

The Impact of Digital Marketing Strategy on Company Performance with Sustainability Strategy as a Moderating Variable at PT PLN (PERSERO) UID North Sumatra

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ABSTRACT

This study examines the impact of digital marketing strategy on company performance with sustainability strategy as a moderating variable in the context of PT PLN (Persero) UID North Sumatra. Digital marketing strategy is conceptualized into managerial digital capability and operational digital capability. Data were collected from 113 respondents across 67 customer service units and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) and Multi-Group Analysis (MGA). The results indicate that both managerial and operational digital capabilities significantly improve company performance. Sustainability strategy strengthens the effect of managerial capability but weakens the effect of operational capability. MGA results reveal that managerial capability is more influential in low-digital readiness units, whereas operational capability is stronger in high-digital readiness units.

INTRODUCTION

Digital transformation has fundamentally reshaped how organizations create value, interact with customers, and sustain performance. In service-oriented industries, particularly public utilities, digitalization is no longer limited to technology adoption but has evolved into a strategic instrument to improve efficiency, service quality, and customer engagement (Maria Antony Raj M & Dr Balamurugan S, 2024). The integration of digital platforms into customer service processes enables organizations to streamline operations, enhance responsiveness, and expand market reach (Guo & Xu, 2021).

PT PLN (Persero) Unit Induk Distribusi Sumatera Utara represents a relevant empirical context where digital transformation has been implemented at scale. Over the past three years, the company has experienced a notable increase in electricity sales growth, rising from 2.65% in 2022 to 6.10% in 2024. This improvement coincides with the intensification of digital marketing strategies, particularly through the deployment of the PLN Mobile application and the expansion of digital-based customer services. However, despite these advancements, performance improvements are not evenly distributed across the 67 customer service units. Units located in areas with stronger digital infrastructure tend to achieve higher performance compared to those in regions with limited digital readiness (Hamzah et al., n.d.).

This uneven performance highlights a critical issue: the presence of digital technology does not automatically translate into improved organizational performance. Instead, the effectiveness of digital marketing strategy depends on how well digital capabilities are developed and utilized within different organizational contexts (Yu & Moon, 2021). Specifically, managerial digital capability (strategic planning, decision-making, and resource allocation) and operational digital capability (customer interaction, communication, and service execution) play a crucial role in determining performance outcomes (Ukko et al., 2019).

In addition to digital capability, organizations are increasingly integrating sustainability-oriented strategies into their business processes (Ukko et al., 2019). In the context of PT PLN (Persero), sustainability initiatives such as renewable energy services, electric vehicle infrastructure, and green energy programs are embedded into digital platforms. These initiatives raise an important question regarding whether sustainability strategy strengthens or alters the relationship between digital marketing strategy and company performance.

This study addresses three research gaps: (1) limited evidence in public utility contexts, (2) lack of comparison across internal organizational units, and (3) limited investigation of sustainability strategy as a moderating variable.

Therefore, this study aims to examine the effect of managerial and operational digital capabilities on company performance, analyze the moderating role of sustainability strategy, and compare effects across different infrastructure and readiness conditions.

LITERATURE REVIEW

Resource-Based View

Resource-Based View explains that superior performance is produced when organizations possess and deploy valuable, rare, inimitable, and non-substitutable resources (Supriadi, 2020). In the present study, managerial digital capability and operational digital capability are conceptualized as strategic capabilities that can explain why some customer service units perform better than others even within the same organization (Ukko et al., 2019).

The relevance of RBV in this research lies in its emphasis on capability quality rather than mere technology possession. Two units may have access to the same application platform, but they can still differ in planning quality, data-based decision making, communication effectiveness, responsiveness to customer needs, and the integration of digital processes into daily service work. Therefore, performance should be interpreted not as the automatic outcome of digital tools, but as the consequence of how digital capability is mobilized and aligned with organizational goals.

Digital Marketing Strategy and Company Performance

Digital marketing strategy refers to the planned use of digital technologies, platforms, and data to achieve marketing and service objectives. Prior studies have consistently shown that digital marketing capability enhances firm performance through improved customer engagement, cost efficiency, and market responsiveness (Chinakidzwa & Phiri, 2020).

However, digital marketing strategy is not a homogeneous construct. It consists of multiple dimensions that operate at different organizational levels. Managerial digital capability focuses on strategic aspects such as planning, technology adoption, and decision-making, while operational digital capability focuses on execution, including customer communication, service delivery, and digital integration (Ukko et al., 2019).

Company performance is a multidimensional construct that includes both financial and non-financial outcomes. It's a key indicator used to assess organizational success or failure, reflecting the outcomes of a series of implementing financial activities over a specific period (Wheelen & Hunger, 2012).

In this study, company performance is measured using three key dimensions: sales growth, customer service performance (e.g., response time and recovery time), and digital platform performance (e.g., user growth and transaction intensity in PLN Mobile). This multidimensional approach provides a more comprehensive understanding of organizational effectiveness in a digital service environment (Al Mulhim, 2020).

Empirical studies suggest that both dimensions are important predictors of firm performance.

Therefore, this study proposes:

H1: Managerial digital capability positively affects company performance.

H2: Operational digital capability positively affects company performance.

Multi-Group Perspective: Digital Infrastructure and Digital-Readiness Differences

Organizations often operate across heterogeneous environments where digital infrastructure, customer readiness, and technological adoption levels vary significantly. In such contexts, the effectiveness of digital strategy is unlikely to be uniform.

Units operating in environments with strong digital infrastructure and high-digital readiness area more likely to benefit from operational digital capability, as digital processes can be executed efficiently (Mayyora et al., n.d.). In contrast, units in low-infrastructure and low-readiness environments rely more on managerial capability to adapt strategies, allocate resources effectively, and overcome structural limitations (Manzoor et al., 2021).

In this research, 67-unit customer service (ULP) separated to 2 group area, they are high-digital readiness area as a unit in strong digital infrastructure environment, high digital readiness environment, than unit with low digital infrastructure and low digital readiness environment in contrast, we call it low-digital readiness area.

This perspective suggests that the impact of digital capabilities differs across groups, leading to the following hypotheses:

H3a: Managerial capability is stronger in high-digital readiness area than low-digital readiness area.

H3b: Operational capability is stronger in high-digital readiness area than low-digital readiness area.

Sustainability Strategy as Moderating Variable

Sustainability strategy, grounded in the Triple Bottom Line framework, integrates economic, social, and environmental considerations into business operations. Increasingly, organizations embed sustainability initiatives into digital platforms to enhance brand image, customer trust, and long-term value creation.

From (Ukko et al., 2019) sustainability strategy can strengthen the relationship between digital marketing strategy and company performance by enhancing legitimacy, differentiation, and customer engagement. However, sustainability initiatives may also introduce complexity, additional costs, and operational constraints, which can weaken performance outcomes if not properly aligned with organizational capabilities.

Empirical findings on the moderating role of sustainability remain mixed. Some studies report a strengthening effect, while others suggest that sustainability can constrain operational efficiency. This indicates that the moderating role of sustainability is context-dependent and may vary across different organizational settings (Ukko et al., 2019).

Therefore, this study proposes:

H4: Sustainability strategy moderates the relationship between managerial digital capability and company performance.

H5: Sustainability strategy moderates the relationship between operational digital capability and company performance.

Conceptual Framework

The objective of this study was to examine the effect of digital marketing strategy on company performance. A digital marketing strategy is a multidimensional entity that requires the consideration of various factors. In our study, digital business strategy consists of the subdimension of managerial capabilities and operational capabilities (Ukko et al., 2019). Figure 1 shows the conceptual model and hypotheses guiding our research. The model suggests that digital marketing strategy offers the potential to influence company performance in different levels of digital readiness environment. Sustainability strategy moderates the relationship between digital marketing strategy with company performance.

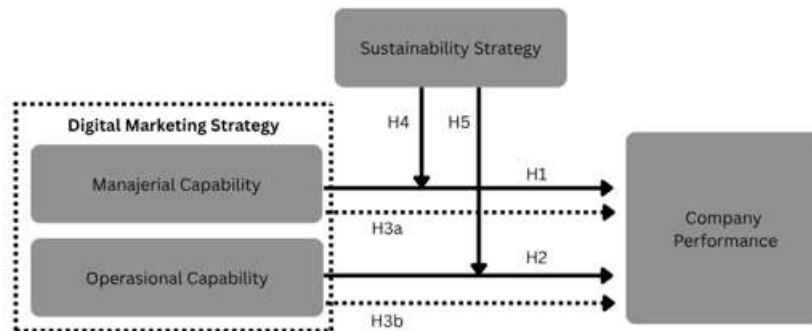


Figure 1. Conceptual Framework

METHODOLOGY

This study applies a quantitative explanatory design with a cross-sectional survey approach. The design is intended to test the direct effects of managerial and operational digital capability on company performance, the moderating effect of sustainability strategy, and the structural differences between groups of units classified by infrastructure adequacy and digital readiness area.

The research setting is PT PLN (Persero) Unit Induk Distribusi Sumatera Utara, specifically 67 customer service units (ULP). The target population consists of structural employees who understand service operations, customer management, and unit performance. Two key respondents are identified in each unit, namely the ULP manager and the customer service team leader, producing a population of 134 employees. Using the Slovin formula with a 5 percent margin of error, the minimum required sample is 101 respondents.

Data were collected using a self-administered online questionnaire distributed through Google Forms and shared via WhatsApp. All constructs were measured using a five-point Likert scale ranging from strongly disagree to strongly agree. The items were adapted from previous studies and adjusted to the PLN service-unit context. The managerial capability indicators cover digital knowledge and skills, strategic planning, digital technology use, and digital decision making (Ukko et al., 2019). Operational capability covers customer information, customer needs, customer communication, and digital integration in service processes (Chinakidzwa & Phiri, 2020). Sustainability strategy reflects the degree to which sustainability principles are integrated into service and

operational activity. Company performance is measured through sales growth (Guo & Xu, 2021), service improvement (Salhab, 2024), and PLN Mobile-related outcomes.

PLS-SEM was selected because the model includes multiple latent constructs, moderation testing, and group comparison. The analysis was conducted in three stages. First, the measurement model was evaluated using outer loadings, composite reliability, Cronbach's alpha, average variance extracted, and discriminant validity. Second, the structural model was assessed using path coefficients, bootstrapping statistics, and significance values. Third, Multi-Group Analysis was used to compare relationships between units with high and limited digital readiness and infrastructure area.

RESEARCH RESULT

Measurement Model Summary

The available results indicate that the indicators met the required quality thresholds for the reflective measurement model. The result reports acceptable discriminant validity because each construct shows stronger correlation with its own indicators than with other constructs. The report also notes the use of Cronbach's alpha, composite reliability, and AVE as the main quality criteria before structural testing.

Descriptive results are also strong. The uploaded summary tables show high mean scores and TCR values for digital capability, sustainability strategy, and company performance items, suggesting that respondents generally perceive digital implementation and performance improvement positively. Several operational items exceed 90 percent TCR, including 24-hour accessibility of digital service platforms and the smoothness of digital transactions.

Structural Model Results

Table 1. Structural Model Results

Hypothesis	Path	Beta	t-statistic	p-value	Decision
H1	Managerial capability -> Company performance	0.245	1.993	0.023	Significant
H2	Operational capability -> Company performance	0.314	2.231	0.013	Significant
H4	Sustainability x Managerial capability -> Company performance	0.266	2.231	0.016	Significant
H5	Sustainability x Operational capability -> Company performance	-0.327	2.491	0.006	Significant

The structural model supports four tested relationships. Managerial digital capability has a positive and significant effect on company performance (beta = 0.245; t = 1.993; p = 0.023), so H1 is supported. Operational digital capability also has a positive and significant effect on company performance (beta = 0.314; t = 2.231; p = 0.013), supporting H2. These results indicate that both strategic direction and service-level digital execution matter for PLN unit performance.

For the moderating paths, sustainability strategy significantly moderates the relationship between managerial digital capability and company performance with a positive coefficient (beta = 0.266; t = 2.231; p = 0.016), supporting H4. In contrast, sustainability strategy significantly moderates the relationship between operational digital capability and company performance with a negative coefficient (beta = -0.327; t = 2.491; p = 0.006), supporting H5 but with a weakening rather than strengthening direction.

Multi-Group Analysis

Table 2. Multi-Group Analysis

Hypothesis	Group	Path	Beta	t-statistic	p-value	Decision
H3a	Adequate infrastructure	Managerial capability -> Performance	0.074	0.308	0.379	Not significant
H3a	Limited infrastructure	Managerial capability -> Performance	0.443	2.366	0.009	Significant
H3b	Adequate infrastructure	Operational capability -> Performance	0.448	1.915	0.028	Significant
H3b	Limited infrastructure	Operational capability -> Performance	0.118	0.534	0.297	Not significant

The MGA results provide a nuanced picture. For H3a, the effect of managerial digital capability is not significant in units with adequate infrastructure (beta = 0.074; t = 0.308; p = 0.379), but it is positive and significant in units with limited infrastructure (beta = 0.443; t = 2.366; p = 0.009). Therefore, H3a is not supported. The result suggests that managerial capability becomes more decisive when the local digital environment is weaker and units need stronger internal coordination to compensate for infrastructure limitations.

For H3b, the effect of operational digital capability is positive and significant in units with high digital readiness area (beta = 0.448; t = 1.915; p = 0.028), but not significant in units with limited readiness area (beta = 0.118; t = 0.534; p = 0.297). Thus, H3b is supported. This indicates that operational digital routines generate stronger performance effects when the surrounding infrastructure is sufficiently supportive.

DISCUSSION

The first major finding is that both managerial and operational digital capability significantly improve company performance. This supports the core RBV argument that internal strategic capabilities can create performance differences. In the PLN context, managerial capability helps units align digital initiatives, allocate attention to priority services, and make better decisions based on data and market signals. Operational capability improves how units communicate with customers, provide information, and integrate digital processes into daily service delivery.

The second major finding concerns the moderating role of sustainability strategy. The positive moderation for managerial capability suggests that sustainability strengthens strategic coherence. When digital planning is aligned with sustainability-oriented service positioning, digital initiatives appear more valuable and more likely to generate performance gains. This pattern is consistent with the argument in (Ukko et al., 2019). that sustainability can strengthen the strategic effect of digital capability.

However, the moderation on operational capability is negative. This result is theoretically interesting rather than problematic. It suggests that sustainability integration may introduce additional operational complexity. At the execution level, units may face extra coordination demands, customer education burdens, procedural adjustments, or readiness gaps when sustainability-oriented services are embedded into routine digital operations. In other words, sustainability may strengthen strategy at the planning level but constrain performance if frontline execution capacity is not equally mature. This explanation is also consistent with the user's earlier interpretation that sustainability items may be perceived positively in general, yet still weaken the operational path if the operationalization of sustainability is broad while day-to-day service execution requires much more specific capability (Ukko et al., 2019)

The third major finding is that digital effects are not uniform across contexts. Managerial capability is stronger in units with limited infrastructure, while operational capability is stronger in units with adequate infrastructure. This divergence is important. In weaker environments, managerial capability becomes a compensating mechanism: better planning, stronger direction, and more adaptive leadership help units cope with infrastructure constraints (Manzoor et al., 2021). In stronger environments, the infrastructure allows operational routines to function effectively, so customer-facing digital execution becomes the more important driver of performance (Mayyora et al., n.d.).

Together, these findings make three contributions. First, they extend RBV by showing that the performance value of digital capability depends not only on capability type, but also on environmental support and strategic complementarity. Second, they extend sustainability strategy research by showing that moderation can be positive for one capability dimension and negative for another. Third, they contribute to public utility management by demonstrating that digital transformation should not be treated as a uniform rollout across all units.

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that digital marketing strategy significantly improves company performance at customer service units of PT PLN (Persero) UID North Sumatra through both managerial and operational digital capability. The findings show that managerial digital capability and operational digital capability each have positive and significant direct effects on performance.

Sustainability strategy plays a dual role. It strengthens the effect of managerial capability on company performance but weakens the effect of operational capability. The results further show that the impact of digital capability depends on context: managerial capability is more important in units with limited digital infrastructure, whereas operational capability is more important in units with adequate digital infrastructure.

Overall, the study demonstrates that digital strategy, sustainability, and infrastructure context interact in a differentiated way. The implication is clear: performance gains from digital transformation depend not only on technology deployment, but also on the specific capability developed and the local environment in which it is implemented.

ADVANCED RESEARCH

This paper has several limitations. First, it focuses on one regional public utility context, so generalization to other sectors should be made carefully. Second, the study uses cross-sectional survey data, which limits causal interpretation over time. Third, sustainability strategy is measured as a perceptual construct, and future research may benefit from combining perceptual and objective indicators.

Future studies can extend this research by examining other public utility regions, incorporating longitudinal data, or testing additional moderators such as customer digital readiness, environmental uncertainty, or organizational learning. Future research may also refine the operationalization of sustainability strategy so that its planning and execution dimensions can be examined separately.

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