



FROM TECHNOLOGY ADOPTION TO STRATEGIC COHERENCE: THE ROLE OF DIGITALIZATION IN INDUSTRIAL GROWTH IN DEVELOPING COUNTRIES

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Abstract

Digitalization has emerged as a transformative force in modern industrial development, reshaping operational models, innovation practices, and competitive structures. This study investigates the impact of digitalization on the financial performance of industrial growth. Drawing on the resource-based view, dynamic capabilities theory, and transaction cost economics, the study develops a comprehensive framework linking digital strategy alignment, digital capabilities, technology adoption, innovation culture, and external support to industrial financial performance. Using panel data regression analysis on industrial firms, the results reveal that digital strategy alignment consistently exerts the strongest positive influence across measures of return on equity, return on assets, and asset turnover. Digital technology adoption and innovation culture show mixed effects, enhancing equity returns and operational efficiency while imposing short-term costs on asset-based performance. Digital capabilities display both transitional inefficiencies and long-term benefits, while external support emerges as statistically insignificant. These findings emphasize that the financial gains of digitalization are contingent on strategic coherence, organizational readiness, and cultural transformation rather than on technology adoption alone. The study contributes to both theory and practice by highlighting that firms must view digitalization as a holistic transformation process to overcome short-term paradoxes and achieve sustainable growth, while policymakers should focus on creating supportive ecosystems that strengthen firm-level capacities.

Keywords: *Digitalization, Industrial Growth, Financial Performance, Innovation Culture*

1. Introduction

The profound and accelerating influence of digitalization has fundamentally reshaped the global economic landscape, extending its effects far beyond individual firms to significantly transform broader industrial development (Brennen & Kreiss, 2016; Yoo et al., 2010; Salleh & Sapengin, 2023). In modern industrial settings, digitalization generally refers to the integration of advanced technologies such as artificial intelligence, the Internet of Things, big data analytics, cloud computing, and automation (Schwab, 2017; Brynjolfsson et al., 2019). Together, these innovations have fueled what is often referred to as Industry 4.0, a paradigm that promises not only greater efficiency and productivity but also entirely new opportunities for value creation across sectors (Kagermann et al., 2013; Lasi et al., 2014; Bibi, 2019; Akim, 2020; Can, 2021). The adoption of these technologies allows firms to streamline operations, strengthen supply chain management, and enhance customer responsiveness (Porter & Heppelmann, 2014; Owusu & Noyignon, 2021).

Nevertheless, the financial returns of digitalization are not always immediate, nor do they follow a linear trajectory. Scholars have identified what is often called the “digitalization paradox,” which reflects the reality that substantial investments in digital tools and infrastructures do not automatically lead to measurable improvements in financial performance (Bloom et al., 2012; Li et al., 2018; Tila & Cera,



2021; Khalid et al., 2025). Zeng et al. (2022) emphasize that such paradoxes are particularly evident during the early phases of digital adoption, where high implementation costs, integration challenges, and disruptions to existing processes can delay positive outcomes. Overcoming this paradox requires firms to develop digital strategies that extend beyond technology acquisition to include organizational and cultural transformation (Matt et al., 2015; Vial, 2019; Karhan, 2019; Yener, 2021; van Zanden, 2023; Hun et al., 2024; Siddique et al., 2025; Iqbal & Hayat, 2025). In this regard, the role of digital capabilities and innovation culture has attracted significant scholarly attention. Ferreira et al. (2019) argue that digital tools must be accompanied by digital literacy, adaptability, and a culture of innovation to generate meaningful financial outcomes. This perspective highlights the central role of human capital in realizing the benefits of digital transformation (Bharadwaj et al., 2013; Khan & Farooq, 2021; Geda, 2023; Mehdi et al., 2025; Ito & Zhang, 2025). Employees must continuously upgrade their skills and embrace new ways of working, while leaders must foster environments that encourage experimentation and creative problem solving (Kane et al., 2015; William, 2021; Jamel & Zhang, 2024; Arshad et al., 2025; Kumar & Wu, 2025).

Empirical studies further demonstrate that firms with strong digital capabilities are more successful in translating technological investments into financial returns. Bai et al. (2022) show that organizations aligning digital investments with strategic objectives and building data-driven cultures achieve significantly higher productivity and profitability gains. Similarly, Pan et al. (2023) find that companies embedding digital tools into broader organizational redesign, encompassing process reengineering, strategic alignment, and responsive leadership, are far better positioned to leverage digitalization as a source of competitive advantage (Westerman et al., 2014; Kumar & Gupta, 2023; Ammar et al., 2025). The financial innovations enabled by digitalization also yield diverse outcomes across different industrial and regional contexts. For example, the rise of financial technologies such as online lending platforms and digital inclusive finance mechanisms has been instrumental in alleviating financing constraints and enhancing access to capital. These tools are particularly valuable for firms in developing regions or for small and medium-sized enterprises that often lack extensive credit histories or collateral (Denial, 2023; Pan et al., 2023; Chen et al., 2021; Iqbal et al., 2025). By broadening financial inclusion, digital finance enables businesses to pursue growth opportunities that would otherwise remain inaccessible (Marc, 2011; Ozili, 2018; Zhang & Wu, 2020; Marc, 2024; Batool et al., 2025). However, the effectiveness of such tools is not universal. Their outcomes are shaped by firm size, prevailing market conditions, and the regulatory environments in which they operate, highlighting the importance of adopting context-specific strategies for digital finance implementation (Gomber et al., 2018; Marc & Yu, 2024; Umair et al., 2025). Beyond immediate financial indicators such as return on assets, profitability, or revenue growth, digitalization is also strongly connected to innovation and sustainability, both of which contribute indirectly to long-term industrial viability. Brynjolfsson and McElheran (2016) demonstrate that digitalization significantly increases the probability of both product and process innovation. Digitally advanced firms are more likely to introduce new offerings, redesign internal workflows, and strengthen customer engagement, thereby achieving competitive differentiation (Nambisan et al., 2017; Marc et al., 2021; Naeem et al., 2025). In this sense, digitalization functions as both an enabler of operational efficiency and a catalyst for innovation-driven growth.

An emerging body of literature further links digital transformation to sustainability outcomes, particularly within the framework of environmental, social, and governance objectives. Sustainable digital practices integrate technological innovation with responsible resource management and ethical



governance structures (George et al., 2021; Marc et al., 2022; Ditta et al., 2025). Hassan and Al-Sayed (2025) argue that when firms embed sustainability into their digital strategies, they not only improve operational efficiency but also reduce waste, optimize energy and resource use, and strengthen the resilience of supply chains. These sustainable practices extend the concept of financial performance beyond traditional profitability metrics to encompass long-term resilience, reputational gains, and alignment with global sustainability agendas (Dao et al., 2011; Iqbal et al., 2025).

Theoretical and empirical research strongly highlights the promise of digitalization for efficiency, innovation, and sustainability (Brynjolfsson & McElheran, 2016; Nambisan et al., 2017; George et al., 2021; Ali et al., 2025). Much of the evidence comes from advanced economies where infrastructure and readiness are already high (Schallmo et al., 2023; Zeng & Su, 2024; Ali et al., 2025). The financial outcomes of digitalization in emerging industrial contexts remain underexplored, especially where firms face barriers such as limited resources, weak regulatory frameworks, and uneven digital skills (Li et al., 2018; Ferreira et al., 2019; Ali et al., 2025). Studies have noted the digitalization paradox, where high investments often fail to produce immediate returns, yet few have examined the conditions that help firms overcome this paradox in developing regions (Bloom et al., 2012; Zeng et al., 2022; Pan et al., 2023; Bai & Jin, 2023; Ali et al., 2025). This study develops a framework that links digitalization with financial performance in industrial growth, while accounting for the cultural, strategic, and organizational factors that condition its success.

2. Literature Review

Geographic and economic contexts also play a significant role in the digitalization journey of industries. Substantial discrepancies in the level of digital maturity can exist among industrial sectors across different regions and countries (OECD, 2019). This underscores the importance of tailored digitalization strategies and policy interventions to address the specific challenges and readiness levels of industries in various geographical areas (Li et al., 2018). Countries lagging in industrial digitalization may require targeted support and infrastructure development to bridge the digital divide and enable their industries to harness the full potential of digital technologies (Manea et al., 2021; Ali et al., 2025). The urgent need for industries to embrace the digital economy for economic growth, especially in the post-pandemic recovery period, further emphasizes this point (UNCTAD, 2021). External shocks, such as the COVID-19 pandemic, have forced many industrial sectors to rethink their business models and accelerate their adoption of digital technologies for survival and resilience (Lund et al., 2020; Brynjolfsson et al., 2020; Khalid et al., 2025).

Schallmo et al. (2023) analyzed the effects of digital transformation on the industrial value chain in Germany. Drawing on a longitudinal panel of manufacturing firms, the study found that companies investing in cyber-physical systems and data-driven process optimization experienced significant increases in return on investment and gross value added. The research underscored the importance of aligning digital strategy with core manufacturing objectives, while also warning of the potential risks posed by partial or misaligned digitalization efforts.

Zeng and Su (2024) examined digital innovation and industrial upgrading in China. Their empirical analysis, based on data from listed industrial enterprises between 2015 and 2022, identified a positive relationship between the adoption of digital platforms such as artificial intelligence, the Internet of Things, and cloud computing, and enhanced industrial productivity. Firms equipped with robust digital infrastructure and skilled human capital recorded substantial gains in profitability and export performance.



Nguyen et al. (2023) investigated the relationship between digital capability maturity and financial performance within Southeast Asian manufacturing industries. Using survey data and structural equation modeling, they demonstrated that digital process automation and real-time data analytics significantly improved operational margins and cash flow stability. The findings support the resource-based view, indicating that digitally mature firms possess rare and inimitable capabilities that foster sustained performance.

Bai and Jin (2023) assessed the effect of digital industrial platforms on innovation efficiency in Chinese industrial zones. Their research revealed that access to shared data networks and digital research and development ecosystems increased patent activity, productivity, and reduced time-to-market cycles. These improvements translated into enhanced return on assets and operating profit margins, affirming that digital ecosystems function as innovation drivers for industrial clusters. Radu and Vasilescu (2022) analyzed the contribution of digital financial technologies to industrial growth in Europe. They found that tools such as blockchain, financial technology payment solutions, and digital invoicing improved supply chain processes and liquidity management for medium-sized industrial firms. The study linked gains in working capital efficiency and interest coverage ratios directly to financial digitalization.

Kamble et al. (2022) applied the dynamic capabilities framework to Indian manufacturing firms transforming advanced industrial technologies. Their case studies identified three essential capabilities: recognizing digital opportunities, capturing value through automation and intelligent production, and modernizing legacy operations. Firms demonstrating these capabilities reported better inventory turnover, higher rates of product innovation, and improved gross profit margins.

Rashid et al. (2024) examined the role of digital public infrastructure and industrial policy in the Middle East. They concluded that industrial sectors receiving robust governmental support for digital adoption, including tax incentives, research and development grants, and broadband expansion, experienced greater growth in total factor productivity and export-oriented manufacturing.

Although global evidence highlights the role of digitalization in improving productivity, innovation, and financial performance in industries (Schallmo et al., 2023; Zeng & Su, 2024; Nguyen et al., 2023; Bai & Jin, 2023; Ali et al., 2025), the outcomes remain highly context-dependent and uneven across sectors and regions (OECD, 2019; Manea et al., 2021; Ali et al., 2025). Prior research has mostly examined digital adoption in advanced economies such as Germany, China, and Europe (Schallmo et al., 2023; Radu & Vasilescu, 2022; Zeng & Su, 2024; Rana et al., 2025), with limited focus on emerging economies where infrastructural constraints, organizational readiness, and policy support significantly shape the impact of digital transformation (UNCTAD, 2021; Lund et al., 2020; Saim et al., 2025). Moreover, while studies consistently acknowledge the digitalization paradox that large investments may not yield immediate financial returns without complementary assets such as leadership vision, culture, and skilled human capital (Li et al., 2018; Ferreira et al., 2019; Kane et al., 2015; Ali et al., 2025; Longton et al., 2025) empirical assessments of how these mediating and moderating factors influence financial performance remain scarce. This gap is especially visible in industrial growth studies, where much of the literature emphasizes technological capabilities and innovation outcomes (Kamble et al., 2022; Bai & Jin, 2023; Ali et al., 2025; Aziz et al., 2025) but underexplores the long-term financial dimensions of digital transformation in developing contexts. Addressing this gap, the present study develops a comprehensive framework linking digital adoption to financial outcomes in industry, while accounting for the paradoxes, conditions, and contextual specificities that determine whether digitalization translates into sustainable industrial growth.

3. Theoretical Model

Constructing a robust theoretical model forms the foundation of a rigorous academic investigation, offering a conceptual framework that clarifies the relationships among variables and informs the empirical approach (Sekaran & Bougie, 2016). In exploring how digitalization affects the financial performance of industrial growth, such a model becomes indispensable for progressing from surface-level associations to a nuanced, causal understanding. The proposed framework does more than explain a direct association between the implementation of digital technologies and enhanced financial outcomes; it delineates the specific mechanisms and contextual conditions through which this influence operates (Bharadwaj et al., 2013; Kumar et al., 2025). Grounded in well-established economic and management theories, including the resource-based view and the dynamic capabilities theory, the model aims to uncover the complex processes by which digitalization contributes to measurable business value (Barney, 1991; Teece et al., 1997). By combining these theoretical perspectives, the model offers a comprehensive explanation of how firms deploy digital resources to boost operational efficiency, stimulate innovation, and ultimately secure a lasting competitive edge along with improved financial performance within the evolving digital industrial environment (Wade & Hulland, 2004; Khan et al., 2025).

The Resource-Based View is a strategic management framework asserting that a firm's long-term advantage is rooted in internal resources and capabilities that are valuable, rare, inimitable, and non-substitutable. Applied to digitalization in industrial settings, this view explains that digital assets, such as advanced technologies and infrastructure, specialized digital skills, and a supportive organizational culture oriented toward digitalization, qualify as strategic resources capable of delivering sustained financial gains (Wernerfelt, 1984). While the resource-based view identifies the critical resources necessary for competitiveness, it does not fully address how firms evolve and adapt those resources under dynamic conditions. This gap is addressed by the dynamic capabilities theory, which focuses on a firm's capacity to integrate, develop, and reconfigure internal and external competencies in response to shifting environments (Eisenhardt & Martin, 2000). In the context of digital transformation, dynamic capabilities explain how firms transition their digital investments into effective, adaptive strategies that sustain financial growth (Teece, 2014). Central to the proposed theoretical model is the premise that digitalization, when strategically executed, positively impacts industrial financial performance. Yet, this effect is neither instantaneous nor uniform. It is shaped through the effective digitalization process, a mediating construct that includes internal digital capabilities, the adoption of digital tools, innovation culture, and organizational alignment (Li et al., 2018; Aqeel et al., 2025).

The theoretical expression representing this model is structured as follows:

$FP\ Industry = f(DSA, DC, DTA, DLIC, ES)$

Where:

- FP Industry = Industrial Financial Performance
- DSA = Digital Strategy Alignment
- DC = Digital Capabilities
- DTA = Digital Technology Adoption
- DLIC = Digital Literacy & Innovation Culture
- ES = External Support

3.1. Definitions and Measurements of Variables

Industrial Financial Performance (FP): Industrial financial performance refers to the quantitative indicators that reflect the economic condition, efficiency, and profitability of an industrial sector or the



firms operating within it. The literature review demonstrates that digitalization influences efficiency, revenue growth, and profitability, as well as broader financial outcomes. It further underscores the enhancement of financial performance and reports a positive and significant effect of digitalization on financial outcomes in the industrial domain.

Digital Strategy Alignment (DSA): Digital strategy alignment refers to the extent to which the digital initiatives, technological investments, and digital technology implementation undertaken by an industrial firm or sector are integrated with and support its broader strategic and operational objectives. The literature underscores that excessive or misaligned digital investments may result in diminishing or adverse returns. Emphasis is placed on the necessity of ensuring that the digital strategy is properly aligned with business operations to achieve optimal financial benefits. A coherent digital strategy alignment enhances the strategic value of digital transformation by ensuring that technological integration advances organisational objectives.

Digital Capabilities (DC): Digital capabilities are the firm-specific competencies that enable industrial entities to effectively deploy, manage, and integrate digital technologies in pursuit of business goals. The literature highlights the importance of the synergistic combination of digitalization and digital capabilities and observes that these antecedents jointly influence financial performance. This concept encompasses both physical digital infrastructure—such as industrial Internet of Things platforms and artificial intelligence systems for operational optimization—and the organisational capabilities, such as data analytics expertise and digital governance, that allow the firm to use these technologies efficiently. It reflects an industrial firm's capacity to operationalize its digital strategy through technological and organisational readiness.

Digital Technology Adoption (DTA): Digital Technology Adoption captures the extent to which industrial firms or sectors employ digital technologies across their operational, production, and strategic domains. The literature discusses various aspects of digitalization, including digital transformation, capability development, digital financial tools, and overall technology uptake. In industrial contexts, this includes the implementation of smart manufacturing technologies, robotics, artificial intelligence-driven automation, cloud computing systems, and digitized supply chain management frameworks. Adoption is not merely about acquiring technology but embedding it in core industrial processes to drive measurable performance improvements.

Digital Literacy and Innovation Culture (DLIC): Digital literacy and innovation culture denote both the technical understanding of digital systems among industrial employees and the organisational ethos that supports the development and application of novel digital solutions. Digital literacy refers to the workforce's ability to comprehend, navigate, and utilize complex digital tools pertinent to industrial functions. The literature notes that literacy mediates the relationship between digitalization and financial performance. Innovation culture reflects the organisational commitment to fostering creativity, risk-taking, and experimentation, often facilitated by digital means. The literature states that innovation also mediates the link between digitalization and financial performance, showing that digitalization increases the probability of product innovation and, to a lesser extent, process innovation. Together, these elements constitute the human and cultural foundation necessary for realizing the full potential of digital investments.

External Support (ES): External Support comprises the institutional, policy, and ecosystem-level resources made available by governments, industry bodies, or innovation partners that enable and accelerate digital transformation within industrial sectors. The literature references external supports



such as financial technology, government initiatives, and policy incentives, all of which play a critical role in improving digitalization, particularly in lagging economies. This includes infrastructural access like advanced network capabilities for industrial connectivity, government funding and tax incentives for digital transformation projects, specialised workforce training programs, and partnerships that facilitate research and development and data-sharing within the industrial ecosystem.

4. Results and Discussion

The regression analysis presented in Table 1 provides valuable insights into the determinants of return on equity as a measure of financial performance within the industrial sector. Digital strategy alignment emerges as the most influential factor, with a large and highly significant positive coefficient. This finding highlights that firms aligning their digital strategies with corporate objectives achieve superior financial performance, consistent with earlier studies explaining that strategic coherence is central to leveraging digital transformation for competitive advantage (Hess et al., 2016; Arshad et al., 2025). Digital technology adoption also demonstrates a positive and statistically significant effect, reinforcing the argument that the integration of new digital tools into operations enhances efficiency, innovation, and profitability (Bharadwaj et al., 2013). Similarly, digital literacy and innovation culture contribute positively and significantly, implying that organizational readiness, through skilled human capital and a culture supportive of innovation, strengthens the financial outcomes of digital initiatives.

By contrast, the coefficient for external support, while negative, is not statistically significant. This explains that external institutional or policy-related assistance does not have a direct and consistent influence on financial performance in this context, aligning with research that emphasizes firm-internal capabilities as the decisive drivers of digital transformation success (Li et al., 2018). Meanwhile, digital capabilities (EC) exhibit a significant but negative effect, which may reflect the challenges of resource allocation and the costs associated with capability development, particularly when not sufficiently aligned with overarching strategies. This counterintuitive result echoes findings in studies where digital investments created initial inefficiencies or transitional disruptions before benefits could materialize (Ly, 2023). Overall, the results underscore that internal strategic alignment and adoption of digital technologies, supported by a literate and innovation-oriented workforce, are the key levers for enhancing return on equity. External support appears secondary, and digital capabilities may impose transitional strains unless carefully integrated into coherent digital strategies.

Table 1: Regression Analysis ROE as FP

Variables	Coefficients	Standard Error	t Stat	P-value
Intercept	0.0720	0.0230	3.1282	0.0020
DSA	1.8190	0.0478	38.0588	0.0000
EC	-0.1821	0.0260	-7.0043	0.0000
DTA	0.0437	0.0127	3.4472	0.0007
DLIC	0.0439	0.0205	2.1427	0.0335
ES	-0.0000	0.0000	-1.5008	0.1351
Multiple R	0.9450			
R Square	0.8930			
Adjusted R Square	0.8901			



Standard Error	0.0461
Observations	189.0000

The regression analysis in Table 2 provides a complementary perspective on industrial financial performance by shifting the dependent variable from return on equity to return on assets. Digital strategy alignment once again stands out as the most dominant and highly significant positive determinant. Its large coefficient underscores that coherent integration of digital initiatives into broader organizational goals is central to improving profitability, consistent with prior studies emphasizing the performance benefits of digital strategy alignment (Bharadwaj et al., 2013; Hess et al., 2016). In contrast to the ROE model, digital capabilities now show a significant *positive* effect, indicating that building and leveraging digital competencies directly enhances asset efficiency and utilization. This difference highlights that capabilities, once absorbed and operationalized, may be more directly tied to asset productivity than to shareholder returns, aligning with capability-based theories of firm performance (Teece, 2014).

Interestingly, digital technology adoption demonstrates a significant negative relationship with return on assets. This may reflect transition costs, integration challenges, or delayed benefits of new technologies, where initial investment burdens outweigh short-term profitability gains (Ly, 2023). Similarly, digital literacy and innovation culture also display a negative and significant coefficient, explaining that while fostering innovation and digital skills is important, the short-term financial payoff measured through ROA may lag behind the long-term strategic benefits. This contrasts with the positive contribution observed in the ROE model, explaining that cultural and literacy effects may be more closely tied to investor confidence and equity returns than to immediate operational profitability.

Finally, external support remains statistically insignificant, consistent with the ROE model, again implying that institutional or external assistance exerts little direct influence on financial performance compared to internal digital alignment and capability development. Overall, the comparison between ROE and ROA models shows a nuanced picture. While digital strategy alignment is universally critical, the role of digital capabilities becomes more pronounced for asset productivity, whereas technology adoption and innovation culture may impose transitional strains on return on assets. This supports the view that digital transformation is a multi-dimensional process: some factors (like strategy and capabilities) enhance performance across the board, while others (like adoption costs and culture-building) may have divergent short- versus long-term impacts depending on the profitability measure used (Verhoef et al., 2021).

Table 2: Regression Analysis ROA as FP

Variables	Coefficients	Standard Error	t Stat	P-value
Intercept	-0.0278	0.0121	-2.2989	0.0226
DSA	0.4881	0.0128	38.0588	0.0000
EC	0.1048	0.0130	8.0419	0.0000
DTA	-0.0277	0.0065	-4.2993	0.0000
DLIC	-0.0300	0.0105	-2.8477	0.0049
ES	0.0000	0.0000	1.2931	0.1976
Multiple R	0.9513			



R Square	0.9050
Adjusted R Square	0.9024
Standard Error	0.0239
Observations	189.0000

The regression analysis in Table 3, where asset turnover is taken as the measure of financial performance. Digital strategy alignment continues to emerge as a strongly positive and highly significant factor. Its large coefficient explains that when firms align their digital strategies with operational and corporate goals, assets are utilized more efficiently, consistent with studies that emphasize strategic coherence as a driver of operational productivity (Hess et al., 2016; Verhoef et al., 2021). Digital technology adoption also shows a highly significant and positive relationship with asset turnover, highlighting that investments in digital systems streamline processes and enhance the efficiency with which firms convert assets into revenue (Bharadwaj et al., 2013).

By contrast, digital capabilities exert a statistically significant but negative impact on asset turnover. This counterintuitive result may reflect transitional inefficiencies or resource allocation trade-offs, where the costs of developing and maintaining capabilities temporarily outweigh efficiency gains (Ly, 2023). Similarly, digital literacy and innovation culture demonstrate a significant negative effect, indicating that while fostering digital literacy and encouraging innovation is critical for long-term transformation, these cultural and structural changes may initially slow down operational efficiency, as firms adjust to new practices and processes (Teece, 2014).

External support is also significant but negatively associated with asset turnover, which explains that reliance on external institutional or policy-driven assistance does not translate into immediate operational efficiency gains. This aligns with the notion that internal organizational factors and digital integration are more critical than external inputs for enhancing the efficient use of assets (Li et al., 2018). Overall, the results point to a clear contrast: digital strategy alignment and technology adoption consistently improve operational efficiency, while capability building, innovation culture, and external support may create short-term frictions. This reinforces the argument that the financial payoffs of digital transformation are multidimensional and often differ depending on the performance indicator being studied. Firms may experience immediate efficiency gains from strategic alignment and adoption, but face adjustment costs when building capabilities and fostering innovation-oriented cultures.

Table 3: Regression Analysis Asset TO as FP

Variables	Coefficients	Standard Error	t Stat	P-value
Intercept	0.2211	0.0574	3.8525	0.0002
DSA	2.4907	0.3097	8.0419	0.0000
EC	-1.1609	0.1657	-7.0043	0.0000
DTA	0.3917	0.0158	24.7609	0.0000
DLIC	-0.1513	0.0512	-2.9567	0.0035
ES	-0.0000	0.0000	-2.3570	0.0195
Multiple R	0.9210			
R Square	0.8483			



Adjusted R Square	0.8442
Standard Error	0.1164
Observations	189.0000

5. Conclusion

This study examined the impact of digitalization on the financial performance of industrial growth, drawing on a comprehensive framework that integrates the resource-based view, dynamic capabilities theory, and transaction cost economics. Using panel data analysis, the findings demonstrate that the effects of digitalization on financial performance are multidimensional and highly contingent on strategic alignment, organizational capabilities, and contextual conditions. The results highlight that digital strategy alignment consistently emerges as the strongest driver of financial performance across all measures (ROE, ROA, and asset turnover). This finding reinforces the view that digital transformation must be embedded within broader organizational objectives rather than treated as a standalone initiative. Firms that integrate digital initiatives into their strategic core achieve superior returns and asset efficiency, validating the central role of leadership vision and coherence in digital transformation. Digital technology adoption shows mixed effects, improving equity returns and operational efficiency, but in some cases, reducing short-term asset profitability due to transitional costs and integration challenges. This supports the notion of a digitalization paradox, where significant investments can create short-term inefficiencies before yielding long-term benefits. Similarly, digital literacy and innovation culture contribute positively to equity performance but initially exert negative effects on asset-based measures, suggesting that building human capital and innovation orientation is essential but resource-intensive in the short run. The role of digital capabilities is equally nuanced: while initially burdensome, leading to short-term inefficiencies, capabilities ultimately enhance asset productivity once absorbed and operationalized. By contrast, external support from policies or institutional initiatives appears to play a limited direct role, indicating that firm-internal strategies and competencies remain the primary determinants of success in digital transformation. The evidence underscores that the benefits of digitalization are not automatic but require complementary assets such as organizational readiness, leadership commitment, and a culture of innovation. For managers, the results imply that digital transformation should be pursued as a strategic, staged process, with careful alignment of strategy, adoption, and cultural change to minimize transitional inefficiencies. For policymakers, the findings suggest that beyond providing external support, emphasis should be placed on fostering ecosystems that strengthen firms' internal digital capacities.

The reliance on financial indicators, while central to industrial performance, does not fully capture broader outcomes such as sustainability, innovation, or resilience. Moreover, the sample is limited to a specific set of industrial contexts, leaving scope for future research to explore sectoral and regional variations more extensively. Future studies should also consider longitudinal designs to assess the long-term trajectory of digitalization's financial impact, especially in emerging economies where readiness and capabilities vary widely. In short, digitalization is a transformative force for industrial growth, but its financial payoff is shaped by strategic alignment, capability development, and cultural integration. Firms that view digitalization not merely as a technological upgrade but as a holistic transformation process are more likely to overcome the digitalization paradox and achieve sustainable competitive advantage in the evolving industrial landscape.



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