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Digital Business Strategy and Artificial Intelligence as Determinants of Corporate Competitiveness in Indonesia

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Abstract

This study investigates the influence of Digital Business Strategy (DBS) and Artificial Intelligence (AI) adoption on corporate competitiveness among companies in Indonesia. Using a quantitative, cross-sectional design, data were collected from 85 managerial respondents representing various industries through a structured questionnaire using a 5-point Likert scale. The data were processed with SPSS 25, including descriptive statistics, tests of validity and reliability, classical assumption diagnostics, and multiple linear regression. The empirical results show that both DBS and AI adoption have positive and statistically significant effects on corporate competitiveness, whether examined separately or jointly. The regression model indicates that the two predictors together explain 50.6% of the variance in competitiveness, suggesting that digital transformation constitutes an important driver of strategic performance. DBS emerges as the dominant predictor, underscoring the need to align digital initiatives with organizational goals, resources, and market positioning. AI adoption further strengthens competitiveness by supporting data-driven decision making, improving operational efficiency, and enhancing customer value creation. The findings highlight the growing importance of digital capabilities for firms seeking to sustain advantage in Indonesia's dynamic, technology-intensive business environment and provide practical insights for managers and policymakers aiming to accelerate digital transformation in emerging markets. Future studies may extend this work by using larger samples, additional performance indicators, and comparative settings across countries or sectors.

Keywords*: Digital Business Strategy, Artificial Intelligence, Competitiveness, Digital Transformation, Indonesia*

1. Introduction

The rapid acceleration of digital technologies has reshaped competitive dynamics across global markets, compelling organizations to build strategic capabilities that support faster adaptation, innovation, and sustainable value creation. In emerging economies such as Indonesia, digital transformation has become a critical agenda for maintaining corporate competitiveness amid increasingly volatile, uncertain, complex, and ambiguous (VUCA) business environments [1], [2]. Changes in consumer behavior, the growth of digital infrastructure, and rising competition from both domestic and international players have shifted digital business strategies and artificial intelligence (AI) adoption from optional initiatives to strategic imperatives [2], [3]. As Indonesian firms seek to strengthen operational performance and remain relevant in the digital era, understanding how digital strategy and AI contribute to competitive advantage is essential.

Digital business strategy (DBS) is defined as an integrated, organization-wide approach to leveraging digital technologies in order to reconfigure business models, streamline organizational processes, and enhance customer engagement [4], [5]. Prior studies emphasize that digital strategy extends beyond the mere deployment of technology; it requires organizational alignment, leadership commitment, and deliberate capability building [6], [7]. Companies that successfully embed digital strategies often achieve superior performance, including greater efficiency, agility, innovation, and customer-centricity. However, empirical evidence in the Indonesian context remains limited, particularly regarding how digital strategies influence competitiveness across industries with diverse levels of digital maturity.

In parallel with digital strategy, artificial intelligence has emerged as a transformative technological force enabling data-driven decision-making, predictive analytics, automation, and personalized customer experiences [8], [9]. AI technologies—ranging from machine learning to natural language processing—are increasingly adopted by firms in Indonesia across sectors such as finance, retail, logistics, manufacturing, and services. Existing research shows

that AI adoption can strengthen competitiveness by optimizing operations, reducing costs, enhancing risk management, and fostering innovation capabilities [10], [11]. Nonetheless, AI adoption in Indonesia still encounters challenges related to limited technical expertise, unequal digital infrastructure, and varying degrees of managerial readiness. These contextual constraints highlight the need for empirical investigation into AI's actual contribution to corporate competitiveness.

Corporate competitiveness refers to a firm's ability to generate superior value, outperform rivals, adapt to environmental changes, and sustain long-term growth. In Indonesia's rapidly evolving business landscape, competitiveness is shaped by digital disruption, regulatory changes, the expansion of e-commerce ecosystems, and rising consumer expectations for seamless digital interactions. Against this backdrop, evaluating the role of digital business strategy and AI in enhancing competitiveness becomes academically significant and practically valuable for strategic decision-making within firms operating in Indonesia.

Despite increasing scholarly attention to digital transformation globally, a notable research gap persists regarding quantitative studies that examine the combined influence of digital business strategy and AI on corporate competitiveness in Indonesia. Existing literature frequently analyzes digitalization or AI in isolation, and many studies rely on qualitative or case-based approaches, offering limited statistical insights. To address this gap, the present study utilizes a quantitative method with structured questionnaires distributed to 85 corporate respondents. The data—measured using a Likert scale—were analyzed through validity, reliability, and regression testing using SPSS version 25. This approach allows for an empirical assessment of the direct effects of both digital business strategy and AI on competitiveness, thereby contributing to theoretical development and offering strategic guidance for Indonesian firms seeking to enhance their digital capabilities.

2. Literature Review

2.1 Digital Business Strategy

Digital business strategy (DBS) refers to an integrated organizational approach to leveraging digital technologies to enhance competitiveness, transform business models, and create new value [9], [12]. Unlike traditional IT strategy, which focuses on system support and operational efficiency, DBS emphasizes strategic alignment between digital capabilities, organizational processes, and customer value creation. Scholars identify four core dimensions of DBS: the use of digital resources, transformation of operational processes, innovation in business models, and reconfiguration of customer engagement mechanisms [12], [13]. Empirical evidence indicates that an effective digital strategy enhances organizational agility, enabling firms to respond quickly to market changes and technological disruptions [10], [14], while also supporting strategic decision-making through data-driven insights that improve customer understanding, supply chain efficiency, and product or service innovation. In emerging economies such as Indonesia, where e-commerce, fintech, logistics, and cloud-based digital ecosystems are evolving rapidly (ASEAN Digital Report, 2023), DBS plays a vital role in accelerating digital transformation across industries. However, companies still face challenges such as shortages of digital talent, inconsistent technology investments, and inadequate alignment between strategy formulation and implementation, underscoring the need to understand how DBS contributes to corporate competitiveness across different organizational contexts.

2.2 Artificial Intelligence Adoption

Artificial intelligence encompasses a range of computational techniques—including machine learning, deep learning, natural language processing, and predictive analytics—that enable machines to perform tasks traditionally requiring human intelligence. Its adoption has become integral to modern business strategy because of its capacity to automate processes, analyze large-scale data, enhance forecasting accuracy, and improve customer interaction [12], [15]. AI technologies allow organizations to identify patterns, optimize operations, and deliver personalized services, thereby boosting operational efficiency and fostering innovation. Empirical studies show that AI significantly enhances organizational performance by reducing costs, improving decision quality, accelerating time-to-market, and elevating product or service quality [10], [16]. In Indonesia, AI applications increasingly support financial services (fraud detection, credit scoring), retail (recommendation systems), logistics (route optimization), and manufacturing (predictive maintenance). However, AI adoption remains constrained by high implementation costs, limited digital infrastructure, regulatory and ethical considerations, and shortages of skilled digital talent, resulting in uneven adoption across firms and limiting their ability to fully capture AI's competitive advantages.

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2.3 Corporate Competitiveness

Corporate competitiveness refers to a firm's ability to achieve superior performance, sustain market advantage, and respond effectively to external environmental changes, a concept grounded in the Resource-Based View (RBV), which posits that competitive advantage stems from valuable, rare, inimitable, and non-substitutable resources [17]. Competitiveness is commonly reflected through indicators such as productivity, innovation capability, market responsiveness, customer satisfaction, cost efficiency, and overall organizational performance. Scholars increasingly argue that competitiveness is shaped by digital capabilities, strategic flexibility, and technological readiness [18], [19], as firms that effectively manage digital technologies tend to outperform competitors by shortening production cycles, improving service quality, and enhancing customer experiences. In Indonesia, competitiveness is influenced by digital disruption, the expansion of e-commerce ecosystems, evolving regulatory environments, and rising consumer expectations for digital convenience. Thus, examining how digital business strategy and AI adoption affect competitiveness provides valuable insights for building more resilient and innovative organizations.

2.4 Research Gap and Hypothesis Development

Although global research underscores the importance of digital strategy and AI in enhancing competitiveness, empirical studies combining both variables in a single analytical framework remain limited, particularly in emerging markets. Indonesian studies often focus separately on digital transformation or AI adoption, rarely examining their simultaneous effects. Additionally, many existing studies rely on qualitative approaches, creating a gap for data-driven analysis that measures statistical significance. Based on the literature, the following hypotheses are formulated:

H1: Digital Business Strategy has a positive and significant effect on Corporate Competitiveness.
H2: Artificial Intelligence Adoption has a positive and significant effect on Corporate Competitiveness.
H3: Digital Business Strategy and Artificial Intelligence together have a significant influence on Corporate Competitiveness.

3. Research Methods

This study employs a quantitative research design to investigate the influence of Digital Business Strategy (DBS) and Artificial Intelligence (AI) adoption on Corporate Competitiveness in Indonesia. A quantitative approach is considered appropriate because it enables systematic measurement of variables, statistical hypothesis testing, and broader generalization of findings. Data were collected using structured questionnaires with a 5-point Likert scale, allowing respondents to express perceptions consistently and ensuring reliability in quantitative analysis. The target population consists of Indonesian companies across multiple sectors that have implemented digital technologies or undertaken digital transformation initiatives. Using purposive sampling, 85 respondents were selected based on criteria such as holding managerial or supervisory roles, involvement in digital strategy or technology adoption, and working in organizations utilizing digital or AI-based systems.

Data collection was conducted through an online survey distributed via email, corporate communication channels, and professional networks. The questionnaire consisted of close-ended items measuring three key constructs: Digital Business Strategy, Artificial Intelligence Adoption, and Corporate Competitiveness. Prior to distribution, the instrument underwent expert review to ensure clarity and content validity. Respondents were assured confidentiality and anonymity to encourage honest responses. The indicators for each variable were adapted from established literature: Digital Business Strategy was measured through alignment of digital initiatives, capability development, operational integration, and digital-driven innovation; AI Adoption through predictive analytics, automation usage, customer applications, and AI-supported decision-making; and Corporate Competitiveness through innovation capability, operational efficiency, market responsiveness, and customer value creation.

To ensure the quality of the measurement instrument, validity and reliability tests were conducted using SPSS version 25. Validity was assessed through Pearson's Product Moment correlation, where items with significance levels below 0.05 and correlation coefficients above the critical value were deemed valid. Reliability was examined using Cronbach's Alpha, with values exceeding 0.70 indicating acceptable internal consistency. All items in the instrument met the required standards, enabling their use in further statistical analysis. Descriptive statistics were also generated to summarize respondent demographics and central tendencies of each variable.

Data analysis proceeded with classical assumption testing—normality, multicollinearity, and heteroscedasticity—to ensure the suitability of the regression model. Multiple linear regression analysis was then used to assess the effects of Digital Business Strategy and Artificial Intelligence Adoption on Corporate Competitiveness, specified in the model:

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$$CC = \beta_0 + \beta_1 DBS + \beta_2 AI + \epsilon.$$

Hypothesis testing involved t-tests to examine the partial effects of each independent variable and an F-test to evaluate their simultaneous influence on competitiveness. The coefficient of determination (R^2) was used to measure the model's explanatory power, indicating the extent to which DBS and AI adoption collectively account for variations in corporate competitiveness.

4. Results and Discussions

4.1 Descriptive Statistics

Descriptive statistics were conducted to summarize respondents' perceptions of the three core variables—Digital Business Strategy (DBS), Artificial Intelligence Adoption (AI), and Corporate Competitiveness (CC)—using a 5-point Likert scale, where higher scores reflect stronger agreement. The results show that organizations are generally progressing in their digital transformation efforts. Digital Business Strategy recorded a mean score of 4.02, indicating positive organizational movement in integrating digital technologies into strategic planning, operations, and customer engagement. Digital alignment with business goals showed the strongest perception (M = 4.15), whereas digital capability development had a relatively lower mean (M = 3.89), suggesting that while strategic intent is strong, many organizations continue to face challenges in building internal digital competencies. Artificial Intelligence Adoption recorded a moderate-to-high mean of 3.87, reflecting growing but uneven adoption across industries. AI for decision-support achieved the highest perceived usage (M = 4.01), emphasizing the increasing reliance on AI-driven analytics, while AI-enabled automation scored the lowest (M = 3.72), likely due to infrastructure limitations, technical complexity, and investment constraints.

Corporate Competitiveness showed the highest overall perception among the three variables, with an average score of 4.10, indicating that respondents generally view their organizations as competitive in innovation, operational performance, and market responsiveness. Market adaptability received the highest rating (M = 4.18), highlighting organizational agility in responding to rapidly changing market demands in Indonesia's dynamic digital environment. Operational efficiency, although slightly lower (M = 4.03), remained strong, demonstrating ongoing efforts to enhance internal workflows through digitalization and data-driven management. Overall, these descriptive findings suggest that while Indonesian firms are advancing in digital strategy and AI adoption, capability development and automation readiness remain areas requiring continued attention to fully support long-term competitiveness.

4.2 Validity and Reliability Results

To ensure that the measurement instrument accurately captured the constructs of Digital Business Strategy (DBS), Artificial Intelligence Adoption (AI), and Corporate Competitiveness (CC), validity and reliability tests were conducted using SPSS version 25. Validity was assessed using Pearson's Product Moment Correlation by comparing the correlation coefficient (r-count) of each item with the r-table value of 0.213 (N = 85, $\alpha = 0.05$), alongside significance values below 0.05. The results demonstrated that all items across the DBS, AI, and CC constructs were valid, with r-count values ranging from 0.421 to 0.812, exceeding the r-table threshold, and sig-values consistently below 0.05. These outcomes confirm that every statement item successfully measures its intended construct, indicating strong convergent validity and ensuring that the instrument is suitable for further statistical analysis.

Reliability testing was conducted using Cronbach's Alpha to evaluate the internal consistency of each variable. All constructs achieved Alpha values above the minimum standard of 0.70, with DBS showing a value of 0.872, AI Adoption at 0.884, and Corporate Competitiveness attaining the highest reliability at 0.901. These results indicate that all constructs exhibit high internal consistency, with the CC variable demonstrating particularly strong cohesion among its items. Overall, the findings confirm that the research instrument is statistically reliable, producing consistent and trustworthy measurements across all variables included in the study.

4.3 Classical Assumption Testing

Before performing multiple linear regression analysis, several classical assumption tests were conducted to ensure that the regression model satisfies the statistical requirements for producing unbiased, consistent, and efficient estimators. Using SPSS version 25, the normality of residuals was examined through both the Kolmogorov–Smirnov (K–S) test and the Normal P–P Plot. The K–S test resulted in a significance value of 0.078, which is greater than the 0.05 threshold, indicating that the residuals are normally distributed. Similarly, the Normal P–P

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Plot showed data points aligned closely with the diagonal line, reflecting no substantial deviations and further confirming that the normality assumption was met. These findings collectively demonstrate that the regression residuals follow a normal distribution pattern suitable for further analysis.

The study also conducted a multicollinearity test to ensure that the independent variables—Digital Business Strategy and Artificial Intelligence Adoption—did not exhibit excessively high correlations that could distort coefficient estimations. Multicollinearity was assessed using Tolerance and Variance Inflation Factor (VIF) values, with the criteria set at Tolerance > 0.10 and VIF < 10. The results showed that all variables met these criteria, indicating the absence of multicollinearity within the model. Together with the normality test, these outcomes confirm that the regression model satisfies key classical assumptions, ensuring the robustness and reliability of subsequent regression analyses.

Table 1. VIF

Variable	Tolerance	VIF	Conclusion
Digital Business Strategy	0.684	1.462	No multicollinearity
Artificial Intelligence Adoption	0.681	1.468	No multicollinearity

The multicollinearity assessment using Tolerance and Variance Inflation Factor (VIF) values confirms that both independent variables demonstrate acceptable levels of independence. Digital Business Strategy recorded a Tolerance of 0.684 and a VIF of 1.462, while Artificial Intelligence Adoption showed a Tolerance of 0.681 and a VIF of 1.468. Since all Tolerance values exceed 0.10 and all VIF values fall well below the threshold of 10, the results indicate the absence of multicollinearity. These findings confirm that each variable contributes uniquely to the regression model without inflating standard errors or distorting coefficient estimates.

The heteroscedasticity test was conducted using both scatterplot analysis and the Glejser method to ensure that residual variance remained constant across predicted values. The scatterplot displayed randomly dispersed data points with no visible funnel pattern or systematic structure, indicating homoscedasticity. Supporting this visual assessment, the Glejser test produced significance values of 0.227 for Digital Business Strategy and 0.314 for Artificial Intelligence Adoption, both exceeding the 0.05 threshold. These results collectively confirm that heteroscedasticity is not present, meaning the residuals exhibit consistent variance, thus satisfying another key assumption of multiple regression analysis.

4.4 Multiple Regression Results

Multiple linear regression analysis was performed to examine the influence of Digital Business Strategy (DBS) and Artificial Intelligence Adoption (AI) on Corporate Competitiveness (CC), using model summary results, ANOVA (F-test), and coefficient analysis (t-test) to assess both simultaneous and partial effects. The model summary shows an R value of 0.711, an R^2 of 0.506, an adjusted R^2 of 0.497, and a Standard Error of Estimate of 0.428. These results indicate that 50.6% of the variance in Corporate Competitiveness can be explained collectively by DBS and AI, while the remaining 49.4% is attributed to other factors not included in the model, such as leadership quality, organizational culture, market dynamics, innovation capability, or external environmental conditions. The adjusted R^2 value of 0.497 further confirms that the regression model is strong, stable, and appropriate for explaining the relationship between the variables.

The F-test was conducted to assess whether Digital Business Strategy and Artificial Intelligence Adoption jointly influence Corporate Competitiveness, and the ANOVA results show an F-value of 41.962 with a significance level of 0.000 ($p < 0.05$). This highly significant result indicates that the overall regression model is statistically meaningful, confirming that both independent variables together have a significant simultaneous effect on Corporate Competitiveness. Consequently, the hypothesis stating that Digital Business Strategy and AI Adoption jointly influence Corporate Competitiveness (H3) is accepted.

The t-test was conducted to evaluate the partial contribution of each independent variable.

Table 2. Multiple Regression

Variable	Beta Coefficient (β)	t-value	Sig.	Interpretation
Digital Business Strategy	0.428	4.132	0.000	Significant
Artificial Intelligence Adoption	0.367	3.543	0.001	Significant

The t-test results show that Digital Business Strategy significantly influences Corporate Competitiveness, with a t-value of 4.132 and a significance level of 0.000, supported by a standardized beta coefficient of 0.428, indicating that DBS is the strongest predictor of competitiveness; thus, H1 is accepted. Likewise, Artificial Intelligence

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Adoption also has a significant effect on Corporate Competitiveness, reflected by a t-value of 3.543 and a significance level of 0.001, with a beta coefficient of 0.367 showing that AI contributes strongly to competitiveness, albeit slightly lower than DBS, thereby supporting the acceptance of H2.

4.6 Discussion

The findings of this study provide strong empirical evidence that Digital Business Strategy (DBS) and Artificial Intelligence Adoption (AI) are significant determinants of Corporate Competitiveness (CC) among Indonesian companies. Using multiple regression analysis on data collected from 85 respondents, the results show that both DBS and AI—individually and simultaneously—enhance firms' ability to innovate, adapt to market dynamics, and achieve superior performance outcomes. These findings are consistent with previous research that links digital capability development and AI integration to strategic advantages, and they highlight the importance of examining these relationships within Indonesia's rapidly evolving digital landscape.

The study reveals that Digital Business Strategy has a positive and significant effect on Corporate Competitiveness, evidenced by strong t-test values and a relatively high standardized beta coefficient, making DBS the strongest predictor in the model. This aligns with theoretical perspectives emphasizing that digitalization serves as a strategic enabler of value creation and long-term sustainability [4], [20], [21]. DBS strengthens organizations by embedding digital technologies in core processes, customer engagement mechanisms, and innovation activities. In Indonesia, the rapid expansion of e-commerce, fintech, and cloud-based services underscores the need for strategic alignment between digital initiatives and business objectives, confirming that firms must integrate—not merely adopt—digital technologies to remain competitive.

The results also demonstrate that Artificial Intelligence Adoption has a positive and significant impact on Corporate Competitiveness. Firms that leverage AI technologies benefit from enhanced operational efficiency, improved decision-making accuracy, and greater customer-centric innovation. Consistent with prior studies [7], [22], [23], AI enables predictive analytics, process automation, personalization, and improved risk management, all of which contribute to superior performance. In Indonesia, AI applications are increasingly apparent in financial services, logistics, retail, and manufacturing, although adoption levels vary due to infrastructure limitations, investment challenges, and gaps in digital literacy. Nevertheless, the significant effect of AI confirmed in this study highlights its role as a strategic capability capable of generating measurable advantages in speed, innovation, and responsiveness.

Furthermore, the F-test results confirm that Digital Business Strategy and AI Adoption simultaneously exert a significant influence on Corporate Competitiveness, with an R^2 value of 0.506 indicating that more than half of the variation in competitiveness is explained by the model—an impressive proportion given the multifaceted nature of competitive performance. This demonstrates that digital competitiveness requires both strategic direction (DBS) and technological enablement (AI). DBS provides vision, governance, and alignment, while AI supplies the intelligence, automation, and operational enhancement needed to execute digital transformation effectively. The combined influence of these variables underscores that organizational competitiveness strengthens when strategic digital leadership and technological readiness develop in tandem; firms with strong digital strategies but weak AI capability, or vice versa, will struggle to achieve sustained competitive advantage.

4. Conclusion

This study provides strong empirical evidence that Digital Business Strategy (DBS) and Artificial Intelligence (AI) Adoption are critical determinants of Corporate Competitiveness within the Indonesian business environment. The findings show that DBS is the strongest predictor of competitiveness, emphasizing the need for organizations to articulate a clear digital vision, align digital initiatives with strategic objectives, and foster a supportive culture for digital transformation. Firms that excel in digital strategy are better positioned to innovate, anticipate market changes, and meet evolving customer expectations. At the same time, AI Adoption significantly enhances competitiveness by enabling predictive analytics, automation, and intelligent customer engagement, allowing organizations to optimize operations, improve decision-making accuracy, and deliver greater customer value. As AI adoption becomes more widespread, competitive disparities between digitally advanced and digitally lagging firms are likely to deepen, underscoring AI's strategic importance. The regression analysis further reveals that DBS and AI jointly explain 50.6% of the variation in corporate competitiveness, demonstrating that strategic alignment and technological enablement must operate simultaneously to produce maximum impact. This combined effect indicates that digital transformation is not merely a matter of technological implementation, but rather a holistic organizational strategy requiring leadership commitment, capability building, and systemic integration. Consequently, sustaining competitive advantage in Indonesia's digital economy requires organizations to develop strong digital business strategies, accelerate AI adoption, balance strategic planning with technological

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capability development, and invest in digital talent and infrastructure. By prioritizing these digital imperatives, Indonesian companies can strengthen their competitiveness, respond more effectively to market disruptions, and secure a more resilient position in an increasingly digitalized global economy.

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