



Artificial Intelligence Capability and Strategic Performance in Computer Firms: The Moderating Role of Organizational Ambidexterity

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Abstract

This study aimed to investigate the effect of artificial intelligence capability on strategic performance in computer firms in Tehran and to examine the moderating role of organizational ambidexterity in this relationship. This applied, quantitative, cross-sectional, and correlational study was conducted among managers, supervisors, specialists, and professional employees of computer and information technology firms in Tehran, Iran. A total of 330 questionnaires were distributed using purposive and convenience sampling, of which 298 were returned; after data screening, 286 valid questionnaires were retained for analysis. Data were collected using standardized measures of artificial intelligence capability, organizational ambidexterity, and strategic performance, all rated on five-point Likert scales. Data analysis was performed using SPSS and SmartPLS. The measurement model was assessed through indicator loadings, Cronbach's alpha, rho_A, composite reliability, average variance extracted, and the heterotrait-monotrait ratio. The structural model was evaluated using partial least squares structural equation modeling, bootstrapping with 5,000 resamples, path coefficients, effect sizes, coefficients of determination, predictive relevance, and moderation analysis. Artificial intelligence capability had a significant positive effect on strategic performance ($\beta = 0.421$, $t = 7.655$, $p < 0.001$), and organizational ambidexterity also positively predicted strategic performance ($\beta = 0.347$, $t = 6.088$, $p < 0.001$). The direct-effects model explained 61.2% of the variance in strategic performance ($R^2 = 0.612$). The interaction between artificial intelligence capability and organizational ambidexterity was positive and significant ($\beta = 0.184$, $t = 3.915$, $p < 0.001$), increasing the explained variance to 63.6% ($R^2 = 0.636$). The effect of artificial intelligence capability on strategic performance increased from $\beta = 0.289$ at low ambidexterity to $\beta = 0.507$ at high ambidexterity. Artificial intelligence capability contributes substantially to strategic performance, while organizational ambidexterity both directly improves performance and strengthens the strategic benefits derived from AI capability. Computer firms can therefore obtain greater returns from AI resources when they simultaneously develop exploratory and exploitative organizational capabilities.

Keywords: Artificial Intelligence Capability; Strategic Performance; Organizational Ambidexterity; Computer Firms; Exploration; Exploitation; PLS-SEM

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1. Introduction

Artificial intelligence (AI) has rapidly evolved from a specialized technological domain into a strategic organizational capability that influences how firms compete, innovate, allocate resources, make decisions, and respond to environmental complexity. In contemporary computer and information technology industries, where competitive

conditions are characterized by short product life cycles, accelerating technological change, high knowledge intensity, and persistent uncertainty, firms increasingly depend on AI not only as an operational tool but also as a strategic resource. AI applications can enhance data processing, predictive analytics, customer intelligence, decision quality, automation, product development, and market responsiveness, thereby affecting multiple



dimensions of organizational performance. Strategic applications of AI have consequently shifted managerial attention from the mere adoption of AI technologies toward the broader question of whether organizations possess the complementary resources, knowledge, managerial competencies, and integration mechanisms required to transform AI investments into competitive outcomes [1]. In this sense, AI capability represents more than access to algorithms or computing infrastructure; it reflects an organization's capacity to mobilize technological, data, human, and managerial resources in a coordinated manner and embed them within strategic and operational processes.

The strategic importance of AI capability has become particularly evident in firms operating in technology-intensive environments. Computer firms are simultaneously developers, adopters, and commercializers of digital technologies, which exposes them to unusually high levels of technological turbulence and competitive pressure. In such organizations, AI capability can strengthen market sensing, identify emerging technological opportunities, support rapid experimentation, improve resource allocation, and facilitate data-driven strategic decisions. AI may also enhance the speed and quality of strategic analysis by enabling organizations to process large and heterogeneous datasets, identify patterns that are difficult to recognize through traditional managerial approaches, and generate alternative strategic scenarios. The growing integration of AI into strategy functions illustrates this transition from operational automation toward strategic augmentation, particularly in areas such as competitive intelligence, portfolio analysis, scenario development, and strategic planning [2]. Accordingly, firms that develop AI capability may be better positioned to convert information into actionable knowledge and to respond more effectively to changing competitive conditions.

AI capability can be theoretically understood through the capability-based and dynamic capability perspectives. From this viewpoint, competitive advantage does not emerge simply from possessing technologies that can be acquired by competitors; rather, it depends on the organizational capacity to integrate technologies with firm-specific routines, knowledge, managerial competencies, and learning processes. Recent studies increasingly conceptualize AI as an enabler of dynamic capabilities by improving organizational sensing, seizing, and transformation processes. AI can support the identification of external opportunities, accelerate strategic interpretation, strengthen knowledge integration, and facilitate organizational

adaptation. Schneider et al. emphasized that AI creates organizational value when it is connected with dynamic capabilities that allow firms to transform technological potential into strategic impact [3]. Similarly, research on sustainable organizational performance has shown that AI capability can strengthen performance outcomes when it is embedded within broader organizational processes of knowledge integration, innovation, and strategic transformation [4]. These findings indicate that the performance effects of AI depend not only on technical sophistication but also on the organizational conditions through which AI resources are converted into strategic action.

The relationship between AI capability and performance has therefore become an increasingly important research area. AI capability can influence performance by improving innovation, enhancing decision accuracy, reducing operational inefficiencies, strengthening customer responsiveness, and supporting strategic differentiation. In international and competitive market settings, AI capability has also been associated with enhanced competitive advantage and stronger strategic positioning, particularly when combined with entrepreneurial and adaptive organizational mechanisms [5]. Similarly, evidence from business-to-business contexts indicates that AI capabilities may strengthen the effectiveness of marketing strategies and improve export-related outcomes by allowing firms to better identify market opportunities, personalize decisions, and optimize resource deployment [6]. These studies suggest that AI capability may function as an important strategic asset, yet they also demonstrate that the benefits of AI are contingent rather than automatic.

A critical explanation for this contingency lies in the organizational capacity to reconcile exploration and exploitation. Organizational ambidexterity refers to the ability of a firm to pursue exploratory activities associated with experimentation, innovation, new knowledge acquisition, emerging technologies, and new market opportunities while simultaneously conducting exploitative activities focused on efficiency, refinement, implementation, and the enhancement of existing capabilities. This dual capacity has become especially important under volatile, uncertain, complex, and ambiguous competitive conditions, where organizations must both adapt to new developments and preserve the operational competencies that support current performance. Research among high-technology firms has shown that organizational ambidexterity provides an important strategic

mechanism for managing the tension between exploration and exploitation in rapidly changing environments [7]. Rather than treating exploration and exploitation as mutually exclusive choices, ambidextrous organizations develop structures, processes, and managerial practices that allow both orientations to coexist.

Organizational ambidexterity is particularly relevant to computer firms because these organizations operate at the intersection of continuous innovation and operational execution. Firms must invest in emerging technologies, experimental products, and new business models while simultaneously maintaining software platforms, serving existing customers, improving current products, and extracting value from established competencies. An excessive emphasis on exploration can create high costs, strategic fragmentation, and weak commercialization, whereas excessive exploitation can lead to competency traps and technological obsolescence. Consequently, maintaining an effective balance between exploration and exploitation can help technology firms remain adaptive without sacrificing efficiency. Clauss et al. demonstrated that organizational ambidexterity contributes to competitive advantage and interacts with strategic agility in resolving the exploration–exploitation paradox [8]. Similarly, strategic flexibility has been identified as an important mechanism connecting organizational learning and ambidextrous behavior, allowing firms to adjust strategic responses while maintaining internal coherence [9].

The performance consequences of organizational ambidexterity have been documented across different organizational contexts. Ambidextrous organizations are better positioned to improve strategic flexibility and business performance because they can simultaneously renew their resource base and exploit existing competencies [10]. In emerging markets, organizational ambidexterity has also been associated with strategic orientations, technological readiness, and sustainable competitive advantage, indicating that its value extends beyond innovation to broader strategic outcomes [11]. Likewise, organizational learning structures can facilitate ambidexterity by supporting continuous knowledge acquisition while preserving the capacity to institutionalize and exploit existing knowledge [12]. These findings suggest that ambidexterity may serve as a central mechanism through which organizations respond to technological change and translate strategic resources into sustained performance.

The relevance of ambidexterity becomes even more pronounced when organizations adopt advanced digital technologies. Digital transformation frequently creates competing organizational demands: firms must experiment with new digital architectures while continuing to operate existing systems and business processes. Research on small and medium-sized enterprises has shown that organizational ambidexterity, digital transformation, and strategic agility are closely interconnected in the creation of competitive advantage [13]. Similarly, the adoption of Industry 4.0 technologies has been shown to generate stronger innovation and circular economy outcomes when organizations possess adequate information acquisition capabilities and ambidextrous structures [14]. These findings indicate that digital technologies produce greater strategic value when firms possess organizational mechanisms that allow them to explore new opportunities while simultaneously exploiting existing capabilities.

AI capability can itself contribute to both exploratory and exploitative activities. On the exploratory side, AI may enable firms to discover novel patterns, identify emerging customer needs, experiment with new products, and assess unfamiliar market opportunities. On the exploitative side, AI can optimize existing processes, automate routine decisions, improve forecasting, enhance operational efficiency, and refine existing products and services. This dual functionality suggests a natural connection between AI capability and organizational ambidexterity. Research specifically examining AI capability and ambidextrous innovation has demonstrated that AI can strengthen both exploratory and exploitative innovation by enhancing organizational information processing and knowledge utilization [15]. Moreover, AI capability has been found to generate higher levels of product and service creativity when combined with strategic agility, further illustrating that technological capabilities require complementary organizational mechanisms to generate strategic value [16].

The interaction between technological capability and organizational ambidexterity can also be understood from a resource orchestration perspective. AI resources are inherently heterogeneous, involving data infrastructures, algorithms, technical expertise, business knowledge, managerial support, and cross-functional coordination. These resources must be orchestrated in ways that support both experimentation and operational integration. If a firm possesses strong AI capability but lacks ambidexterity, it may be technically sophisticated but unable to translate AI potential into new strategic initiatives while sustaining

existing business performance. Conversely, an ambidextrous organization with insufficient AI capability may be strategically flexible but unable to leverage advanced analytics and automation effectively. Thus, strategic performance may be highest when AI capability and organizational ambidexterity reinforce each other.

Empirical evidence from adjacent technological contexts supports this complementarity. Big data analytics capabilities have been shown to contribute to innovation performance through strategic capabilities and organizational ambidexterity, demonstrating that data-driven resources achieve greater value when organizations can balance exploration and exploitation [17]. Similar findings have emerged in studies of digitalization and frugal innovation, where strategic orientation and organizational ambidexterity jointly strengthen innovation capabilities under resource-constrained and rapidly changing conditions [18]. In addition, the integration of smart technologies, AI, robotics, and algorithmic capabilities has been connected with organizational sustainability strategies, highlighting the importance of complementary organizational systems in transforming digital capabilities into broader performance outcomes [19]. Together, these findings indicate that the strategic benefits of emerging technologies are rarely produced by technological resources alone.

Strategic performance provides an appropriate outcome for examining these relationships because it captures the extent to which an organization achieves its major competitive and long-term objectives. Unlike narrow operational indicators, strategic performance reflects broader outcomes such as innovation success, market responsiveness, competitive position, growth, strategic goal achievement, and organizational adaptability. In technology firms, strategic performance is especially important because short-term efficiency may coexist with long-term strategic decline if the organization fails to renew its capabilities. Conversely, sustained strategic performance requires both effective exploitation of current competencies and continuous exploration of new technological and market opportunities. Evidence from strategic leadership research shows that innovation ambidexterity can play an important role in converting strategic leadership into improved organizational performance [20]. This reinforces the view that performance outcomes depend not merely on the presence of strategic resources but on how organizations deploy them across competing strategic demands.

The growing importance of ambidexterity has also been demonstrated in studies of internationalizing and growth-

oriented firms. Organizational ambidexterity can support post-internationalization growth by enabling firms to exploit established capabilities while adapting to new markets and developing novel competencies [21]. This capability is especially relevant in industries characterized by rapid innovation and global competitive pressure, where firms cannot rely exclusively on existing resources. For computer firms in Tehran, similar pressures are increasingly important because they operate in markets affected by digital disruption, changing customer expectations, skill shortages, technological dependence, and shifting competitive dynamics. The ability to combine AI-based capabilities with ambidextrous strategic behavior may therefore be decisive for sustaining superior strategic outcomes.

Moreover, organizational flexibility is central to the effective use of digital technologies. Earlier research on cloud technologies showed that digital infrastructure can influence strategic management and organizational flexibility by enabling faster access to information, more scalable operations, and adaptive decision-making [22]. The expansion from cloud-based digitalization toward AI-driven decision environments increases the importance of these flexible organizational capabilities. AI systems may produce information and recommendations rapidly, but organizations require structural and managerial flexibility to act on such insights. Without appropriate organizational adaptation, technological intelligence may remain underutilized or disconnected from strategic implementation.

Despite the increasing body of literature on AI capability, organizational ambidexterity, and performance, important gaps remain. First, a considerable proportion of existing research has examined AI capability in relation to innovation, sustainability, creativity, marketing, or competitive advantage rather than directly investigating strategic performance as a multidimensional organizational outcome. Second, organizational ambidexterity has frequently been modeled as a predictor or mediator, while its potential moderating role in strengthening the translation of AI capability into strategic performance has received comparatively limited attention. Third, much of the evidence has emerged from broad manufacturing, sustainability, international business, or emerging technology contexts, leaving a need for more sector-specific evidence from computer firms. Fourth, research on AI-related strategic capability remains relatively underdeveloped in emerging-market contexts, where institutional constraints, resource limitations, and environmental volatility may make

complementary organizational capabilities particularly important.

Recent research increasingly emphasizes that the strategic value of AI depends on organizational context. The contribution of AI is likely to be greater when firms possess capabilities that enable experimentation, learning, adaptation, and coordinated implementation. For example, AI capability can support sustainable performance through knowledge integration and innovation processes [4], while dynamic capability research demonstrates that technological potential must be converted into organizational transformation to generate strategic impact [3]. Similarly, AI-related competitive advantage is strengthened when firms combine technological capability with adaptive strategic mechanisms [5]. These findings collectively suggest that organizational ambidexterity may function as a critical boundary condition determining the extent to which AI capability translates into superior strategic performance.

In computer firms, this moderating logic is particularly compelling. When organizational ambidexterity is high, firms are more capable of using AI simultaneously to explore new technologies, products, and markets and to improve existing processes, customer relationships, and operational routines. Under these conditions, AI capability can be deployed across a wider range of strategic activities, increasing its performance impact. By contrast, when ambidexterity is low, firms may struggle to convert AI capability into strategic outcomes because technological resources are confined either to experimentation without commercialization or to efficiency improvements without strategic renewal. The moderating role of ambidexterity therefore provides a theoretically meaningful explanation for why firms with similar AI resources may experience different levels of strategic performance.

The empirical investigation of these relationships can contribute to both theory and managerial practice. Theoretically, it extends the capability-based perspective by examining AI capability as a strategic resource whose effects depend on complementary organizational capabilities. It also advances ambidexterity research by positioning organizational ambidexterity as a moderator rather than solely as an independent, mediating, or outcome variable. Managerially, understanding this relationship can help technology firms recognize that investments in AI infrastructure and expertise may not be sufficient unless accompanied by organizational systems that support both exploration and exploitation. This is consistent with the broader evidence that strategic agility, digital

transformation, organizational learning, and ambidextrous structures jointly determine whether advanced technologies produce sustainable competitive outcomes [10, 13]. The integration of these capabilities is therefore central to understanding how computer firms can convert AI investments into superior strategic results.

Accordingly, the aim of the present study was to investigate the effect of artificial intelligence capability on strategic performance in computer firms in Tehran and to examine the moderating role of organizational ambidexterity in this relationship.

2. Methodology

This study employed a quantitative, applied, cross-sectional, and correlational research design to investigate the relationship between artificial intelligence capability and strategic performance and to examine the moderating role of organizational ambidexterity in this relationship. The statistical population consisted of managers, supervisors, specialists, and professional employees working in computer and information technology firms located in Tehran, Iran. The target firms were active in areas such as software development, information technology services, computer systems, artificial intelligence solutions, data analytics, digital platforms, cloud services, and related technology-based activities. Because the study variables concerned organizational capabilities and strategic outcomes, participants were required to have sufficient familiarity with their firm's technological resources, business processes, and strategic activities. The inclusion criteria were employment in a computer or information technology firm in Tehran, at least two years of organizational work experience, and involvement in managerial, technical, strategic, information systems, research and development, or business development activities that enabled respondents to provide informed assessments of the organizational constructs under investigation. Employees with less than two years of experience, respondents who were not sufficiently familiar with organizational technology and strategic processes, and questionnaires with substantial missing data or patterned responses were excluded. A total of 330 questionnaires were distributed using a combination of purposive and convenience sampling among eligible personnel of computer firms in Tehran. Of these, 298 questionnaires were returned. After screening the questionnaires for missing responses, unengaged response patterns, and multivariate outliers, 12 questionnaires were excluded, resulting in a final

sample of **286 participants** and an effective response rate of 86.67%. Participation was voluntary, respondents were informed of the research objectives before completing the questionnaire, and confidentiality and anonymity of individual and organizational information were assured. No personally identifying information was collected, and respondents were informed that the collected data would be analyzed only in aggregate form for scientific purposes.

Data were collected using a structured questionnaire consisting of demographic questions and standardized multi-item measures assessing artificial intelligence capability, organizational ambidexterity, and strategic performance. Artificial intelligence capability was operationalized as an organizational-level capability reflecting the firm's ability to acquire, mobilize, integrate, and effectively deploy resources required for artificial intelligence applications. The measurement instrument covered complementary aspects of AI capability, including tangible technological resources, data resources, human skills and expertise, managerial capability, interdepartmental coordination, and the capacity to integrate AI technologies into organizational processes and decision-making. The items assessed the extent to which firms possessed appropriate AI-related technological infrastructure, accessible and high-quality data, employees with sufficient technical and business knowledge concerning AI, managerial support for AI initiatives, and organizational mechanisms for coordinating and deploying AI resources. Respondents rated each item on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores representing stronger organizational AI capability. Because artificial intelligence capability represents the coordinated deployment of multiple organizational resources rather than the mere ownership of specific technologies, the measure emphasized the firm's ability to combine technological, human, and managerial resources and convert them into usable organizational capabilities.

Organizational ambidexterity was measured using the established exploration and exploitation framework. The instrument consisted of 12 items divided equally between exploratory and exploitative organizational activities. Six items assessed exploration, including the extent to which the firm actively searched for new technological opportunities, experimented with novel products and services, entered emerging markets, adopted innovative processes, and pursued knowledge and competencies that differed from its existing capabilities. The remaining six items measured exploitation, including refinement of existing products and

services, improvement of operational efficiency, enhancement of existing competencies, strengthening relationships with current customers, and incremental improvement of established processes and technologies. All items were assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores reflected a stronger simultaneous capacity to conduct exploratory and exploitative activities. Organizational ambidexterity was conceptualized as the firm's ability to maintain an appropriate balance between searching for and developing new opportunities and efficiently utilizing and improving existing resources, competencies, products, and markets. This conceptualization was especially appropriate for computer firms because organizations operating in technology-intensive environments must continuously explore emerging technologies while simultaneously exploiting existing technical knowledge and commercial capabilities.

Strategic performance was measured using a multidimensional organizational performance instrument designed to capture the extent to which firms achieved strategically important outcomes relative to their objectives and competitive environment. The measure included indicators related to market position, achievement of strategic objectives, innovation performance, customer-related outcomes, competitive capability, growth, operational improvement, and overall organizational effectiveness. Participants were asked to evaluate the performance of their firms during the recent operating period using a five-point Likert scale ranging from 1 (very low) to 5 (very high). Higher scores indicated more favorable strategic performance. A perceptual assessment approach was adopted because detailed objective performance information is frequently confidential in privately owned computer and technology firms and because strategic performance incorporates nonfinancial outcomes that cannot be adequately represented by accounting indicators alone. Accordingly, the measurement captured both market-oriented and organizational aspects of performance and enabled knowledgeable respondents to evaluate the extent to which their firms had successfully achieved key strategic outcomes.

The questionnaire was reviewed before the main data collection process to ensure linguistic clarity, conceptual relevance, and compatibility with the organizational context of computer firms in Tehran. Where necessary, minor wording adjustments were made to improve comprehensibility without altering the conceptual meaning

of the original items. Content validity was evaluated by specialists in strategic management, information systems, artificial intelligence, and organizational behavior. The measurement model was subsequently assessed empirically through indicator loadings, internal consistency reliability, convergent validity, and discriminant validity. Cronbach's alpha and composite reliability coefficients were used to examine reliability, with values of 0.70 or higher considered satisfactory. Convergent validity was evaluated using standardized outer loadings and average variance extracted, with an average variance extracted value of at least 0.50 regarded as evidence of adequate convergence. Discriminant validity was assessed using the heterotrait-monotrait ratio of correlations, with values below the recommended threshold indicating sufficient empirical distinction among artificial intelligence capability, organizational ambidexterity, and strategic performance.

Data analysis was performed using SPSS and SmartPLS software. SPSS was initially used for data screening and descriptive statistical analysis. The dataset was examined for missing values, incomplete questionnaires, unengaged response patterns, and potential outliers before testing the hypothesized relationships. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were calculated to describe participant characteristics and the distributions of the principal study variables. Because the conceptual model included latent organizational constructs and a moderating relationship, partial least squares structural equation modeling (PLS-SEM) was employed to evaluate both the measurement and structural models. The measurement model was assessed through standardized indicator loadings, Cronbach's alpha, ρ_A , composite reliability, average variance extracted, and the heterotrait-monotrait ratio. Indicator loadings of approximately 0.70 or higher, reliability coefficients of at least 0.70, and average variance extracted values above 0.50 were considered indicative of satisfactory measurement quality. Multicollinearity was assessed using variance inflation factor values, with values below 5 considered acceptable. The structural model was evaluated using standardized path coefficients (β), t statistics, p values, coefficients of determination (R^2), effect sizes (f^2), and predictive relevance coefficients (Q^2). Statistical significance of the structural relationships was examined through the bootstrapping procedure with 5,000 resamples and a significance level of 0.05. The direct effect of artificial intelligence capability on strategic performance was first estimated, followed by assessment of the direct contribution of organizational

ambidexterity to strategic performance. To examine the hypothesized moderation effect, an interaction term between artificial intelligence capability and organizational ambidexterity was incorporated into the structural model. A statistically significant interaction coefficient was interpreted as evidence that organizational ambidexterity altered the strength or direction of the relationship between artificial intelligence capability and strategic performance. Where a significant interaction was identified, the moderating effect was further interpreted by examining the relationship between artificial intelligence capability and strategic performance at relatively low and high levels of organizational ambidexterity. The overall explanatory and predictive capacity of the model was assessed through R^2 and Q^2 values, while the standardized root mean square residual (SRMR) was also examined as an index of overall model fit, with values below 0.08 considered indicative of an acceptable fit between the proposed model and the observed data.

3. Findings and Results

The final sample consisted of 286 managers, supervisors, specialists, and professional employees working in computer and information technology firms in Tehran. Of the participants, 174 (60.84%) were male and 112 (39.16%) were female. With respect to age, 54 participants (18.88%) were younger than 30 years, 111 (38.81%) were between 30 and 39 years, 82 (28.67%) were between 40 and 49 years, and 39 (13.64%) were 50 years of age or older. Regarding educational attainment, 41 participants (14.34%) held a bachelor's degree, 173 (60.49%) held a master's degree, and 72 (25.17%) held a doctoral degree or equivalent professional qualification. In terms of organizational position, 68 respondents (23.78%) were senior or middle-level managers, 73 (25.52%) were supervisors or team leaders, and 145 (50.70%) were specialists and professional employees working in technical, strategic, research and development, data, information systems, or business-related functions. The mean organizational tenure of participants was 8.64 years ($SD = 5.11$), while their mean tenure in the current organization was 5.92 years ($SD = 3.87$). Overall, the demographic profile indicated that the respondents possessed adequate professional and organizational experience to provide informed assessments of artificial intelligence capability, organizational ambidexterity, and strategic performance within their firms.

Table 1. Descriptive Statistics and Correlations among the Study Variables

Variable	Mean	SD	1	2	3
1. Artificial Intelligence Capability	3.74	0.63	1.00		
2. Organizational Ambidexterity	3.68	0.59	0.61***	1.00	
3. Strategic Performance	3.82	0.57	0.67***	0.64***	1.00

As presented in Table 1, the mean scores of all three principal variables were above the theoretical midpoint of the five-point measurement scale, indicating relatively favorable evaluations of artificial intelligence capability, organizational ambidexterity, and strategic performance among the participating computer firms. Strategic performance exhibited the highest mean score ($M = 3.82$, $SD = 0.57$), followed by artificial intelligence capability ($M = 3.74$, $SD = 0.63$) and organizational ambidexterity ($M = 3.68$, $SD = 0.59$). The standard deviations were moderate and indicated sufficient variability in respondents' perceptions to support subsequent multivariate analyses. Pearson correlation analysis revealed statistically significant positive associations among all study variables. Artificial intelligence capability was positively and strongly correlated with strategic performance ($r = 0.67$, $p < 0.001$), suggesting

that firms with stronger technological, data, human, and managerial capabilities for deploying artificial intelligence tended to report higher levels of strategic performance. Artificial intelligence capability was also positively related to organizational ambidexterity ($r = 0.61$, $p < 0.001$), indicating that firms with greater AI capability were more likely to demonstrate the simultaneous ability to explore emerging opportunities and exploit established competencies. In addition, organizational ambidexterity showed a significant positive relationship with strategic performance ($r = 0.64$, $p < 0.001$). Although the correlations were substantial, none approached a level that would indicate problematic redundancy among the constructs, providing preliminary support for their conceptual distinction.

Table 2. Assessment of the Measurement Model

Construct	Indicator/Dimension	Loading Range	Cronbach's Alpha	rho_A	Composite Reliability	AVE	HTMT Maximum
Artificial Intelligence Capability	Technological, data, human, managerial, and coordination capabilities	0.724–0.887	0.928	0.931	0.940	0.611	0.748
Organizational Ambidexterity	Exploration and exploitation	0.716–0.869	0.906	0.910	0.921	0.594	0.731
Strategic Performance	Market, innovation, competitive, growth, and organizational performance	0.738–0.891	0.918	0.921	0.934	0.639	0.748

The measurement model results presented in Table 2 demonstrated satisfactory reliability and validity for all latent constructs. Standardized indicator loadings ranged from 0.716 to 0.891 and therefore exceeded the generally acceptable threshold of approximately 0.70, indicating that the observed indicators represented their intended latent variables adequately. Artificial intelligence capability demonstrated a Cronbach's alpha coefficient of 0.928, rho_A of 0.931, and composite reliability of 0.940. Organizational ambidexterity showed corresponding values of 0.906, 0.910, and 0.921, respectively, while strategic performance demonstrated a Cronbach's alpha of 0.918, rho_A of 0.921, and composite reliability of 0.934. All internal consistency coefficients substantially exceeded the recommended minimum value of 0.70, supporting the reliability of the constructs. Convergent validity was also confirmed because

the average variance extracted values were 0.611 for artificial intelligence capability, 0.594 for organizational ambidexterity, and 0.639 for strategic performance, all exceeding the minimum criterion of 0.50. The HTMT values between the constructs ranged from 0.694 to 0.748 and remained below the conservative threshold of 0.85, demonstrating adequate discriminant validity. Furthermore, the variance inflation factor values for the structural predictors ranged from 1.42 to 2.17, well below the critical threshold of 5, indicating that multicollinearity did not represent a substantial concern. Taken together, these findings demonstrated that the measurement model possessed satisfactory indicator reliability, internal consistency, convergent validity, discriminant validity, and absence of problematic collinearity and was therefore

suitable for evaluating the hypothesized structural relationships.

Table 3. Structural Model and Direct Effects on Strategic Performance

Hypothesized Relationship	β	SE	t	p	95% CI	f ²	Result
Artificial Intelligence Capability → Strategic Performance	0.421	0.055	7.655	<0.001	[0.313, 0.526]	0.238	Supported
Organizational Ambidexterity → Strategic Performance	0.347	0.057	6.088	<0.001	[0.237, 0.459]	0.163	Supported

The structural model results demonstrated that both artificial intelligence capability and organizational ambidexterity had significant positive effects on strategic performance. Artificial intelligence capability exerted a statistically significant positive effect on strategic performance ($\beta = 0.421$, $SE = 0.055$, $t = 7.655$, $p < 0.001$, 95% CI [0.313, 0.526]), indicating that improvements in firms' capacity to acquire, coordinate, and deploy AI-related technological, data, human, and managerial resources were associated with higher levels of strategic performance. The confidence interval did not include zero, providing additional evidence for the statistical robustness of this relationship. The effect size for artificial intelligence capability was $f^2 = 0.238$, demonstrating a moderate substantive contribution to the explanation of strategic performance. Organizational ambidexterity also showed a significant positive direct effect on strategic performance (β

$= 0.347$, $SE = 0.057$, $t = 6.088$, $p < 0.001$, 95% CI [0.237, 0.459]), indicating that firms capable of simultaneously pursuing exploratory activities and effectively exploiting existing competencies achieved higher strategic performance. Its effect size was $f^2 = 0.163$, representing a moderate contribution to the model. Collectively, artificial intelligence capability and organizational ambidexterity explained 61.2% of the variance in strategic performance ($R^2 = 0.612$; adjusted $R^2 = 0.609$), indicating substantial explanatory capacity. In addition, the Stone-Geisser predictive relevance coefficient for strategic performance was positive and relatively strong ($Q^2 = 0.389$), confirming that the model possessed meaningful out-of-sample predictive relevance. The standardized root mean square residual was 0.061, below the recommended threshold of 0.08, further supporting the acceptable overall fit of the proposed model.

Table 4. Moderating Effect of Organizational Ambidexterity on the Relationship between Artificial Intelligence Capability and Strategic Performance

Effect	β	SE	t	p	95% CI	f ²
Artificial Intelligence Capability → Strategic Performance	0.398	0.052	7.654	<0.001	[0.296, 0.498]	0.207
Organizational Ambidexterity → Strategic Performance	0.329	0.055	5.982	<0.001	[0.222, 0.437]	0.149
AI Capability × Organizational Ambidexterity → Strategic Performance	0.184	0.047	3.915	<0.001	[0.093, 0.276]	0.061
AI Capability → Strategic Performance at Low Ambidexterity (−1 SD)	0.289	0.061	4.738	<0.001	[0.171, 0.409]	—
AI Capability → Strategic Performance at Mean Ambidexterity	0.398	0.052	7.654	<0.001	[0.296, 0.498]	—
AI Capability → Strategic Performance at High Ambidexterity (+1 SD)	0.507	0.059	8.593	<0.001	[0.392, 0.621]	—

Table 4 presents the moderation analysis examining whether organizational ambidexterity changed the strength of the relationship between artificial intelligence capability and strategic performance. The interaction between artificial intelligence capability and organizational ambidexterity had a positive and statistically significant effect on strategic performance ($\beta = 0.184$, $SE = 0.047$, $t = 3.915$, $p < 0.001$, 95% CI [0.093, 0.276]). Because the interaction coefficient was positive and its bootstrapped confidence interval excluded zero, organizational ambidexterity was confirmed as a significant positive moderator of the relationship between artificial intelligence capability and strategic performance. Incorporating the interaction term increased

the explained variance in strategic performance from 61.2% to 63.6%, corresponding to an additional 2.4% of explained variance. The interaction effect size was $f^2 = 0.061$, indicating a small but substantively meaningful moderation effect within the structural model. Simple slope analysis provided further clarification of this interaction. At a relatively low level of organizational ambidexterity, defined as one standard deviation below the mean, artificial intelligence capability remained positively associated with strategic performance, but the relationship was comparatively weaker ($\beta = 0.289$, $t = 4.738$, $p < 0.001$). At the mean level of organizational ambidexterity, the effect increased to $\beta = 0.398$ ($t = 7.654$, $p < 0.001$). At a high level

of organizational ambidexterity, defined as one standard deviation above the mean, the relationship became considerably stronger ($\beta = 0.507$, $t = 8.593$, $p < 0.001$). These results demonstrate that artificial intelligence capability contributes to strategic performance under different levels of organizational ambidexterity, but its contribution is substantially greater in firms that possess a stronger

simultaneous capacity for exploration and exploitation. In substantive terms, the strategic benefits derived from AI-related technological, data, human, and managerial resources appear to depend partly on whether the organization is able to use these resources both to identify and pursue new opportunities and to refine and leverage its existing competencies, processes, products, and markets.

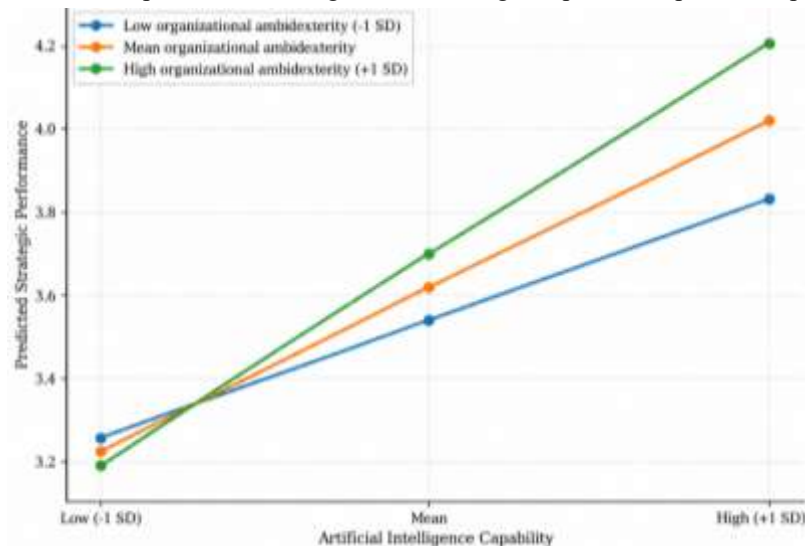


Figure 1. Moderating Effect of Organizational Ambidexterity on the Relationship between Artificial Intelligence Capability and Strategic Performance

The interaction pattern represented in Figure 1 further demonstrates the positive moderating role of organizational ambidexterity. The slope representing firms with high organizational ambidexterity was steeper than the slope representing firms with low organizational ambidexterity, indicating that increases in artificial intelligence capability were associated with larger improvements in strategic performance when organizational ambidexterity was high. Firms characterized by relatively weak ambidexterity benefited from increases in AI capability as well; however, the magnitude of this relationship was more limited. By contrast, firms that were simultaneously capable of exploring new technological and market opportunities and exploiting established knowledge, routines, customer relationships, and operational capabilities translated AI capability into strategic performance more effectively. Therefore, the interaction analysis supported the proposed moderation hypothesis and indicated that organizational ambidexterity functions as an important organizational condition through which artificial intelligence capability can generate stronger strategic outcomes. Overall, the findings supported the proposed research model and demonstrated that artificial intelligence capability had a substantial direct

relationship with strategic performance, organizational ambidexterity independently contributed to strategic performance, and the strategic value of artificial intelligence capability increased significantly as the level of organizational ambidexterity increased.

4. Discussion and Conclusion

The present study investigated the effect of artificial intelligence capability on strategic performance in computer firms in Tehran and examined whether organizational ambidexterity strengthened this relationship. The findings supported the proposed conceptual model and showed that artificial intelligence capability had a significant positive effect on strategic performance, organizational ambidexterity had a significant positive effect on strategic performance, and organizational ambidexterity significantly moderated the relationship between artificial intelligence capability and strategic performance. More specifically, artificial intelligence capability exerted a positive direct effect on strategic performance ($\beta = 0.421$, $p < 0.001$), while organizational ambidexterity also contributed significantly to strategic performance ($\beta = 0.347$, $p < 0.001$). Together,

these variables explained 61.2% of the variance in strategic performance, demonstrating substantial explanatory power. In addition, the interaction between artificial intelligence capability and organizational ambidexterity was positive and statistically significant ($\beta = 0.184$, $p < 0.001$). The addition of the interaction term increased the explained variance in strategic performance to 63.6%. The simple-slope analysis further indicated that the positive relationship between artificial intelligence capability and strategic performance became progressively stronger as organizational ambidexterity increased, with the effect of artificial intelligence capability rising from $\beta = 0.289$ at low ambidexterity to $\beta = 0.507$ at high ambidexterity. These findings confirm that the strategic value of AI capability depends not only on the availability of technological, data, human, and managerial resources but also on the organizational capacity to combine exploration and exploitation effectively.

The first major finding showed that artificial intelligence capability significantly improved strategic performance. This result indicates that computer firms possessing stronger AI-related technological infrastructure, better data resources, more developed technical and managerial knowledge, and greater capacity for integrating AI into business processes are more likely to achieve superior strategic outcomes. This finding is consistent with the broader capability perspective, according to which the strategic value of technology emerges when technological assets are integrated with complementary organizational resources. AI capability can support strategic performance by improving the speed and accuracy of decision-making, enabling more sophisticated analysis of market and customer data, strengthening forecasting capacity, and supporting more adaptive resource allocation. In computer firms, these benefits are particularly relevant because competition frequently depends on the ability to identify technological changes early, commercialize new solutions rapidly, and respond to rapidly shifting customer expectations.

The positive effect of AI capability on strategic performance is closely aligned with prior studies emphasizing the strategic contribution of AI-based resources. Venkateswaran et al. argued that AI capability provides firms with strategic value when it is deployed as an organizational capability rather than treated as an isolated technology [1]. Their capability-oriented perspective supports the present finding because it emphasizes the importance of integrating technological infrastructure, human expertise, and managerial resources. Similarly,

Ameen et al. found that AI capability can improve product and service creativity when combined with strategic agility [16]. Although their outcome variable differed from strategic performance, their findings reinforce the conclusion that AI capability can enhance firm-level outcomes when organizations are able to use AI in adaptive and strategically relevant ways. The present study extends this logic by showing that the contribution of AI capability is not limited to creativity or innovation but also encompasses broader strategic performance outcomes.

The findings are also consistent with recent evidence linking AI capability with dynamic capabilities and sustainable organizational outcomes. Schneider et al. emphasized that AI creates value by strengthening organizational sensing, seizing, and transformation processes [3]. This interpretation is particularly relevant to the current results because strategic performance in computer firms depends heavily on the ability to identify emerging opportunities, allocate resources quickly, and transform organizational processes in response to technological change. Similarly, Liu et al. demonstrated that AI capability can improve sustainable performance when it is embedded within knowledge integration and innovation processes [4]. The present findings support the same general principle: the possession of AI resources alone is insufficient; firms must be able to integrate and deploy those resources through organizational capabilities that connect AI with strategic action.

The result is also compatible with studies examining competitive advantage and international performance. Saeidi and Alizadeh reported that AI capabilities can contribute to competitive advantage in international markets, especially when firms possess complementary strategic capabilities [5]. Likewise, Alizadeh et al. found that AI capabilities strengthened the effect of business-to-business marketing on export performance [6]. These studies collectively suggest that AI capability can amplify the effectiveness of existing strategic processes by enhancing analytical intelligence, responsiveness, and decision quality. In the context of Tehran-based computer firms, stronger AI capability may therefore allow firms to achieve strategic goals more effectively by improving market sensing, innovation prioritization, service customization, resource allocation, and responsiveness to competitive threats.

The second major finding indicated that organizational ambidexterity had a significant positive effect on strategic performance. This result suggests that computer firms capable of simultaneously pursuing exploratory and

exploitative activities achieve better strategic outcomes than firms that emphasize one orientation at the expense of the other. Exploration allows firms to seek new technologies, new markets, novel products, and experimental business models, while exploitation enables them to refine existing processes, improve efficiency, enhance current products, and extract value from established capabilities. In technology-intensive sectors, both activities are necessary because overreliance on exploitation can create rigidity and technological obsolescence, whereas excessive exploration may generate high costs and strategic fragmentation.

This finding aligns closely with the established organizational ambidexterity literature. Clauss et al. demonstrated that organizational ambidexterity contributes to competitive advantage by enabling firms to manage the exploration–exploitation paradox more effectively [8]. Their findings support the present result because strategic performance depends on balancing short-term efficiency with long-term renewal. Similarly, Kafetzopoulos et al. found that organizational ambidexterity enhances strategic flexibility and business performance [10]. The current study corroborates this relationship in the specific context of computer firms and suggests that the benefits of ambidexterity extend directly to strategic performance. In other words, firms that can innovate without abandoning operational discipline are better positioned to achieve competitive and strategic objectives.

The positive association between ambidexterity and strategic performance is also supported by research on emerging markets and digital transformation. Ed-Dafali et al. found that organizational ambidexterity contributes to sustainable competitive advantage in conjunction with strategic orientations and Industry 4.0 readiness [11]. This is consistent with the present study because computer firms operate in similarly technology-intensive environments where competitiveness depends on the capacity to adapt while maintaining operational effectiveness. Ürü et al. also showed that organizational ambidexterity, digital transformation, and strategic agility jointly support competitive advantage in SMEs [13]. Their findings provide additional support for the argument that ambidexterity serves as an important organizational capability through which firms manage rapid technological change.

The findings can also be interpreted through the lens of organizational learning. Lissillour and Rodríguez-Escobar emphasized that ambidexterity is closely connected with organizational learning and the institutionalization of knowledge [12]. This perspective helps explain the positive

relationship observed in the present study because computer firms must continually acquire new technical knowledge while simultaneously codifying, refining, and applying existing knowledge. Stelmaszczyk and Pierścieniak similarly emphasized the role of strategic flexibility in linking managerial decisions with organizational learning from an ambidexterity perspective [9]. The present findings suggest that strategic performance improves when firms possess the structural and cognitive flexibility needed to learn in both exploratory and exploitative ways.

The third and most distinctive finding concerned the moderating role of organizational ambidexterity. The interaction between artificial intelligence capability and organizational ambidexterity was significant and positive, demonstrating that the strategic effect of AI capability is stronger in firms with higher ambidexterity. This result provides an important explanation for why firms with similar levels of AI resources may achieve different strategic outcomes. AI capability creates potential value, but organizational ambidexterity determines how effectively that potential is converted into exploration and exploitation. Firms with high ambidexterity can use AI simultaneously to discover new market opportunities and technologies while also improving existing operations, products, customer relationships, and business processes. Consequently, the same level of AI capability is more valuable in an ambidextrous organization than in a structurally rigid or strategically one-sided organization.

The moderation finding is strongly supported by research on AI and ambidextrous innovation. Dong showed that AI capability can influence ambidextrous innovation by strengthening the organizational ability to pursue both exploratory and exploitative innovation [15]. This evidence is directly relevant because it confirms that AI is not inherently exploratory or exploitative; rather, it can support both dimensions depending on how the organization deploys it. The present study extends this finding by showing that organizational ambidexterity does not merely result from AI capability but can also function as a contextual condition that strengthens the effect of AI capability on strategic performance. Thus, the relationship appears reciprocal and complementary: AI capability can support ambidextrous behavior, while ambidexterity can increase the strategic return generated from AI capability.

The moderation result is also consistent with research on advanced analytics and strategic capabilities. Alaskar et al. found that big data analytics affects innovation performance through strategic capabilities and organizational

ambidexterity [17]. This finding supports the present study because both AI capability and big data analytics require firms to integrate information-processing resources with organizational mechanisms that support flexibility and dual learning. Similarly, Sahoo et al. reported that Industry 4.0 adoption and information acquisition capability generate stronger innovation and circular economy outcomes when organizational ambidexterity is present [14]. The same underlying logic applies to the current findings: digital and analytical technologies deliver stronger performance benefits when organizational structures and routines allow firms to deploy them across both exploratory and exploitative domains.

The moderation effect can further be explained from the perspective of strategic agility. Ameen et al. showed that the benefits of AI capability for product and service creativity are strengthened through strategic agility [16], while Ürü et al. connected ambidexterity with strategic agility and digital transformation [13]. These studies suggest that AI resources create greater value when the organization is capable of rapid strategic adjustment. Ambidexterity supports this adjustment because it prevents firms from becoming locked into existing routines while also preventing them from pursuing innovation without operational discipline. In the present study, the simple-slope results clearly reflected this mechanism: when ambidexterity was low, AI capability still improved strategic performance, but the effect was relatively modest; when ambidexterity was high, the effect of AI capability became substantially stronger.

The result is also compatible with evidence from high-technology and uncertain environments. Du and Chen showed that organizational ambidexterity is particularly important under volatile and uncertain conditions because it enables high-technology firms to reconcile competing strategic demands [7]. This finding helps explain why ambidexterity strengthened the AI capability–performance relationship in the present context. Computer firms face rapid technological obsolescence, uncertain customer demand, platform shifts, evolving software architectures, and continual innovation pressure. Under such conditions, AI capability can only generate sustained strategic value if the firm is sufficiently flexible to use AI for both adaptation and refinement. Yazdani and Darbani similarly emphasized that digital technologies can improve strategic management and organizational flexibility [22]. The present findings extend this argument by indicating that flexibility alone may not be enough; firms also require a balanced ambidextrous

orientation that directs AI toward both renewal and exploitation.

The current results are also consistent with the strategic orientation literature. Sengura et al. found that strategic orientation and organizational ambidexterity jointly contribute to innovation capability in digitally transforming environments [18]. Similarly, Poursadeq and Qaraei-Ashtiani reported that innovation ambidexterity mediates the relationship between strategic leadership and organizational performance [20]. These findings reinforce the idea that organizational ambidexterity is not a peripheral capability but a central strategic mechanism through which leadership, technology, and strategic resources are translated into performance. The present study adds to this literature by identifying ambidexterity as a moderator that increases the effectiveness of AI capability.

The strategic implications of the findings are also supported by studies of growth and internationalization. Reyes-Parga et al. showed that organizational ambidexterity contributes to post-internationalization growth by enabling firms to exploit established capabilities while simultaneously developing new opportunities [21]. Although the present research focused on computer firms rather than born-global organizations, the underlying mechanism is comparable. Growth-oriented technology firms must continuously combine technological exploration with commercial exploitation, and AI capability can facilitate both processes when ambidexterity is sufficiently developed. In this sense, the present findings provide additional evidence that ambidexterity functions as a strategic amplifier of technological capabilities.

The findings also align with research on digitally enabled organizational systems. Ogbeibu et al. emphasized that capabilities related to smart technologies, AI, robotics, and algorithms can support organizational sustainability when embedded in appropriate strategic systems [19]. This supports the conclusion that AI capability should not be conceptualized as an isolated IT asset. Instead, AI becomes strategically valuable when it is incorporated into broader organizational systems that support learning, adaptability, experimentation, and implementation. For computer firms, this means that investment in AI should be accompanied by organizational designs that reduce functional silos, promote cross-functional learning, and allow new technological ideas to be tested without weakening the efficiency of existing operations.

Overall, the findings demonstrate that strategic performance in computer firms is shaped not only by the

possession of AI-related capabilities but also by the organizational context in which those capabilities are deployed. Artificial intelligence capability directly enhances strategic performance, but its effect becomes considerably stronger when firms are ambidextrous. This interaction provides a more nuanced explanation of the AI–performance relationship and suggests that differences in organizational ambidexterity may account for variation in the strategic returns firms obtain from similar technological investments. The study therefore contributes to AI capability research by identifying organizational ambidexterity as an important boundary condition and contributes to ambidexterity research by demonstrating its role as a strategic moderator in a technology-intensive setting.

The present study has several limitations that should be considered when interpreting the findings. First, the research employed a cross-sectional design, and all variables were measured at one point in time; therefore, the observed relationships should not be interpreted as definitive evidence of temporal causality. Second, the data were collected through self-report questionnaires, which may have introduced common method bias, social desirability bias, or perceptual inaccuracies, particularly because respondents evaluated organizational capabilities and strategic performance subjectively. Third, the sample was restricted to computer and information technology firms located in Tehran, which limits the direct generalizability of the findings to firms operating in other cities, countries, or industries. Fourth, although the final sample was adequate for PLS-SEM, the study did not differentiate extensively among computer firms according to size, ownership, market orientation, technological specialization, or level of AI maturity. Fifth, strategic performance was assessed using perceptual indicators rather than archival financial or market-based data, and although perceptual measures are appropriate for multidimensional strategic outcomes, incorporating objective performance indicators could provide a more comprehensive evaluation.

Future studies should employ longitudinal designs to examine how the effects of artificial intelligence capability and organizational ambidexterity on strategic performance develop over time and whether changes in ambidexterity precede or follow improvements in AI capability. Researchers could also use multi-source data by collecting information from different managerial levels and combining perceptual questionnaires with objective indicators such as revenue growth, market share, innovation output, project success, customer retention, or productivity. Comparative

studies across industries and regions would help determine whether the moderating effect of organizational ambidexterity is stronger in highly dynamic technology sectors than in more stable industries. Future research could also examine additional moderators such as strategic agility, organizational culture, environmental turbulence, digital leadership, absorptive capacity, or AI governance maturity. Another useful direction would be to distinguish between exploratory and exploitative forms of AI use and investigate whether different dimensions of AI capability have distinct effects on strategic performance. Qualitative and mixed-method research could further clarify the organizational mechanisms through which firms convert AI capability into strategic outcomes.

Managers of computer firms should treat artificial intelligence capability as an integrated strategic capability rather than as a stand-alone technological investment. Building AI capability requires simultaneous attention to technical infrastructure, data quality, employee expertise, managerial understanding, cross-functional coordination, and the integration of AI into strategic decision processes. At the same time, firms should deliberately strengthen organizational ambidexterity by creating structures and routines that support experimentation while preserving efficiency in established operations. Managers can achieve this by allocating separate resources to exploratory and exploitative initiatives, encouraging collaboration between innovation teams and operational units, establishing mechanisms for transferring knowledge across projects, and using AI both to identify new market opportunities and to optimize existing products and processes. Senior managers should also monitor whether AI investments are excessively concentrated on either experimentation or automation and should redirect resources when necessary to maintain a balanced strategic portfolio. By combining strong AI capability with organizational ambidexterity, computer firms can improve their ability to convert technological resources into sustainable strategic performance.

Authors' Contributions

Authors equally contributed to this article.

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Declaration of Interest

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Ethical Considerations

All procedures performed in this study were under the ethical standards.

References

- [1] V. Venkateswaran, U. Sivarajah, and Z. Irani, "Strategic Applications of Artificial Intelligence in Digital Marketing: A Capability Perspective," *Industrial Marketing Management*, vol. 118, pp. 34-48, 2024.
- [2] J. Pachner and Y. Atsmon. "Artificial intelligence in strategy." <https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/artificial-intelligence-in-strategy> (accessed).
- [3] A. Schneider, C. Gerlich, J. L. Antonio, and D. K. Kanbach, "From Potential to Impact: How Artificial Intelligence Drives Dynamic Capabilities for Sustainability," *Business Strategy & Development*, vol. 9, no. 2, 2026, doi: 10.1002/bsd2.70327.
- [4] X. Liu, K. Y. Chau, T. C. Chang, and M. Moslehpour, "Driving Sustainable Performance Through Green Business Strategy, Artificial Intelligence Capability, and Green Supply Chain Management: The Mediating Roles of Knowledge Integration and Green Innovation," *Corporate Social Responsibility and Environmental Management*, vol. 33, no. 3, pp. 4531-4546, 2026, doi: 10.1002/csr.70397.
- [5] S. Saeidi and H. Alizadeh, "The Effect of Artificial Intelligence Capabilities on Competitive Advantage in International Markets: The Mediating Role of Entrepreneurial Orientation and the Moderating Role of Strategic Agility," *Technology in Entrepreneurship and Strategic Management*, vol. 5, no. 2, 2026.
- [6] H. Alizadeh, M. Damavandinejad, and A. Behradfar, "The Role of Artificial Intelligence Capabilities in Strengthening the Effect of B2B Marketing on Export Performance: A Study in the Petrochemical Industry," *Technology in Entrepreneurship and Strategic Management*, vol. 5, no. 2, 2026.
- [7] J. Du and Z. Chen, "Applying Organizational Ambidexterity in strategic management under a "VUCA" environment: Evidence from high tech companies in China," *International Journal of Innovation Studies*, vol. 2, no. 1, pp. 42-52, 2018, doi: 10.1016/j.ijis.2018.03.003.
- [8] T. Clauss, S. Kraus, F. L. Kallinger, P. M. Bican, A. Brem, and N. Kailer, "Organizational ambidexterity and competitive advantage: The role of strategic agility in the exploration-exploitation paradox," *Journal of Innovation and Knowledge*, 2020, doi: 10.1016/j.jik.2020.07.003.
- [9] M. Stelmaszczyk and A. Pierścieniak, "Strategic Flexibility as a Mediator in Relationship Between Managerial Decisions and Organizational Learning: Ambidexterity Perspective," *European Research Studies Journal*, vol. XXIII, no. Issue 4, pp. 612-622, 2020, doi: 10.35808/ersj/1704.
- [10] P. Kafetzopoulos, E. Psomas, and A. A. Katou, "Promoting Strategic Flexibility and Business Performance through Organizational Ambidexterity," *Sustainability*, vol. 15, no. 17, p. 12997, 2023. [Online]. Available: <https://doi.org/10.3390/su151712997>.
- [11] S. Ed-Dafali, M. S. Al-Azad, M. Mohiuddin, and M. N. H. Reza, "Strategic Orientations, Organizational Ambidexterity, and Sustainable Competitive Advantage: Mediating Role of Industry 4.0 Readiness in Emerging Markets," *Journal of Cleaner Production*, vol. 401, 2023, doi: 10.1016/j.jclepro.2023.136765.
- [12] R. Lissillour and J. A. Rodríguez-Escobar, "Organizational Ambidexterity and the Learning Organization: The Strategic Role of a Corporate University," *The Learning Organization*, vol. 30, no. 1, pp. 55-75, 2022, doi: 10.1108/tlo-01-2021-0011.
- [13] F. O. Ürü, E. Gözükar, and A. A. Ünsal, "Organizational Ambidexterity, Digital Transformation, and Strategic Agility for Gaining Competitive Advantage in SMEs," *Sosyal Mucit Academic Review*, vol. 5, no. 1, pp. 1-23, 2024, doi: 10.54733/smar.1386357.
- [14] S. Sahoo, A. Kumar, S. K. Mangla, and A. Ishizaka, "Examining the Effects of Industry 4.0 Adoption, Information Acquisition Capability, and Organizational Ambidexterity on Innovation and Circular Economy Performance," *Business Strategy and the Environment*, vol. 34, no. 2, pp. 1590-1606, 2024, doi: 10.1002/bse.4067.
- [15] W. Dong, "Research on the Influence Mechanism of Artificial Intelligence Capability on Ambidextrous Innovation," *Jes*, vol. 20, no. 3, pp. 246-262, 2024, doi: 10.52783/jes.2378.
- [16] N. Ameen, S. Y. Tarba, J. H. Cheah, S. Xia, and G. D. Sharma, "Coupling Artificial Intelligence Capability and Strategic Agility for Enhanced Product and Service Creativity," *British Journal of Management*, vol. 35, no. 4, pp. 1916-1934, 2024, doi: 10.1111/1467-8551.12797.
- [17] T. H. Alaskar, A. K. Alsadi, W. J. Aloulou, and F. Ayadi, "Big Data Analytics, Strategic Capabilities, and Innovation Performance: Mediation Approach of Organizational Ambidexterity," *Sustainability*, vol. 16, no. 12, p. 5111, 2024, doi: 10.3390/su16125111.
- [18] J. D. Sengura, R. Mu, and J. Zhang, "Towards Frugal Innovation Capability in Emerging Markets within the Digitalization Epoch: Exploring the Role of Strategic Orientation and Organizational Ambidexterity," *Journal of Theoretical and Applied Electronic Commerce Research*, vol. 19, no. 3, pp. 2000-2029, 2024, doi: 10.3390/jtaer19030098.
- [19] S. Ogbeibu *et al.*, "Demystifying the Roles of Organisational Smart Technology, Artificial Intelligence, Robotics and Algorithms Capability: A Strategy for Green Human Resource Management and Environmental Sustainability," *Business Strategy and the Environment*, vol. 33, no. 2, pp. 369-388, 2024, doi: 10.1002/bse.3495.
- [20] N. Poursadeq and M. R. Qaraei-Ashtiani, "The Impact of Strategic Leadership on Organizational Performance with the Mediating Role of Innovation Ambidexterity (Case Study: A Defense Organization of the Armed Forces)," *Interdisciplinary Studies in Strategic Knowledge*, vol. 13, no. 52, pp. 25-45, 2023. [Online]. Available: https://smsnds.sndu.ac.ir/article_2484.html?lang=en.
- [21] M. Reyes-Parga, Á. Rialp-Criado, and V. Gutierrez-Rincon, "Organizational Ambidexterity and Born Global Firms' Post-Internationalization Growth: A Multi-Case Study From the Agri-Food Sector," *Strategic Change*, pp. 1-28, 2025. [Online]. Available: <https://doi.org/10.1002/jsc.2633>.
- [22] A. Yazdani and S. Darbani, "The Impact of Cloud Technology on Strategic Management and Organizational Flexibility," (in

en), *Journal of Technology in Entrepreneurship and Strategic Management*, vol. 1, no. 1, pp. 12-20, 2022. [Online]. Available:
https://www.journaltesm.com/article_192386.html.