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THE IMPACT OF DIGITAL PLATFORMS ON THE ECONOMIC EFFICIENCY OF SMALL BUSINESSES

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ABSTRACT: Digital platforms are reshaping how small businesses acquire customers, process transactions, coordinate delivery and use market information. This paper examines the conditions under which such adoption translates into economic efficiency rather than merely higher online sales. Using a structured analytical review of OECD research and official statistics from Uzbekistan, the study develops a firm-level measurement framework combining platform-use intensity, labour productivity, operating-cost ratios, net margins and customer acquisition costs. Official statistics indicate that small business accounted for 53.8% of Uzbekistan's GDP in 2023, 53.5% in 2024 and 52.2% in 2025; these are contextual indicators, not estimates of the effect of digital platforms. OECD survey findings illustrate potential benefits but are not representative of Uzbek enterprises. The paper proposes a channel-adjusted profitability indicator, a multidimensional platform efficiency assessment and an empirical design for subsequent testing. The findings suggest that platforms can reduce search and coordination costs, but fees, logistics expenses, digital-skill constraints and intermediary dependence may erode net gains. A phased policy and managerial framework is proposed for small firms in Uzbekistan. The contribution is conceptual and methodological; causal impacts require firm-level validation.

Keywords: digital platforms; small business; economic efficiency; digital transformation; transaction costs; Uzbekistan; productivity.

INTRODUCTION

Digital platforms have moved beyond a simple advertising function. Marketplaces aggregate buyers and sellers, payment applications simplify settlement, logistics platforms connect firms with delivery providers, and cloud services facilitate inventory and customer management. For resource-constrained small businesses, these infrastructures can substitute for some fixed investments in physical distribution and proprietary information systems. Yet the same platforms charge commissions, control visibility and impose operational requirements. Whether adoption improves economic efficiency is therefore an empirical and managerial question rather than a technological assumption.

The issue is important for Uzbekistan because small businesses make a substantial contribution to domestic economic activity. According to the National Statistics Committee, their share in GDP was 53.8% in 2023, 53.5% in 2024 and 52.2% in 2025 [5]. These aggregate figures establish the economic relevance of the sector but cannot reveal platform adoption rates or platform-related productivity changes. In particular, a change in GDP share can reflect many macroeconomic and sectoral forces unrelated to digitalisation.

The research problem is the frequent conflation of digital adoption with economic performance. The presence of an online store or a growing number of digital orders is not proof of improved profitability. The article therefore asks: through which mechanisms do digital platforms influence

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small-business efficiency, which costs can reverse expected benefits, and how should these effects be measured in Uzbekistan? Its objective is to develop a testable analytical framework and practical evaluation criteria.

2. LITERATURE REVIEW AND THEORETICAL FOUNDATIONS

The OECD report The Digital Transformation of SMEs [1] describes digitalisation as a heterogeneous process: small firms often start with administration, marketing and customer communication, while more advanced integration requires complementary organisational capabilities. The report identifies platform participation as a means of reaching markets but also highlights exposure to security risks and the power of intermediaries. Consequently, the direction and size of gains are likely to differ across sectors and firms.

The OECD 2024 D4SME survey [2] reports that 47% of surveyed businesses perceived increased domestic sales, 41% extended customer outreach and 40% automation-related productivity improvements among the benefits of digital tools. The survey also found that 72% used digitally collected and analysed data for strategic decisions [2]. These are self-reported survey responses from selected participating firms in seven OECD countries, not measured causal effects and not national estimates for Uzbekistan. Their analytical value lies in identifying plausible channels and constraints.

From a transaction-cost perspective, a platform may lower the expense of identifying customers, verifying payments and arranging delivery. From a resource-based perspective, the gains depend on how effectively owners combine digital services with staff skills, accounting systems and product quality. Network effects can enlarge demand, but concentrated platform markets may also create dependence and reduce bargaining power. A balanced evaluation must therefore consider both cost savings and new intermediary costs.

The World Bank's Digital Progress and Trends Report 2023 [3] discusses unequal access to digital opportunities across countries and population groups. Its e-commerce discussion [4] indicates how digital sales channels may connect smaller enterprises to customers and value chains. These sources support a conditional interpretation: platforms create opportunities, while infrastructure, finance, digital literacy and market institutions shape their actual value.

3. RESEARCH METHODOLOGY

This paper applies a descriptive, comparative and analytical approach. The evidence base consists of OECD publications, World Bank analytical materials and the National Statistics Committee's published GDP-share series for Uzbekistan. The sources are used for different purposes: international research informs mechanisms and risks, while Uzbek official statistics describe the importance of small business in the national economy. No primary interviews, enterprise panel data or econometric estimates were available for this article; thus the proposed mechanisms are hypotheses for future testing.

The analytical unit is an individual small firm observed before and after its adoption of a defined digital platform. Platform participation should be operationalised separately from platform intensity: participation is a binary adoption variable, while intensity may be measured by platform sales divided by total sales. Economic efficiency is defined as the relationship between outputs and the full set of resources and costs required to generate them. This definition rules out treating online sales share alone as a measure of efficiency.

The proposed evaluation has three stages. First, document platform expenditure and the distribution of revenue across channels. Second, compare firm performance across equivalent

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accounting periods using consistent price and cost definitions. Third, assess whether observed changes persist after considering seasonality, firm size, sector, regional infrastructure and general market trends. Ideally, a panel of adopting and comparable non-adopting firms would permit difference-in-differences estimation; the validity of such a design depends on checking pre-adoption trends and selection into adoption.

4. CONTEXTUAL EVIDENCE: UZBEKISTAN AND INTERNATIONAL EXPERIENCE

Table 1 presents the officially published share of small business and private entrepreneurship in Uzbekistan's GDP. The figures are annual shares, not digital-platform indicators. They demonstrate why even modest firm-level productivity improvements could matter for the wider economy, while avoiding an unsupported claim that platforms caused changes in aggregate output.

Table 1. Share of small business in Uzbekistan's GDP, 2023–2025

Year	Share of GDP (%)	Meaning for this study
2023	53.8	Sectoral context; no platform effect measured
2024	53.5	Sectoral context; no platform effect measured
2025	52.2	Sectoral context; no platform effect measured

Source: National Statistics Committee of the Republic of Uzbekistan, SIAT indicator "Share of small businesses in GDP" [5].

International evidence adds information about potential mechanisms but must not be extrapolated directly. In the OECD 2024 D4SME survey, reported sales, customer reach and automation benefits reflect the perceptions of participating enterprises [2]. The figures are not a before–after experimental comparison. The distinction is essential when developing research claims for Uzbekistan, where local enterprise-level validation remains necessary.

Different business models also imply different platform economics. A retailer may gain national reach but pay fulfilment and return costs; a service provider may reduce scheduling time but face customer acquisition fees; a small manufacturer may use B2B platforms to find buyers while incurring certification and fulfilment costs. Consequently, the net effect should be assessed by channel and sector rather than assumed to be uniform.

5. PROPOSED ECONOMIC EFFICIENCY ASSESSMENT FRAMEWORK

The principal methodological contribution is a channel-adjusted framework that separates adoption, operational performance and financial outcomes. It also identifies complementary capabilities as moderating factors. A digital platform can improve gross sales and simultaneously reduce profit if commission and fulfilment costs grow faster than revenue. The assessment therefore combines productivity, cost intensity, net profitability, customer acquisition costs and delivery performance.

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Table 2. Proposed firm-level indicators of platform-related efficiency

Indicator	Operational definition	Interpretation
Labour productivity	Real sales revenue / full-time-equivalent employees	Higher value suggests more output per worker
Operating-cost ratio	Operating expenses / net sales × 100	Lower value suggests improved cost efficiency
Net profit margin	Net profit / net sales × 100	Higher value indicates stronger financial result
Customer acquisition cost	Marketing and acquisition costs / new paying customers	Lower value implies more efficient customer acquisition
Platform sales intensity	Platform sales / total sales × 100	Measures use intensity, not efficiency
Platform channel contribution	Platform sales − attributable variable costs − platform fees − channel marketing costs	Tests whether digital channel generates positive contribution
Order fulfilment time	Average hours/days from confirmed order to delivery	Shorter time indicates faster operations

Source: Author's proposed framework informed by OECD research [1, 2]. Definitions are conceptual and require consistent accounting in empirical application.

To distinguish economic gains from mere channel switching, the analysis should compare contribution margins across digital and offline channels. A suggested channel-adjusted efficiency ratio is CAER = (platform-channel revenue − directly attributable platform-channel costs) / directly attributable platform-channel costs. The denominator must be positive, and shared overheads should be allocated using a transparent rule. CAER is proposed here as an analytical indicator, not a validated standard measure. It should be reported together with whole-firm profit margin to identify substitution effects.

A composite assessment could standardise changes in labour productivity, operating-cost ratio, net profit margin and customer acquisition cost relative to pre-adoption baselines. Weighting should be justified empirically or presented as alternative scenarios; an arbitrary single index may conceal important trade-offs. For a PhD-level empirical project, sensitivity tests using equal weights, expert weights and principal-component weights would clarify the robustness of rankings.

6. RESEARCH HYPOTHESES AND EMPIRICAL DESIGN

The framework generates four testable propositions. H1: higher platform-sales intensity is associated with higher labour productivity, conditional on sector and firm characteristics. H2: the relationship between platform intensity and net profitability is nonlinear because intermediary fees and logistics expenses may rise with scale. H3: digital managerial skills positively moderate the relationship between platform intensity and economic efficiency. H4: diversification across sales channels reduces exposure to changes in platform fees or ranking algorithms.

An appropriate survey would record the month and type of platform adoption, sales by channel, employees, gross and net revenue, advertising spending, platform commissions, returns, delivery costs, owner experience and digital skills. Annual or quarterly accounting records should be sought where

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available. A sample should include retail and service enterprises from urban and rural areas, with firm-size and sector stratification. The sample size would be calculated from the expected effect, variance and desired statistical power rather than selected arbitrarily.

An illustrative econometric specification is: $Efficiency_{it} = \alpha + \beta\ PlatformIntensity_{it} + \gamma\ Skills_{it} + \delta\ X_{it} + \mu_i + \tau_t + \varepsilon_{it}$, where X includes firm-level controls, μ_i denotes firm effects and τ_t period effects. Interaction terms between platform intensity and skills can test H3, while quadratic intensity terms can examine H2. These expressions are proposals only; no coefficients are estimated in the present paper. Reverse causality remains a concern because already-successful firms may be more likely to adopt platforms. Plausible robustness checks include pre-trend analysis, alternative efficiency measures and sector-specific estimates.

7. DISCUSSION: POLICY AND MANAGERIAL IMPLICATIONS

For managers, the priority should be unit economics rather than digital presence. Before investing in paid advertising, a firm should calculate the margin after platform commission, payment processing, packaging, delivery, returns and customer support. It should monitor repeat-purchase rates and compare customer acquisition costs with expected customer value. Basic digital bookkeeping and inventory management are often prerequisites for reliable evaluation.

For universities and business-support organisations, training should integrate e-commerce operations with cost accounting, analytics and cybersecurity. Short courses can require participants to build a channel-level profit-and-loss statement and test the financial viability of a proposed online business model. Mentoring should focus on the application of these tools rather than the number of accounts opened on marketplaces.

For policymakers, the central objective is sustained business performance, not simply the number of digitally registered enterprises. Improving connectivity, digital payments, logistics interoperability and transparent platform conditions can reduce entry barriers. Programme evaluations should track survival, real productivity and net margins over time. Targeted support may be needed for smaller and rural enterprises that face higher logistics costs or weaker access to digital skills.

Platform diversification and consumer protection also deserve attention. Dependence on one intermediary creates vulnerability to commission increases, rule changes and visibility algorithms. Firms can partly manage these risks by maintaining direct customer relationships, preserving transaction records and developing more than one viable sales channel, subject to platform terms and applicable law.

8. CONCLUSION

Digital platforms can increase the economic efficiency of small businesses through wider market access, lower coordination costs, improved information use and flexible service delivery. The benefits are not automatic. The final result depends on platform fees, fulfilment costs, digital capabilities, competition and the firm's capacity to reorganise business processes. The article contributes a structured indicator system and a channel-adjusted approach that distinguish platform use from realised profitability and productivity.

Official statistics confirm the substantial role of small business in Uzbekistan's economy, but they do not measure platform effects. The next stage of research should test the proposed hypotheses with enterprise-level panel or survey data, including comparison firms and transparent cost allocation. This would enable a more defensible assessment of the mechanisms through which digital platforms influence economic efficiency in Uzbekistan.

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