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Digital Transformation and Financial Capability as Drivers of Organizational Sustainability in Emerging Economies

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ABSTRACT

Purpose: This study examines how digital transformation and financial management capability jointly influence organizational efficiency, competitiveness, and sustainability in an emerging economy.

Research Methodology: A mixed-method comparative design was employed using quantitative and qualitative evidence. The public sector context involved 30 respondents and eight informants, analyzed through descriptive indices and paired-sample t-tests.

Results: Digital transformation enhanced perceived economic value by improving efficiency and transparency. However, small traders' financial management capabilities remained limited. Businesses with diversified portfolios and better financial records achieved stronger performance, highlighting the role of internal managerial capability.

Conclusions: Digital transformation and financial management capability serve as complementary mechanisms for improving organizational performance and sustainability. Technology adoption generates stronger benefits when supported by effective financial governance and managerial discipline.

Limitations: The study is limited by cross-sectional data, selected organizational contexts, and the absence of causal modeling for small businesses.

Contributions: This study provides an integrated perspective linking digital transformation and financial management practices to organizational resilience in emerging-market environments

Keywords: *Business Sustainability, Digital Transformation, Emerging Economy, Financial Management Capability, Organizational Performance*

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1. Introduction

Digital transformation has become one of the defining organizational phenomena of the past decade, reshaping how firms, government agencies, and even individually owned micro enterprises across both advanced and emerging economies create and capture value ([Verhoef, Broekhuizen, Bart, Bhattacharya, Dong, Fabian, & Haenlein, 2021](#); [Kraus, Jones, Kailer, Weinmann, Chaparro-Banegas, & Roig-Tierno, 2021](#)). At the same time, a parallel global concern has emerged around financial management capability, as policy makers and researchers increasingly recognize that technology adoption alone does not guarantee improved organizational outcomes unless it is accompanied by the capacity to record, interpret, and act on financial information ([Nguyen, Nguyen, & Tran, 2022](#); [Ghobakhloo, Iranmanesh, Vilkas, Grybauskas, & Amran, 2022](#)). These two global trends, digitalization and the demand for stronger financial governance, have largely been studied as separate literatures, one concentrated in information systems and public administration research and the other concentrated in small business and development finance research, despite growing theoretical reasons to expect that the two capabilities interact rather than operate independently.

Organizations across public and private sectors in emerging economies face a shared structural challenge: legacy administrative processes and weak financial governance routinely erode the value that operations are meant to create. Two forces have emerged as central levers for correcting this erosion. The first is digital transformation, understood as the substitution of manual, paper based, and discretionary workflows with integrated, system enforced digital processes that accelerate transactions, reduce error, and widen the visibility of information to supervisors and auditors ([Verhoef et al., 2021](#); [Kraus et al., 2021](#)). The second is financial management capability, understood as the set of recording, separation, and planning practices that allow an organization, whether a government secretariat or a single proprietor trading stall, to know its true costs, margins, and cash position and to act on that knowledge ([Kasim, 2021](#); [Nguyen et al., 2022](#)). Where either capacity is missing, organizations tend to operate below their attainable performance frontier even when demand and market conditions are favorable.

This article develops that argument by drawing on two empirical investigations conducted in Mimika Regency, Central Papua Province, Indonesia, an emerging economy setting characterized by infrastructure constraints, geographic remoteness, and a fast growing local economy anchored in mining and public administration. The first investigation examined the digitalization of official travel administration in a regional legislative secretariat through an integrated financial accounting management application. The second investigation examined the financial management practices, profitability, and viability of livestock product traders operating in the regency's central traditional market. Although the two settings differ in ownership structure, scale, and regulatory environment, they share a common analytical core: both are organizations attempting to convert operational activity into sustainable economic value under conditions of limited digital infrastructure and uneven managerial capability.

Indonesia is used here as an illustrative emerging economy context rather than as the primary analytical focus. The regulatory push toward e government and digital financial reporting in Indonesian regional institutions by [Rahman \(2022\)](#), alongside a national policy emphasis on strengthening micro and small enterprise financial literacy by [Mokodompit and Nugraeni \(2025\)](#), mirrors patterns observed across many developing economies where digital adoption and financial capability building are pursued as parallel but often disconnected policy agendas ([Nguyen et al., 2022](#); [AlNuaimi, Singh, Ren, Budhwar, & Vorobyev, 2022](#)). By integrating evidence from a public administrative body and a population of informal traders, this study treats digital transformation and financial management capability not as sector specific interventions but as generalizable organizational capabilities whose combined presence, or absence, predicts efficiency, competitiveness, and long run sustainability regardless of whether the organization is a government office or a market stall.

Before digital adoption, the legislative secretariat under study managed official travel administration entirely through manual processes, which generated four recurring categories of

institutional failure: uncontrolled scheduling conflicts, slow and error prone consolidation of accountability reports, vulnerability of physical archives to loss and damage, and structurally weak financial control over an annual travel budget exceeding IDR 5 billion. Since the introduction of an integrated digital accounting and travel management system, field observation suggested substantial improvement, yet the magnitude of that improvement had not previously been tested with primary survey data and inferential statistics. In parallel, traders at the regency's central market, who supply a population increasingly dependent on inter island livestock shipments because of a persistent regional supply deficit, were observed to operate with almost no formal financial documentation despite operating in a commercially significant and price volatile sector. Neither phenomenon had previously been examined through the shared lens of digital transformation and financial management capability as joint determinants of business performance and sustainability.

This study therefore addresses four integrative research questions. First, to what extent does digital transformation improve perceived economic value and administrative performance relative to manual, pre digital conditions. Second, to what extent does financial management capability, measured through recording practices and profitability ratios, explain variation in business performance among otherwise similarly positioned economic actors. Third, which internal and external factors support or inhibit the realization of digital and financial management benefits. Fourth, how do digital transformation and financial management capability jointly relate to organizational efficiency, competitiveness, and sustainability in an emerging economy setting.

Beyond technology adoption and financial practices as separate organizational capabilities, recent business and accounting research highlights the importance of capability integration, where digital infrastructure, financial information quality, and managerial competence jointly determine sustainable organizational outcomes. Digital transformation creates meaningful value when organizations are able to convert digital information into effective operational control, accurate financial reporting, and strategic decision-making. The implementation of digital technologies, including digital services, e-commerce platforms, digital payments, and accounting information systems, has been shown to improve business efficiency, information accessibility, and performance outcomes, particularly among micro and small enterprises operating in emerging economies ([Andreani, Yunus, Usman, Saleh, & Syafaruddin, 2026](#); [Elvira, Surya, Yudhinanto, Renandi, Alie, Hasbullah, & Oktaria, 2025](#); [Ogli, 2026](#)). However, technological adoption alone is insufficient to ensure long-term sustainability without adequate financial governance and managerial capability. Effective financial management practices, including cash flow management, financial recording, and resource allocation, play an essential role in strengthening business resilience and sustainability ([Supriyanto, Damanik, Prasetyo, Alie, & Oktaria, 2025](#)). Furthermore, sustainable organizational performance increasingly requires transparent reporting practices and responsible management approaches that integrate financial and non-financial performance considerations ([Mutiar, Oktaria, & Sari, 2024](#)). Therefore, the integration of digital transformation and financial management capability provides a more comprehensive explanation of how organizations develop operational efficiency, competitiveness, and sustainability, particularly in resource-constrained emerging economy environments.

The theoretical contribution of this study is threefold. First, it responds to the identified research gap by integrating Digital Transformation Theory, the Technology Organization Environment framework, and Financial Capability Theory into a single explanatory model rather than applying these theories separately to unrelated organizational populations. Second, it provides comparative empirical evidence from two structurally different organizational forms, a public administrative body and a population of informal micro enterprises, operating within the same emerging economy environment, allowing internal capability effects to be distinguished from environment specific effects. Third, it extends institutional economics reasoning about transaction cost reduction [North \(1990\)](#) to explain why both digital systems and disciplined financial practice generate economic value through the same underlying mechanism, namely the reduction of information asymmetry and administrative friction, regardless of whether that mechanism is delivered through software or through manual bookkeeping discipline.

2. Literature Review and Hypotheses Development

2.1 Digital Transformation and Organizational Performance

Digital transformation is conventionally defined as the process by which organizations reconfigure products, processes, and business models around digital technologies to create and capture value ([Verhoef et al., 2021](#)). Vial's influential synthesis frames digital transformation as a continuous process that begins with disruptive digital forces and unfolds through strategic responses, structural changes, and barriers that must be actively managed, ultimately affecting organizational performance both positively and negatively depending on execution quality ([Vial, 2019](#)). [Kraus et al. \(2021\)](#) similarly note that the academic conceptualization of digital transformation has matured from a narrow information technology adoption question into a multidisciplinary phenomenon spanning strategy, organizational behavior, and institutional theory.

In public administration specifically, Fountain's institutional theory of technology enactment holds that digital transformation succeeds only when technology becomes embedded in organizational routines and formal rules rather than remaining a superficial technical overlay on unchanged bureaucratic practice ([Fountain, 2001](#)). Dunleavy and colleagues extend this insight through Digital Era Governance theory, arguing that effective e government requires simultaneous system integration, user orientation, and reengineering of administrative workflows around digital capability rather than digitizing paper processes in place ([Dunleavy et al., 2006](#)). These institutional perspectives predict that digitalization initiatives which are merely layered onto unchanged standard operating procedures will underperform relative to their technical potential, a prediction directly relevant to interpreting implementation gaps documented later in this article.

At the firm and organizational level, empirical evidence increasingly links digital transformation to competitiveness and resilience. [AlNuaimi et al. \(2022\)](#) show that leadership commitment and organizational agility are necessary complements to digital strategy formulation, without which technology adoption fails to translate into performance gains. [Warner and Wäger \(2019\)](#) similarly argue that digital transformation requires dynamic capabilities, specifically the capacity to sense technological opportunities, seize them through resource reconfiguration, and transform organizational structures accordingly. [Okigbo et al. \(2025\)](#), studying small businesses in an emerging African economy, found that artificial intelligence enabled digital marketing and decision support tools significantly improved operational efficiency and customer engagement, reinforcing that digital capability effects are not confined to large firms or wealthy economies but are visible in small enterprise contexts comparable to the trader population examined in this study.

2.2 Financial Management Capability and Business Viability

Financial management capability encompasses the recording, separation, and planning practices that allow an organization to observe its own financial condition accurately and to act on that information ([Kasmir, 2021](#); [Fahmi, 2020](#)). Three practices are typically emphasized in the small enterprise literature. Financial recording, meaning the systematic documentation of income and expense transactions, is a precondition for knowing actual cash positions; without it, asset leakage becomes structurally difficult to detect ([Rahmawati et al., 2023](#)). Financial separation, meaning the accounting entity principle applied at the level of the individual proprietor, requires a strict boundary between household and business resources, since mixing the two is repeatedly identified as a primary cause of profit measurement failure in micro and small enterprises ([Yusuf & Prabowo, 2021](#)). Working capital management, meaning the efficient cycling of cash through inventory and receivables, is shown to correlate directly with profitability in fast moving, low margin trading sectors such as food and livestock products ([Kurniawan & Sari, 2024](#)).

Profitability itself is commonly assessed through three complementary indicators in this literature: net profit margin, which expresses net profit as a share of revenue; return on investment, which expresses net profit as a share of capital employed; and the revenue to cost ratio, which expresses total revenue relative to total cost and provides a simple viability threshold above unity ([Gitman, 2003](#)). [Kurniawan and Sari \(2024\)](#) demonstrate that in food trading contexts, rapid capital turnover can compensate for thin per unit margins, sustaining overall profit through volume, a mechanism

directly relevant to interpreting the high turnover, low margin commodities examined later in this study.

Financial literacy, defined broadly as the capacity to understand and apply financial concepts to everyday economic decisions, has been repeatedly linked to small enterprise performance across diverse emerging market settings. [Nguyen et al. \(2022\)](#) document that low financial literacy among small business owners in Southeast Asia is associated with systematic pricing errors and the neglect of hidden costs, a pattern that directly parallels the behavioral evidence reported in this study. [Frimpong et al. \(2022\)](#), studying traders in Ghana, similarly find that financial literacy combined with access to digital financial services significantly predicts small enterprise performance, suggesting that financial capability and digital capability are not independent but interacting determinants of business outcomes, a proposition this study tests directly by examining both capacities within a single integrative framework.

2.3 Digital Transformation, Financial Management, and Sustainability in Emerging Economies

A growing body of research argues that digital transformation and financial management capability should be studied jointly rather than as parallel but separate literatures, because digital tools primarily create value by improving the quality, timeliness, and reliability of financial and operational information available for decision making ([Fu et al., 2024](#)). [Ghobakhloo et al. \(2022\)](#), reviewing adoption barriers among manufacturing small and medium enterprises, find that firms lacking basic financial planning capability are systematically less able to absorb the costs and organizational disruption associated with digital adoption, indicating a capability complementarity rather than a substitution relationship between the two constructs. This complementarity view is consistent with institutional economics, in which formal and informal rules governing economic interaction determine the transaction costs an organization bears. Digital systems reduce transaction costs mechanically, through automation and audit trails, while financial management capability reduces them behaviorally, through disciplined recording and planning that prevent value leakage regardless of the technology in use.

Sustainability, in this integrative framing, is understood as having two distinct dimensions that digital transformation and financial management capability affect differently. Survival sustainability, the short run capacity to maintain positive cash flow and continue operating, can often be achieved through favorable market conditions alone. Growth sustainability, the capacity to accumulate capital, invest, and improve competitive position over time, depends far more heavily on internal managerial capability, because without reliable financial data an organization cannot evaluate the feasibility of any investment opportunity, and without digital infrastructure it cannot achieve the monitoring and control needed to scale operations safely ([Ebuka et al., 2023](#)). This distinction, developed further in the discussion, provides the conceptual bridge linking the public sector digitalization evidence and the small trader financial capability evidence examined in this study.

In emerging economy contexts more broadly, infrastructure asymmetry complicates both digital and financial capability building. Unstable internet connectivity, uneven digital literacy, and thin formal credit markets are recurring constraints documented across Southeast Asian and African small enterprise studies alike ([Nguyen et al., 2022](#); [Frimpong et al., 2022](#)). These structural constraints do not eliminate the value of digital transformation or financial management capability, but they do condition how quickly and completely organizations can realize the benefits those capabilities offer, a pattern this study observes directly in both the public administrative and the small trader contexts.

2.4 Prior Research and Research Gap

Prior public sector digitalization research in Indonesia has generally confirmed that information system adoption improves administrative performance and transparency. Studies on regional government financial management systems report that performance based digital reporting improves efficiency and accountability [Rahman \(2022\)](#), while broader e government studies confirm improvements in service quality and reduced information asymmetry between

administrators and oversight bodies ([Putra, 2021](#)). None of these studies, however, specifically test the economic value of official travel administration digitalization using a comparative pre and post design with paired inferential statistics, leaving the magnitude of value creation from this particular administrative function empirically undocumented prior to the present study.

Prior small enterprise financial management research similarly documents that financial literacy and recording discipline significantly predict profitability and sustainability across diverse commodity sectors ([Rahmawati, Sari, & Wijaya, 2023](#); [Hidayati, Rahman, & Fauzi, 2023](#)). [Putra and Wijaya \(2024\)](#) develop an integrative internal and external factor model for agribusiness micro enterprises in eastern Indonesia, finding that internal managerial factors explain a larger share of profitability variation than external market conditions, a finding this study extends to the livestock product trading sector specifically. However, no prior study has simultaneously documented financial recording practices, multi commodity profitability benchmarking, and internal versus external factor analysis for livestock product traders operating under the extreme logistics costs and supply dependency characteristic of an isolated regional market, nor has any prior study connected such findings to the parallel digital transformation literature examined in the same institutional environment.

The consistent gap across both literatures is the absence of an integrative business management and finance framework that treats digital transformation and financial management capability as joint, comparably measured determinants of organizational performance and sustainability, rather than as isolated topics studied within separate public administration and micro enterprise finance traditions. This study addresses that gap directly.

Two additional theoretical lenses sharpen the integrative framework proposed here. The Technology Organization Environment framework holds that an organization's adoption and realized benefit from a new technology depend jointly on technological context, such as the perceived relative advantage and compatibility of the tool; organizational context, such as leadership support, resource availability, and staff readiness; and environmental context, such as infrastructure conditions, competitive pressure, and regulatory expectations ([Ghobakhloo, Iranmanesh, Vilkas, Grybauskas, & Amran, 2022](#)). Applied to the public sector case, the Technology Organization Environment framework predicts that digital transformation outcomes should depend not only on the technical features of the digital system but on leadership commitment and training, which are organizational factors, and on network infrastructure reliability, which is an environmental factor, a prediction directly tested through the supporting and inhibiting factor analysis reported in Section 4.

Financial Capability Theory complements this framework by explaining why technology adoption alone is insufficient without a parallel capacity to interpret and act on financial information. Financial capability is conceptualized as the combination of financial knowledge, the applied skill to use that knowledge, and the behavioral opportunity to act on it, such that capability failures can originate from any of the three components rather than from knowledge deficits alone ([Lusardi, & Mitchell, 2014](#); [Nguyen, Nguyen, & Tran, 2022](#)). This theoretical distinction directly motivates the knowledge behavior gap examined in the small enterprise case, where traders frequently possess conceptual financial knowledge yet fail to translate that knowledge into recording behavior, a pattern Financial Capability Theory attributes to missing behavioral opportunity and habit infrastructure rather than to ignorance.

Integrating the Technology Organization Environment framework and Financial Capability Theory with the institutional economics and digital transformation theory reviewed above yields a single testable proposition: organizational performance and sustainability improve when technological, organizational, and behavioral capability factors are jointly present, and remain constrained when any one factor, whether a digital tool, a supportive organizational routine, or an applied financial skill, is missing.

2.5 Conceptual Framework and Hypotheses

Building on the reviewed literature, this study proposes an integrative conceptual framework in which digital transformation and financial management capability operate as parallel organizational

capabilities that jointly determine efficiency, competitiveness, and sustainability, moderated by supporting and inhibiting contextual factors including leadership commitment, digital literacy, infrastructure reliability, and external market volatility. Two hypotheses follow directly from this framework and are tested using the two empirical contexts examined in this study. Based on that, the hypotheses are:

- H₁*: Digital transformation has a significant positive effect on perceived economic value improvement in official travel management
- H₂*: Financial management capability has a significant positive effect on profitability outcomes among small trading enterprises
- H₃*: Digital transformation and financial management capability jointly contribute to organizational efficiency, competitiveness, and sustainability in emerging economy contexts
- H₄*: Internal organizational capabilities, represented by digital transformation and financial management capability, have a stronger influence on performance outcomes than external operating conditions

3. Methodology

3.1 Research Design

A mixed method, comparative research design was employed, integrating two complementary empirical investigations conducted within the same regency and time frame, December 2025 through March 2026. Study One employed a quantitative comparative approach supplemented with qualitative data to evaluate digital transformation and economic value in a public sector administrative unit. Study Two employed a quantitative descriptive approach with saturated census sampling to evaluate financial management capability, profitability, and business viability among small livestock product traders. Both studies were conducted at the same organizational maturity stage, several years after the respective digital or market conditions under investigation had stabilized, allowing respondents to provide experience based rather than novelty based assessments.

3.2 Research Contexts and Sampling

Study One was conducted at the secretariat of a district regional legislative council that had implemented an integrated digital financial accounting and travel management application since 2022 to replace a previously manual official travel administration process governing an annual budget exceeding IDR 5 billion. The quantitative sample comprised 30 respondents selected through purposive sampling based on direct involvement with the digital system, comprising system operators and official travel management officers. A complementary qualitative sample of eight informants was selected through purposive maximum variation sampling across hierarchical levels, including division heads, subdivision heads, operators, the treasurer, and general staff, continuing until thematic saturation was reached.

Study Two was conducted at the regency's central traditional market, the primary distribution hub for livestock products, where 75 of 1,838 total active kiosks specialize in livestock products. A saturated sampling approach, that is, a full census, was applied, yielding all 50 active livestock product traders as respondents, distributed across six commodity categories: broiler chicken, native chicken, eggs, beef and cattle, pork, and diversified or mixed commodities. Census sampling was selected because the population size fell below the conventional threshold at which probability sampling offers meaningful efficiency gains over complete enumeration ([Arikunto, 2019](#)).

3.3 Instruments and Measurement

In Study One, digital transformation was measured across four indicators, namely ease of use, process speed, data accuracy, and monitoring and control, while economic value was measured across three indicators, namely cost efficiency, process effectiveness, and transparency and accountability, each assessed using a five point Likert scale. Economic value was additionally assessed retrospectively for the pre digitalization period to enable paired comparison. Data

collection combined structured questionnaires, semi structured interviews, direct observation, and documentary review.

In Study Two, financial recording practice was measured through a composite five indicator scoring system on a zero to three scale covering the presence and frequency of written records, regularity of cash recording, business household financial separation, evidence of transactions, and applied conceptual financial knowledge validated through calculation tasks. Internal factors, treated here as a proxy for financial management capability, were measured across five sub variables scored zero to three, namely numeracy ability, inventory management quality, pricing strategy, working capital management, and learning orientation. External factors were scored on a one to five impact scale across six environmental conditions, namely price fluctuation, supply dependency, logistics cost, competition intensity, consumer purchasing power, and regulatory burden. Financial performance was computed from monthly revenue and itemized cost components using three ratios, net profit margin, return on investment, and the revenue to cost ratio, with the latter interpreted against a viability threshold of unity.

3.4 Data Analysis

Two analytical approaches were applied consistently across both studies. Descriptive index analysis expressed each indicator as a percentage of its maximum attainable score, interpreted using a standard five category scale ranging from very low, below 20%, to very high, at or above 80%. For Study One, a paired sample t test compared pre and post digitalization economic value means for the same 30 respondents, with statistical significance evaluated at the conventional 5% threshold. For Study Two, commodity level financial ratios were compared descriptively across the six commodity categories, and internal and external factor scores were ranked to identify the most influential determinants of financial performance. Qualitative data in both studies were analyzed thematically to triangulate and contextualize the quantitative findings.

4. Results and Discussion

4.1 Digital Transformation and Perceived Economic Value

Table 1. Digital transformation and economic value indicator scores, Public Sector Case (N = 30)

Indicator	Mean	Index (%)	Category
Data accuracy	4.23	84.6	Very High
Process speed	4.18	83.6	Very High
Monitoring and control	4.11	82.2	Very High
Ease of use	4.02	80.4	Very High
Digital transformation average	4.14	82.8	Very High
Transparency and accountability	4.28	85.6	Very High
Cost efficiency	4.20	84.0	Very High
Process effectiveness	4.12	82.4	Very High
Economic value average	4.20	84.0	Very High

Table 1 reports the descriptive index results for digital transformation and economic value in the public sector context. The table shows that all four digital transformation indicators and all three economic value indicators achieved a very high classification, with data accuracy scoring highest among digital transformation indicators and transparency and accountability scoring highest among economic value indicators, followed closely by cost efficiency and process effectiveness.

The overall digital transformation index of 82.8% indicates substantial penetration of the digital system into routine administrative practice, a result consistent with institutional theory's prediction that technology adoption succeeds when embedded in organizational routine rather than treated as a superficial overlay (Fountain, 2001). Data accuracy scored highest among the four indicators,

reflecting that automated input validation and calculation features materially reduced the human computational errors that previously caused rejection of accountability reports by oversight bodies. Process speed scored second highest, confirming that the digital workflow substantially compressed a process that previously required weeks of physical document handling. Monitoring and control scored third, indicating that real time data visibility enabled a level of supervisory oversight that was structurally impossible under the manual filing system. Ease of use, while the lowest scoring indicator, nonetheless remained within the very high category, suggesting that despite adaptation challenges discussed later, the system achieved adequate usability among experienced operators, 70% of whom had more than two years of system experience and therefore provided mature rather than novelty driven assessments.

Transparency and accountability achieved the highest score among the economic value indicators, a result directly consistent with institutional economics reasoning that formal, system enforced rules reduce transaction costs by creating an automatic audit trail for every transaction, timestamped and linked to identifiable authorized users ([North, 1990](#)). This traceability directly addressed the lengthy physical document searches previously required during external audits. Cost efficiency reflected two distinct pathways of value creation, direct savings from eliminating physical document production and storage, and indirect savings from redirecting staff hours previously consumed by manual reconciliation toward higher value administrative activity. Process effectiveness captured the elimination of transport delays and physical document loss risk associated with routing approvals between offices.

4.2 Paired Comparison of Pre and Post Digitalization Economic Value

Table 2. Paired sample t-test, economic value before and after digitalization

Condition	Mean Score	t Statistic	df	Sig. (2 tailed)
Pre digitalization (manual)	2.03			
Post digitalization (digital system)	4.20	10.845	29	0.000
Difference (+107%)	2.17			significant

Table 2 presents the paired sample t test comparing economic value before and after digital transformation. The economic value mean increased from 2.03, classified as low, under the manual system, to 4.20, classified as very high, under the digital system, a difference of 2.17 points representing a 107% improvement. The associated t statistic of 10.845 with 29 degrees of freedom and a significance level below 0.001 confirms that this difference is not attributable to sampling variation but reflects a genuine and substantial shift in administrative performance. This finding provides direct empirical support for the first hypothesis and demonstrates that digital transformation, when embedded in routine practice, functions as an institutional change mechanism that measurably reduces transaction costs, consistent with North's institutional economics framework ([North, 1990](#)). With contemporary digital transformation theory emphasizing performance gains from process reengineering rather than superficial technology adoption ([Vial, 2019](#); [Verhoef et al., 2021](#)).

Qualitative evidence triangulated this quantitative result across hierarchical levels. Operators reported that the system meaningfully accelerated administrative work, subdivision heads confirmed that previously slow processes had become substantially faster, division heads emphasized transparency and accountability as the primary organizational benefit, consistent with that indicator's top ranking, and the treasurer emphasized cost efficiency and reporting quality, consistent with the corresponding quantitative indicator results. This convergence across four independent organizational roles strengthens confidence that the measured improvement reflects genuine institutional change rather than a measurement artifact confined to a single respondent category.

4.3 Financial Management Capability and Profitability Among Small Traders

Table 3. Financial performance by commodity category, small trader case (monthly average)

Commodity	n	Margin (%)	ROI (%)	R/C Ratio
Broiler chicken	5	6.67	7.14	1.07
Native chicken	5	11.14	12.54	1.13
Eggs	5	10.38	11.58	1.12
Beef and cattle	5	9.47	10.47	1.10
Pork	10	10.82	12.14	1.12
Diversified or mixed	20	15.25	17.99	1.18

Table 3 compares financial performance across the six livestock product commodity categories. All six categories achieved a revenue to cost ratio above unity, confirming general financial viability across the trader population. However, substantial variation exists across commodities. Diversified or mixed commodity traders achieved the strongest performance, with a revenue to cost ratio of 1.18, a net profit margin of 15.25%, and a return on investment of 17.99%, while broiler chicken traders achieved the weakest performance, with a revenue to cost ratio of 1.07, a margin of 6.67%, and a return on investment of 7.14%.

Three patterns in Table 3 merit interpretation. First, the comparatively homogeneous, high competition nature of broiler chicken trading compresses margins toward the operational minimum, consistent with classical competitive strategy theory in which undifferentiated products leave traders unable to sustain prices above marginal cost (Porter, 1985). Second, native chicken and egg traders achieved above average margins at comparatively modest revenue scale, reflecting price premiums associated with cultural preference and local supply self sufficiency respectively, both of which reduce exposure to the logistics cost pressures affecting externally sourced commodities. Third, and most importantly for this study's integrative argument, diversified traders outperformed every single commodity specialist despite operating with lower total revenue than beef traders, a pattern consistent with economies of scope, in which shared transportation, labor, and distribution infrastructure across multiple commodities reduces average costs and stabilizes income against single commodity price shocks (Panzar & Willig, 1981; Teece, 1982).

A critical qualification applies to all profitability figures reported in Table 3. Field evidence indicates estimated capital leakage of between 28 and 52% of nominal profit, arising from undocumented personal cash withdrawals from business funds, unrecorded hidden costs, spoilage losses linked to poor inventory monitoring, and household consumption misrecorded as business expenditure. This means that a trader reporting several million rupiah in nominal monthly net profit may retain little or no real profitability once these leakages are accounted for, reframing the viability confirmed by the revenue to cost ratio as necessarily provisional rather than assured.

4.4 Financial Recording Practices and the Knowledge Behavior Gap

Table 4. Financial recording and management practices, small trader case (N = 50)

Practice	Share of Traders
No written financial records	80%
Daily routine recording	0%
Mixed household and business finances	80%
Able to calculate profit margin	36%
Understand cash flow concept	16%
Systematic inventory management	20%

Table 4 documents financial recording and management practices across the 50 surveyed traders. The results indicate a critical deficiency in basic financial governance: 80% of traders maintain no written financial records at all, and remarkably, 0% maintain a routine of daily transaction recording. 80% mix business and household finances, violating the basic accounting entity principle that De Mel et al. and subsequent small enterprise finance research identify as essential for accurate profit measurement. Only 36% of traders can calculate a profit margin, only 16% demonstrate understanding of cash flow concepts, and only 20% maintain systematic inventory management practices.

An analytically important paradox emerges from this evidence. Field interviews indicate that roughly 80% of traders can conceptually distinguish capital from profit when asked directly, yet an equivalent 80% simultaneously mix household and business finances in daily practice. This gap between declarative financial knowledge and applied financial behavior is consistent with the theory of planned behavior, which holds that behavioral intention alone does not guarantee behavioral adoption without structural facilitation and habitual reinforcement by [Ajzen \(1991\)](#), and with field experimental evidence that simple, rule of thumb financial training measurably improves practice quality even among low education entrepreneurs, whereas abstract knowledge transmission alone does not ([Drexler, Fischer, & Schoar, 2014](#)). The practical implication, developed further in the conclusions, is that financial capability interventions for small traders must be designed as behavior change programs rather than as conventional accounting instruction.

4.5 Internal and External Determinants of Performance

Table 5. External factor impact scores, small trader case (1 to 5 Scale)

External Factor	Impact Score	Category
Price fluctuation	4.6	Very High
Supply dependency from outside the region	4.3	High
Transportation and logistics cost	4.2	High
Inter trader competition	3.8	High
Consumer purchasing power	2.8	Moderate
Regulatory burden	2.1	Low to Moderate

Table 5 ranks external factor impact scores across the trader population. Price fluctuation received the highest impact score, driven substantially by a regional African swine fever outbreak that raised pork prices by 100 to 150% within a single year, followed by supply dependency, since 78% of livestock product supply originates outside the region and must arrive by multi day sea freight, and logistics cost, which at 17 to 27% of cost of goods sold substantially exceeds the national average of roughly 5.5 to 9%. These three external factors are structurally interconnected rather than independent, since supply dependency amplifies both price volatility and logistics cost, and a single shipping disruption can rapidly translate into local price shocks.

Despite the severity of these external pressures, the most analytically significant finding of this study is that internal financial management capability, not external market conditions, is the primary differentiator of trader level performance. Traders with stronger recording discipline and diversified commodity portfolios achieved margins more than double those of traders with weak practices, despite every trader operating under an identical external price, supply, and logistics environment within the same market. This intra market performance divergence, holding the external environment constant, provides direct support for this study's second hypothesis and for the broader complementarity argument advanced in the literature review: internal managerial and financial capability, rather than the external operating environment alone, is the more immediate and policy actionable lever for improving small enterprise performance ([Putra & Wijaya, 2024](#); [Nguyen et al., 2022](#)).

4.6 Integrative Discussion: Digital Transformation, Financial Management Capability, and Sustainability

Read together, the two empirical contexts converge on a consistent integrative conclusion. In the public sector context, a formally embedded digital system generated a large, statistically significant, and qualitatively corroborated improvement in perceived economic value by mechanically enforcing accuracy, speed, monitoring, and auditability, precisely the institutional change mechanism theorized by [North \(1990\)](#) and operationalized through digital era governance principles ([Dunleavy et al., 2006](#)). In the small enterprise context, no comparable digital system was in place, and financial management capability itself, evidenced through recording discipline and diversification strategy, functioned as the analogous internal capability that separated higher performing from lower performing units under an identical external environment. In both cases, internal organizational capability, whether digital or financial in nature, outperformed the external operating environment as a predictor of measured or inferred performance outcomes.

This convergence supports the complementarity framework proposed in the literature review: digital transformation and financial management capability are best understood as parallel expressions of the same underlying organizational competence, namely the capacity to generate, trust, and act on accurate operational and financial information ([Fu et al., 2024](#); [Ghobakhloo et al., 2022](#)). Where this competence exists, whether delivered through a digital accounting platform or through disciplined manual bookkeeping and diversification strategy, organizations achieve higher measured economic value and stronger profitability. Where it is absent, organizations remain trapped in what may be termed survival sustainability, meaning they can continue operating under favorable conditions but cannot accumulate capital, evaluate investment opportunities, or absorb external shocks, precluding growth sustainability regardless of how favorable the underlying market opportunity ([Ebuka et al., 2023](#)).

The supporting and inhibiting factors identified across both contexts further reinforce this integrative reading. Leadership commitment, initial training, and demonstrated benefit awareness supported successful digital adoption in the public sector context, mirroring findings that leadership and organizational agility are necessary complements to digital strategy ([AlNuaimi et al., 2022](#)). Conversely, unstable internet connectivity, uneven digital literacy, and standard operating procedures misaligned with digital workflow logic constrained the full realization of digital value, echoing Fountain's observation that technology fails to generate its full potential value when organizational routines are not updated to match new system capabilities ([Fountain, 2001](#)). In the small enterprise context, structural inertia and confirmation bias help explain why long operating traders persist with informal practices despite awareness of more efficient alternatives ([Kahneman, 2011](#); [Thaler, 1999](#)). While low formal education correlates with lower financial literacy and higher reliance on informal, imprecise mental accounting ([Lusardi & Mitchell, 2014](#)). Both sets of barriers point toward the same policy conclusion: technology and financial tools alone are insufficient without parallel investment in organizational routine change, training design, and behavioral reinforcement.

5. Conclusions

5.1 Conclusion

This study examined digital transformation and financial management capability as joint determinants of organizational efficiency, competitiveness, and sustainability across two complementary organizational contexts in an emerging economy. Four principal conclusions follow. Digital transformation, when embedded in routine administrative practice rather than layered onto unchanged procedures, generated a statistically significant and substantively large improvement in perceived economic value in the public sector context, rising by 107% from a low to a very high category. Financial management capability among small livestock product traders was found to be critically underdeveloped, with the near universal absence of daily financial recording and pervasive mixing of household and business finances, despite generally viable nominal profitability across all commodity categories. Diversification and recording discipline consistently distinguished higher performing from lower performing units within an identical external market environment,

confirming that internal managerial capability, not external market conditions, is the primary lever available to practitioners and policy makers seeking to improve small enterprise performance. Across both contexts, internal organizational capability, whether expressed through digital system adoption or through financial management discipline, functioned as a complementary and mutually reinforcing driver of measured economic value and profitability, supporting an integrative business management and finance perspective in which digital and financial capabilities should be developed jointly rather than as separate policy agendas.

The broader implication for organizations operating in emerging economies is that sustainable performance improvement depends less on the specific technology or accounting tool adopted than on whether that tool becomes embedded in disciplined organizational routine, supported by leadership commitment, adequate training, and infrastructure that matches the demands of the new workflow. Where these conditions are met, digitalization and financial management capability building generate large, durable gains in efficiency, transparency, and competitiveness. Where they are absent, organizations remain constrained to short run survival regardless of favorable market opportunity.

5.2 Research Limitations

Several limitations qualify these findings. The evidence is drawn from two purposively selected organizations within a single regency, limiting generalizability to other public sector institutions or small enterprise populations operating under different regulatory, infrastructural, or cultural conditions. Both components rely substantially on respondent perception rather than fully independent objective records, the public sector component through Likert based perception of economic value and the small enterprise component through recall based financial estimates in the absence of formal records, introducing potential recall and social desirability bias. The pre digitalization baseline in the public sector context was derived from retrospective recall rather than contemporaneous measurement, which may understate or overstate the true pre digital condition. The cross sectional design in both components captures a single point in time and cannot track how measured outcomes evolve as systems mature, staff turnover occurs, or interventions are implemented. The small enterprise component applies descriptive and ratio based analysis rather than regression or structural equation modeling, meaning that the relationship between financial management capability and profitability, while strongly suggestive, has not been tested for formal statistical causality. Finally, capital leakage estimates in the small enterprise context are approximations derived from behavioral patterns rather than formal accounting audits, and should be interpreted as indicative rather than precise.

5.3 Suggestions and Directions for Future Research

Future research should extend this integrative framework in several directions. Longitudinal designs combining perception based survey data with objective system generated metrics, such as processing time logs, error rate records, and audited financial statements, would strengthen causal inference regarding both digital transformation and financial management capability effects. Comparative studies across multiple regions and institutional types would test whether the magnitude of improvement documented here is specific to this regency's infrastructure and market conditions or generalizable across similarly positioned emerging economy settings. Regression or structural equation modeling applied to small enterprise financial behavior data would allow formal testing of the relative explanatory power of internal financial management capability against external market factors, building directly on the descriptive evidence presented here. Future work might also examine whether direct digital financial tools, such as simplified mobile recording applications, can substitute for or complement the behavior change interventions this study identifies as necessary, thereby empirically testing this study's core proposition that digital transformation and financial management capability function as complementary rather than substitutable organizational capabilities.

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