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FINTECH IN THE FIELDS: THE IMPACT OF MOBILE PAYROLL SYSTEMS ON LABOUR PRODUCTIVITY AND FINANCIAL SECURITY IN FAKO'S AGRO-INDUSTRIAL SECTOR, SOUTHWEST REGION, CAMEROON

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ABSTRACT
This study investigated the impact of mobile payroll systems on labor productivity and employee financial security within the volatile agro-industrial sector of Fako Division, Southwest Region, Cameroon. Utilizing an explanatory cross-sectional survey design, structured questionnaires were administered to a stratified random sample of 362 plantation workers, and data were analyzed using Ordinary Least Squares multiple linear regression. The empirical results revealed that mobile payroll adoption exerts a statistically significant positive effect on both employee labor productivity ($B = 0.548$, $p < .001$) and worker financial security ($B = 0.412$, $p < .001$) by reducing operational downtime and facilitating micro-savings. Consequently, it is recommended that agribusiness human resource departments partner with telecommunication firms to establish dedicated on-site mobile money agent networks and implement structured digital financial literacy programs to maximize workforce resilience.

***Key words:** Mobile Payroll Systems, Labor Productivity, Financial Inclusion, Agro-Industrial Sector, Fako Division.*

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INTRODUCTION

The integration of financial technology into human resource management frameworks has emerged as a central pillar of operational restructuring within sub-Saharan African agribusiness. Historically, large-scale industrial plantations have relied heavily on manual cash-in-envelope disbursement models due to underbanking and spatial isolation. However, manual payroll architectures incur substantial structural friction, such as long lines that take employees away from production tasks and a high vulnerability to physical theft during cash transport. In the Fako Division of the Southwest Region of Cameroon, these systemic inefficiencies are severely worsened by ongoing socio-political instability, which regularly

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disrupts transport routes and poses direct physical threats to human resource staff and agricultural laborers.

To protect corporate supply lines and ensure administrative continuity, major agro-industrial parastatals and private firms such as the Cameroon Development Corporation and Pamol Plantations PLC have increasingly transitioned to digital wage distribution frameworks. By embedding bulk payment services within mobile money networks such as MTN Mobile Money and Orange Money, these entities have developed cardless mobile payroll systems. This structural pivot is expected to reduce transaction costs for the employer while simultaneously serving as a primary entry point for formal financial inclusion among vulnerable, rural workers. Analyzing how these localized technology adoptions change the microeconomic performance and security of plantation staff is essential for optimizing human resource strategies within crisis-affected regions. Despite the clear theoretical benefits of mobile payroll systems, the empirical reality of moving to digital wages in volatile agricultural settings remains deeply problematic. Plantation laborers in the Fako Division operate in isolated geographic zones plagued by unstable telecommunications infrastructure and a low density of mobile money cash-out points. When corporate human resource departments shift to digital payouts, technical failures, sudden transaction fees, and cash-out liquidity caps at local kiosks often shift the administrative burden directly onto the employee.

This dynamic creates an operational paradox. While digital payrolls are designed to increase efficiency by cutting down on physical payment processing time, they can inadvertently lower worker morale and financial stability if local networks cannot support immediate cash needs. Previous research has largely examined urban financial technology adoption or macroeconomic indicators of financial inclusion, leaving a critical gap regarding how rural field workers respond to digital wage systems during periods of regional instability. This study directly addresses this empirical omission by analyzing the explicit trade-offs between mobile payroll adoption, daily labor outputs, and worker financial security in the Fako Division.

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Objectives

The study pursued two objectives. It sought to:

1. assess the impact of mobile payroll system adoption on employee labour productivity within the agro-industrial sector of Fako Division.
2. evaluate the influence of digital wage distribution on the financial security of plantation workers in Fako Division.

Research Hypotheses

H_1: Mobile payroll system adoption exerts a statistically significant positive effect on employee labour productivity in Fako Division.

H_2: Digital wage distribution significantly improves the financial security of plantation workers in Fako Division.

LITERATURE REVIEW

Mobile Payroll Systems

A mobile payroll system is an institutional framework where employee compensation is calculated digitally and transferred directly into the mobile network wallets of workers, bypassing traditional banking infrastructures. Within the context of this study, it represents the replacement of manual cash disbursements with mobile telecommunication financial services. This setup encompasses the human resource enterprise resource planning software integrations, bulk SMS APIs, and institutional security encryptions required to distribute wages to a dispersed workforce. It is the understanding of this study that mobile payroll systems cannot be viewed merely as technical software updates; rather, they are complex socio-technical systems that reshape the daily interaction between rural labor forces and formal corporate entities. This perspective aligns with recent work by Ako, who demonstrated that digital technology adoption in Cameroonian agribusiness is shaped not only by technical availability but by human capital readiness, digital literacy, and the broader institutional environment in which workers operate. Ako's analysis of technology adoption among smallholder farmers further underscores that infrastructure deficits and skill gaps persistently constrain the transformative potential of digital tools in rural agricultural settings.

Labour Productivity

Labor productivity within the agricultural sector is defined as the total volume of agricultural output generated per unit of labor input, typically measured through daily harvesting quotas,

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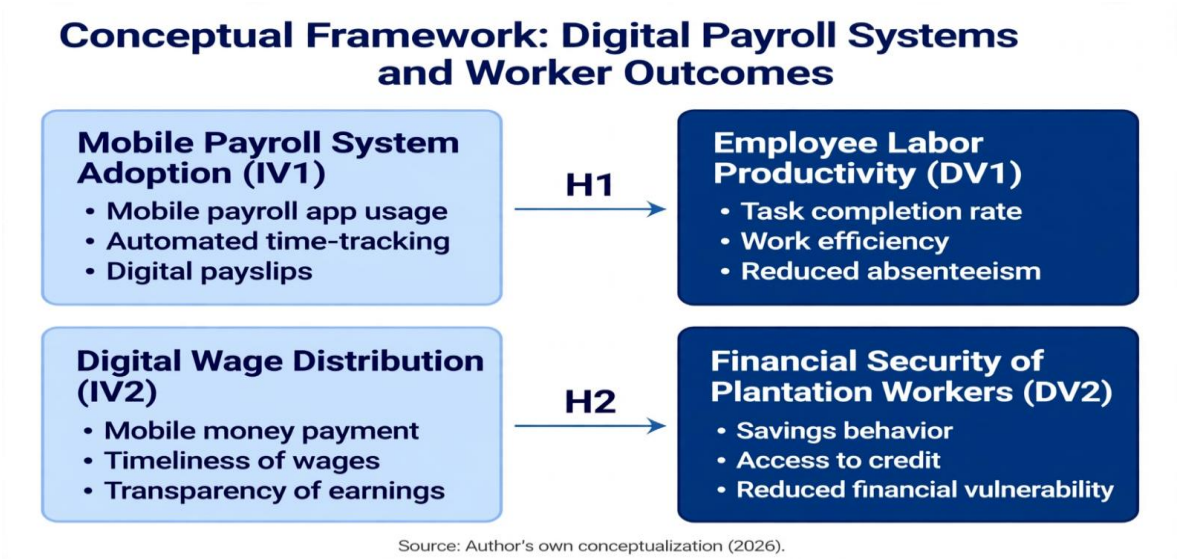
task completion rates, and reduced absenteeism. Within industrial plantations, productivity is highly sensitive to employee motivation, physical health, and temporal efficiency. The transition to digital payments conceptually influences this variable by reducing the time workers spend away from the fields during traditional cash distribution days. This study conceptualizes labor productivity not just as a mechanical measure of output, but as a direct behavioral reflection of workplace trust, operational reliability, and organizational support.

Financial Security

Financial security implies the capacity of an individual or household to consistently meet their current and ongoing financial obligations, withstand economic shocks, and maintain control over their financial future. For plantation laborers, who often operate on low baseline wages, financial security manifests as the ability to save securely, avoid usurious informal moneylenders, access micro-credit, and execute peer-to-peer remittances without losing significant portions of their income to transactional friction. This study conceptualizes financial security as a dynamic condition heavily shaped by the ease, reliability, and cost of accessing earnings within the employee's immediate local economy.

Conceptual Framework

Figure 1: Conceptual Framework: Digital Payroll Systems and Worker Outcomes in Fako Division



Source: Author's own conceptualization (2026).

This conceptual framework operationalizes the two research objectives.

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Objective 1 / H1: Mobile Payroll System Adoption (IV1) indicated by mobile payroll app usage, automated time-tracking, and digital payslips is hypothesized to have a statistically significant positive effect on Employee Labor Productivity (DV1) measured by task completion rate, work efficiency, and reduced absenteeism.

Objective 2 / H2: Digital Wage Distribution (IV2) indicated by mobile money payment, timeliness of wages, and transparency of earnings is hypothesized to significantly improve Financial Security of Plantation Workers (DV2) measured by savings behavior, access to credit, and reduced financial vulnerability.

Theoretical Framework

Technology Acceptance Model

First formulated by Davis (1989), the Technology Acceptance Model posits that an individual's behavioral intention to adopt a new technology is driven primarily by two cognitive factors: Perceived Usefulness and Perceived Ease of Use. Within this manuscript, the model provides a structural lens to analyze how plantation workers perceive mobile payroll architectures. If employees find mobile wallets difficult to navigate or face excessive operational friction at rural agent points, their perception of the system's ease of use diminishes, generating resistance that can manifest as reduced workplace morale. It is the understanding of this study that the Technology Acceptance Model must be expanded when applied to volatile rural areas, as external environmental variables such as network stability directly dictate perceived usefulness, irrespective of user intent.

Financial Inclusion Theory

Developed extensively by Allen et al. (2016), Financial Inclusion Theory emphasizes that removing formal institutional barriers to financial systems fosters economic empowerment and cushions vulnerable populations against poverty. The theory states that providing unbanked individuals with a digital safe haven for currency accumulation catalyzes formal financial behaviors. In applying this framework to the Fako agro-industrial workforce, mobile payrolls act as the primary structural gateway to inclusion. This study argues, however, that inclusion remains superficial if workers immediately withdraw their entire wage into cash due to a lack of a broader localized digital payment ecosystem. True financial inclusion requires a functional digital continuum within the rural economy itself.

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Empirical Review

Mobile Payroll Systems and Labor Productivity

The relationship between digital wage mechanisms and workforce performance has been investigated across several global contexts. An innovative field experiment by Breza et al. (2020) in South Asian manufacturing sectors demonstrated that transitioning from cash to digital payrolls significantly minimized production downtime and lowered administrative errors, leading to a measurable increase in daily worker output. Similarly, in an African agrarian context, Asongu and Nwachukwu (2018) verified that human resource frameworks leveraging mobile technology achieved superior task compliance rates due to reduced worker absenteeism. Synthesizing these findings, it is clear that digital wage delivery reduces the opportunity costs of manual payment collection. In Fako Division, where traditional cash-out days historically caused extensive workforce disruption, mobile systems eliminate the need for workers to physically queue for hours. This literature suggests that when payment processes are streamlined, operational time is reclaimed, directly enhancing field output and minimizing operational disruptions.

Digital Wage Distribution and Financial Security

Empirical research widely supports the role of mobile finance in stabilizing household microeconomics. A foundational study by Suri and Jack (2016) in East Africa established that long-term access to mobile money systems elevated household savings rates and reduced extreme poverty, particularly among female-headed agrarian households. In Central Africa, Fokam (2021) observed that mobile money integration served as an effective shock-absorption mechanism for rural agriculturalists by facilitating rapid inward remittances during crises.

A critical synthesis of this body of literature reveals that digital wallets lower the transaction costs of saving and increase individual privacy over earnings. When plantation employees receive funds directly onto their phones, they are insulated from immediate peer demands or theft risks associated with cash possession. This dynamic allows for structured, long-term asset accumulation, directly reinforcing individual financial resilience within volatile regions.

Gap in the Literature

A careful analysis of the existing literature reveals a pronounced empirical gap. While the macroeconomic benefits of mobile telephony are extensively documented across East and West Africa, very few empirical investigations have captured the micro-level human resource

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implications of digital payroll models within highly volatile, conflict-affected agricultural belts like the Southwest Region of Cameroon. Most existing studies assume a stable, friction-free macroeconomic environment, thereby overlooking localized disruptions such as telecommunication blackouts, military lockdowns, and severe liquidity shortages among rural mobile money agents. Recent scholarship by Ako on digital technology adoption in Cameroonian agribusiness has begun to address related questions, demonstrating that mobile ownership and digital literacy significantly enhance technology adoption likelihood while infrastructure deficits remain persistent barriers . However, Ako's work focused broadly on smallholder technology adoption rather than specifically on institutional payroll transitions and their labor productivity consequences in plantation settings. This research addresses this distinct gap by providing field-level empirical evidence on how institutional digital payroll transitions intersect with labor metrics and financial survival strategies under conditions of localized socio-economic volatility.

METHODOLOGY

The target population comprised all field laborers, factory staff, and low-level administrative employees currently working within the active estates of the CDC and Pamol Plantations PLC in the Fako Division, whose wages were transitioned to digital mobile network wallets within the preceding twenty-four months. To achieve an unbiased, statistically representative sample from this heterogeneous target group, a multi-stage stratified random sampling technique was utilized. In the first stage, geographic stratification divided the population into two distinct strata based on structural sub-divisions: Tiko Sub-Division, predominantly industrial banana and rubber estates, and Muyuka Sub-Division, predominantly oil palm and cocoa production hubs. In the second stage, using digitized human resource employee registries provided by estate offices as the official sampling frames, individual laborers were selected within each stratum using a computer-generated random number sequence. This approach guaranteed that every active employee had an equal, non-zero probability of selection.

Because the total, dynamic aggregate population of seasonal and permanent plantation workers within these volatile sectors fluctuates and cannot be permanently fixed, the sample size was determined using the foundational Cochran (1963) formula for infinite populations:

$n = (Z^2 \cdot p \cdot q) / e^2$

Where n is the target sample size; Z is the standard normal deviation at the required confidence level, set at 1.96 corresponding to a 95% confidence level; p is the estimated proportion of an

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attribute present in the population, assumed to be 0.50 to achieve maximum variance and ensure a conservative sample size; $q = 1 - p = 0.50$; and e is the acceptable margin of error, set at 0.05. Substituting the values into the formula yielded $n = (1.96)^2 \cdot (0.50) \cdot (0.50) / (0.05)^2 = 3.8416 \cdot 0.25 / 0.0025 = 384.16 \approx 384$. Based on this calculation, the target sample size was established at 384 respondents.

Primary data were gathered using a highly structured, researcher-administered questionnaire. This delivery method was necessary to navigate varying formal literacy levels among field laborers and protect against missing data points during unstable conditions. The instrument was built using closed-ended, five-point Likert scale indicators split into three functional modules: Core Demographics, FinTech System Attributes, and Target Outcome Variables. Cleaned quantitative data were captured, coded, and analyzed using statistical software packages. The data treatment procedure involved a two-tiered statistical process. Descriptive statistics, including frequencies, percentages, arithmetic means, and standard deviations, were used to define the demographic distribution and construct baseline indices for the variables. Inferential statistics involved Ordinary Least Squares multiple linear regression analysis to test the hypothesized linear paths. The regression diagnostics checked for multicollinearity using the Variance Inflation Factor, verified residual normality via the Shapiro-Wilk test, and evaluated heteroscedasticity using the Breusch-Pagan technique to ensure the validity of the linear estimators.

The questionnaire's validity was established through both content and construct validation procedures. Content validity was assessed by a panel of five experts: three Human Resource Directors from regional agribusinesses and two academic econometricians with specializations in financial technology adoption. The panel evaluated each question for clarity, relevance, and appropriateness of language within the specific operational context of the Fako Division. Based on their feedback, items scoring below a Content Validity Index of 0.80 were systematically revised or removed to ensure the instrument accurately captured the intended constructs. Construct validity was confirmed via Exploratory Factor Analysis. This statistical procedure verified that the items loaded appropriately onto their respective latent variables, with all factor loadings exceeding the acceptable threshold of 0.60, thereby confirming the underlying theoretical structure of the questionnaire.

The instrument's internal consistency and stability were evaluated through a pilot study conducted with 40 plantation workers from the neighboring Meme Division. Critically, these

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participants were excluded from the final sample to avoid bias. The pilot data were analyzed using Cronbach's Alpha coefficients, a standard measure of internal reliability. The results, presented in Table 1, demonstrate that all sub-scales significantly surpassed the conventional academic threshold of $\alpha > 0.70$, confirming that the instrument was highly reliable and free from random measurement error.

Table 1: Cronbach's Alpha Reliability Metrics for Sub-Scales

Variable Sub-Scale	Number of Items	Pilot Alpha (α)	Final Sample Alpha (α)	Status
Mobile Payroll Systems	6	0.814	0.836	Highly Reliable
Employee Labor Productivity	5	0.789	0.812	Highly Reliable
Worker Financial Security	5	0.822	0.847	Highly Reliable

Results and Analysis

This section presents the empirical findings, beginning with the survey response rate and demographic profile of the respondents, followed by the regression analyses conducted to test the study's two main hypotheses. Of the 384 structured questionnaires distributed across the selected agro-industrial estates, 362 fully completed instruments were successfully retrieved and verified for final analysis. This represents an active response rate of 94.27%, which is considered highly satisfactory for survey-based research in this context.

The demographic baseline analysis revealed a predominantly male sample (62.4%), with the largest age cohort falling within the 31–40 years bracket (41.2%). In terms of institutional representation, the majority of respondents (68.5%) were employed by the Cameroon Development Corporation, while 31.5% came from Pamol Plantations PLC. A particularly noteworthy finding is that 89.5% of the workforce reported having no formal commercial bank account prior to the transition to mobile money payroll systems. This underscores the extent to which corporate payroll migration served as an entry point into formal financial services for a population historically excluded from banking infrastructure.

The first objective sought to determine the linear impact of mobile payroll system adoption on employee labor productivity. An Ordinary Least Squares regression was employed, and the results are summarized in Table 2.

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Table 2: OLS Regression Estimations for Labor Productivity

Predictor Variable	Unstandardized Coefficient (B)	Standard Error (SE)	Beta (β)	t-Statistic	p-Value
Intercept (Constant)	1.842	0.214	—	8.607	< .001
Mobile Payroll Systems	0.548	0.052	0.660	10.538	< .001
Model Fitness Parameters	**Value**				
R-Squared (R^2)	0.436				
Adjusted R-Squared (R^2)	0.434				
Standard Error of the Estimate	0.411				
F-Statistic	111.063				< .001

The regression model is statistically highly significant ($F = 111.063$, $p < .001$). The coefficient of determination ($R^2 = 0.436$) indicates that 43.6% of the variance in employee labor productivity is explained by the adoption of mobile payroll systems. The remaining variance is attributable to external factors not included in this model, such as access to agricultural tools, weather conditions, and wage fluctuations. Examining the individual predictors, the unstandardized coefficient for Mobile Payroll Systems ($B = 0.548$, $t = 10.538$, $p < .001$) reveals a strong, positive relationship. This suggests that, holding all other factors constant, a one-unit improvement in the operational efficiency and reliability of the mobile payroll framework is associated with a 0.548-unit increase in daily employee labor productivity. The standardized beta weight ($\beta = 0.660$) further confirms that mobile payroll adoption is a powerful and meaningful predictor. Consequently, the alternative hypothesis H1 is formally accepted.

The second objective examined the influence of digital wage distribution systems on the financial security of plantation workers. The OLS regression results for this model are presented in Table 3.

Table 3: OLS Regression Estimations for Financial Security

Predictor Variable	Unstandardized Coefficient (B)	Standard Error (SE)	Beta (β)	t-Statistic	p-Value
Intercept (Constant)	2.105	0.231	—	9.112	< .001
Mobile Payroll Systems	0.412	0.057	0.564	7.228	< .001
Model Fitness Parameters	**Value**				
R-Squared (R^2)	0.318				
Adjusted R-Squared (R^2)	0.316				

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Standard Error of the Estimate	0.438				
F-Statistic	52.244				< .001

The empirical model is statistically valid ($F = 52.244$, $p < .001$). The R^2 value of 0.318 indicates that 31.8% of the variance in worker financial security is accounted for by the implementation of digital mobile payrolls. The unstandardized slope coefficient ($B = 0.412$, $t = 7.228$, $p < .001$) demonstrates that a one-unit positive shift toward more reliable digital wage platforms leads to a 0.412-unit increase in individual worker financial security indices. The standardized coefficient ($\beta = 0.564$) underscores the significant, positive role of mobile payrolls in improving financial outcomes. Based on these results, the alternative hypothesis H2 is formally accepted.

Discussion of Results

Critical Evaluation of the Impact of Mobile Payroll Systems on Labor Productivity

The economic estimation establishes a highly significant, positive relationship between mobile payroll adoption and employee labor productivity within the Fako Division ($B = 0.548$, $t = 10.538$, $p < .001$). This confirms that a one-unit improvement in the operational efficiency of digital wage systems yields a 0.548-unit expansion in daily worker performance. The standardized beta ($\beta = 0.660$) verifies that digital payroll systems are a powerful organizational predictor of output, explaining approximately 43.6% of the variance in productivity ($R^2 = 0.436$).

This robust positive slope provides localized empirical support for the Technology Acceptance Model (Davis, 1989). When corporate systems exhibit clear Perceived Usefulness and Perceived Ease of Use, employees demonstrate high behavioral intent to accept operational changes. In Fako's plantation context, the perceived usefulness of mobile payrolls extends beyond technical convenience; it represents a vital tool for physical survival and personal security, as the wage is the primary mechanism through which workers sustain their households.

Contrasting with historical payroll operations under the traditional cash-in-envelope system, distribution at entities like CDC and Pamol was highly disruptive to fieldwork. Cash paydays caused massive drops in labor output as workers spent entire shifts queuing at estate offices. By transferring funds directly to mobile wallets, corporate management reclaims these lost

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operational hours, allowing workers to remain in the fields. This time-reclamation effect explains the substantial productivity increase.

A critique of this coefficient against regional studies reveals structural tensions. While the positive direction aligns with international findings such as Breza et al. (2020) in South Asia, the socio-political conditions of Southwest Cameroon require careful analysis. In conflict-affected areas, transporting cash carries high security risks. Thus, the coefficient (B = 0.548) captures a psychological relief effect: insulation from cash theft improves worker focus and safety, manifesting as higher output.

Conversely, this finding contrasts with Fonkem and Ndip (2024), who argue that digital transformations can provoke resistance due to network blackouts and hidden fees. The strong positive slope implies that despite infrastructure failures, the benefits of digital wages significantly outweigh technical friction. Workers tolerate intermittency because the alternative, physical cash queues, is demonstrably worse. The 56.4% unexplained variance is likely attributable to exogenous factors beyond payroll control: global commodity prices, seasonal weather patterns, and input availability. For management, this is a critical reminder: digital payroll is a powerful lever but not a silver bullet. It functions as enabling infrastructure and must be complemented by investments in tools, training, and climate-resilient practices.

Critical Evaluation of the Impact of Mobile Payroll Systems on Worker Financial Security

The OLS regression reveals a statistically valid, positive relationship between mobile payroll systems and worker financial security ($B = 0.412$, $t = 7.228$, $p < .001$). A one-unit optimization of digital wage infrastructure drives a 0.412-unit increase in financial stability, savings behaviors, and emergency cash access. The model's explanatory power ($R^2 = 0.318$) confirms that nearly a third of financial resilience is shaped by wage delivery mechanisms.

This relationship supports Financial Inclusion Theory (Allen et al., 2016). By converting wages into mobile digital assets, agribusinesses act as the primary gateway to the financial system for unbanked rural workforces. As demographic diagnostics show, 89.5% of sampled laborers had no prior bank accounts. Mobile money wallets provide a secure digital vault, insulating funds from theft and sudden consumption demands.

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This aligns with Suri and Jack (2016) in East Africa, who showed that mobile financial systems increased household savings and helped vulnerable populations withstand economic shocks. Similarly, Fokam (2021) demonstrated that mobile money wallets served as essential tools for rural farmers. The positive slope (B = 0.412) confirms that workers receiving wages on their phones are better equipped to accumulate micro-savings and manage household expenses independently.

Comparing this metric against West African realities reveals critical structural limits. The lower R^2 value of 0.318 indicates that substantial financial security determinants lie outside digital payroll control. As Chunya and Amungwa (2023) argue, digital financial inclusion remains fragile without a functional rural digital ecosystem. In deep rural areas of Tiko and Muyuka, workers cannot use mobile money directly for basic goods because local markets still rely heavily on cash.

Consequently, laborers must visit mobile money agents to withdraw wages, introducing cash-out liquidity constraints. Fonkem and Ndip (2024) observe that rural agents frequently face cash shortages or inflate fees during peak paydays. Thus, while the digital transfer protects wages, the financial security benefit degrades when workers face high costs and delays to access physical cash. Moreover, during socio-political volatility, digital networks can be entirely shut down, blocking wallet access. This systemic vulnerability explains why the financial security coefficient (B = 0.412) is lower than the productivity coefficient (B = 0.548). While digital payrolls reclaim working hours for the employer, worker financial empowerment remains constrained by the broader cash-dependent rural economy.

A critical dimension absent from this model is intra-household dynamics. Research from Financial Inclusion Insights highlights the gender gap in mobile money control. In many households, male workers retain exclusive wallet control, while female dependents become more excluded than with physical cash, which was easier to share. This study did not disaggregate financial security by gender or household bargaining power, representing a significant avenue for future inquiry. The B = 0.412 coefficient may mask considerable heterogeneity: for male heads of households, financial security may improve substantially; for female spouses, it may stagnate or decline. Recent evidence from Cameroon further supports this concern, indicating that mobile money adoption may improve household-level welfare while leaving women's individual economic agency unchanged or even constrained by intra-household bargaining dynamics.

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Integrated Theoretical Implications

Synthesizing both objectives, this study contributes to the emerging framework of digital financial infrastructure as human capital investment. Traditional human capital theory views education and health as primary productivity drivers. This study empirically posits that access to secure, efficient financial infrastructure is a fundamental component of modern human capital development in developing economies. This argument resonates with Ako's finding that human capital dimensions, including digital literacy and financial literacy, significantly moderate the extent to which Cameroonian agripreneurs benefit from fintech adoption . The significant B-values, 0.548 for productivity and 0.412 for security, suggest a cascading effect: a secure digital wage increases psychological safety, freeing cognitive bandwidth and reducing presenteeism. This cognitive liberation translates into measurable output gains. The findings move the discourse beyond cash versus cashless to a nuanced understanding of financial dignity as a catalyst for organizational performance and human welfare.

CONCLUSION AND RECOMMENDATIONS

This study investigated the impact of mobile payroll systems on labor productivity and employee financial security within the volatile agro-industrial sector of Fako Division, Southwest Region, Cameroon. The empirical findings confirm that transitioning from traditional cash-in-envelope disbursements to digital mobile money configurations significantly improves both operational time management in the fields and the financial resilience of plantation workers. By minimizing administrative delays and physical security risks, digital payrolls reclaim valuable working hours, directly driving up daily agricultural productivity ($B = 0.548$, $p < .001$). Furthermore, mobile wallets act as a practical gateway to financial inclusion for a predominantly unbanked workforce, enabling vulnerable workers to save securely and manage their income independently ($B = 0.412$, $p < .001$). While structural constraints like network instability and local agent liquidity shortages prevent workers from realizing the full benefits of digital wage systems, mobile payrolls represent a highly effective human resource and operational innovation for managing large workforces in volatile agrarian environments.

Contribution to Knowledge

This manuscript contributes uniquely to the scientific literature by empirically testing financial technology adoption models within a highly volatile, conflict-affected rural economy. It expands the scope of both the Technology Acceptance Model and Financial

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Inclusion Theory by demonstrating that external environmental factors such as regional security risks, network blackouts, and localized cash liquidity constraints directly shape user perceptions and the ultimate effectiveness of financial tools. By providing detailed, field-level empirical data from the Fako Division, this study offers evidence that institutional payroll transitions can serve as simultaneous instruments of productivity enhancement and financial inclusion, while also identifying the structural limits that constrain their transformative potential.

Recommendations

First, human resource departments within Fako's agro-industrial sector should actively partner with telecommunication firms such as MTN and Orange to deploy dedicated mobile money agent networks and high-capacity network masts directly inside plantation camps. This targeted infrastructure will resolve local cash-out liquidity constraints and minimize technical transaction failures on paydays, ensuring that workers can reliably access their earnings and maintain high workplace motivation.

Second, agribusiness management should design and implement structured financial literacy and digital training modules for all field staff. By actively guiding workers on how to use mobile wallets for secure digital savings, interest-bearing mobile accounts, and peer-to-peer micro-insurance, organizations can maximize the long-term financial security, economic resilience, and tech-readiness of their workforce. This recommendation is particularly salient given evidence that human capital, especially digital and financial literacy, significantly amplifies the benefits derived from fintech adoption in Cameroonian agricultural contexts.

Implications of the Study

The findings of this research carry vital practical and strategic implications for corporate management, financial service providers, and regional policymakers.

For agro-industrial management, the strong positive slope for productivity demonstrates that FinTech investments should not be viewed merely as administrative upgrades. Instead, they are strategic human resource tools that directly influence employee performance, operational continuity, and field-level physical safety.

For telecommunication operators and FinTech providers, the lower explanatory power for financial security underscores the reality that digital bulk payments are only as effective as

the local cash-out ecosystems supporting them. Providers must deploy more reliable network nodes and stabilize cash liquidity structures in rural plantation hubs.

For regional policymakers, the high baseline of previously unbanked laborers (89.5%) highlights that corporate payroll migrations are a powerful tool for national financial inclusion strategies. Governments can leverage these corporate transitions to expand digital economic participation in rural peripheral zones. This recommendation aligns with Ako's broader findings on digital technology adoption in Cameroonian agribusiness, which emphasize that mobile ownership and digital literacy significantly enhance adoption likelihood and that infrastructure deficits remain persistent barriers requiring coordinated policy intervention.

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