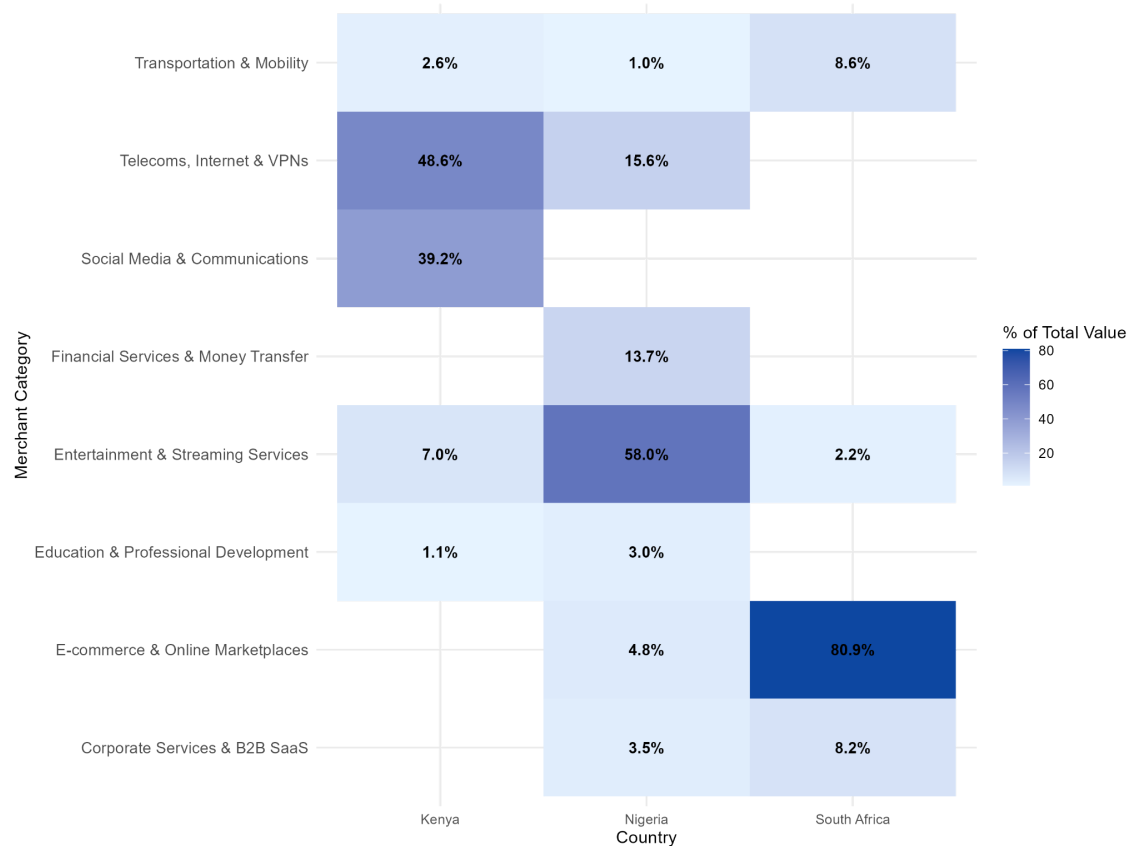
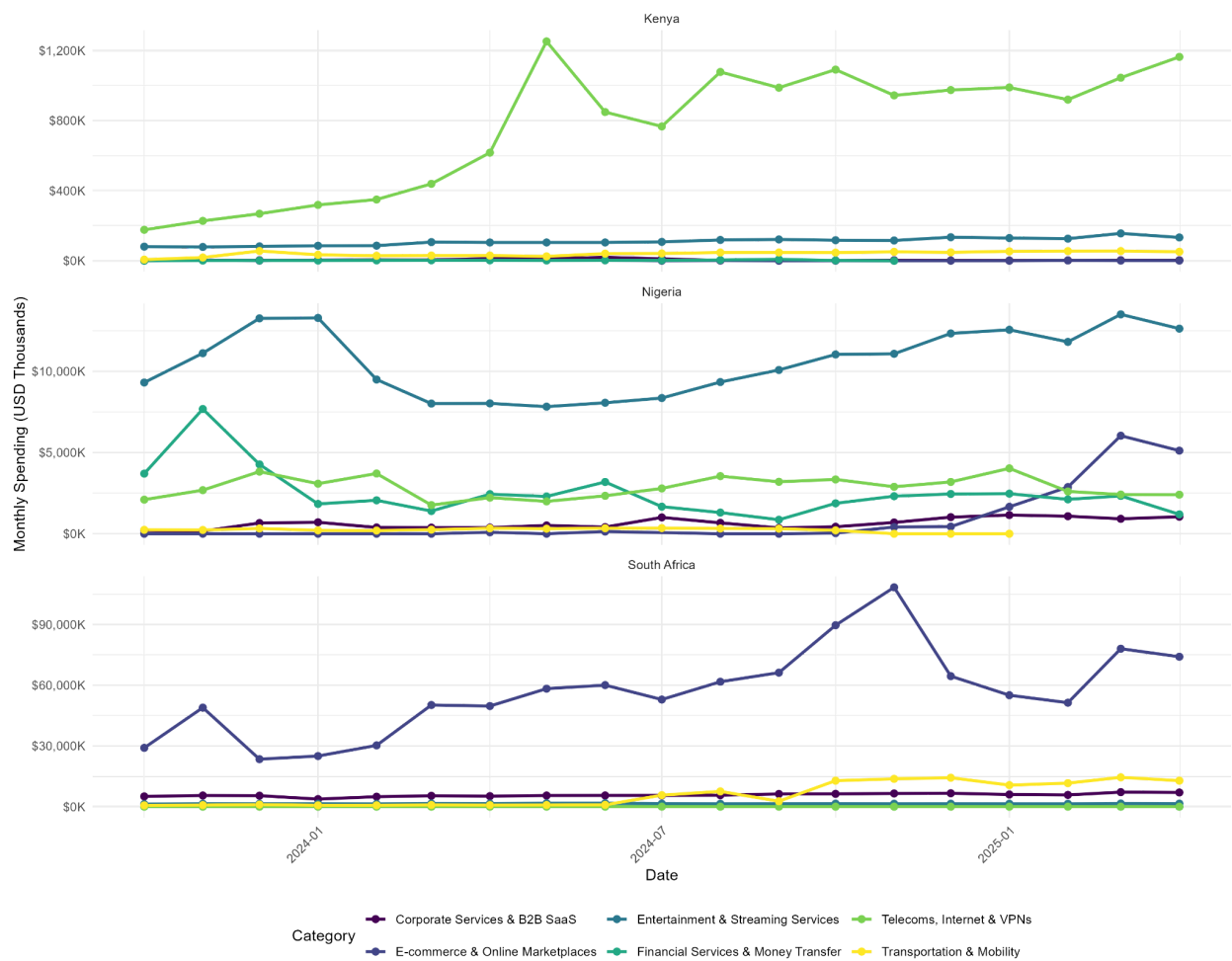


Figure 6: Monthly Spending Trends by Category

Top 6 categories by total value across all three countries



6. Real-Time Event Impact Analysis: The Kenyan Mobile Wallet Case Study

The period surrounding the introduction and debate of Kenya’s Finance Bill 2024 provides a compelling case study of how high-frequency payment data can reveal the immediate impact of fiscal policy proposals and socio-political responses on a digital economy. By synthesizing data on payment method shares, transaction values, and merchant category spending, we can construct a detailed narrative of consumer reactions that would be difficult to observe using traditional, lower-frequency data sources.

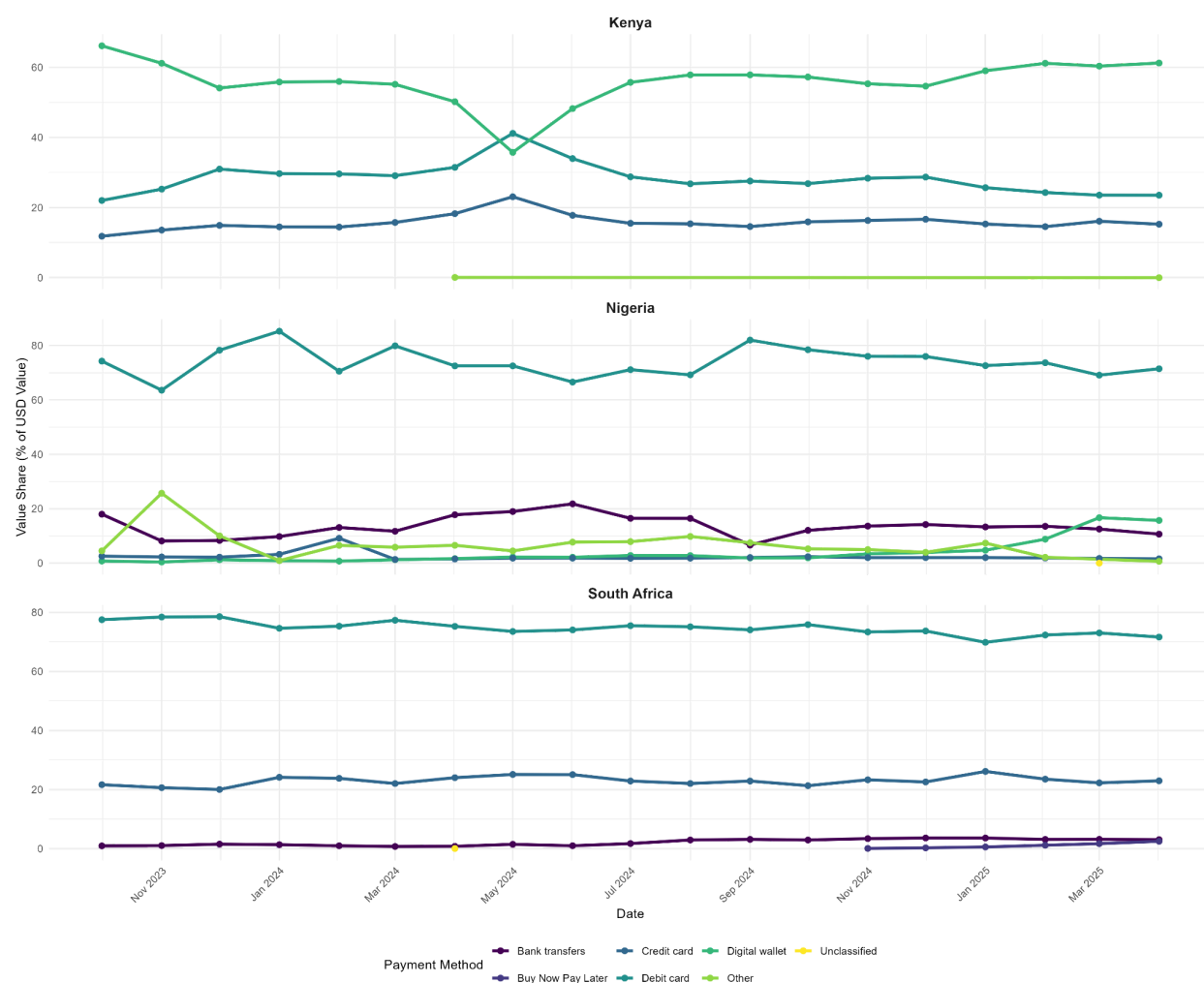
The central event was the government's proposal in May 2024 to increase the excise duty on mobile money transfer fees from 15% to 20% (BBC News, 2024). This proposal immediately triggered significant public concern over rising transaction costs for what has become an essential financial service in Kenya. The dLocal data allows us to observe the clear economic footprint of this "anticipatory anxiety." As shown in Figure 7, the value share of Digital Wallets began a steep decline in May, falling from a dominant position of approximately 60% to a low of nearly 40% by July. This demonstrates a rapid and significant behavioural response, occurring well before the tax could have been implemented.

Two other data points corroborate and enrich this finding. First, **Figure 4** shows that the average transaction value (ATV) for Digital Wallets in Kenya fell during this period. This supports the hypothesis that consumers were not abandoning mobile money entirely, but were rather adapting their usage. They likely shifted higher-value transactions to other methods or fragmented them into smaller amounts to minimize the impact of anticipated percentage-based fee increases, while continuing to use mobile money for essential, low-value payments. Second, **Figure 6** shows a concurrent spike in spending within the 'Telecoms, Internet & VPNs' category. This surge aligns directly with the timeline of the widespread anti-Finance Bill protests in June, which were accompanied by internet disruptions and heightened fears of censorship (KICTANet, 2024). The spending reflects a proactive move by consumers to secure their means of communication and information access through VPNs and other services (Media Council of Kenya, 2024).

The subsequent reversal of the proposed tax on mobile money fees in late June 2024, following intense public pressure (Reuters, 2024), provides a natural experiment. As seen in **Figure 7**, the value share of Digital Wallets began to recover almost immediately, rebounding through the latter half of 2024. This rapid recovery underscores both the systemic importance of mobile money and the high elasticity of consumer behaviour to fiscal policy signals. This episode powerfully illustrates the value of granular platform data as a real-time barometer of public sentiment and economic behaviour, capturing nuances of adaptation, resilience, and digital agency that are invisible in aggregated annual or quarterly statistics.

Figure 7: Payment Method Value Share Evolution By Country

Percentage of transaction value over time



7. Contribution and Policy Relevance

This paper offers two primary contributions to the discourse on cross-border payments in Sub-Saharan Africa. Methodologically, it demonstrates the significant analytical value of using high-frequency, proprietary data from payment platforms as a complement to traditional economic statistics. Such data provides a real-time, ground-level perspective that can illuminate the immediate behavioural impacts of policy changes and other external shocks, as vividly illustrated by the Kenyan case study. This approach allows for a more dynamic and responsive form of policy analysis than is possible with lower-frequency official data alone.

Substantively, the empirical findings of this paper carry several important policy implications for stakeholders seeking to foster a more integrated and resilient digital economy in SSA:

- **Navigating path dependency and policy design:** Payment preferences in each market reflect distinct technological and institutional trajectories: South Africa's card-centric system, Kenya's mobile-money ecosystem, and Nigeria's hybrid of instant transfers and wallets. A one-size-fits-all approach to regulation – whether in licensing, interoperability, or taxation – risks being ineffective or even harmful. Instead, policy should reinforce the strengths of each system: ensuring that cards in South Africa remain competitive and open to innovation; recognising mobile money in Kenya as critical national infrastructure central to inclusion; and managing competition and interoperability in Nigeria so that instant transfers and fintech wallets develop on a level playing field.
- **Segmenting regulation by transaction size and rail:** The data highlights distinct roles for different instruments: wallets in Kenya support micro-payments, transfers and BNPL are used for high-ticket purchases, and Nigerian transfers are increasingly shifting into higher-value commerce. These differences suggest that consumer-protection frameworks should be proportionate: robust dispute-resolution and fraud safeguards for high-value instant transfers, and simplified fee disclosures or low-value protections for micro-payments. Tailoring oversight to actual usage patterns improves both efficiency and consumer trust.
- **Consumer responsiveness and policy uncertainty:** The Kenyan case study demonstrates how quickly consumers adjust to perceived risks. The announcement of a potential tax on mobile-money fees was sufficient to depress wallet usage and fragment transactions in a critical segment of the financial system. This illustrates the real economic costs of policy uncertainty and highlights the importance of clear, consultative, and predictable policymaking, particularly where it touches essential services in the digital economy. Consumers behave as rational, responsive actors, and their collective reactions can produce immediate macroeconomic consequences.

By connecting global merchants with locally preferred payment methods, platforms like dLocal not only facilitate digital commerce but also generate invaluable data that can enhance market intelligence. For G20 members and SSA governments, fostering public-private partnerships to ethically leverage such data can lead to more effective, evidence-based policymaking that better reflects the lived economic realities of consumers and businesses across the continent.

8. Conclusion

This paper has demonstrated the analytical power of leveraging high-frequency, proprietary data from a cross-border payment platform to decode the complex and rapidly evolving digital economies of Sub-Saharan Africa. By moving beyond aggregated national statistics, we have uncovered the distinct payment archetypes of Kenya, Nigeria, and South Africa, revealing deep structural differences in how consumers in these key markets interact with the global digital economy. The analysis of payment methods shows not just static preference but dynamic evolution, from the maturation of Kenya's mobile money ecosystem to the rise of a hybrid

bank-transfer and digital-wallet model in Nigeria and the stability of South Africa's card-based system.

Furthermore, the data provides a real-time lens on economic behaviour. As the case study of Kenya vividly illustrated, platform data can capture the immediate financial footprint of major external events, showing how anticipatory reactions to fiscal policy and assertive responses to internet disruptions translate directly into measurable shifts in transaction values and spending patterns. This capability to observe and quantify such nuances in near real-time represents a significant step forward in understanding economic sentiment and behaviour in emerging markets.

Ultimately, this research underscores a dual contribution. Methodologically, it presents a compelling case for the use of new, "organic" data sources to complement traditional economic analysis, offering a model for public-private data collaboration. Substantively, it provides actionable intelligence for policymakers. The findings highlight the futility of a one-size-fits-all approach to financial regulation in SSA and emphasize the need for policies tailored to the unique infrastructural and behavioural realities of each market. For businesses and investors, the data offers a granular map of where digital consumption is growing and what services consumers value most. As SSA's digital transformation continues to accelerate, harnessing the insights from the data it generates will be essential for crafting the effective, evidence-based strategies needed to foster inclusive and sustainable growth across the continent.

References

- Aker, J. C., & Mbiti, I. M. (2010). Mobile Phones and Economic Development in Africa. *Journal of Economic Perspectives*, 24(3), 207–232.
- BBC News. (2024, June 18). *Kenya finance bill 2024: Bread and other tax proposals axed amid public outcry*. Available at: <https://www.bbc.co.uk/news/articles/ce77ld43lngo>
- Briter Bridges. (2023). *Africa Investment Report 2023*. Available at: <https://www.scribd.com/document/705921920/BriterBridges-AfricaInvestmentReport-2023-Uncompressed>
- BusinessDay 2025. *Real-time payment transactions to hit 19.7 billion by 2028 — Report*. Available at: <https://businessday.ng/technology/article/real-time-payment-transactions-to-hit-19-7-billion-by-2028-report/>
- Connecting Africa. (2025, Jan 28). *Starlink doubles market share in Kenya, launches ground station*. Available at: <https://www.connectingafrica.com/connectivity/starlink-doubles-market-share-in-kenya-launches-ground-station>
- dLocal. (2024). *Annual Report for the fiscal year ended December 31, 2023 (Form 20-F)*. U.S. Securities and Exchange Commission. Available at: <https://www.sec.gov/Archives/edgar/data/1846832/000095017025058197/dlo-20241231.htm>
- Einav, L., & Levin, J. (2014). The Data Revolution and Economic Analysis. In J. P. Poterba (Ed.), *Innovation Policy and the Economy, Volume 14* (pp. 1–24). University of Chicago Press.
- Electronic Payments International (2023, May 2025). dLocal expands African footprint, granted payment service licences for Kenya and Rwanda. Available at: <https://www.electronicpaymentsinternational.com/news/dlocal-expands-african-footprint-granted-payment-service-licences-in-kenya-rwanda/#:~:text=Payments%20platform%20dLocal%20has%20been,fuel%20growth%20in%20the%20regionm>
- GSMA. (2024). *State of the Industry Report on Mobile Money 2024*. London: GSMA. Available at: <https://www.gsma.com/mobilemoneymatrix/wp-content/uploads/2024/03/GSMA-State-of-the-Industry-Report-on-Mobile-Money-2024.pdf>
- Hjort, J., & Poulsen, J. (2019). The Arrival of Fast Internet and Employment in Africa. *American Economic Review*, 109(3), 1032-79.
- Jack, W., & Suri, T. (2014). Risk Sharing and Transactions Costs: Evidence from Kenya's Mobile Money Revolution. *American Economic Review*, 104(1), 183-223.
- KICTANet. (2024, June 26). *Kenya's Internet Disrupted During Protests: A Violation of Human Rights*.

Available at:

<https://www.kictanet.or.ke/kenyas-internet-disrupted-during-protests-a-violation-of-human-rights/>

McKinsey & Company. (2022). *The future of payments in Africa*. Available at:

<https://www.mckinsey.com/industries/financial-services/our-insights/the-future-of-payments-in-africa>

Media Council of Kenya. (2024). *Report on Online Mobilisation of Anti-Government Protests in Kenya*.

Available at: <https://mediacouncil.or.ke/sites/default/files/downloads/Online%20Mobilisation%20Report.pdf>

Myovella, G., Karacuka, M., & Haucap, J. (2020). Digitalization and economic growth: A comparative analysis of Sub-Saharan Africa and OECD economies. *Telecommunications Policy*, 44(2), 101856.

NIBSS. (2024). *NIBSS Instant Payments (NIP) - 2023 Annual Report*. Nigeria Inter-Bank Settlement System Plc.

PASA. (2023). *Annual Report 2023*. Payments Association of South Africa. Available at:

https://pasa.org.za/wp-content/uploads/2024/07/PASA-IR-2024_FINAL_COMPRESSED.pdf

Reuters. (2024, June 26). *Kenya's Ruto scraps tax bill after deadly protests*. Available at:

<https://www.reuters.com/world/africa/kenyan-president-ruto-says-he-will-not-sign-finance-bill-into-law-2024-06-26/>

South African Reserve Bank (2024). *Quarterly Bulletin - December 2024*. Available at:

<https://www.resbank.co.za/en/home/publications/publication-detail-pages/quarterly-bulletins/quarterly-bulletin-publications/2024/december>

TechCabal. (2023, May 23). *dLocal secures payment service licence for Kenya and Rwanda*. Available at:

<https://techcabal.com/2023/05/23/dlocal-secures-rwanda-and-kenya/>

World Bank. (2023). *Digital Africa: Technological Transformation for Jobs*. Washington, DC: World Bank.

World Wide Worx. 2025. *Online Retail in South Africa 2025*. Available at:

<https://www.peachpayments.com/hubfs/Online%20Retail%20in%20South%20Africa%202025%20FD.pdf>

Worldpay/FIS. (2025). *Global Payments Report 2025*. Available at:

<https://www.worldpay.com/en/insights/articles/gpr-2025-released>