Assessing the Influence of Leadership Adaptability in Post-Pandemic on Strategic Agility and Digital Transformation: The Moderating Role of Technological Readiness in Ghana

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Abstract

The study examines how leadership adaptability and technology readiness influence digital transformation and strategic agility, including the moderating role of technology readiness. The study used an explanatory cross-sectional design. Data were collected from 509 managerial-level employees in Ghana through purposive sampling. The study employed both descriptive statistics and PLS-SEM to test the study's hypothesis. The results reveal that leadership adaptability positively influences both digital transformation and strategic agility. Also, Technology readiness significantly enhances digital transformation and strategic agility. Furthermore, technology readiness strengthens the relationship between leadership adaptability and strategic agility, but does not significantly moderate its effect on digital transformation. These findings highlight the importance of adaptable leadership and technological preparedness in achieving agile and digitally transformed organisations in today's dynamic business environment. Based on the results, organisations should prioritise leadership development programs that improve adaptability, particularly in the context of digital transitions and strategic responsiveness. Also, future research should investigate the influence of contextual factors, including industry type, organisational size, and cultural dynamics, on the relationship between strategic agility, technology readiness, and leadership adaptability.

Keywords: Leadership Adaptability, Technology Readiness, Digital Transformation, Strategic Agility, Organisational Change

1. Introduction

The COVID-19 pandemic has significantly disrupted global business operations, highlighting the critical need for leadership agility and accelerated digital innovation and exposing deep vulnerabilities in traditional organisational models (Sholokwu, 2024). To ensure operational continuity in the presence of prolonged uncertainty, businesses in a variety of sectors were compelled to promptly adjust to evolving market conditions, reorganise internal operations, and incorporate digital technologies (Suryani & Dwiputra, 2025; Koomson, 2025). The crisis has increased awareness of the necessity for leadership models that are more resilient and responsive, in which leaders are expected to facilitate strategic learning, promote innovation, and navigate ambiguity (Gyamerah et al., 2025; Agyapong et al., 2024). In this context, leadership adaptability is the ability of a leader to proactively respond to external changes by fostering collaboration, embracing flexibility, and driving transformation. In turbulent periods, this construct has emerged as a critical predictor of organisational resilience and performance (Adobor et al., 2021; Koomson, 2025). At the same time, the pandemic exacerbated the global trend towards digitalisation, which compelled organisations to integrate digital technologies throughout their value chains to improve operational efficiency, customer experience, and competitive advantage (Bans-Akutey & Ebem, 2022; Karoney, 2024). In dynamic environments, digital transformation has transformed from a technological trend to a strategic imperative that redefines how organisations create, deliver, and capture value (Aggrey et al., 2022; Yamin & Murwaningsari, 2023). The convergence of leadership adaptability and digital transformation is indicative of a more extensive change in management paradigms, in which sustainable development and competitiveness in a post-pandemic era are contingent upon the incorporation of technology, continuous learning, and agility.

The pandemic in Ghana considerably impacted business continuity and recovery efforts across industries by amplifying pre-existing structural and institutional challenges. Due to limited access to financial resources, weak digital infrastructure, and leadership gaps in crisis management, Ghanaian firms, particularly micro, small, and medium-sized enterprises (MSMEs), faced increased challenges in maintaining operations (Akpe et al., 2022; Asare-Kyire et al., 2023). Syamsir et al. (2025) observed that numerous organisations encountered limitations in their ability to implement adaptable strategies or implement digital tools, which is indicative of a more extensive issue of technological under-preparedness in the national economy. A dearth of forward-thinking, proactive decision-making, and innovation-driven perspectives was a defining characteristic of the leadership crisis, particularly among SMEs, as it was necessary to navigate disruptions (Okrah et al., 2025). Ghana's digital economy experienced a 19% expansion in the post-pandemic period (Mensah et al., 2025). This expansion was primarily attributed to the rapid proliferation of mobile technology, the expansion of financial technology platforms, and the increased adoption of e-commerce solutions (Aloulou et al., 2024). However, this expansion obscures a more intricate reality, as the Ghana Statistical Service (2021) reported that only approximately 34% of businesses employ sophisticated ICT tools or digital models, suggesting a substantial digital divide. Digital literacy remains low, and infrastructural support is insufficient in rural

and informal sectors, which is where this divide is most apparent (Arokodare & Asikhia, 2020). The limited capacity of Ghanaian firms to adopt digital transformation has significant implications for productivity, scalability, and resilience, as digital competitiveness becomes more critical in the global economy (Kumi et al., 2024; Achieng & Malatji, 2022). As a result, it is imperative to examine how leadership adaptability can enable local firms to improve their strategic agility and digital transformation trajectories in a constrained ecosystem.

Despite the increasing corpus of international literature that has investigated the connections between strategic agility, adaptive leadership, and digital transformation, there is a substantial dearth of empirical studies that are context-specific to Ghana and the broader Sub-Saharan Africa region. The majority of the current research is based on evidence from technologically advanced economies, where institutional infrastructure, digital capability, and policy support are more mature and conducive to strategic change and digital innovation (Jibril et al., 2024; Anning-Dorson, 2021). As a result, it is frequently challenging to transpose findings from these settings to developing contexts, where firms frequently face infrastructural deficits, limited access to digital tools, and underdeveloped innovation ecosystems (Kumi et al., 2024; Okyere, 2024). Macro-level development challenges, such as access to ICT or government-led digital strategies, are typically the focus of studies on Africa, rather than the internal strategic behaviours and leadership dynamics within firms (Muthoni, 2023; Abera et al., 2025). In Ghana, few empirical investigations have evaluated the extent to which leadership adaptability enables organisations to adapt to changing market conditions, restructure operations, or embrace digital technologies in response to turbulent environments. This disparity is particularly critical in the context of the post-pandemic business environment, where digital agility and resilient leadership are indispensable for sustained competitiveness and recovery (Asif et al., 2024). Additionally, the moderating influence of technological readiness has not been sufficiently examined in relation to leadership and transformation outcomes. The Technology-Organisation-Environment (TOE) framework provides an appropriate theoretical framework for investigating the convergence of internal capabilities and external technological factors that influence innovation outcomes. Nevertheless, the TOE model has yet to be empirically applied in Ghana's private sector, particularly in the context of agility and leadership research (Ledi et al., 2024; Edu et al., 2025). This omission is significant in light of the increasing importance of digital strategies in Ghanaian businesses, particularly among SMEs and service-oriented firms that are dealing with unstable economic conditions (Osei et al., 2025; Oyeyipo et al., 2023). Consequently, there is an urgent requirement for research that not only evaluates the direct impact of leadership adaptability on strategic agility and digital transformation but also examines how these effects are influenced by the firm's technological readiness within the socio-economic and infrastructural realities of Ghana. This study is among the first to empirically integrate these constructs in the Ghanaian context, providing a framework that reflects the region's unique organisational, technological, and economic conditions. It contributes to regional scholarship by expanding the understanding of how firms in developing economies navigate uncertainty through leadership and innovation, and adds to global discourse by challenging assumptions of universality in leadership and digital maturity models.

The remainder of this paper is organised as follows. The next section develops the theoretical framework and research hypotheses based on relevant literature. This is followed by a description of the research methodology, including data collection and analysis procedures. The subsequent sections present the empirical findings and discuss their implications for theory and practice. The paper concludes by outlining limitations and suggesting avenues for future research.

2. Theoretical Background and Development of Research Hypotheses

The study draws on two main theories: The Technology-Organisation-Environment framework and the Dynamic Capabilities Theory. The Technology-Organisation-Environment framework, which was initially introduced by Tornatzky and Fleischer in 1990, functions as a fundamental model for the examination of the adoption, implementation, and benefits of technological innovations by organisations. Its core premise lies in the interrelationship between three key contexts: technological, organisational, and environmental (Alshammari et al., 2024; Nurhayati & Astono, 2024). The technological context encompasses the availability, complexity, compatibility, and perceived utility of innovations, as well as all internal and external technologies that are pertinent to the firm (Ahenkan et al., 2025). The organisational context encompasses the unique characteristics of a firm, including its size, structure, managerial competencies, and internal resources, that influence the assimilation of technology (Ahmad et al., 2022). At the same time, the environmental context encompasses external factors such as market competitiveness, industry regulations, supplier and customer dynamics, and macroeconomic or socio-political conditions. These factors are particularly relevant in developing economies such as Ghana, where the risks associated with digital transformation are frequently exacerbated by institutional weakness and volatility (Sholokwu, 2024).

The TOE framework's comprehensiveness and flexibility are its most notable strengths, as they enable it to be customised to a variety of industries and technological landscapes, including both traditional and emergent sectors (Suryani & Dwiputra, 2025). Nevertheless, the framework has also been subject to criticism due to its restricted theoretical profundity. Scholars contend that TOE is more descriptive than explanatory and lacks a predictive mechanism to simulate causal interactions between its dimensions (Koomson, 2025). Furthermore, the absence of specific metrics for assessing component synergy frequently results in fragmented empirical interpretations. The TOE framework is still notably pertinent to this study for two reasons, despite the criticisms it has received. First, it contextualises leadership adaptability as an organisational capability that impacts the assessment and implementation of technological readiness by firms. Secondly, it recognises the infrastructural and institutional constraints of the Ghanaian business environment, which influence the external conditions in which strategic agility and digital transformation occur (Gyamerah et al., 2025; Agyapong et al., 2024). In the post-pandemic era, firms are confronted with the challenge of digitising while simultaneously navigating unstable economic and regulatory environments. TOE offers a comprehensive framework for comprehending the way in which internal leadership capabilities and external forces combine to drive technology-based strategic change (Adobor et al., 2021). The study not only

evaluates the enabling or inhibiting factors of innovation adoption but also enhances our comprehension of how organisations in emerging markets strategically navigate digital transformation amid complexity and uncertainty by positioning technological readiness within this triadic framework (Agyapong et al., 2024).

Additionally, the Dynamic Capabilities Theory (DCT), which was developed by Teece and Shuen in 1997, complements the TOE; the DCT extends the resource-based view by emphasising a firm's ability to reconfigure and renew its resources and competencies in response to swiftly changing environments (Okrah et al., 2025). DCT argues that a firm's sustained competitive advantage is not exclusively derived from inert resources, but rather from its capacity to perpetually adapt through three critical processes: sensing, seizing, and transforming (Karoney, 2024). Sensing is the capacity of the organisation to detect changes in its external environment, including technological disruptions or emerging market trends (Syamsir et al., 2025). Capturing these opportunities necessitates the mobilisation of internal resources and the implementation of opportune strategic decisions. Continual renewal of organisational capabilities, processes, and structures to ensure that they are following changing market conditions is referred to as transformation (Asare-Kyire et al., 2023). In this study, leadership adaptability serves as a critical dynamic capability that enables organisations to detect technological disruptions, capitalise on digital opportunities, and adjust operational models accordingly (Akpe et al., 2022). In the Ghanaian context, where firms are confronted with limited digital infrastructure, fluctuating economic policies, and institutional voids, leadership's capacity to initiate and perpetuate change is particularly important (Aggrey et al., 2022; Yamin & Murwaningsari, 2023). DCT's practical relevance across volatile sectors is a significant asset, rendering it optimal for the analysis of digital transformation in post-pandemic contexts characterised by rapid innovation cycles and uncertainty (Karoney, 2024). The emphasis is on the continuous reshaping of firms to flourish in the face of change, with strategic decision-making and organisational learning at the core of adaptability. Nevertheless, the theory has been criticised for its abstractness, with scholars observing challenges in operationalising its constructs, particularly in empirical research (Bans-Akutey & Ebem, 2022). Additionally, in emerging markets with resource constraints and leadership capability disparities, assumptions regarding firms' inherent capabilities to identify and adapt to change may not always be accurate. However, the objective of this study is to investigate the role of leadership in promoting strategic agility and digital innovation, and DCT's emphasis on strategic responsiveness is highly relevant to this objective. It underscores the significance of leadership as a transformative force that enables firms to remain competitive, innovative, and resilient in the face of continuous disruption, rather than merely as a managerial function (Agyapong et al., 2024). The study provides a multidimensional understanding of how leadership adaptability and technological readiness synergistically drive strategic transformation in Ghana's evolving private sector landscape by combining DCT with the TOE framework, which in turn bridges internal capabilities and external contingencies.

2.1 Leadership Adaptability and Strategic Agility

Leadership adaptability plays an integral role in enhancing a firm's capacity to act with

strategic agility, especially in environments marked by complexity and uncertainty, such as post-pandemic Ghana. Leaders who are adaptive exhibit flexibility in strategic execution, enabling organisations to identify changes in the external environment and modify internal processes accordingly. These leaders foster decentralised decision-making, encourage experimentation, and empower employees to act promptly on new insights and behaviours that are strongly associated with strategic agility (Aloulou et al., 2024; Arokodare & Asikhia, 2020). In Ghana's private sector, where firms encounter institutional volatility and infrastructural constraints, adaptable leadership catalyses maintaining competitive advantage and relevance. These leaders frequently function as boundary-spanners, nurturing a culture of openness to change and translating external threats and opportunities into internal strategic actions (Kumi et al., 2024). The organisation's capacity to efficiently reallocate resources, align short-term objectives with long-term vision, and orchestrate collaboration across departments enables it to remain resilient and responsive. The congruence of leadership behaviour with strategic agility mechanisms is not an accident; it is the result of a deliberate leadership mindset that prioritises real-time responsiveness over rigorous planning (Mensah et al., 2025). Additionally, adaptive leadership facilitates the dynamic interplay between the identification and seizing of opportunities, both of which are indispensable for agility. A work culture that embraces ambiguity as a space for innovation rather than paralysis is fostered by leaders who modify their strategies and models of engagement (Okrah et al., 2025). In Ghanaian organisations that are seeking to digitise or expand, this leadership guarantees that agility is not merely a response, but rather an inherent organisational capability. Adaptable leaders establish a favourable environment for strategic flexibility by fostering rapid execution and collaborative thinking. Based on this review, the following hypothesis is proposed:

H1: Leadership adaptability has a positive and significant effect on strategic agility.

2.2 Leadership Adaptability and Digital Transformation

Leadership adaptability is crucial for promoting digital transformation, particularly in emerging markets where technological infrastructure and institutional support are frequently inconsistent (Achieng & Malatji, 2022). Adaptive leaders proactively address technological changes by aligning digital initiatives with the organisational objectives and the capabilities of their employees. By mobilising cross-functional teams, reallocating resources, and cultivating a learning culture that embraces technology-driven change, their flexibility allows them to navigate uncertainty and complexity, two defining features of digital transformation efforts (Jibril et al., 2024; Anning-Dorson, 2021). In the Ghanaian context, where numerous firms are still in the process of achieving digital maturity, leadership adaptability serves as a strategic enabler that enables organisations to identify pertinent technologies, customise them to local operational realities, and manage the human capital challenges associated with digital transitions (Qiao et al., 2024). These leaders comprehend that digital transformation necessitates a fundamental shift in organisational culture and strategy, rather than solely the adoption of new tools. They achieve this by fostering open communication, fostering innovation, and mitigating resistance to change. Adaptable leaders facilitate both the technical and behavioural aspects of transformation by encouraging experimentation,

inclusivity, and agility (Okyere, 2024; Muthoni, 2023). Additionally, the digital mindset that is essential for sustained transformation is fostered by leadership adaptability. Adaptable leaders are capable of balancing short-term operational requirements with long-term digital aspirations, frequently advocating for incremental adoption that is consistent with the organisation's technological readiness and resource base (Abera et al., 2025; Asif et al., 2024). They are more adept at identifying the disruptive potential of digital technologies and converting this awareness into tangible strategies that enhance organisational capabilities. In Ghana, the contextual intelligence required to bridge digital divides is provided by adaptable leadership, as digital literacy and access to infrastructure differ significantly among firms (Ledi et al., 2024; Osei et al., 2025). Additionally, these executives are essential in fostering trust in digital systems, particularly among employees who may be apprehensive about automation or data-driven systems. Based on this review, the following hypothesis is proposed:

H2: Leadership adaptability has a positive and significant effect on digital transformation

2.3 Technological Readiness and Strategic Agility

The capacity of a company to respond with agility in dynamic environments is significantly influenced by its technological readiness (Edu et al., 2025). Strategic agility necessitates the expeditious identification of opportunities, the rapid reconfiguration of resources, and the ability to make prompt decisions, all of which are enhanced by the presence of a sufficient technological infrastructure and competencies (Oyeyipo et al., 2023). Robust IT systems, real-time data analytics capabilities, and digitally proficient employees are characteristic of firms with high technological readiness, which allows them to effectively pivot their strategies and anticipate market shifts (Alshammari et al., 2024; Sharma & Aggarwal, 2024). Technological readiness provides a distinct advantage in emerging markets such as Ghana, where digital resources are variably distributed, by reducing operational frictions and enhancing internal coordination. By investing in foundational technologies, such as enterprise systems, cloud platforms, and mobile tools, organisations can enhance communication, reduce decision latency, and reconfigure operations, thereby increasing strategic responsiveness (Nurhayati & Astono, 2024). In this manner, technological readiness serves as both a catalyst and an enabler of agility by incorporating speed and adaptability into organisational processes. In addition to infrastructure, technological readiness also incorporates organisational culture and digital mindset, which are equally essential for strategic agility. Agile responses to change necessitate firms that cultivate a culture of digital openness, which promotes experimentation, decentralised decision-making, and real-time knowledge sharing (Ahmad et al., 2022; Sholokwu, 2024). The importance of technological readiness in the form of employee ICT competence and supportive digital leadership is particularly evident in Ghanaian firms, where hierarchical structures and resistance to change may impede the ability to respond promptly (Koomson, 2025). Additionally, companies that provide their employees with the necessary training to effectively utilise digital tools are more likely to implement agile practices, including responsive consumer engagement and iterative project management (Sharma & Aggarwal, 2024). This strategic value of

technological readiness is enhanced by the cultural and human-centric dimension, which enables firms to operate with precision and speed in volatile environments (Ahenkan et al., 2025). Based on this review, the following hypothesis is proposed:

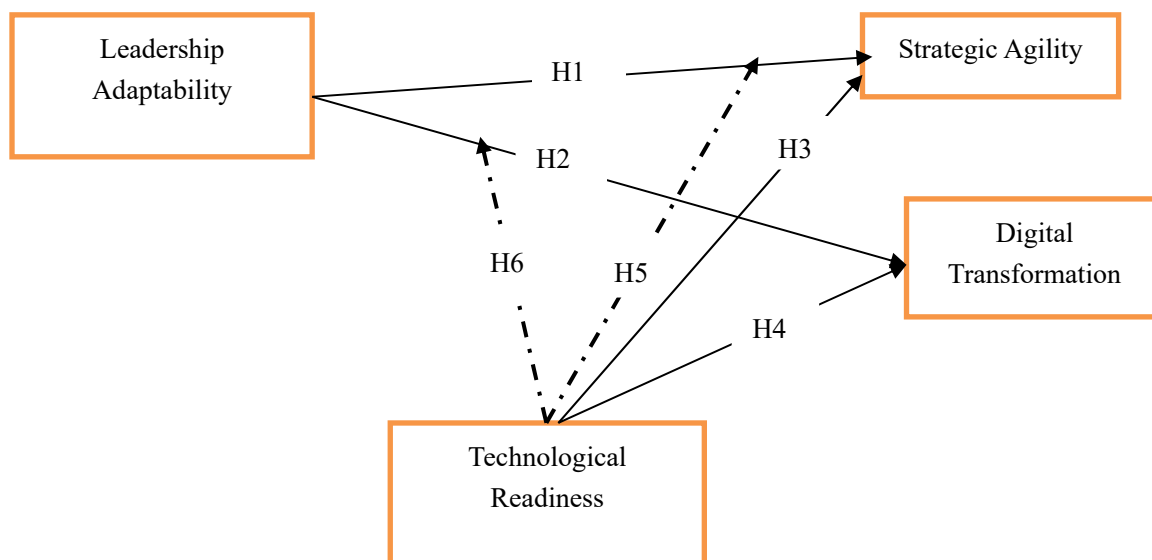**H3: Technological readiness has a positive and significant effect on strategic agility.**

Figure 1. Conceptual Framework

Source: Field Data, 2025.

2.4 Technological Readiness and Digital Transformation

Technological readiness is a crucial antecedent of successful digital transformation, particularly in emerging economies where infrastructural and technological disparities present significant challenges. It incorporates the organisational capacity to deploy, manage, and perpetually adapt to evolving technologies, in addition to the availability of advanced digital infrastructure and tools (Gyamerah et al., 2025). Digital innovations are more effectively integrated into core business processes, operations are streamlined, and service delivery is improved for organisations with a high level of technological readiness (Agyapong et al., 2024). In this context, digital transformation is not merely the implementation of technology; it constitutes a profound transformation in the manner in which an organisation generates value, engages with stakeholders, and competes in the marketplace (Adobor et al., 2021). In Ghana, where technological capabilities may be restricted by resource constraints, the foundational stratum for digital transformation is preparedness in terms of ICT infrastructure, data management systems, and cloud computing capacity (Bans-Akutey & Ebem, 2022; Karoney, 2024). This fundamental strength enables organisations to implement technologies such as AI, big data, and mobile platforms with greater flexibility, thereby facilitating organisational transformation. The organisational culture and leadership's dedication to digital innovation are equally significant. Technological readiness encompasses human

factors, including employees' digital literacy, receptivity to change, and ongoing training, which are essential for the sustainability of transformation initiatives (Aggrey et al., 2022; Yamin & Murwaningsari, 2023). A company may have state-of-the-art digital infrastructure; however, transformation initiatives are likely to be unsuccessful or impeded in the absence of a workforce that can effectively utilise these tools. Fostering a digitally adept and agile workforce is crucial in Ghanaian firms to ensure that technological investment and strategic transformation objectives are in alignment (Akpe et al., 2022). This is because digital maturity levels may vary considerably (Asare-Kyire et al., 2023). Additionally, the impact of technological readiness is further exacerbated by organisational structures that facilitate rapid learning and cross-functional collaboration, which accelerate the tempo and depth of digital transformation (Syamsir et al., 2025). In essence, technological readiness not only establishes the context for continuous digital evolution but also provides the necessary instruments for transformation. Based on this review, the following hypothesis is proposed:

H4: Technological readiness has a positive and significant effect on digital transformation

2.5 Moderating Role of Technological Readiness

Technological readiness is a critical factor in the amplification of the impact of leadership adaptability on both strategic agility and digital transformation, particularly in dynamic and uncertain environments, such as emerging economies like Ghana (Okrah et al., 2025). Although adaptable leadership is crucial for fostering organisational responsiveness and innovation, its influence can be either substantially restricted or enhanced by the organisation's technological capabilities (Mensah et al., 2025; Aloulou et al., 2024). Arokodare and Asikhia (2020) define technological preparedness as the availability of IT infrastructure, digital competencies, and a supportive culture for technology adoption. This enables leaders to more effectively implement adaptive strategies. Advanced digital tools and real-time data analytics, which are critical attributes of strategic agility, can assist adaptive leaders in more effectively reconfiguring processes, stimulating innovation, and responding promptly to market shifts (Kumi et al., 2024; Achieng & Malatji, 2022). Conversely, the efficacy of leadership actions may be impeded by inadequate technological infrastructure, which can impede innovation, communication, and slow down decision-making (Jibril et al., 2024). This implies that technological readiness is not only a catalyst that enables leadership adaptability to flourish in fast-changing environments, but also a facilitator of strategic agility (Anning-Dorson, 2021; Qiao et al., 2024). Additionally, the translation of leadership adaptability into digital transformation outcomes is significantly improved by technological readiness. Leaders who exhibit adaptive qualities frequently encourage innovative thinking and envision change; however, the actual execution of these strategies is contingent upon the organisation's digital maturity and readiness to operationalise transformation strategies (Okyere, 2024; Muthoni, 2023). Adaptable leadership is more likely to succeed in the redesign of business models and the integration of new technologies in contexts where digital infrastructure is resilient and the workforce is digitally skilled (Abera et al., 2025; Asif et al., 2024). Technologically prepared organisations provide the agility necessary for leaders to cultivate a digital culture, automate operations, and guarantee the timely execution of

strategies (Okrah et al., 2025). Conversely, organisations that lack this level of preparedness may encounter resistance to their transformation endeavours, irrespective of the intentions of their leadership. The pace and success of both strategic repositioning and digital innovation in Ghana's increasingly digitised economy are determined by the synergy between technological readiness and adaptive leadership (Ledi et al., 2024). Based on this review, the following hypothesis is proposed:

H5: **Technological readiness positively moderates the relationship between leadership adaptability and strategic agility.**

H6: Technological readiness positively moderates the relationship between leadership adaptability and digital transformation.

3. Research Methodology

This study adopts a quantitative research approach with an explanatory cross-sectional design, which is appropriate for investigating the causal relationships among leadership adaptability, strategic agility, digital transformation, and the moderating role of technological readiness within a specific timeframe. The quantitative approach enables the objective measurement and statistical analysis of the relationships between variables by utilising numerical data, which is collected through structured instruments such as questionnaires (Creswell, 2017). This method is particularly well-suited for hypothesis testing, as it allows the researcher to assess the direction and intensity of associations among the constructs being investigated (Saunders et al., 2019). The explanatory design aims to investigate the fundamental mechanisms that connect leadership adaptability to strategic agility and digital transformation, as well as how technological readiness either strengthens or weakens these effects. The design's cross-sectional nature enables the accumulation of data at a single point in time, which is particularly convenient for evaluating the perceptions and behaviours of participants across various sectors in Ghana, particularly in the post-pandemic context (Levin, 2006; Hair et al., 2020).

3.1 Population and Sample

The population of a study is the comprehensive collection of individuals or elements that share common characteristics that are pertinent to the research problem and from which information is sought to make generalisations (Ahmad et al., 2022). The target population for this study comprises managerial-level employees, including executives, directors, department heads, and team leaders across various industries in Ghana who possess the requisite knowledge and experience in organisational strategy and technology adoption. These individuals are selected based on their active roles in making or influencing decisions related to strategic agility, digital transformation, and technological investments within their respective firms. The study employs purposive sampling, a non-probability technique suitable for selecting respondents who meet predefined criteria essential to the research objectives (Etikan et al., 2016). Inclusion criteria required respondents to have been in their current roles for at least one year and to have participated in digital or strategic change initiatives within their firms after the COVID-19 pandemic. Respondents not meeting these criteria, such as

entry-level staff or individuals not involved in strategic or technological decisions, were excluded from the sample. The sampling technique ensures that the data collected reflects informed perspectives directly relevant to the variables under investigation. Also, participants were recruited through professional networks, organisational contacts, and industry associations in Ghana. Screening questions were incorporated into the questionnaire to verify that respondents met the inclusion criteria. To reduce potential selection bias, the study combined online distribution (via LinkedIn, email, and WhatsApp groups) with in-person administration across multiple firms in both private and public sectors, ensuring a diverse and representative sample. A total of 560 questionnaires were distributed across private and public sector firms in Ghana. Out of these, 509 responses were returned and deemed valid for analysis, yielding a high response rate of approximately 90.9%, which enhances the reliability of the results (Hair et al., 2020). This sample size satisfies the minimum requirement for conducting robust multivariate statistical analyses and offers adequate representation of the targeted managerial population, ensuring the generalizability of findings within similar organisational contexts in emerging economies (Creswell, 2017).

3.2 Data Collection Instrument and Procedure

For this study, primary data were collected using a structured questionnaire developed in alignment with the study's objectives, research philosophy, and quantitative methodological approach. The instrument was designed to assess respondents' perceptions of leadership adaptability, strategic agility, digital transformation, and technological readiness within Ghanaian organisations in the post-pandemic context. A 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), was employed to capture the degree of agreement or disagreement with various statements. The 5-point scale was selected for its simplicity, ease of comprehension, and ability to reduce respondent fatigue, especially when data collection is conducted across diverse organisational settings (Joshi et al., 2015; Boone & Boone, 2012). Measurement items were adapted from validated constructs in prior studies and modified slightly to reflect the Ghanaian business environment. For example, items on leadership adaptability were drawn from Pulakos et al. (2000), while constructs for strategic agility and digital transformation were adapted from Doz and Kosonen (2010) and Vial (2021), respectively. Technological readiness items were based on the Technology Readiness Index developed by Parasuraman (2000). To ensure clarity and appropriateness, the questionnaire was reviewed by academic experts and industry practitioners, followed by a pilot test involving 30 respondents. Feedback from this process informed minor revisions to improve the instrument's wording, flow, and reliability. The questionnaire was administered using both paper-based and online methods to ensure broader coverage and inclusivity. The online survey was developed using Google Forms and distributed through email, WhatsApp, and professional networks such as LinkedIn. Respondents were encouraged to further circulate the link within their networks to enhance reach. Simultaneously, paper-based questionnaires were administered in person to managers and employees at various firms and institutions, especially those with limited access to digital platforms. Appropriate ethical protocols, including voluntary participation, anonymity, and informed consent, were observed. Screening questions were used to ensure that participants had at least three months of

experience in their current roles and were actively involved in digital operations. Of the 560 questionnaires distributed, 509 valid responses were retrieved after data cleaning, representing a 90.9% response rate. The responses were coded and analysed using SPSS and SmartPLS. Data from both formats were merged, checked for consistency, and subjected to reliability and validity tests, including Cronbach's alpha and exploratory factor analysis (Hair et al., 2020). This mixed-mode approach allowed for comprehensive and high-quality data collection, suitable for addressing the study's explanatory objectives.

3.3 Statistical Analysis

Descriptive statistics and Partial Least Squares Structural Equation Modelling (PLS-SEM) were implemented to analyse the quantitative data that was collected. The demographic characteristics of the respondents were summarised, and the general trends in the data were analysed using descriptive statistics, including means, standard deviations, frequencies, and percentages. This step enabled comprehension of the data distribution and provided context for the interpretation of the results from inferential analyses. Hair et al. (2019) selected PLS-SEM as the primary statistical technique for complex models that involve multiple constructs, small-to-medium sample sizes, and non-normal data distributions; this decision was based on its suitability. In the context of evaluating the theoretical relationships among latent variables and predicting key target constructs, PLS-SEM is particularly advantageous (Sarstedt et al., 2020). Using this method, the proposed measurement and structural models were tested to evaluate the reliability and validity of constructs as well as the intensity and significance of hypothesised paths. Several diagnostic tests were implemented to guarantee the dataset's integrity and mitigate potential biases. The marker variable technique was employed to evaluate Common Method Bias, a critical concern in cross-sectional survey-based research. The questionnaire contained a theoretically unrelated marker variable, and its correlation with key variables was investigated. The findings indicated that the Common Method Bias did not pose a substantial threat, as the correlations remained below the recommended threshold (Ahmad et al., 2022; Ahenkan et al., 2025). Additionally, the data were assessed for normality, multicollinearity, and outliers. Variance Inflation Factor was employed to verify multicollinearity, and the values were found to be below the conservative cut-off of 3.3, indicating that there were no multicollinearity concerns (Hair et al., 2019). The analysis was conducted in a two-step process, beginning with the evaluation of the measurement model and concluding with the evaluation of the structural model. The robustness of the findings was improved by conducting bootstrapping with 5,000 resamples to estimate the significance of path coefficients. The statistical interpretations were validated, reliable, and consistent with the study's explanatory objectives as a result of this rigorous data analysis approach.

4. Results and Discussion

The respondent characteristics provide insight into the demographic and organisational profiles of participants involved in the study. Most respondents fall within the 26–35 years age group (35.9%), followed by those aged 36–45 years (26.7%), indicating a relatively young and active workforce. The gender imbalance in leadership and digital transformation

roles is indicated by the fact that males constituted a greater proportion (58%) than females (42%). The sample was highly educated, as the majority of individuals held at least a bachelor's degree (45.6%), and a substantial number also held master's degrees (30.5%). The largest groups within organisations were senior managers/directors (27.3%) and department chiefs (23.8%), while 20.2% were owners or founders, suggesting that the respondent base had decision-making influence.

Table 1. Respondent Characteristics

Variables	Categories	Frequency	Percentage
Age Group	18–25 years	76	14.9
	26–35 years	183	35.9
	36–45 years	136	26.7
	46–55 years	82	16.1
	56 years and above	32	6.3
Gender	Male	295	58
	Female	214	42
Educational Qualification	Diploma/HND	94	18.5
	Bachelor's Degree	232	45.6
	Master's Degree	155	30.5
	Doctorate (PhD)	28	5.5
Current Role in Organisation	Owner/Founder	103	20.2
	Senior Manager/Director	139	27.3
	Department Head	121	23.8
	ICT Officer	78	15.3
	Other	68	13.4
Years in Organisation	1–2 years	112	22
	3–5 years	181	35.6
	6–10 years	138	27.1
	More than 10 years	78	15.3
Organization Size	Small (1–49 employees)	217	42.6
	Medium (50–249 employees)	184	36.2
	Large (250+ employees)	108	21.2
Sector of Operation	Manufacturing	78	15.3
	Services	149	29.3
	Agriculture	45	8.8
	ICT/Technology	64	12.6
	Finance/Insurance	72	14.1
	Wholesale/Retail	76	14.9
	Other	25	4.9
Strategic Plan (Technology Focus)	Yes	298	58.5
	No	143	28.1
	Not sure	68	13.4

Source: Field Data, 2025.

The duration of tenure indicated that 35.6% of the respondents had been with their organisations for 3–5 years, while 27.1% had been with them for 6–10 years. This indicates that the organisations had moderate levels of experience. The study's emphasis on MSMEs was further emphasised by the fact that small enterprises (1–49 employees) comprised the largest portion (42.6%), followed by medium-sized firms (36.2%). The service sector was the most prevalent, accounting for 29.3% of the total. Wholesale/retail and finance/insurance accounted for 14.9% and 14.1%, respectively. Also, 58.5% of organisations reported having a strategic strategy that is technology-focused, which suggests that there is a growing awareness of digital transformation. Nevertheless, 28.1% of respondents lacked a strategic technological readiness plan, while 13.4% were uncertain, serving as a reminder of the deficiencies in this area.

4.1 Descriptive Statistics

The respondents reported a relatively high level of digital transformation (M = 4.015, SD = 0.587), which implies that Ghanaian firms are increasingly adopting digital tools and processes in the wake of the pandemic. Firms exhibit a moderate-to-high capacity to respond flexibly to changing conditions, as evidenced by strategic agility (M = 3.872, SD = 0.642) and leadership adaptability (M = 3.768, SD = 0.695), both scoring above the midpoint. Additionally, leaders are increasingly exhibiting adaptive behaviours, which are essential in dynamic environments. The average technology readiness score was 3.954 and SD = 0.611, which supports the notion that organisations are progressively establishing the infrastructure and capabilities necessary for successful technology integration.

Table 2. Descriptive Statistics

Construct	Mean	SD	Kurtosis	Skewness
Strategic Agility	3.872	0.642	-0.214	-0.356
Digital Transformation	4.015	0.587	0.432	-0.129
Leadership Adaptability	3.768	0.695	-0.037	0.241
Technological Readiness	3.954	0.611	0.208	-0.174

Source: Field Data, 2025.

The skewness and kurtosis values of all constructs were within the permissible range (±1), suggesting that the responses were distributed normally (Ahenkan et al., 2025). Furthermore, the strategic agility and digital transformation exhibited a minor negative skewness, which indicates a tendency towards greater agreement among respondents. Conversely, leadership adaptability exhibited a minor positive skew, suggesting that there is some variation in the perceptions of leadership responsiveness. Overall, the findings indicate that though digital transformation is gathering momentum, its success is closely associated with strategic agility, leadership adaptability, and organisational technological readiness.

4.2 Reliability, Convergent Validity, and Discriminant Validity

The reliability and convergent validity results indicate strong measurement quality across the constructs in the study. The recommended threshold of 0.70 is exceeded by the Cronbach's Alpha (CA) and Composite Reliability (CR) values of all constructs, indicating satisfactory internal consistency (Hair et al., 2019). Digital Transformation demonstrated satisfactory reliability and convergent validity, as evidenced by a CA of 0.780 and a CR of 0.784, as well as an Average Variance Extracted (AVE) of 0.603. Similarly, Leadership Adaptability demonstrated a CA of 0.802 and a CR of 0.805, with an AVE of 0.557, thereby confirming that the items accurately assess the intended construct. Strategic Agility recorded a Cronbach's Alpha of 0.768, a high Composite Reliability of 0.879, and an AVE of 0.609, indicating strong internal consistency and confirming that the items converge well to represent the underlying latent construct.

Table 3. Reliability, Convergent Validity

| Construct	Items	Loadings	CA	CR	AVE	VIF
Digital Transformation	DT2	0.722	0.780	0.784	0.603	1.424
	DT4	0.805				1.653
	DT5	0.789				1.593
	DT6	0.786				1.53
Leadership Adaptability	LA1	0.772	0.802	0.805	0.557	1.584
	LA2	0.739				1.704
	LA3	0.757				1.745
	LA4	0.74				1.513
	LA5	0.721				1.432
Strategic Agility	SA1	0.756	0.768	0.879	0.609	1.215
	SA3	0.803				1.432
	SA4	0.781				1.418
Technological Readiness	TR1	0.888	0.735	0.854	0.730	1.276
	TR2	0.82				1.276

Source: Field Data, 2025.
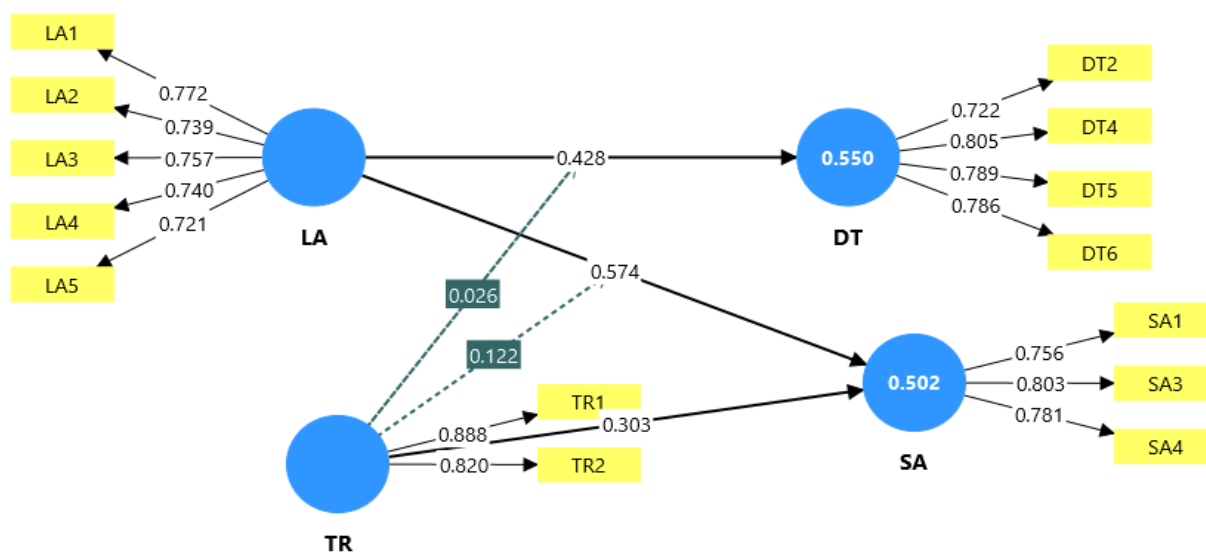
Figure 2. Measurement Model

Technological Readiness exhibited robust psychometric properties, as evidenced by a CA of 0.735, a CR of 0.854, and a high AVE of 0.730. These findings suggest that the items account for a significant portion of the construct's variance. Item reliability was reinforced by the fact that factor loadings for all items exceeded the minimum criterion of 0.70, ranging from 0.721 to 0.888 (Fornell & Larcker, 1981). Furthermore, the Variance Inflation Factor values for all items were below the critical value of 5, which implies that multicollinearity is not a potential issue (Hair et al., 2020). Overall, these findings provide evidence that the measurement model is both valid and dependable, thereby confirming the instrument's suitability for evaluating the constructs of strategic agility, digital transformation, leadership adaptability, and technological readiness in the Ghanaian business environment.

4.3 Discriminant Validity and Common Method Bias Test

The discriminant validity of the constructs was assessed using two key methods: the HTMT criterion and the Fornell-Larcker criterion. The HTMT values indicate that all inter-construct correlations are below the conservative threshold of 0.90, which suggests that the discriminant validity is adequate (Henseler et al., 2015). In particular, the HTMT values between Strategic Agility and Leadership Adaptability were 790, which is near the cut-off but still within acceptable limits. This indicates that these constructs are related but not conceptually redundant. The HTMT value between Digital Transformation and Strategic Agility was 0.794, while that between DT and Technological Readiness was 0.615. Similarly, LA and TR exhibited an HTMT value of 0.747, while SA and TR had a value of 0.789. These values confirm that while the constructs are moderately correlated, as expected in a theoretical model integrating leadership, agility, and technology, they still maintain discriminant validity, supporting the uniqueness of each latent variable within the structural model.

Table 4. Discriminant Validity - Heterotrait-Monotrait Ratio (HTMT) Criterion

	DT	LA	SA	TR
DT	1			
LA	0.511	1		
SA	0.794	0.790	1	
TR	0.615	0.747	0.789	1

Source: Field Data, 2025.

Table 5. Discriminant Validity - Fornell and Larcker Criterion

	DT	LA	SA	TR
DT	[0.776]			
LA	0.65	[0.746]		
SA	0.652	0.668	[0.781]	
TR	0.651	0.542	0.528	[0.855]

Source: Field Data, 2025.

The Fornell-Larcker criterion further substantiates discriminant validity by illustrating that the square root of the AVE for each construct surpasses its correlations with other constructs (Fornell & Larcker, 1981). The square roots of AVEs are represented by the diagonal values, which are denoted by brackets. For example, DT has a value of 0.776, LA has a value of 0.746, SA has a value of 0.781, and TR has a value of 0.855. Each of these exceeds the corresponding off-diagonal correlations. For instance, the correlation between DT and SA is 0.652, which is less than their respective AVE square roots of 0.776 and 0.781. Similarly, the correlation between TR and LA is 0.542, which is also less than the square roots of both constructs. The reliability of the model's structural relationships is guaranteed by the robust evidence of discriminant validity and the confirmation that the constructs are empirically distinct.

Table 6. Common Method Bias Analysis, Using Marker Variable Method

Variables	Coefficient	Standard error	T-stat.	P values
MV->DT	0.034	0.041	0.829	0.408
MV-> LA	-0.017	0.038	-0.447	0.655
MV->SA	0.025	0.044	0.568	0.571
MV-> TR	-0.012	0.039	-0.308	0.758

Source: Field Data, 2025.

The findings indicate that the marker variable did not have a significant impact on any of the primary constructs: Strategy Agility (B = 0.025, p = 0.571), Leadership Adaptability (B =

-0.017, p = 0.655), Technological Readiness (B = -0.012, p = 0.758), and Digital Transformation (B = 0.034, p = 0.408). This suggests that common method bias is not a significant concern in the current study, as the marker variable exhibits statistically insignificant trajectories to all main constructs. The marker variable method is employed as a post-hoc statistical control to mitigate potential bias introduced by the data collection method, particularly when self-reported measures are employed (Ahmad et al., 2022). In this instance, the non-significant path coefficients indicate that the variance explained by the marker variable does not account for any significant systematic bias in the responses of the respondents. Consequently, the findings substantiate the data's integrity and validity, suggesting that the relationships between constructs such as leadership adaptability, strategic agility, digital transformation, and technological readiness are not artefacts of the measurement method but rather genuine theoretical associations. This guarantees that method variance does not distort subsequent interpretations and hypothesis testing, thereby enhancing the credibility of the structural model.

4.4 Model Evaluation

The f-square statistics provide insight into the effect sizes of the predictor variables on the respective dependent constructs within the structural model. The results suggest that Leadership Adaptability has a moderate-to-large effect on Strategic Agility ($f^2 = 0.331$), and that adaptive leadership plays a significant role in enhancing a firm's ability to respond strategically to changing conditions. Similarly, Leadership Adaptability exhibits a moderate impact on Digital Transformation ($f^2 = 0.205$), suggesting that leaders who are adaptable and responsive are more effective in driving digital initiatives within their organisations. This is consistent with prior research that has focused on the critical role of leadership in guiding organisations through digital transformation (Abera et al., 2025).

Table 7. F-Square Statistics

Relationship	f-square
Leadership Adaptability -> Digital Transformation	0.205
Leadership Adaptability -> SA	0.331
Technological Readiness -> Digital Transformation	0.219
Technological Readiness -> Strategic Agility	0.120

Source: Field Data, 2025.

Technological Readiness also exhibits a moderate effect on Digital Transformation ($f^2 = 0.219$), which confirms that the availability and preparedness of technological infrastructure considerably influence an organisation's digital progress. In contrast, its impact on Strategic Agility is less pronounced ($f^2 = 0.120$), despite remaining significant. This implies that, although technology facilitates strategic responsiveness, its influence is somewhat less pronounced than that of leadership variables. The notion that both internal capabilities (leadership adaptability) and external resources (technological readiness) are critical drivers

of strategic and digital transformation outcomes is further confirmed by these findings.

Table 8. Predictive Power

Variable	Q²predict	RMSE	MAE
Digital Transformation	0.327	0.538	0.421
Strategic Agility	0.294	0.561	0.447

Source: Field Data, 2025.

The results of the predictive power assessment, based on the Q²predict values, Root Mean Square Error (RMSE), and Mean Absolute Error (MAE), indicate that the model possesses moderate predictive relevance for both Digital Transformation and Strategic Agility. A Q²predict value above zero signifies that the model has predictive capability, and values of 0.327 for Digital Transformation and 0.294 for Strategic Agility suggest medium predictive power (Hair et al., 2019). The RMSE and MAE values further substantiate this conclusion, as Digital Transformation exhibits lower error rates (RMSE = 0.538; MAE = 0.421) than Strategic Agility (RMSE = 0.561; MAE = 0.447), suggesting that Digital Transformation has slightly superior prediction accuracy. These results underline the model's capacity to accurately predict the results of the endogenous variables, thereby bolstering the structural framework's robustness and its practical applicability in the prediction of digital and strategic responsiveness in organisations.

Table 9. Model Fit

Indices	Saturated model	Estimated model
SRMR	0.079	0.085
d_ULS	0.662	0.76
d_G	0.26	0.281
Chi-square	475.853	508.701
NFI	0.734	0.716

Source: Field Data, 2025.

The model fit indices offer a comprehensive assessment of the extent to which the hypothesised structural model corresponds with the observed data. The estimated (0.085) and saturated (0.079) models have Standardised Root Mean Square Residual (SRMR) values that are less than the acceptable threshold of 0.10. This suggests that the model fit is adequate and that the discrepancy between the predicted and observed correlations is relatively small. The model's consistency with the empirical data is further confirmed by the discrepancy measures, d_ULS (0.662 for saturated, 0.76 for estimated) and d_G (0.26 for saturated, 0.281 for estimated), which also lie within acceptable ranges. In PLS-SEM, where exact model fit is

not a strict requirement, the Chi-square values (475.853 for saturated and 508.701 for estimated) are relatively close, which is desirable. Although slightly below the conventional threshold of 0.90, the Normed Fit Index (NFI) values of 0.734 for the saturated model and 0.716 for the estimated model still suggest a reasonable degree of fit, particularly in the context of exploratory research.

4.5 Structural Model & Hypothesis Testing

The findings indicate that Digital Transformation is significantly positively influenced by Leadership Adaptability (B = 0.428, p = 0.000). This suggests that organisations that are led by adaptable leaders are more likely to succeed in applying digital transformation strategies. Adaptable leaders are capable of managing uncertainties, fostering a culture that embraces digital tools and innovation, and being responsive to change. Their capacity to guide teams through technological transitions facilitates the seamless integration of digital platforms and promotes strategic alignment among departments. This discovery is in accordance with Asif et al. (2024), who contend that adaptable leadership is essential for the acceleration of digital adoption and the maintenance of transformation. It is also consistent with Ledi et al. (2024), who emphasise the importance of proactive and adaptable leadership to effectively navigate the complex and evolving technological landscapes. Consequently, the evidence emphasises the necessity of cultivating leadership adaptability to effectively advance digital initiatives. The results also indicate that Strategic Agility is significantly and positively influenced by Leadership Adaptability (B = 0.574, p = 0.000). This suggests that adaptable executives improve an organisation's ability to promptly address market shifts, emerging opportunities, and disruptions. By empowering teams, promoting innovation, and encouraging strategic experimentation, leaders foster agility by being able to adapt their strategies to dynamic environments. Osei et al. (2025) emphasise that strategic agility necessitates leadership that is both visionary and adaptable, characteristics that are essential for adaptive leaders. Consequently, the robust relationship serves as confirmation that leadership adaptability enhances an organisation's capacity to promptly and decisively respond to, sense, and anticipate change, thereby establishing the organisation for long-term relevance and resilience.

Table 10. Hypothesis Results

Structural path	Coefficient	Standard Error	t-value	p-value	Decision
Direct effect					
LA -> DT	0.428	0.067	6.386	0.000	Support
LA -> SA	0.574	0.056	10.185	0.000	Support
TR -> DT	0.437	0.066	6.639	0.000	Support
TR -> SA	0.303	0.074	4.084	0.000	Support
Moderation Effect					
TR x LA -> DT	0.026	0.048	0.539	0.590	Not Support
TR x LA -> SA	0.122	0.051	2.4	0.016	Support

Source: Field Data, 2025.

Furthermore, the findings indicate that Technology Readiness has a positive impact on Digital Transformation (B = 0.437, p = 0.000). This suggests that organisations that possess the requisite technological infrastructure and a culture that is receptive to technology are more likely to successfully implement digital transformation. A high level of technology readiness guarantees that the organisation is capable of integrating and scaling digital tools, as well as that employees are prepared to work with new systems. Parasuraman (2000) contends that technology readiness is a comprehensive concept that includes the beliefs and attitudes that either facilitate or impede the implementation of new technologies. This outcome suggests that technological preparedness serves as a catalyst, expediting the pace and profundity of transformation. Additionally, Strategic Agility is substantially influenced by Technology Readiness (B = 0.303, p = 0.000), suggesting that organisations are more agile and capable of adjusting strategies in real time when they are technologically prepared. This implies that technological capability, in addition to leadership, facilitates organisational agility by facilitating quicker decision-making, improved data access, and seamless collaboration. Chen et al. (2014) emphasise that technology infrastructure is a critical enabler of strategic responsiveness and flexibility in competitive environments, and this finding supports their assertion.
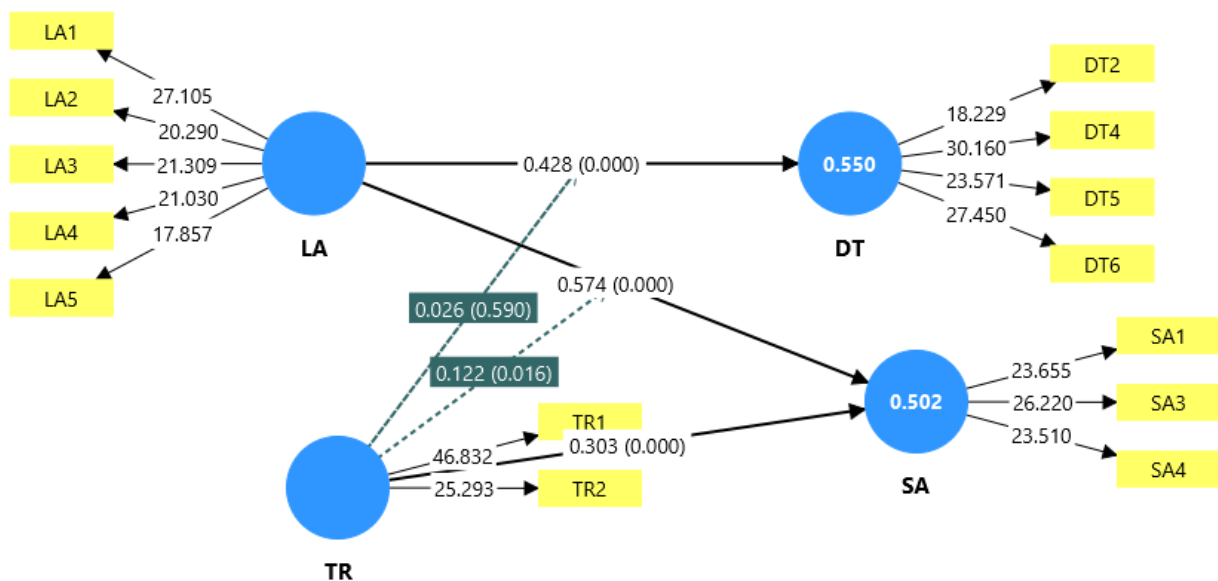

Figure 3. Hypothesis Model

The results show that the interaction between Technology Readiness and Leadership Adaptability does not significantly influence Digital Transformation (B = 0.026, p = 0.590). This suggests that the direct impact of leadership adaptability on digital transformation is not substantially amplified by the combined effect of these two variables. Nevertheless, the interaction effect between Technology Readiness and Leadership Adaptability on Strategic Agility is statistically significant and positive (B = 0.122, p = 0.016), suggesting that the relationship between strategic agility and leadership adaptability is bolstered when

technology readiness is high. This moderating effect suggests that adaptive leaders are better equipped to foster strategic agility as a result of their technology readiness. The presence of both factors enhances the ability of organisations to promptly adapt to market demands, implement flexible strategies, and maintain a competitive advantage. This is consistent with the findings of Edu et al. (2025), who assert that the combination of dynamic leadership and technological capabilities leads to increased organisational responsiveness and innovation.

4.6 Discussion of Findings

The findings from the study reveal that Leadership Adaptability has a significant and positive influence on Digital Transformation, indicating that organisations led by adaptive leaders are more likely to succeed in implementing digital strategies. Leaders of this nature are capable of effectively guiding teams through intricate transitions, reducing resistance to change, and cultivating a work environment that values digital tools and innovation. This discovery is consistent with the fundamental principles of the Dynamic Capabilities Theory, which underscores the critical role of managerial capabilities in assisting organisations in the reconfiguration of internal competencies to accommodate rapidly changing environments (Sholokwu, 2024). Consequently, adaptive leadership is a demonstration of dynamic capability, particularly in the context of operational restructuring and digital innovation. This corroborates Suryani and Dwiputra's (2025) assertion that leadership adaptability is indispensable for the implementation of sustainable transformation initiatives and significantly facilitates digital integration. It also aligns with Koomson (2025), who asserts that effective leadership in dynamic environments is contingent upon proactiveness, flexibility, and an openness to experimentation. Similarly, Gyamerah et al. (2025) propose that leadership responsiveness is a critical factor in the integration of digital technologies into organisational operations. These results collectively confirm that the cultivation of leadership adaptability is essential for the establishment of a successful digital transformation and the preservation of a competitive advantage in swiftly changing business environments.

Additionally, Leadership Adaptability is discovered to have a substantial positive influence on Strategic Agility, which serves to substantiate the notion that adaptable leaders improve a company's capacity to promptly detect and react to market fluctuations. This is consistent with the Dynamic Capabilities Theory, which posits that a company's capacity to integrate, construct, and reconfigure internal and external competencies is a determinant of its ability to remain competitive in volatile conditions (Agyapong et al., 2024). This capacity is fostered by adaptive leaders through the promotion of organisational learning, the adoption of strategic renewal, and the encouragement of innovation across departments. Adobor et al. (2021) contend that strategic agility is contingent upon leaders who challenge conventional thinking and guide the organisation through uncertainty by facilitating the rapid realignment of strategies. This is corroborated by the current study, which posits that agility is not only a structural characteristic but also a behavioural consequence that is influenced by leadership. This is consistent with the conclusions of Bans-Akutey and Ebem (2022), who maintain that strategic responsiveness is significantly enhanced by adaptive leadership. Therefore, the agility of a firm is significantly influenced by the adaptability of its leadership, which is essential for addressing emergent challenges and capitalising on new opportunities in

dynamic markets.

Furthermore, the research indicates that Technology Readiness has a substantial impact on both Strategic Agility and Digital Transformation. Organisations that prioritise innovation and possess robust technological capabilities are better equipped to execute digital strategies and promptly adjust to fluctuations in the external environment. This is consistent with the Dynamic Capabilities Theory, which contends that technology enables firms to identify and capitalise on opportunities while simultaneously facilitating transformation processes (Karoney, 2024). Firms are equipped with the necessary tools for strategic implementation and improved decision-making as a result of their high levels of technology readiness, which are demonstrated by infrastructure, digital skills, and an openness to change. This aligns with Parasuraman's (2000) framework, which regards technology readiness as a comprehensive concept that encompasses the psychological and technical preparedness of organisations to adapt to technological advancements. Nevertheless, the interaction between Leadership Adaptability and Technology Readiness does not have a substantial impact on Digital Transformation; however, it does have a significant impact on Strategic Agility. This implies that the positive effects of leadership adaptability on agility are enhanced by technology readiness, indicating a synergistic relationship. Yamin and Murwaningsari (2023) substantiate this interdependence by explaining that dynamic capabilities develop as a result of the integration of technological and managerial assets. Consequently, the combined impact of leadership and technology is particularly critical in fostering agile and adaptive organisational behaviour, although both factors individually contribute to transformation and agility.

Despite this discussion, scholars such as Aggrey et al. (2022) argue that digital transformation outcomes are strongly driven by external market pressures, competitive dynamics, and regulatory frameworks rather than by leadership adaptability alone. In contexts where firms face resource limitations or operate under restrictive institutional regulations, the influence of adaptive leaders is framed by the conditions of the external environment. This suggests that leadership effectiveness must be understood within the broader socio-economic and institutional landscape in which organisations operate. Similarly, Yamin and Murwaningsari (2023) demonstrate that strategic agility is not solely dependent on leadership qualities but can also be fostered through structural mechanisms such as decentralised decision-making, flexible organisational structures, and cross-functional integration, which enable organisations to respond effectively to turbulence even in the absence of strong adaptive leadership. These perspectives highlight that while leadership adaptability and technology readiness remain critical internal drivers, they interact with institutional, cultural, and resource-based factors that play an equally decisive role. Consequently, digital transformation and strategic agility should be interpreted as multifaceted outcomes that emerge from the combined influence of leadership, technology, organisational design, and external environmental conditions.

4.7 Theoretical Implications

This study makes important theoretical contributions by extending the Dynamic Capabilities Theory through the integration of Leadership Adaptability and Technology Readiness as key

enablers of digital transformation and strategic agility. Although the theory has traditionally emphasised a company's capacity to change, integrate, and reconfigure internal and external competencies in response to environmental changes (Qiao et al., 2024; Abera et al., 2025), this research shows that leadership adaptability and technology readiness play distinct but complementary roles in determining digital outcomes. The results indicate that leadership adaptability has a significant direct impact on both digital transformation and strategic agility, while technology readiness also substantially influences these outcomes and enhances the effect of leadership adaptability on strategic agility. This implies that the theory's comprehension of capability configurations is enhanced by the necessity of aligning technological readiness with leadership in dynamic environments. The results also indicate that digital transformation may be more reliant on visionary leadership than on technological readiness, while agility is facilitated by the synergy between the two. This provides nuance to the theory by demonstrating that the configuration of capabilities may vary depending on the strategic outcome, thereby corroborating the notion that dynamic capabilities are context-specific. This contribution contributes to the development of theoretical models of digital strategy by emphasising the distinct roles of technological competence and leadership in organisational adaptation and change, which is in line with the work of Akpe et al. (2022) and Asare-Kyire et al. (2023).

4.8 Managerial and Practical Implications

The findings of this study offer several managerial and practical implications, particularly for organisations striving to enhance digital transformation and strategic agility in dynamic business environments. First, the findings underscore the critical role of leadership adaptability in fostering strategic agility and digital transformation. Consequently, managers and executives must develop leadership practices that are adaptable, forward-thinking, and responsive to change. Organisations should allocate resources to leadership development programs that prioritise cognitive adaptability, innovation readiness, and resilience in the presence of uncertainty. This guarantees that leaders are adequately prepared to effectively lead strategic initiatives and navigate technological disruptions. Secondly, the research substantiates the notion that strategic agility and digital transformation are substantially influenced by technology readiness. This emphasises the necessity for organisations to evaluate and enhance their technological capabilities, not only by investing in digital infrastructure but also by improving the digital literacy and confidence of employees. Steps that are practical include cultivating a culture that encourages technological innovation, upgrading IT systems, and providing consistent training. Additionally, the moderating effect of technology readiness on the relationship between strategic agility and leadership adaptability implies that the influence of leadership is enhanced when an organisation is technologically prepared. To optimise strategic responsiveness, managers should therefore coordinate leadership development initiatives with digital readiness initiatives.

Additionally, these results have practical implications for mental health professionals and educators who are responsible for the care of adolescents. For example, educators can implement the principles of strategic agility and leadership adaptability to develop curricula and educational programs that promote technology-based learning, resilience, and

problem-solving. These insights can be used by mental health professionals to create interventions that improve the digital competence, critical thinking, and adaptability of adolescents, thereby enabling them to flourish in environments that are becoming more technology-driven and dynamic. Structured technology activities, collaborative digital projects, and resilience-building exercises can be incorporated into schools and youth programs to develop these abilities. Lastly, organisations that aspire to strategic agility must not solely depend on visionary leadership or advanced technologies in isolation; rather, they should endeavour to establish a synergistic environment in which both elements contribute positively. The organisation's agility, competitiveness, and ability to capitalise on emergent opportunities in an increasingly digital economy are all guaranteed by this integrated approach.

5. Conclusion

The research establishes that leadership adaptability is a critical factor in the development of strategic agility and digital transformation in contemporary organisations. Adaptive leaders are essential in the management of change, the facilitation of digital transitions for teams, and the cultivation of an environment that encourages innovation. These leaders not only embrace change but also foster a culture of experimentation and flexibility, which is crucial for traversing the rapidly changing business landscapes of today. Their capacity to motivate employees to adopt new technologies and strategies and reconfigure internal processes is particularly evident. Additionally, the research indicates that a company's strategic agility is substantially improved by leadership adaptability. The capacity of their organisations to anticipate and respond to market changes rapidly is enhanced by leaders who challenge conventional thinking and promote learning and innovation. This agility, which is fuelled by leadership behaviour rather than structure alone, provides firms with a competitive advantage in volatile environments. It is indicative of the notion that agility is a behavioural consequence that is influenced by the responsiveness and vision of leaders. Also, the research demonstrates that strategic agility and digital transformation are significantly bolstered by technology readiness. Organisations that prioritise infrastructure, digital skills, and technology are more adept at adapting to change. Although the combined effect of leadership adaptability and technology readiness did not enhance digital transformation, it did positively influence agility. This suggests that the integration of managerial and technological strengths is essential for the development of resilient and agile organisations. Importantly, these findings have practical implications for educators and policymakers. Educators can integrate programs that foster adaptability, problem-solving, and digital literacy among students, preparing them for dynamic and technology-driven environments. Policymakers can design policies that support leadership development initiatives, promote digital infrastructure, and encourage organisational agility within public and private institutions. By linking leadership adaptability and technology readiness to actionable strategies, both education systems and policy frameworks can cultivate more resilient, agile, and innovation-ready organisations and individuals.

5.1 Suggestion for Future Research

Future research should investigate the influence of contextual factors, including industry type, organisational size, and cultural dynamics, on the relationship between strategic agility, technology readiness, and leadership adaptability. Longitudinal research has the potential to offer more profound insights into the manner in which these variables change over time and affect the results of digital transformation. Furthermore, future research may investigate the effects of alternative leadership styles, such as transformational or servant leadership, in comparison to adaptive leadership, to ascertain their relative efficacy in dynamic environments.

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