

Unlocking Economic Gains: *How E-commerce Enhances Efficiency, Productivity, and Market Access in Indonesia*

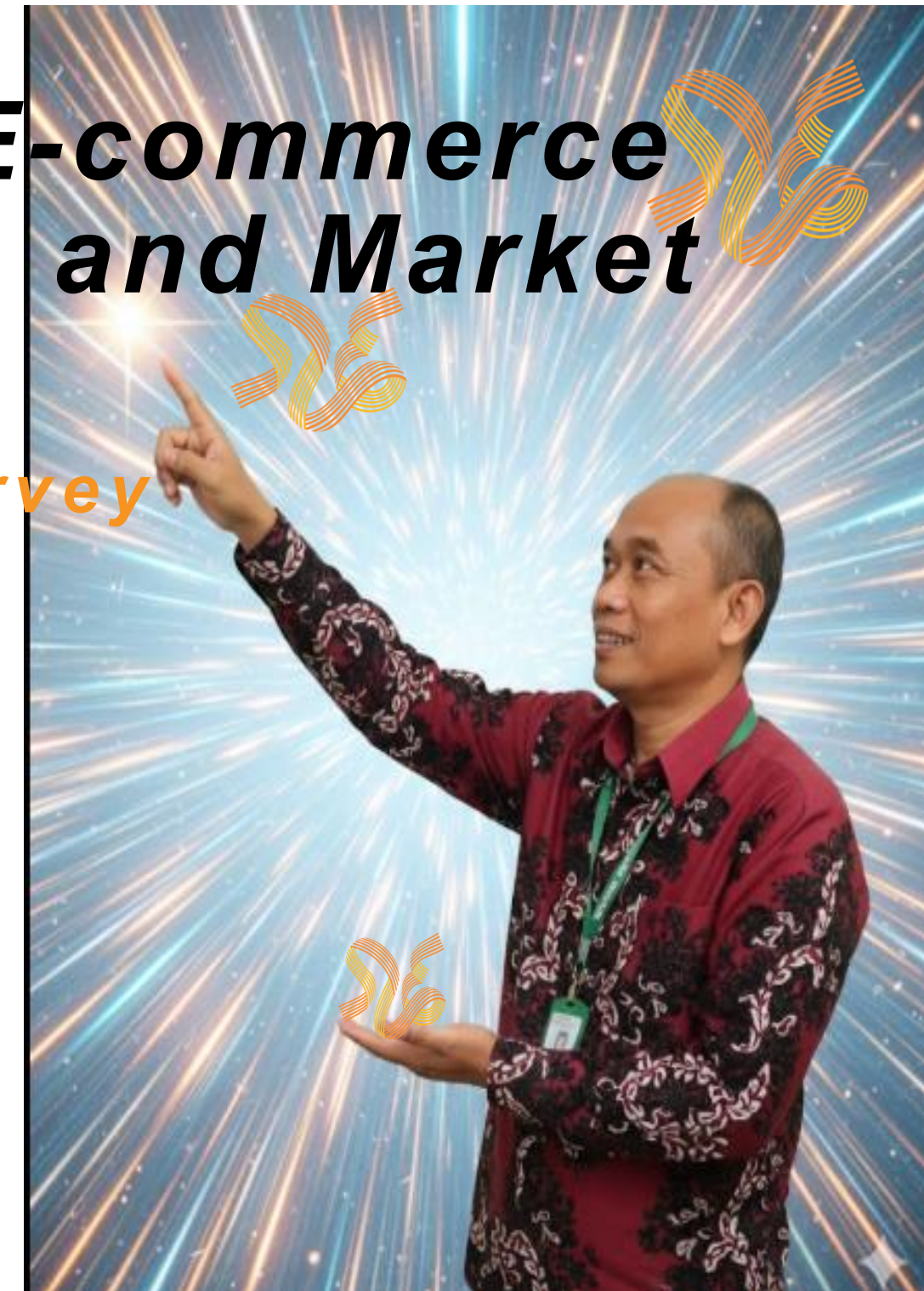
Evidence from Indonesia's 2024 E-Commerce Survey

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Background

Digital transformation has emerged as a critical engine of global economic growth. In the Asia Pacific region, e-commerce has been particularly dynamic, reshaping trade and consumer behavior. For Indonesia, as the largest economy in Southeast Asia, the rise of e-commerce is reshaping how businesses operate and how consumers access goods and services. MSMEs, which dominate Indonesia's business landscape, are key actors in this transformation.



Digital Transformation as a Driver of Total Factor Productivity (TFP)

- **Global Shift (Oh, 2021; Rehman & Nunziante, 2023):** Digital trade and e-commerce are the most dynamic sectors globally, positively influencing Total Factor Productivity (TFP) through strategic investments in digital infrastructure.
- **Theoretical Link:** The growth of ICTs and the digital economy fosters economic cohesion and growth by reducing operational friction and enabling process automation.
- **Digital Silk Road (DSR):** Regional initiatives emphasize digital connectivity, cloud computing, and big data as critical components of future economic architecture (Cheng, 2022).

The Second Machine Age: E-commerce exemplifies the "new economy" that enhances productivity through lowered search costs and increased transaction speed (Brynjolfsson & McAfee, 2014).



Indonesia's E-commerce Momentum

The Largest Economy in Southeast Asia and the MSME Engine



E-commerce in Indonesia has seen rapid expansion, significantly contributing to GDP and employment. However, despite its potential, challenges remain. Few businesses can access international markets, digital and financial literacy are still low, and regional disparities in infrastructure limit inclusive growth. Understanding these gaps is essential for designing effective interventions



- **Economic Scale:** Indonesia is the world's most populous nation; its digital economy is projected to reach **USD Billion by 2025** (9-10% of national GDP).
- **E-commerce Dominance:** E-commerce contributed to Indonesia's total digital economy value in 2023. User penetration is estimated to reach a **million users (2025)**.
- **MSME Significance:** Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the economy:
 - ❑ Account for all businesses.
 - ❑ Employ of the total workforce (million jobs created by e-commerce alone).
- **Archipelagic Challenge/Opportunity:** E-commerce is crucial for bridging geographic divides and fostering inclusive growth across the archipelago.



Research Objectives: Assessing E-commerce Impact on Economic Performance (2023 Data)

Empirically assess how e-commerce influences three main dimensions

Goal: To provide a comprehensive, data-driven analysis of how e-commerce adoption impacts the economic performance of Indonesian MSMEs.

- Key Dimension: Measurement Focus (Survey Data)
 - Economic Efficiency: Digitalization of transaction processes, payment systems (COD vs. non-cash), and financial reporting adoption.
 - Productivity: Job creation, employment distribution, firm revenue growth, impact of training/governance on performance.
 - Market Accessibility: Domestic reach (B2C vs. B2B), geographic inequality, barriers to global market entry (exports). |
- ❑ **Data Source:** E-Commerce Survey (BPS Statistics Indonesia).
- ❑ **Scope:** provinces, districts/cities, business units.



Economic Efficiency through transaction cost reduction and smarter resource use



Productivity by examining job creation, revenue growth, and profit margins



Market Accessibility focuses on both domestic and international reach. Ultimately, it provides data-driven recommendations for policymakers



Methodology

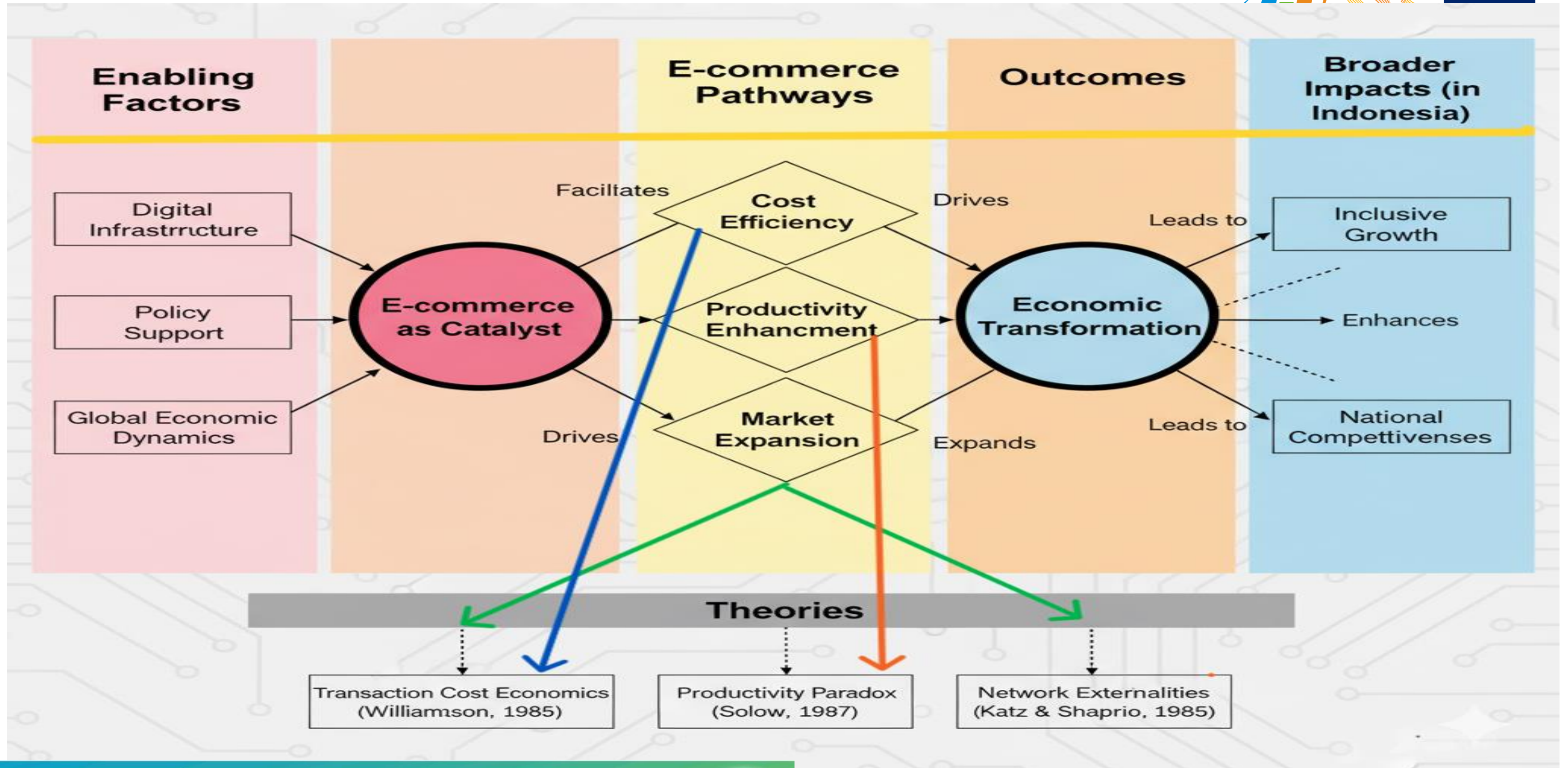
The study uses data from the 2024 BPS E-Commerce Survey. ***A Robust National Snapshot***

- The survey covers 38 provinces, 365 districts/cities, and over 40,000 business units, ensuring strong national representation.
- The analysis focuses on how businesses engage in e-commerce across sectors and scales, using indicators on sales media, payment methods, delivery systems, and financial management practices.

- ❑ **Approach:** Descriptive and Inferential Quantitative Analysis.
- ❑ **Data Source:** Secondary data from the E-Commerce Survey 2024 (capturing activities).
- ❑ **Statistical Robustness:** Uses Stratified Random Sampling and a standardized OECD/UNCTAD-aligned questionnaire.
- ❑ **Coverage:**
 - ❖ **Geographic:** Provinces, Districts/Cities.
 - ❖ **Sample Size:** business units (Micro to Large enterprises).
- ❑ **Focus:** E-commerce activities across trade, manufacturing, services, and transportation sectors.



Conceptual Framework of E-commerce's Catalyst



Findings

Widespread Adoption, Low-Tech Preference

Economic Efficiency: The Dominance of Instant Messaging

- **Adoption Rate:** of surveyed businesses reports some level of e-commerce engagement.
- **Inverted Correlation with Firm Size:** E-commerce provides valuable opportunities for smaller businesses, suggesting a leveling effect.
- **Channel Preference:** The majority of entrepreneurs favor platforms that are easily accessible and cost-effective.
- **Key Sales Channels (2023):**
 - Instant Messaging:** (Primary sales channel).
 - Social Media/Marketplaces:** High but secondary usage.

Economic Interpretation: This indicates lower initial **Transaction Costs (TCE)**, facilitating real-time negotiation and faster purchasing processes, but potentially hindering scale and formalization.



Key Statistics

Findings

Indonesia had 3.82 million ecommerce businesses in 2023, employing 12.4 million people, or 8.57% of the total workforce. A vast majority (95.33%) rely on instant messaging as their sales channel, while 75.19% still prefer cash on delivery. These figures highlight both the widespread use of digital tools and the persistence of traditional trust-based payment systems.

Efficiency

Adoption of ecommerce has reduced transaction costs by 24% and customer acquisition costs by 31%. Instant messaging platforms dominate as sales tools because they are affordable and easy to use. At the same time, cash on delivery remains the most common payment method, reflecting consumer trust issues with digital payments.



Key Statistics

Productivity

Businesses adopting ecommerce reported significant gains: revenue growth of 23.4%, higher profit margins of 15.2%, and an average increase of 2.3 employees per firm. Importantly, women's participation in the e-commerce workforce is also higher, demonstrating e-commerce's potential to drive inclusive growth.

Findings

Market Access

Most ecommerce businesses (72%) target retail consumers in domestic markets, but engagement with B2B and government markets remains limited. Geographically, 75% of shipments are concentrated in Java, exposing a strong regional imbalance. On the global front, fewer than 1% of businesses have ventured into export markets, showing large untapped potential.

Challenges

Despite progress, several obstacles persist: only 15% of businesses keep proper financial records, and fewer than 4% have received digital skills training. Digital literacy remains low, particularly outside urban areas, while unequal infrastructure development deepens the digital divide across Indonesia's provinces.



Findings

Statistical Analysis

Regression analysis reveals that businesses with financial records are 44% more likely to maintain or grow revenue. Surprisingly, firms engaging in digital marketing training or using non-cash payments did not perform better, indicating issues in program design, training quality, and low consumer trust in digital transactions.

Factors Influencing Stable or Rising Revenue (2023 vs. 2022)

- **Dependent Variable:** Revenue Change (stayed the same or increased; decreased).
- **Overall Revenue Trend:** reported higher revenue; reported no change.

Predictor, Odds Ratio (OR), statistical Implication ($p < 0.0001$)

- Financial Statements (R308), 1.44 ; Positive Governance Effect: 44% higher odds of stable/rising revenue. Formal financial practices are crucial for digital success.
- Digital Marketing Training (R323A), 0.80; Paradoxical Negative Effect: 20% lower odds. Suggests limits in training quality/relevance (mostly basic skills: 78.36%). Training may add cost without a strategic benefit.
- Non-Cash Payments (R318), 0.90, Friction Cost: 10% lower odds. Digital payments may be hindered by fees, low literacy, or strong COD preference.

B2C Dominance and Geographic Inequality

- **Customer Segmentation:** Online sales are heavily focused on the end consumer (B2C), limiting large-scale partnership potential (B2B).

Target Segment	% of Businesses
1. End Consumers (B2C)	71.88%
2. Agents/B2B	19.07%
3. Government	2.83%

• **Shipment Concentration (Geographic Divide):**

- ❖ Java Shipments:
- ❖ Maluku/Papua Contribution:

- **GVC Implication:** The low B2B engagement and high geographic concentration limit MSMEs' ability to integrate into complex Global Value Chains (GVCs).



The COD Paradox and Financial Governance Gap

Findings

Efficiency Hindrance: Trust and Transparency Issues

Metric	% of Businesses	Economic Implications
Cash on Delivery (COD) Payment	75.19%	Trust-Driven Inefficiency: While building trust in low-infrastructure/low-literacy markets (reduces perceived risk), it perpetuates operational and financial inefficiency.
Keeping Financial Reports	15.19%	Administrative Immaturity: Significant lack of formal accounting records. Hinders financial planning, access to formal credit, and transparency (Kaplas, 2017).



- **The Paradox** is that high operational efficiency in *sales* (instant messaging) is undermined by low administrative efficiency in *governance* (financial records).
- This shortfall limits the ability of MSMEs to convert digital access into financial resilience and scale.

E-commerce is a Major Employer, but Geographically Skewed

- **Total Job Creation:** E-commerce employs a **million workers** (of the national workforce), making it one of the fastest-growing sectors.
- **Professionalization:** of the workforce is paid employees, reflecting a shift toward greater professionalization.
- **Geographic Imbalance (Digital Divide):**

Region: Java Island is 79.52% % ; and Outside of Java ~20.48% of E-commerce Workforce |

Interpretation: The vast majority of productivity gains and job absorption are concentrated on Java, driven by superior logistics infrastructure and digital connectivity. This underscores the need for **equitable TFP-enhancing investment** in non-Java regions.



Barriers to Global Market Accessibility

The Untapped Export Potential: Only of Firms Go Global

- **International Sales Rate:** Only of Indonesian e-commerce businesses successfully export.
- **Competitive Advantage Gap:** E-commerce's promise of simplified international entry (Ricardo, Porter) remains largely unfulfilled due to structural barriers.
- **Key Barriers Cited by MSMEs:**

Barrier Category with Its % of Businesses Citing

Lack of Demand/Marketing: 41.24%

Insufficient Capital/Credit: 29.03%

Shortage of Skilled Labor: 11.48%

Other Barriers: Procedures, high logistics costs, and low global branding capabilities.

The constraint is less about platform access and more about capital access, export literacy, and robust logistics infrastructure (a fundamental Digital Divide challenge).



Policy Recommendation

1. Prioritize Digital and Financial Literacy (Human Capital)

Convert Access into Resilience by Formalizing Business Practices

- **Move Beyond Basic IT:** Policy must mandate a more holistic curriculum that includes:
 - **Financial Management:** Simple, standardized bookkeeping and reporting for micro firms (to address the OR = finding).
 - **Strategic Digital Marketing:** Advanced, needs-based training linked to measurable outcomes (to address the OR = paradox).
 - **Data Analytics:** Training on leveraging consumer data for strategic decision-making.
- **Government Program Scale-Up:** Accelerate initiatives like "MSMEs Digital Heroes" to link digital skills directly to formal business documentation and access to formal credit.

2. Equitable Infrastructure & Trust-First Regulatory Framework, by Invest in Equitable Infrastructure (Closing the Digital Divide)

- **Strategic Focus:** Shift investment to non-Java regions to address the labor concentration.
- **Accelerate National Projects:** Fast-track the Palapa Ring network and SATRIA-1 satellite deployment.
- **Hub and Spoke Model:** Implement a framework where digitally advanced urban centers (hubs) provide mentorship and logistical support to less-connected surrounding areas (spokes).

3. Implement a Trust-First Regulatory Framework

- **Consumer Confidence:** Adopt measures like the Philippines' "E-Commerce Trustmark" to certify legitimate sellers, fostering a safer marketplace *without* restricting access.
- **Competition and Fairness:** The Business Competition Supervisory Commission (KPPU) must actively enforce anti-monopoly laws to prevent market concentration and ensure a level playing field for MSMEs.



Inclusive Growth

E-commerce has encouraged greater female participation in the workforce and given MSMEs more equal access to markets. However, to ensure that growth is sustainable, policies must also focus on green digital transformation. Digitalization should not only empower entrepreneurs but also contribute to long-term environmental and social goals.



Conclusion and Future Research

A Strategic Path to Inclusive and Sustainable E-commerce Growth

- **Synthesis:** E-commerce is a powerful catalyst for Indonesia, successfully enhancing economic efficiency and productivity at the macro level.
- **Key Challenge:** Deeply rooted structural (infrastructure, inequality) and behavioral (low financial literacy, COD preference) barriers are preventing the majority of MSMEs from realizing these benefits.
- **The Way Forward:** Unlocking full potential requires a **strategic, holistic, and integrated policy approach** focused on:
 - ✓ Human Capital Investment.
 - ✓ Equitable Infrastructure Development.
 - ✓ A Trust-Based Regulatory Environment.

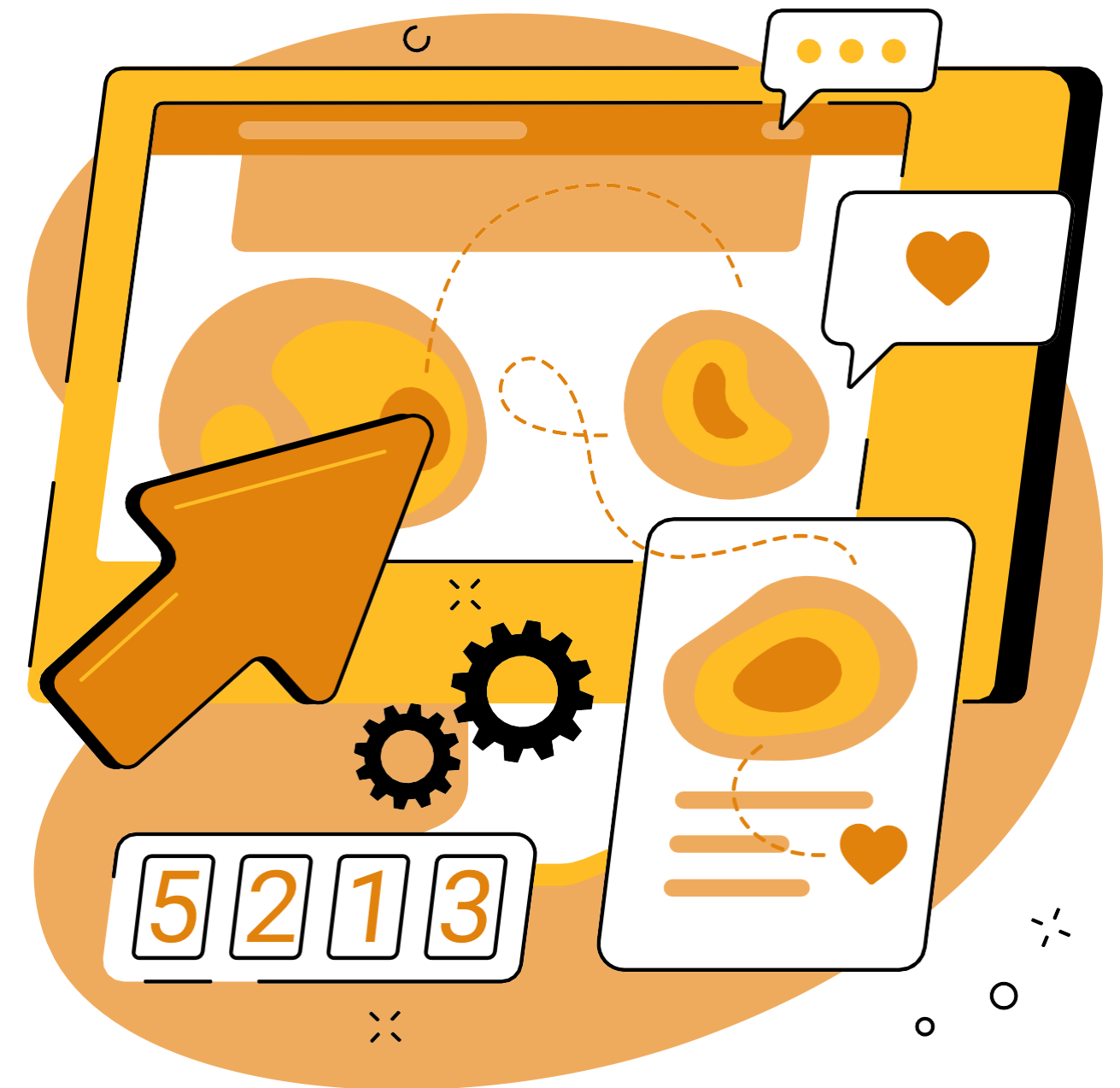
Future Research Directions:

- Examine heterogeneity (e.g., Logit model interactions: financial statements, firm size).
- Conduct experimental evaluations of digital training programs to identify effective pedagogy.
- Analyze the micro-level cost of the COD paradox on firm profitability.



Acknowledgments

E-commerce is now a major pillar of Indonesia's digital economy, delivering growth in efficiency, productivity, and market access. However, gains remain uneven, with many businesses left behind due to structural and capability gaps. Holistic, inclusive policies are essential to ensure that Indonesia fully harnesses e-commerce for sustainable competitiveness.





Thank you for your Attention !

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