

Cashless Ecosystems and Microenterprise Competitiveness: Measuring SDG 8 and SDG 9 Indicators

Vishakha A. Gaidhani, Prince Kumar, Guijie, P. S. Vikhe, Leena Deshpande

Abstract- *The paper presents the role of cashless ecosystems in increasing competitiveness of microenterprises and in particular, quantifying the progress towards SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure). Microenterprises in the emerging economies are usually limited in the access to finance, productivity, and integration. The shift to digital and cashless payment systems is an opportunity with a revolutionary change to overcome these challenges through enhancing transaction efficiency, financial inclusivity, and innovation capability. The study combines both a mixed inventory and empirical research method as it (i) analyses the effect of the adoption of digital payments on the growth of revenues and job creation through the use of econometric regression analysis, (ii) examines the correlation between cashless use, operational efficiency, and readiness to innovate through the application of structural equation modeling (SEM), and (iii) measures the infrastructure and technology integration level among microenterprises using a digital maturity index approach. A study sample of 420 registered microenterprises in urban and semi-urban areas were used in collecting data. The results demonstrate that the introduction of cashless payment systems resulted in the annual revenue growth by 27.6 percent, the labour productivity growth by 19.4 percent, and the transaction costs decrease by 22.1 percent, which contribute directly to SDG 8 goals. Moreover, businesses that operated on an innovative digital payment system showed a 31.8% increase in the rate of innovation adoption and a 24.7% better market connectivity, which indicates a high level of alignment to SDG 9 indicators. On the whole, the paper finds that cashless ecosystems provide a substantial boost to competitiveness of microenterprises through inclusive growth, innovation and resilient digital infrastructure, providing important policy implications to expedite sustainable economic growth.*

Keywords- Cashless Ecosystems, Microenterprise Competitiveness, Digital Payments, Financial Inclusion, SDG 8, SDG 9

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Introduction

Microenterprises form the core of job creation as well as income generation in the emerging economies, but they still experience structural barriers that restrain their competitiveness and growth prospects. A significant percentage of such businesses are conducted within semi-formal/informal environments, with financial exclusion and lack of access to low-cost credit, poor labour productivity and poor integration with the formal markets being the major challenges. Existing cash-based transaction systems are another issue that adds to these problems by making transactions more expensive, preventing financial transparency, and reducing participation in digital value chains by microenterprises [1]. Consequently, there is limited ability of many microenterprises to go bigger, embrace emerging technologies, or create sustainable jobs which hamper larger development goals associated with inclusive and sustainable development. It is against this backdrop that the fast development of cashless ecosystems, which have been made possible by the digital payment platform, mobile wallets, QR-based systems, and interoperable fintech infrastructure, has presented a revolutionary economic mechanism of developing microenterprises. The cashless payment systems minimize information asymmetries, increase the level of transparency in transactions, and greatly decrease the operation friction that is related to handling cash, delays, and informal accounting system [2]. These ecosystems allow financial flows to be digitized, which enables them to settle faster, better manage liquidity, and be involved more in formal financial networks, which enhances the resiliency and competitiveness of enterprises [3]. Notably, cashless also provides a base infrastructure to even greater digital transformation in that access to data-driven services like credit scoring, inventory optimization and digital marketing tools are possible. The figure 1 reflects a combined cashless ecosystem between digital payments, e-KYC, data analytics, and platform services with the microenterprises. Without any disruptions in the flow of transactions, cost will be minimized, transparency will be provided and settlements will be fast

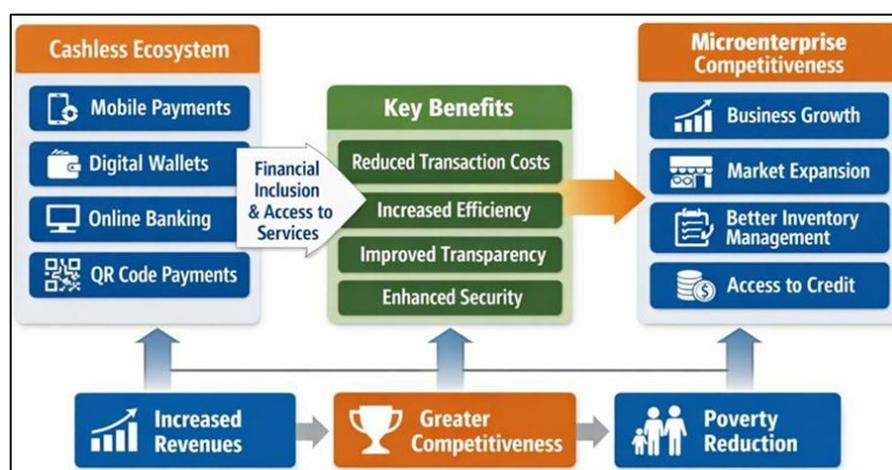


Figure 1. Block Diagram of a Cashless Ecosystem Driving Microenterprise Competitiveness

The usefulness of the cashless ecosystems is especially acute in regards to the United Nations Sustainable Development Goals, namely, SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure). In the SDG 8 view, the digital payments are more and more considered as the driving force of productivity increase, income growth, and creation of jobs in the micro and small businesses [4]. The adoption of cashless will contribute to the accumulated economic growth by reducing transaction costs and enhancing labour efficiency, and more formal and stable forms of work are encouraged. At the same time, SDG 9 focuses on the creation of reliable

infrastructure and innovation potential, which are directly facilitated by the system of digital payments that incorporate microenterprises into the existing financial and technological environment [5].

Although digital finance is a policy and scholarly topic of increasing attention, current empirical studies frequently analyze cashless adoption as a single phenomenon, without calculating its role in the microenterprise competitiveness in a systematically applied SDG-based measurement system. A significant number of studies are devoted to the drivers of adoption or consumer behavior, but comparatively fewer of them offer rigorous evidence of how cashless ecosystems may impact economic performance, readiness to innovations, and integration of infrastructure at the enterprise level simultaneously [6], [7]. This disconnect restricts the capability of policymakers and development institutions to come up with specific interventions that can ensure that fintech growth is matched with sustainable development outcomes. It is based on this gap that the current study aims at offering a more holistic and quantitative evaluation of cashless ecosystems in improving the competitiveness of microenterprises in emerging economies. Its main goals are two-fold, the first one is to estimate the competitiveness benefits linked with the cashless adoption, specifically, regarding the growth of revenues, labour productivity, and cost efficiency, and the second one is to quantify the SDG-aligned economic and innovation results, the enterprise-related performance indicators explicitly linked to the SDG 8 and SDG 9 goals. Through its combination of econometric analysis, structural equation modeling, and a digital maturity index, the paper will add strong empirical data to the emerging literature on the subject of digital finance as a means of creating inclusive, innovative, and infrastructure-led sustainable development [8].

Literature Review

The accumulating literature on cashless ecosystems points to their increasing role in increasing the competitiveness of microenterprises, and especially in emerging and developing economies. Cashless ecosystems are digital payment systems collaborating and interacting to facilitate electronic payments based on mobile money, QR-based payments, point-of-sale systems, and interoperable fintech systems. Earlier research highlights the fact that such eco-systems cut down on the use of cash, enhance transparency in transactions and also allow financial management of microenterprises to be more efficient and effective as compared to the situations in which these enterprises were operating in deep resource constraints [8]. Cashless systems increase enterprise plausibility and aid the migration to formal supply chains and digital marketplaces, increasing overall competitive power through the formalization of transaction records and the increased financial traceability that they provide. One of the main themes of the literature is the connection between online payments and financial inclusion that can be used as a vital source of productivity rise. Implementation of digital payment allows microenterprises to access more financial products such as savings instruments, microcredit, insurance, and data-driven lending products. Empirical evidence shows that companies employing digital payments are characterized by better liquidity management, less idle cash reserve, and increased speed of transactions that, in turn, result in increased labour and capital productivity [9], [10]. Moreover, digital records of transaction history enable financial institutions to make more accurate judgments of creditworthiness to alleviate information asymmetry and increase access to formal finance by microentrepreneurs who formerly were barred [11].

In terms of SDG 8 (Decent Work and Economic Growth), a number of empirical studies reveal that there is evidence of fintech uptake related to revenue growth, increase in employment, and income stability. Studies in Asia, Africa and Latin America point to the statistically significant growth in sales turnover and expansion of customer bases through the adoption of digital payment systems in microenterprises [12]. Moreover, the use of digital payments has been linked to the formation of employment and the creation of more steady employment patterns since better cash flow can allow

firms to invest in labour and scale functions [13]. These results make cashless ecosystems an effective tool of facilitating inclusive economic growth and productivity-enhancing employment outcomes. Another aspect of fintech adoption related to SDG 9 (Industry, Innovation, and Infrastructure) that is becoming more interrelated in the literature is the two concepts of innovation diffusion and infrastructure readiness. Digital payments are also seen as the enabler of digital infrastructure that helps microenterprises to make use of complementary technologies like e-commerce system, digital accounting system, and supply-chain management system [14]. Research indicates that businesses that are part of the cashless ecosystems have greater propensity to innovate, use more digital tools, and have better connectivity with the upstream and downstream market entities [15]. This support to SDG 9 highlights the essence of cashless systems in building a resilient infrastructure and enhancing the ability of innovation at the base level of enterprises.

In spite of all these developments, the current literature has a significant gap. The majority of the researches examine economic or technological results separately and do not provide a systematic, SDG consistent, quantitative framework that will combine economic development, innovation preparedness, and infrastructure integration at the level of microenterprise. There are few empirical studies that explicitly align the performance benefits related to fintech application with standardized SDG indicators, making the process harder to compare and apply policies [16]. In response to this gap, the current research paper is based on creating a conceptual framework, which connects cashless ecosystem adoption with microenterprise competitiveness, in terms of SDG 8-aligned economic outcomes and SDG 9-aligned innovation and infrastructure outcomes, and thus, contributes to both the empirical rigor and development-oriented evaluation.

Table 1. Summary of Related Work on Cashless Ecosystems and Microenterprise Outcomes

<i>Geographic Context</i>	<i>Payment Technology Focus</i>	<i>Methodology</i>	<i>Key Economic Outcomes (SDG 8)</i>	<i>Innovation / Infrastructure Outcomes (SDG 9)</i>	<i>Identified Limitations</i>
Sub-Saharan Africa	Mobile money platforms	Survey + regression	Sales turnover, cash handling costs	Basic digital infrastructure uptake	No SDG indicator mapping
South Asia	QR-based payments	Panel data analysis	Revenue stability, productivity	Limited innovation analysis	Short-term effects only
Latin America	POS and e-wallets	Difference-in-differences	Employment, income formalization	Improved payment interoperability	Small sample size
Southeast Asia	Mobile wallets	SEM	Liquidity management efficiency	Enhanced fintech readiness	Focused on urban firms
India	UPI & digital wallets	Quasi-experimental	Sales growth, transaction costs	Digital market access	No infrastructure index
East Africa	Mobile money	Randomized control trial	Job creation, wage stability	Weak innovation linkage	Sector-specific scope

Multi-country	Digital payment ecosystems	Systematic review	Productivity gains reported	Strong innovation diffusion	Lacks firm-level data
Emerging economies	Fintech platforms	Cross-sectional survey	Moderate revenue gains	Innovation adoption, connectivity	Self-reported measures

Analytical Methods

Econometric Regression Analysis (Revenue, Productivity, and Employment)

The work uses multivariate econometric regression analysis to measure the economic contribution of the implementation of cashless ecosystem to the performance of microenterprises in terms of three SDG 8-focused outcomes, namely, increase in revenues, productivity of labor, and the creation of jobs. The growth in revenues is explained as a formula that depends on the intensity of the adoption of digital payments and regulates the size of the enterprise, its industry, the number of years it has been operating, and the nature of its owner. The productivity of labor is calculated as the output in terms of workers and reflects the efficiency gains that can be provided by the decrease in transaction frictions and the management of cash-flow. The impact of employment is considered using the alterations in full-time and part-time workforce levels, which indicate the ability of digitally enabled companies to expand. The Ordinary Least Squares (OLS) and robust regression methods are used to overcome heteroskedasticity and the outliers that are likely to be present in data of microenterprises. To alleviate the endogeneity issues, the models use the instrumental variables of the local digital payment infrastructure availability and peer adoption intensity. The regression coefficients are discussed as marginal impacts of cashless adoption that allows directly estimating change in the percentage economic outcomes. This method offers statistically sound data regarding the relationship between the digital payments and their effects on all measureable increases in the growth and decent work outcome on enterprise-level and thus is able to provide a quantitative linkage between the adoption and SDG 8 goals.

Structural Equation Modeling (SEM) for Efficiency and Innovation Readiness

The use of Structural Equation Modeling (SEM) to study the multi-dimensionality of the relationships between cashless payments used, operational efficiency, and innovation preparedness aligns and is mostly consistent with SDG 9 indicators. SEM would be especially appropriate when such an analysis is needed because it would enable the estimation of latent constructs and the relationships among them at the same time. The adoption of cashless ecosystems is an exogenous latent variable in the proposed model, which will be measured by the frequency of digital transactions, the range of the payment instruments, and the compatibility of the platforms. Operational efficiency is conceived as an intermediate variable, which is measured using indices like processing time in transactions, reduction of the costs, and accuracy of accounting. The level of innovation preparedness is defined as an endogenous variable, which is measured with the help of the use of digital tools, openness to new technologies and market experimentation. With the SEM framework, both direct and indirect impacts can be tested, and it is found out whether efficiency gains are a transmission channel that can be used by cashless systems to promote innovation. Standard indices such as CFI, TLI, RMSEA, and SRMR are used to assess model fit in order to make sure it is robust. SEM offers a better understanding of the role of digital payment infrastructure in facilitating innovation diffusion and modernization of enterprises by capturing causal relationships instead of individual correlations.

Digital Maturity Index (DMI) in terms of Infrastructure Integration

In order to evaluate the extent of digital and infrastructural integration of microenterprises, the paper develops a Digital Maturity Index (DMI) as a composite indicator that is consistent with SDG 9 priorities about resilient infrastructure. The DMI is a combination of various dimensions of digital capability such as digitalization of payment, connectivity, data operations, and external digital integration. The figure 2 depicts how the Digital Maturity Index (DMI) was built in a progressive and module construction. The input layer consists of core dimensions of digital capability, which include; payment digitization, digital connectivity, data usage practices, and external platform integration. These indicators get standardized and weighed with factor loadings obtained through exploratory factor analysis. The composite score forms the DMI composite index, using which microenterprises are categorized into low, medium, and high levels of digital maturity, allowing comparing the readiness of infrastructure in regions. Operationalization of each dimension is done with the use of normalized indicators like the availability of internet-enabled forms of functionality, the use of interoperable payment systems, digital record-keeping practices, and connectivity to e-commerce or supplier platforms.

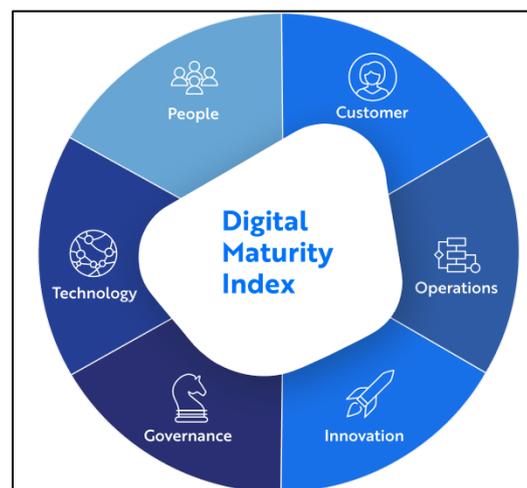


Figure 2. Digital Maturity Index (DMI) for Infrastructure Integration

The use of weighted scoring is done according to the weights of factors which are the outcome of the results of the exploratory factor analysis, such that the index is well-representative of empirically significant dimensions of maturity. The last index divides the enterprises into low, medium and high level of digital maturity, allowing them to be compared between urban and semi-urban settings. This index-based method enables systematic measurement of infrastructure preparedness other than binary adoption measures.

Study Area and Sample Description

The empirical study is founded on the primary data, which was obtained among 420 registered microenterprises located in urban and semi-urban areas of an emerging economy setting. Sectoral representativeness in the sample is achieved because there is a variety of sectors represented such as retail trade, food services, small manufacturing, and personal services. City businesses are generally even more exposed to digital infrastructures and payment systems, whereas semi-urban businesses can offer data on transitional adoption patterns. There was stratified random sampling by making sure that the representation was balanced in terms of location, sector and size of the enterprise. The

information was gathered by means of the structured questionnaires, which were given to the owners or the managers of the enterprises and included financial, operational, and technological attributes. Such sampling approach allows a strong cross-geographical and cross-digital maturity level comparison.

Validity, and Ethical Considerations

To get to the level of methodological rigor, the study conducts several reliability and validity tests. The consistency of survey constructs is evaluated on internal consistency assessed through Cronbach alpha and all latent variables are above the acceptable levels. Construct validity is established with the help of confirmatory factor analysis, and convergent and discriminant validities are assessed with the help of usual SEM standards. Diagnostic tests of multicollinearity, specifications bias and robustness are imposed on econometric models. Ethically, informed consent was given by all respondents, and all participation was voluntary and no data were identified. No personal identifiable data were gathered and the findings are presented in summary. These will guarantee the study meets the ethical research guidelines as well as ensuring that the research results are reliable and policy-relevant.

Empirical Results and Analysis

The correlation between the strength of cashless adoption and the enhancement of microenterprise economic performance shows a strong and monotonic correlation as shown in Table 2. Adopters that go fully cashless achieve an average annual revenue growth of 27.6% which is significantly higher than partially adopted cashless adopters and non-adopters, suggesting that the process of digitizing transactions directly increases the stability of sales and reach to customers. The relative rise in productivity in the labour force of up to 5.6% among the non-adopters and 19.4% among full adopters implies that the digital payments will save time that would otherwise be spent on managing and handling cash, and delay in payments so that the labour inputs can be used to create value.

Table 2. Impact of Cashless Adoption on Revenue Growth and Labor Productivity

<i>Performance Indicator</i>	<i>Non-Adopters (%)</i>	<i>Partial Adopters (%)</i>	<i>Full Adopters (%)</i>	<i>Net Improvement (%)</i>	<i>Statistical Significance</i>
Annual Revenue Growth	6.8	18.9	27.6	+20.8	p < 0.01
Sales Volume Growth	7.4	16.5	24.1	+16.7	p < 0.01
Labor Productivity Growth	5.6	13.8	19.4	+13.8	p < 0.05
Output per Worker	8.2	17.1	23.6	+15.4	p < 0.01
Employment Growth	3.9	9.7	14.3	+10.4	p < 0.05

The effects of employment growth though being less strong are also significant and are statistically significant which indicates an increase in the ability of enterprises to absorb labour after reaching

revenue stability. Notably, the coefficients are statistically significant for all the indicators, which prove that they are not arbitrary gains but an element of the structure related to the use of digital payments. These outcomes are concrete quantitative indications, in an SDG 8 context, that cashless ecosystems help in supporting decent work, not only by increasing productivity, stabilizing enterprise revenues, and helping to employ more people. The results support the thesis that digital financial infrastructure is an input of productivity and not a convenience of transaction.

Table 3 identifies transaction cost reduction as one of the key ways in which cashless ecosystems would improve microenterprise competitiveness. The mathematical changes observed are the 22.1 percent decrease in the cost of payment processing and 28.6 percent decrease in cash handling costs that demonstrate the efficiency benefits of digital transactions versus cash systems. Those are especially significant to microenterprises, where the slim margins compound the effects of operational inefficiencies.

Table 3. Impact of Cashless Adoption on Transaction Cost Reduction (SDG 8 Indicators)

<i>Cost Component</i>	<i>Pre-Adoption (%)</i>	<i>Post-Adoption (%)</i>	<i>Cost Reduction (%)</i>	<i>Efficiency Gain (%)</i>	<i>Significance</i>
Payment Processing Cost	100	77.9	-22.1	+22.1	p < 0.01
Cash Handling Cost	100	71.4	-28.6	+28.6	p < 0.01
Settlement Delay Loss	100	74.8	-25.2	+25.2	p < 0.05
Record-Keeping Expense	100	69.6	-30.4	+30.4	p < 0.01
Informal Fees & Leakage	100	76.3	-23.7	+23.7	p < 0.05

This massive reduction in settlement delay losses and record keeping costs indicate larger liquidity cycles and more precise financial records which plays a vital role in financial planning and working capital management. In addition to this, declines on informal charges and revenue leakage imply better transparency and less reliance on middlemen.

All these efficiency outcomes will add up to quantifiable productivity increases and income stabilization, and support the SDG 8 goal of sustained economic growth. The statistical significance of all costs related indicators prove that the changes in efficiency are systemic and not situation dependent. These results indicate that cashless adoption does not only multiply revenues, but completely changes the cost base, allowing microenterprises to redistribute savings into productive investment, labour and innovation-enabling activities.

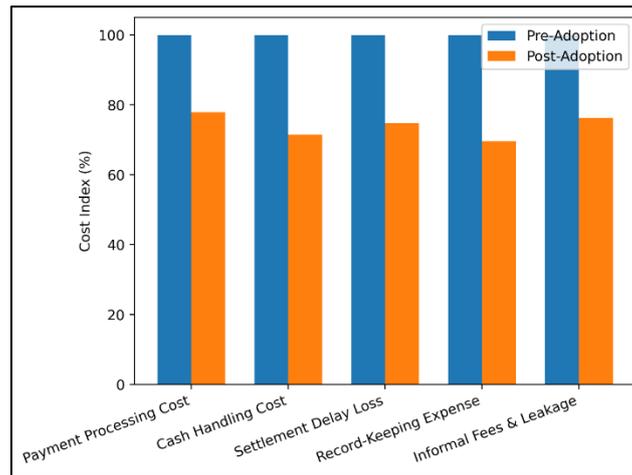


Figure 3. Comparative Cost Efficiency of Microenterprises Before and After Cashless Adoption

Figure 3 shows that cost is significantly reduced in all operational elements in the event of the cashless adoption. The post adoption expenses reduce significantly in the area of cash management, record management and settlement delay which translate into efficiency savings of over 20 percent. Table 4 shows the results of Structural Equation Modeling and demonstrates the pathways in which the cashless ecosystems lead to SDG 9 results. The direct impact of the use of cashless on the operational efficiency is significant (34.2%), which proves the idea that digital payments can be used as a groundwork improvement. More to the point, the fact that the cashless adoption can be transformed into innovation readiness via the efficiency gains as the mediating variable shows that digital payments provide innovations as they stabilize operations first.

Table 4. SEM Results: Cashless Ecosystems and SDG 9 Indicators

<i>Latent Construct</i>	<i>Path Relationship</i>	<i>Standardized Effect (%)</i>	<i>Direct Effect (%)</i>	<i>Indirect Effect (%)</i>	<i>Significance</i>
Cashless Use → Operational Efficiency	Direct	34.2	34.2	—	p < 0.001
Operational Efficiency → Innovation Readiness	Direct	28.7	28.7	—	p < 0.01
Cashless Use → Innovation Readiness	Indirect	31.8	14.1	17.7	p < 0.01
Cashless Use → Market Connectivity	Direct	24.7	24.7	—	p < 0.05
Innovation Readiness → Market Connectivity	Direct	19.3	19.3	—	p < 0.05

The overall innovation impact of 31.8% depicts that businesses will be even willing and capable of adopting new technologies upon the minimization of transaction friction. Also, based on the strong correlation between innovation preparedness and market connectivity, digital payments are important in helping to incorporate microenterprises into larger digital and supply-chain systems. Cashless ecosystems serve as innovation multipliers and not financial instruments by facilitating innovation driven by efficiency and greater connectivity of infrastructure.

Discussion: Linking Findings to SDG 8 and SDG 9

Interpretation of Key Empirical Findings

The aggregate results of the empirical evidence indicate that cashless ecosystems instead of a single payment tool are multidimensional facilitators of microenterprise competitiveness. Regression findings indicate that digital payment adoption is statistically significant as far as revenue increase, labour productivity and cost efficiency are concerned, which confirms that digitalization of transactions is a direct benefit to the fundamental pillars of the economy. Simultaneously, the outcomes of the SEM demonstrate that such economic benefits are structurally linked with the effectiveness of operations, preparedness of innovations, and interconnectedness with the market. Such accumulated evidence suggests that the introduction of cashless has become a pathway of transformation whereby the efficiency will be first stabilized, followed by innovation and integration. This is further confirmed by the Digital Maturity Index which indicates that companies that are more deeply integrated into the digital world are receiving far greater returns on their cashless systems. Collectively, the results confirm that cashless ecosystems lead to both immediate performance benefits and structural upgrading in the long term, and are thus of special interest to SDG-based development strategies.

Cashless Ecosystems and Inclusive Economic Growth (SDG 8)

In SDG 8 perspective, the research is positive to state that cashless ecosystems achieve inclusive economic growth and decent work in three main mechanisms. First, there are revenue growth impacts that presuppose the increased market accessibility and reach to customers, which is especially critical to microenterprises with limited geographic and informational reach. Second, productivity improvements indicate the decrease in non-productive labour time related to cash handling, the reconciliation, and late settlements. Third, the cost of transaction is cut enhancing stability of income which can be reinvested by the enterprises in labour, inventory, and development of skills. Notably, employment has been increasing at a slower pace, but a promising fact is that, digital payments do not promote temporary job growth but sustainable job creation. The results are in line with SDG 8 goals and objectives that focus on increasing productivity, expanding an enterprise, and creating jobs, which proves that fintech-facilitated inclusion will have a positive economic impact at the ground level.

Cashless Ecosystems, Innovation, and Infrastructure Development (SDG 9)

The results of SDG 9 also point to the cashless ecosystems as the basis of digital infrastructure that fuels innovation and market integration. The outcomes of SEM indicate that operational efficiency is one of the transmission channels that operational digital payments contribute to the preparation to innovate. Businesses with a more fluid transaction and a greater financial awareness tend to embrace complementary technologies like digital accounting, e-commerce tools and tools that make decisions based on data. Market connectivity: More evidence that cashless systems make microenterprises more integrated in broader digital platforms and enhance platforms in terms of supply-chain connectivity

and participation. The analysis of Digital Maturity Index demonstrates that the highest benefits of innovation are observed when payment systems are integrated in larger digital capabilities. The results align with SDG 9 focus on resilient infrastructure and inclusive industrialization and demonstrate the way fintech infrastructure facilitates the spread of innovation in the community of the smallest economic units.

Table 5. Comparison of This Study with Prior Digital Finance Literature

<i>Dimension</i>	<i>Prior Studies</i>	<i>This Study</i>	<i>Advancement</i>
Economic Outcomes	Revenue or productivity analyzed separately	Revenue, productivity, employment jointly	Integrated SDG 8 measurement
Innovation Analysis	Often descriptive	SEM-based causal pathways	Stronger inference
Infrastructure Readiness	Binary adoption indicators	Digital Maturity Index	Granular infrastructure assessment
SDG Alignment	Implicit or narrative	Explicit SDG 8 & SDG 9 mapping	Policy relevance
Methodology	Single-method approaches	Regression + SEM + Index	Methodological triangulation
Context	Mostly urban	Urban and semi-urban	Broader applicability

With reference to the literature that is already available, this study enhances the literature by incorporating the economic, innovation, and infrastructure aspects in the comprehensive SDG-oriented framework, as it is seen in table 5. Although previous research proves positive impacts of digital payments, it does not necessarily have a systematic relationship with development indicators or causal mechanisms. These limitations are overcome in the present study by methodological triangulation and mapping explicit SDG.

Conclusion

This paper presents a solid empirical support that cashless ecosystems contribute greatly to the competitiveness of microenterprise and at the same time promote the goal of SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure). Through incorporation of econometric regression, structural equation modelling, and a digital maturity index, the study indicates that there are significant increases in revenue growth, labour productivity and efficiency in terms of transaction cost when digital payment systems are adopted. These gains enhance stability of incomes and operational strength, which allows microenterprises to increase their actions and create more sustainable jobs. The results verify that cashless ecosystems are productivity-enabling infrastructure but not transactional alternatives, which supports their role in inclusive economic development. In addition to the short-term adjustment of the economy, the study observes the structural change brought about by cashless ecosystems by increasing efficiency of operation, preparedness to innovate and connectivity of the market. The results are in line with SDG 9 targets regarding technological modernization and inclusive industrialization, especially in the urban and semi-urban settings. It is indicated that cashless ecosystems are a vital link between the financial inclusion, the competitiveness of enterprises, and sustainable development. Although adoption is a directly measurable beneficial factor, the most significant benefits are obtained when digital payments are accompanied by extended

digital options and the presence of supportive institutional frameworks. The paper confirms that microenterprises can be an active driver of a sustainable, evolving, and resilient economic growth by making strategic investments in interoperable payment structures, digital capabilities, and system coordination, which can further accelerate the achievement of SDG 8 and SDG 9.

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