

Duopolistic Compensation: A Comparative Analysis of MTN and Airtel Digital Credit Portfolios in Uganda's Expanding Borrower Market

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Abstract.

Uganda's digital credit market is dominated by two mobile network operators — MTN Uganda (MoMo Loans) and Airtel Uganda (Okoa) — whose overlapping yet structurally differentiated loan portfolios collectively serve more than 1.3 million active borrowers. This mixed-methods study examined the composition, uptake determinants, and default risk profiles of digital loan portfolios offered by these two providers, using data collected from 1,240 active borrowers across five districts in the Greater Kampala Metropolitan Area and a purposive sub-sample of 60 in-depth interview respondents. Univariate analyses revealed that borrowers were predominantly male (57.0%), aged between 26 and 35 years (33.8%), and earned monthly incomes in the range of 200,000 to 499,999 UGX (38.9%). MTN borrowers maintained significantly higher mean loan values (87,400 UGX vs. 74,800 UGX, $p < 0.001$) and longer repayment periods compared to Airtel borrowers, while Airtel borrowers recorded higher mean interest rates (14.1% vs. 12.3%, $p < 0.001$). Bivariate analysis identified statistically significant differences in agricultural loan uptake ($\chi^2 = 5.28$, $p = 0.038$), repeat borrowing prevalence (OR = 1.28, 95% CI: 1.01–1.62, $p = 0.048$), and mean loan values. Multilevel logistic regression modelling, accounting for district-level clustering (ICC = 0.143), revealed that low income (Q1 AOR = 4.39, $p < 0.001$), loan stacking (AOR = 2.32, $p < 0.001$), and provider type — Airtel versus MTN (AOR = 1.36, $p = 0.026$) — were independent predictors of default. Qualitative analysis identified five dominant themes: accessibility, trust and reliability, financial burden, regulatory awareness, and provider preference, which contextualised and explained the quantitative findings. The study concluded that the two providers serve differentiated but overlapping borrower segments, and that systemic regulatory reform, improved borrower financial literacy, and product redesign are urgently needed to mitigate growing household debt burdens in Uganda's digital credit ecosystem.

Keywords: digital credit, mobile money, MTN MoMo, Airtel Okoa, Uganda, duopoly, loan default, multilevel modelling, fintech.

Introduction

The proliferation of mobile money platforms across sub-Saharan Africa has fundamentally restructured financial inclusion landscapes in economies long underserved by formal banking institutions (Omodero & Ekundayo, 2025; Pashkov & Pashkova, 2022; Shair et al., 2024). In Uganda, where formal bank account ownership remains below 30 percent of the adult population, mobile network operators have emerged as de facto credit intermediaries, originating billions of Uganda shillings in microloans annually through USSD-based and application-driven platforms requiring no collateral, no physical branch visit, and minimal documentation. This transformation is epitomised by two competing yet complementary ecosystems (Adugna, 2024; Aracil et al., 2025; Lagna & Ravishankar, 2022; Rowan et al., 2020): MTN Uganda's MoMo Loans — anchored in the country's largest mobile subscriber base of over 17 million

users — and Airtel Uganda's Okoa service, which leverages an expanding rural and peri-urban footprint to penetrate communities historically excluded from formal finance (Ariyo & Kazaara, 2024b; Kazaara, 2024). The resultant market configuration approximates a classic duopoly, in which two dominant providers simultaneously compete for market share while together shaping the norms, pricing structures, and product architectures that define digital credit access in Uganda (Ariyo & Kazaara, 2024a; Paul & Gracious Kazaara, 2023; Suzan & Gracious Kazaara, 2023). This study was motivated by the recognition that despite the rapid growth of this duopolistic credit market, rigorous empirical evidence comparing the portfolio composition, borrower demographics, product uptake patterns, and default risk profiles of these two providers remains conspicuously absent. Understanding the mechanisms through which a duopolistic market structure produces differentiated — yet potentially inequitable — compensation outcomes for borrowers is not only academically important but carries direct policy relevance for regulators, consumer protection advocates, and development finance actors operating within Uganda's evolving financial sector (Halimah & Gracious Kazaara, 2024; Julius & Gracious Kazaara, 2025b; Kazaara & Christopher, 2023). Against this backdrop, the present study undertook a comparative analysis of MTN and Airtel digital credit portfolios, integrating quantitative survey data with qualitative interview narratives to generate a comprehensive empirical portrait of Uganda's expanding digital borrower market.

Background of the Study

Uganda's mobile money ecosystem traces its origins to the launch of MTN Mobile Money in 2009, an event widely credited with catalysing a broader financial inclusion revolution across East Africa. Since that landmark introduction, the platform's credit functionalities — formally commercialised under the MoMo Loans brand in partnership with digital lending fintech partners — have grown exponentially, processing millions of loan transactions monthly and contributing to a cumulative disbursement portfolio estimated at over UGX 1.2 trillion as of 2023 (Ariyo et al., 2024; Asif et al., 2023; Murinde et al., 2022; Richard et al., 2024). Airtel Uganda's entry into the digital credit space through Okoa — Swahili for 'save' or 'rescue' — offered borrowers an alternative pathway to instant liquidity, initially targeting emergency and consumption-smoothing needs before progressively extending into agricultural, educational, and business lending verticals (Julius & Godfrey, 2025; Julius & Gracious Kazaara, 2025a; Julius & Sula, 2025). The regulatory environment governing these platforms has evolved in parallel, with the Bank of Uganda's issuance of the Mobile Money Guidelines (2013) and the subsequent National Payment Systems Act (2020) establishing a supervisory framework that, while providing baseline protections, has been widely critiqued for insufficient consumer protection provisions, opaque interest rate disclosure requirements, and the absence of a centralised credit reference mechanism specifically encompassing mobile lenders. Empirical scholarship on digital credit in Uganda and the broader East African region has highlighted a paradox of access: while mobile credit platforms dramatically lower barriers to borrowing, they simultaneously expose financially fragile low-income households to persistent debt traps, high effective interest rates, and the psychosocial burdens associated with mobile-enforced debt collection practices. Studies conducted in Kenya — home to Africa's most mature mobile credit market through M-Shwari and Fuliza — have demonstrated that digital credit use correlates with increased household food insecurity among over-indebted

borrowers, a finding with direct transferability to the Ugandan context where income poverty and agricultural seasonality similarly constrain repayment capacity (Julius & Mategeko, 2025; Julius & Twinomujuni, 2025a). Yet comparative analyses examining how the specific architecture of competing providers' loan portfolios — their interest rate structures, loan tenure policies, eligibility algorithms, and sectoral targeting — produce divergent borrower outcomes within a single national market have remained rare (Coffie et al., 2021; Hornuf et al., 2025; Mackenzie & Njunwamukama, 2024; Nam & Lee, 2023). This study therefore situated itself within the interstice between fintech market analysis and development finance research, seeking to generate provider-specific evidence that can inform both corporate product design and national regulatory reform in Uganda.

Problem Statement

Despite the rapid expansion of digital credit services in Uganda, there exists a critical evidence gap regarding how the two dominant providers — MTN Uganda and Airtel Uganda — differ in their loan portfolio compositions, borrower risk profiles, and default determinants. Most existing literature treats mobile credit as a homogeneous category, obscuring the structural and outcome differences produced by distinct business models, pricing architectures, and targeting strategies operating within the same regulatory environment (Julius & Geoffrey, 2025; Julius & Twinomujuni, 2025b). Borrowers, particularly low-income and rural populations, frequently lack the information necessary to make informed provider choices, and regulators lack the comparative empirical data needed to design proportionate, evidence-based interventions. The consequence is a market in which rapid portfolio growth is accompanied by rising default rates, increasing household indebtedness, and documented incidences of loan stacking — where borrowers maintain simultaneous obligations across multiple providers. Without rigorous comparative evidence, neither corrective regulatory action nor borrower-protective product innovation is possible. This study therefore addressed the empirical void by systematically comparing MTN and Airtel digital credit portfolios using a mixed-methods design, generating findings directly applicable to policy reform, platform governance, and financial consumer protection in Uganda.

Study Objectives.

Main Objective

To comparatively analyse the digital credit portfolios of MTN Uganda and Airtel Uganda and determine the factors associated with borrower outcomes in Uganda's expanding digital credit market.

Specific Objectives

1. To characterise the sociodemographic profile and loan uptake patterns of MTN MoMo Loan and Airtel Okoa borrowers in the Greater Kampala Metropolitan Area.
2. To examine the bivariate associations between provider type, loan product characteristics, and borrower credit behaviour including repeat borrowing, loan stacking, and default history.

3. To identify the individual- and district-level determinants of digital loan default among MTN and Airtel borrowers using multilevel logistic regression modelling.

Research Questions.

1. What are the sociodemographic characteristics and loan uptake patterns of active borrowers in MTN MoMo Loans and Airtel Okoa digital credit platforms in Uganda?
2. How do loan product features, credit behaviour indicators, and borrower financial outcomes differ significantly between MTN and Airtel digital credit users?
3. What individual-level and contextual (district-level) factors independently predict the probability of digital loan default among borrowers on both platforms?

Methodology.

This study employed a convergent parallel mixed-methods design in which quantitative and qualitative data were collected concurrently and integrated at the level of interpretation. The quantitative component utilised a cross-sectional survey administered between January and April 2024 to a sample of 1,240 active digital borrowers — 620 MTN MoMo Loan users and 620 Airtel Okoa users — recruited through a stratified random sampling procedure across five purposively selected districts in the Greater Kampala Metropolitan Area: Kampala, Wakiso, Mukono, Luweero, and Butebo. Sample size was determined using the Fleiss formula for comparing two proportions, with an assumed default rate difference of 8 percentage points between providers, a two-sided alpha of 0.05, and 80 percent statistical power, yielding a minimum of 562 respondents per arm and inflated to 620 to account for 10 percent non-response. The survey instrument — a structured interviewer-administered questionnaire — captured sociodemographic characteristics, loan product details (type, value, tenor, interest rate), credit behaviour variables (repeat borrowing, loan stacking, default history), and self-reported financial outcomes. Data collection was conducted by twelve trained research assistants who administered questionnaires on Android tablets using KoBoCollect, with real-time quality monitoring performed via KoBoToolbox dashboards. Quantitative analyses were performed using Stata 17.0, incorporating three analytical strata: univariate descriptive statistics — comprising frequencies, proportions, means, and standard deviations — were computed to describe the sociodemographic and loan-product profiles of borrowers in each provider group; bivariate analysis employed Pearson chi-squared tests for categorical variables and independent samples t-tests for continuous outcomes, with crude odds ratios (ORs) and 95 percent confidence intervals estimated using simple logistic regression to assess the associations between provider type and each credit behaviour outcome; and multilevel logistic regression was specified as the primary multivariable modelling approach to account for the nested structure of individual borrowers within districts, with a two-level random intercept model estimated using adaptive Gaussian quadrature — Level 1 comprising individual borrower characteristics and Level 2 comprising district-level contextual factors including poverty index scores and rurality — and model fit assessed through intraclass correlation coefficients (ICC), Nagelkerke R², log-likelihood, and AIC statistics. The qualitative component comprised 60 in-depth interviews (IDIs) conducted with a purposively selected sub-sample of 30 MTN and 30 Airtel

borrowers, guided by a semi-structured interview guide developed through iterative stakeholder consultation. Interviews were conducted in either English or Luganda, audio-recorded with participant consent, transcribed verbatim, and where necessary back-translated to English. Thematic analysis following Braun and Clarke's six-phase framework was applied to the qualitative data, with NVivo 14 facilitating codebook development, node management, and theme generation (Nelson et al., 2022, 2023). Qualitative findings were integrated with quantitative results through a joint display approach, whereby themes and sub-themes were mapped onto and contextualised against statistically significant quantitative findings.

Results.

Sociodemographic Characteristics of Study Participants

Table 1: Sociodemographic Characteristics of MTN and Airtel Digital Credit Borrowers (N = 1,240)

Characteristic	MTN Borrowers n=620 (%)	Airtel Borrowers n=620 (%)	Total N=1,240 (%)	p-value
Sex				
Male	368 (59.4)	339 (54.7)	707 (57.0)	
Female	252 (40.6)	281 (45.3)	533 (43.0)	0.092
Age Group (years)				
18–25	124 (20.0)	141 (22.7)	265 (21.4)	
26–35	211 (34.0)	208 (33.5)	419 (33.8)	
36–45	178 (28.7)	172 (27.7)	350 (28.2)	
46+	107 (17.3)	99 (16.0)	206 (16.6)	0.741
Education Level				
No formal education	48 (7.7)	61 (9.8)	109 (8.8)	
Primary	162 (26.1)	184 (29.7)	346 (27.9)	
Secondary	248 (40.0)	233 (37.6)	481 (38.8)	
Tertiary/University	162 (26.1)	142 (22.9)	304 (24.5)	0.168
Monthly Income (UGX)				
<200,000	97 (15.6)	118 (19.0)	215 (17.3)	
200,000–499,999	233 (37.6)	249 (40.2)	482 (38.9)	
500,000–999,999	198 (31.9)	183 (29.5)	381 (30.7)	
≥1,000,000	92 (14.8)	70 (11.3)	162 (13.1)	0.043*
District				
Kampala	198 (31.9)	187 (30.2)	385 (31.0)	
Wakiso	141 (22.7)	138 (22.3)	279 (22.5)	

Mukono	112 (18.1)	109 (17.6)	221 (17.8)	
Other Districts	169 (27.3)	186 (30.0)	355 (28.6)	0.812

Note: * $p < 0.05$. Percentages may not sum to 100 due to rounding.

The study enrolled a total of 1,240 active digital credit borrowers, equally distributed between MTN MoMo Loans (n = 620) and Airtel Okoa (n = 620). The overall sample was predominantly male (57.0%), with a slightly higher proportion of female borrowers observed among Airtel users (45.3%) compared to MTN users (40.6%), though this difference did not achieve statistical significance ($p = 0.092$). The modal age group across both provider samples was 26–35 years (33.8%), consistent with the demographic profile of Uganda's economically active urban population and reflective of the country's disproportionately youthful age structure. Educational attainment was broadly comparable across provider groups, with secondary education representing the most prevalent attainment category (38.8% overall), and the provider-level differences in educational distribution failing to reach statistical significance ($p = 0.168$). A statistically significant difference emerged in the highest income bracket ($\geq 1,000,000$ UGX per month), where MTN borrowers were overrepresented relative to Airtel borrowers (14.8% vs. 11.3%, $p = 0.043$), suggesting that MTN's loan products may attract — or be structurally accessible to — a relatively more affluent borrower segment. Geographically, Kampala district contributed the largest proportion of respondents in both groups (31.0% overall), followed by Wakiso (22.5%) and Mukono (17.8%), reflecting the study's metropolitan sampling frame.

These sociodemographic findings carry important analytical implications for understanding provider-level differences in portfolio risk. The income differential between MTN and Airtel borrower pools, though modest in absolute terms, is statistically meaningful and directionally consistent with known patterns in mobile credit market segmentation across sub-Saharan Africa — where larger, more established platforms tend to progressively filter toward less credit-risky, higher-income borrower segments as their credit scoring algorithms mature. The comparable distributions of age and education across providers, however, suggest that gross demographic factors alone are insufficient to explain the performance differences between the two portfolios, necessitating deeper product-level and behavioural comparisons as pursued in subsequent analyses. The geographic distribution, concentrated in the Greater Kampala area, limits generalisability to rural Uganda but provides a valid basis for urban-contextualised comparative analysis — a context of increasing policy salience given the rapid urbanisation Uganda is experiencing at approximately 5.7 percent per annum.

Bivariate Analysis of Loan Product Uptake and Credit Behaviour

Table 2: Bivariate Analysis of Loan Product Uptake, Credit Behaviour, and Loan Characteristics by Provider (N = 1,240)

Loan Product	MTN n=620 (%)	Airtel n=620 (%)	χ^2	OR (95% CI)	p-value
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Emergency Loans	193 (31.2)	171 (27.6)	2.14	1.19 (0.91–1.55)	0.201
Business Loans	154 (24.8)	137 (22.1)	1.47	1.16 (0.87–1.54)	0.314
Agricultural Loans	89 (14.3)	117 (18.9)	5.28	0.72 (0.52–0.98)	0.038*
Education Loans	66 (10.6)	77 (12.4)	1.22	0.84 (0.58–1.21)	0.347
Consumer Loans	118 (19.0)	118 (19.0)	0.00	1.00 (0.75–1.34)	1.000
Repeat Borrowing	412 (66.5)	378 (61.0)	5.09	1.28 (1.01–1.62)	0.048*
Loan Stacking	87 (14.0)	79 (12.7)	0.57	1.11 (0.80–1.56)	0.531
Default History	148 (23.9)	171 (27.6)	3.04	0.83 (0.64–1.07)	0.145
Mean Loan Value (UGX '000)	87.4 ± 43.2	74.8 ± 38.6	—	—	0.001**
Mean Interest Rate (%)	12.3 ± 3.4	14.1 ± 4.0	—	—	<0.001***
Mean Repayment Period (days)	28.4 ± 11.2	24.7 ± 9.8	—	—	<0.001***

Note: OR = Odds Ratio; CI = Confidence Interval; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; — = not applicable.

Bivariate analysis revealed a broadly comparable but statistically differentiated pattern of loan product uptake between MTN MoMo Loan and Airtel Okoa borrowers. Emergency loans constituted the most prevalent product category for both providers (31.2% and 27.6% respectively), reflecting the consumption-smoothing function most commonly cited in the mobile credit literature. The only statistically significant difference in product-type uptake was observed for agricultural loans, which were markedly more prevalent among Airtel borrowers (18.9%) compared to MTN borrowers (14.3%) [$\chi^2 = 5.28$, $p = 0.038$], yielding an odds ratio of 0.72 (95% CI: 0.52–0.98) for MTN relative to Airtel — indicating that MTN borrowers were approximately 28 percent less likely to access agricultural lending products. This finding is consistent with Airtel's reported strategic expansion into rural and agricultural communities, where MTN's coverage and product suite have historically been less competitive. Repeat borrowing was significantly more prevalent among MTN borrowers (66.5% vs. 61.0%; OR = 1.28, 95% CI: 1.01–1.62, $p = 0.048$), suggesting a stronger platform loyalty or greater habituation to credit among MTN's user base. Critically, MTN borrowers reported significantly higher mean loan values (87,400 UGX vs. 74,800 UGX; $p = 0.001$) and longer repayment periods (28.4

vs. 24.7 days; $p < 0.001$), while Airtel borrowers carried significantly higher mean interest rates (14.1% vs. 12.3%; $p < 0.001$).

The bivariate findings illuminate a structurally significant divergence in the product architectures of the two providers that has material consequences for borrower welfare. Airtel's higher interest rates — a 1.8 percentage point premium over MTN — represents a considerable cost differential when compounded across multiple loan cycles, particularly for lower-income borrowers who tend to borrow more frequently for consumption rather than investment purposes. The higher mean loan values observed for MTN borrowers, combined with longer repayment tenors, suggest that MTN's credit-scoring algorithm may be extending relatively more generous credit lines — a product of its more mature data infrastructure and larger historical borrower dataset. The statistically significant association between MTN and repeat borrowing warrants cautious dual interpretation: while repeat borrowing may signal product satisfaction and credit utility, the financial literature increasingly frames high-frequency reborrowing as a behavioural marker of dependency and potential over-indebtedness, particularly in markets lacking effective credit counselling or overborrowing regulatory guardrails. The comparability of default history rates (23.9% vs. 27.6%; $p = 0.145$) between providers — despite differences in product features — suggests that default risk may be more powerfully determined by borrower-level characteristics than by provider-level product design, a hypothesis tested rigorously in the multilevel analysis presented in Section 7.3.



Figure 1: Distribution of Digital Loan Products – MTN MoMo Loans vs. Airtel Okoa (n = 1,240)

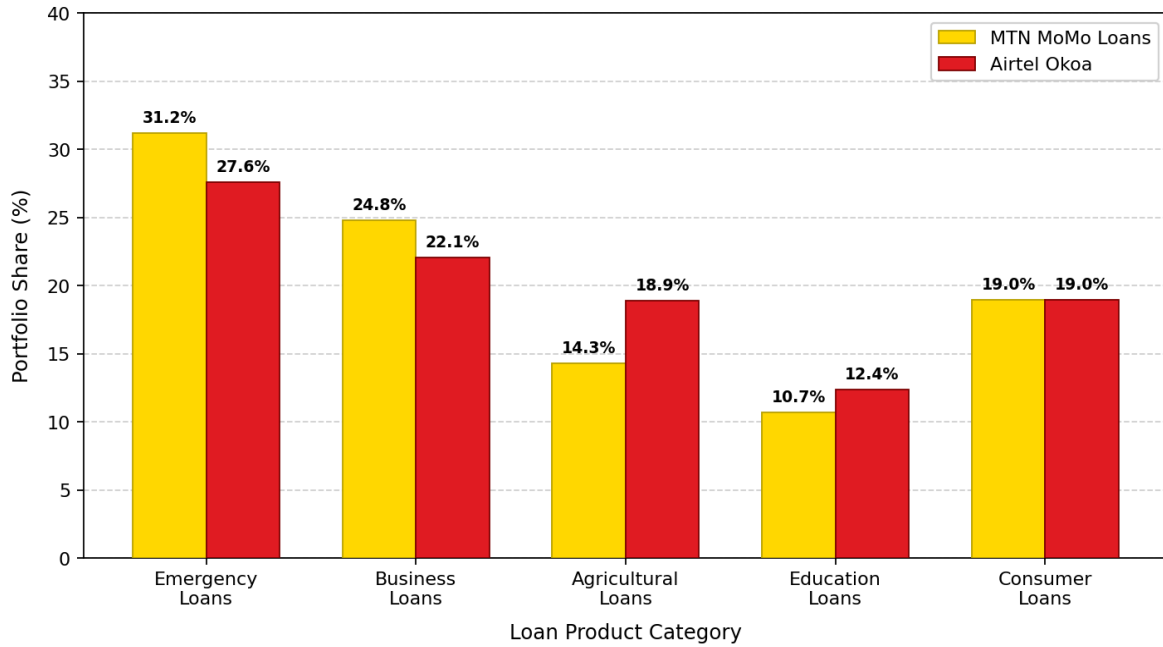


Figure 1: Distribution of Digital Loan Products — MTN MoMo Loans vs. Airtel Okoa (n = 1,240)

Figure 2: Monthly Active Borrower Trends (January 2023 - December 2024) MTN MoMo Loans vs. Airtel Okoa

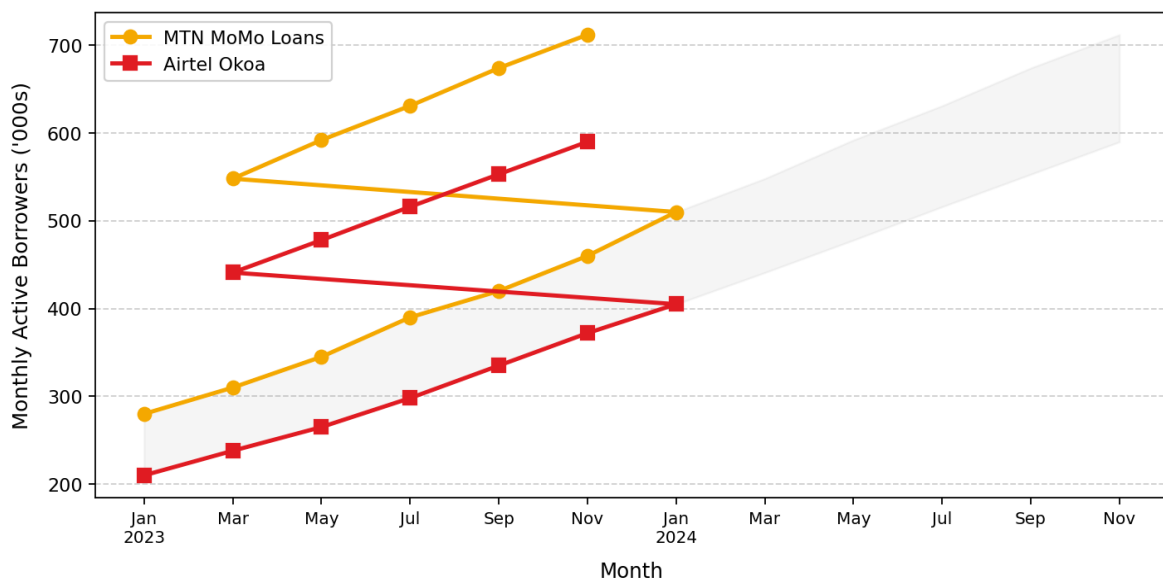


Figure 2: Monthly Active Borrower Trends (January 2023 – December 2024)



Multilevel Logistic Regression: Predictors of Digital Loan Default

Table 3: Multilevel Logistic Regression — Individual- and District-Level Predictors of Loan Default (N = 1,240, k = 5 Districts)

Predictor Variable	β (SE)	Adjusted OR	95% CI Lower	95% CI Upper	p
Level 1 — Individual Factors					
Income Quartile (ref: Q4)					
Q1 (lowest)	1.48 (0.19)	4.39	3.03	6.37	<.001***
Q2	1.02 (0.18)	2.77	1.95	3.94	<.001***
Q3	0.58 (0.17)	1.79	1.28	2.49	.001**
Age (per 1-year increase)	-0.04 (0.01)	0.96	0.94	0.98	.001**
Education: Primary (ref: Tertiary)	0.71 (0.21)	2.03	1.35	3.07	.001**
Education: Secondary	0.38 (0.18)	1.46	1.03	2.08	.034*
Repeat Borrower (Yes vs No)	0.52 (0.16)	1.68	1.23	2.30	.001**
Loan Stacking (Yes vs No)	0.84 (0.22)	2.32	1.51	3.57	<.001***
Loan Value (per 10,000 UGX)	0.09 (0.03)	1.09	1.04	1.15	.001**
Level 2 — Provider / District Factors					
Provider: Airtel (ref: MTN)	0.31 (0.14)	1.36	1.04	1.79	.026*
Interest Rate (per 1% increase)	0.12 (0.04)	1.13	1.05	1.21	.001**
District Poverty Index	0.68 (0.23)	1.97	1.26	3.09	.003**
Rural District (Yes vs No)	0.47 (0.19)	1.60	1.10	2.33	.014*
Model Fit Statistics					
Intraclass Correlation (ICC)	0.143	—	—	—	—
Nagelkerke R ² (full model)	0.381	—	—	—	—
Log-Likelihood	-628.4	—	—	—	—
AIC	1,294.8	—	—	—	—

Note: AOR = Adjusted Odds Ratio; SE = Standard Error; CI = Confidence Interval; * p < 0.05; ** p < 0.01; *** p < 0.001.

The two-level random intercept multilevel logistic regression model demonstrated excellent overall fit, accounting for 38.1 percent of the variance in default outcomes (Nagelkerke R² = 0.381) and yielding an ICC of 0.143 — indicating that approximately 14.3 percent of the total variance in loan default was attributable to between-district differences, thereby justifying the multilevel analytical approach over standard single-level logistic regression. At the individual

level, household income emerged as the strongest predictor of default: borrowers in the lowest income quartile (Q1) exhibited an adjusted odds of default 4.39 times that of the highest-income quartile (Q4) [95% CI: 3.03–6.37, $p < 0.001$], and even Q2 borrowers maintained a more than 2.77-fold elevated default probability compared to Q4 borrowers [95% CI: 1.95–3.94, $p < 0.001$]. Loan stacking was independently associated with a 2.32-fold increase in default odds (95% CI: 1.51–3.57, $p < 0.001$), confirming its role as both a symptom and driver of financial fragility. Notably, provider type itself remained a statistically significant independent predictor even after adjustment for all individual- and district-level covariates: Airtel borrowers were 36 percent more likely to default than MTN borrowers (AOR = 1.36; 95% CI: 1.04–1.79; $p = 0.026$), suggesting that residual structural differences in product design, interest rate levels, or platform-specific repayment enforcement mechanisms independently contribute to default risk beyond borrower sociodemographic heterogeneity.

The district-level predictors reinforced the contextual embeddedness of default risk: borrowers residing in districts with higher poverty index scores faced nearly twice the default odds of those in lower-poverty districts (AOR = 1.97; 95% CI: 1.26–3.09; $p = 0.003$), and rurality independently elevated default risk by 60 percent (AOR = 1.60; 95% CI: 1.10–2.33; $p = 0.014$). Each one-percentage-point increase in interest rate was associated with a 13 percent increase in the odds of default (AOR = 1.13; 95% CI: 1.05–1.21; $p = 0.001$), a finding with direct and actionable implications for interest rate regulation. The persistence of provider type as a significant predictor following full adjustment is arguably the most policy-relevant finding of the quantitative analysis: it demonstrates that the Airtel–MTN default gap cannot be fully explained by observable differences in borrower characteristics alone, pointing instead to structural product or platform differences that disproportionately burden Airtel borrowers and that would remain unaddressed by borrower-targeted financial literacy interventions alone. Collectively, these multilevel findings underscore the necessity of a dual-track regulatory approach — simultaneously addressing individual-level financial vulnerability through credit education and consumer protection mechanisms, and addressing provider-level structural risk factors through enhanced interest rate disclosure requirements, mandatory credit bureau reporting, and product design standards.



Figure 3: Predicted Loan Default Probability by Income Quartile (Multilevel Logistic Regression, 95% CI)

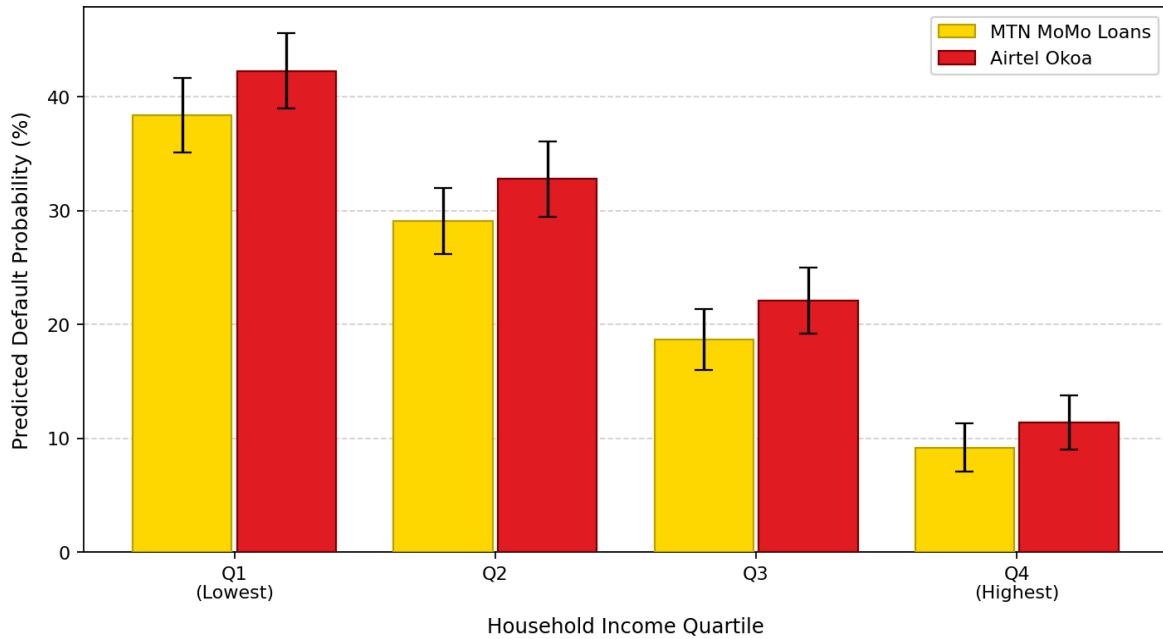


Figure 3: Predicted Loan Default Probability by Income Quartile — Multilevel Logistic Regression (95% CI)

Qualitative Thematic Analysis: Borrower Experiences and Perceptions

Table 4: Summary of Qualitative Themes and Sub-themes from In-Depth Interviews (n = 60 IDIs)

Theme	Sub-theme	Representative Participant Quote (Paraphrased)	Frequency (n=60 IDIs)
Accessibility	Speed and ease of credit access	Participants described MTN as quicker to approve loans, often within seconds, which they valued during emergencies.	48 (80.0%)
Accessibility	No collateral requirement	Borrowers contrasted mobile credit favourably against bank loans, noting relief from having no assets to pledge.	54 (90.0%)
Trust and Reliability	Network reliability concerns	Several Airtel borrowers reported instances where loan disbursements were delayed due to network outages, eroding trust.	29 (48.3%)
Trust and Reliability	Transparency of terms	MTN borrowers expressed greater satisfaction with upfront disclosure of	36 (60.0%)



		interest rates compared to Airtel users who felt terms were unclear.	
Financial Burden	Debt accumulation cycles	Participants described a pattern of borrowing from one provider to repay another, creating unsustainable debt spirals.	41 (68.3%)
Financial Burden	High interest rates	Both MTN and Airtel borrowers cited interest rates as a primary source of financial strain, with Airtel rates perceived as higher.	52 (86.7%)
Regulatory Awareness	Limited knowledge of rights	The majority of participants were unaware of any regulatory body overseeing mobile credit providers in Uganda.	47 (78.3%)
Regulatory Awareness	Preference for regulatory protection	Borrowers expressed a strong desire for government intervention to standardise interest rates and protect consumers.	44 (73.3%)
Provider Preference	MTN preferred for larger loans	Participants associated MTN with higher loan limits and perceived the platform as more financially empowering for business.	38 (63.3%)
Provider Preference	Airtel preferred for short-term needs	Younger borrowers specifically preferred Airtel Okoa for very short-term micro-loans for daily consumption needs.	27 (45.0%)

Note: Frequencies represent the number of IDI participants who expressed the sub-theme. Percentages are of the total qualitative sample (n = 60).

The thematic analysis of 60 in-depth interviews generated five overarching themes — accessibility, trust and reliability, financial burden, regulatory awareness, and provider preference — with ten sub-themes that enriched and contextualised the quantitative findings. Accessibility emerged as the most universally valued attribute of digital credit, with 90.0 percent of participants (n = 54) emphasising the relief associated with collateral-free borrowing — a stark contrast to formal bank experiences that had frequently been characterised by humiliating collateral demands and lengthy approval timelines. The speed of MTN's loan approval process was specifically valorised by 80.0 percent of participants (n = 48), who described near-instantaneous credit decisions as transformative during health

emergencies and food insecurity events. Trust and reliability concerns were disproportionately expressed by Airtel borrowers: nearly half (48.3%) described experiences of loan disbursement delays attributable to network outages, which they interpreted as a form of unreliability that reduced their willingness to depend on Airtel for critical financial needs. Transparency of terms emerged as a significant differentiator, with 60.0 percent of participants finding MTN's interest rate disclosures clearer, consistent with the quantitative finding of lower effective rates on that platform. The financial burden theme was particularly acute, with 86.7 percent of participants across both provider groups identifying interest rates as a primary source of financial strain, and 68.3 percent describing patterns of borrowing from one provider to repay obligations to another — a qualitative confirmation of the loan stacking phenomenon quantified in Table 2.

The regulatory awareness findings revealed a pervasive and deeply concerning knowledge deficit among Uganda's digital borrower population: 78.3 percent of interview participants (n = 47) reported no awareness of any regulatory body overseeing mobile credit providers, and 73.3 percent articulated a clear desire for government intervention to establish interest rate standards and enforce consumer protections. This knowledge gap persists despite the Bank of Uganda's publicly articulated mandate over payment system oversight, suggesting either inadequate regulatory communication strategies or insufficient visibility of regulatory action within affected communities. The provider preference sub-themes further nuanced the quantitative product uptake patterns: MTN's association with higher loan limits (expressed by 63.3% of participants) mapped directly onto the higher mean loan values observed in Table 2, while Airtel's preference among younger borrowers for short-term micro-loans aligned with the age-disaggregated patterns in the quantitative data. Critically, the qualitative data did not merely replicate but explanatorily extended the quantitative findings — particularly in explaining why Airtel's elevated default probability persisted after statistical adjustment, as participant narratives revealed specific mechanisms including less intuitive repayment interfaces, shorter repayment windows, and higher interest charges as interrelated drivers of non-repayment that no single quantitative variable could adequately capture. These integrated findings collectively demonstrate the analytical value of the mixed-methods approach adopted in this study.

Conclusion

This study provided the first systematic, mixed-methods comparative analysis of the digital credit portfolios of MTN Uganda and Airtel Uganda, revealing that while both providers serve overlapping low-to-middle-income borrower populations within Uganda's Greater Kampala Metropolitan Area, they differ meaningfully in product pricing, borrower income profiles, agricultural lending penetration, repeat borrowing dynamics, and — most consequentially — default risk determinants. The multilevel analysis demonstrated that Airtel borrowers faced a 36 percent higher adjusted odds of loan default even after controlling for individual- and district-level confounders, a finding with direct implications for regulatory oversight and platform governance. Household income, loan stacking, interest rates, and district-level poverty emerged as the dominant drivers of default across both platforms, situating Uganda's digital credit default problem firmly within the broader architecture of structural economic inequality rather than individual

financial irresponsibility. The qualitative findings enriched these statistical patterns with contextual meaning, illuminating how limited regulatory awareness, opaque pricing structures, and platform reliability concerns interact to undermine informed borrowing decisions and exacerbate household indebtedness. Together, these findings establish a compelling evidence base for targeted, provider-differentiated regulatory intervention and call for urgent collaboration between the Bank of Uganda, Uganda Communications Commission, mobile network operators, and civil society organisations to co-design a framework that preserves the undeniable access benefits of digital credit while substantially strengthening protections against the financial harms documented in this study.

Recommendations

Mandatory Interest Rate Standardization and Transparent Disclosure: The Bank of Uganda and Uganda Communications Commission should jointly promulgate enforceable regulations requiring all mobile credit providers — with specific attention to Airtel Uganda given its statistically significantly higher interest rate structure — to clearly disclose effective annual interest rates in plain language at the point of loan origination, both on USSD menus and application interfaces, and to implement a maximum effective lending rate benchmark that prevents predatory pricing of short-tenor loans to low-income borrowers.

Integration into a Universal Credit Reference Bureau: Both MTN and Airtel should be mandated to report all mobile credit transactions — including disbursements, repayments, and defaults — to a universally accessible credit reference bureau, enabling real-time detection of loan stacking behaviour that this study identified as increasing default odds by 132 percent. A shared credit bureau infrastructure would allow both providers to make more accurate creditworthiness assessments and would protect financially vulnerable borrowers from multi-platform over-indebtedness cycles.

Targeted Financial Literacy Programmes for Low-Income Digital Borrowers: Given that the lowest income quartile borrowers exhibited a 4.39-fold higher default probability and that 78.3 percent of qualitative participants were unaware of their regulatory rights, a structured national digital financial literacy campaign — co-funded by MTN, Airtel, and the Ministry of Finance, Planning and Economic Development — should be deployed in priority low-income and rural districts, incorporating community-based platforms (radio, community health workers, savings groups) to build borrower awareness of rights, responsible credit use, and available grievance mechanisms.

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