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# The Enhancing Effect of Entrepreneurial Spirit on Corporate AI Capability

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***Abstract:*** *We examine the relationship between entrepreneurial spirit and corporate AI capability using a sample of Chinese A-share listed firms from 2012 to 2024. The empirical results indicate that entrepreneurial spirit significantly enhances corporate AI capability. This finding remains valid after a series of robustness checks and endogeneity tests. Furthermore, the enhancing effect of entrepreneurial spirit on AI capability stems primarily from entrepreneurs' innovation spirit. Mechanism analysis reveals that entrepreneurial spirit improves AI capability through four mediating channels: improving internal control, mitigating managerial myopia, fostering a collaborative corporate culture, and strengthening employee incentives. The heterogeneity analysis indicates that the effect is stronger for privately-owned enterprises, those with younger chairpersons, those with female chairpersons, those located in provinces with higher education levels and those based in provinces with more developed digital infrastructure.*

***Keywords:*** *Entrepreneurial Spirit; Artificial Intelligence Capacity; Internal Control; Managerial Myopia; Collaborative Culture; Employee Incentives*

## 1. Introduction

The rapid development of artificial intelligence (AI) technology has spearheaded a new round of technological revolution and industrial transformation. AI has demonstrated significant value across multiple dimensions, such as enhancing production efficiency [1] and investment efficiency [2], strengthening corporate resilience [3], and improving ESG performance [4]. However, existing research mostly focuses on the economic consequences of AI, while discussions on its driving factors remain relatively insufficient. The limited relevant literature primarily concentrates on AI adoption decisions rather than AI capability. These studies suggest that technological infrastructure serves as a prerequisite, while organizational innovation culture, financial planning capacity, and government policy incentives constitute core driving forces [5]. Organizational innovation culture and governance structure significantly moderate technology absorption capability [6], whereas environmental uncertainty directly shapes adoption intentions [7]. Moreover, sustainability imperatives have now emerged as nascent drivers [8].

Entrepreneurial spirit refers to a distinctive set of capabilities and attributes characterizing entrepreneurs. It has evolved conceptually from individual traits to organizational strategic postures and context-embedded frameworks. Rooted in Schumpeter's "creative destruction," it encompasses innovation, risk-taking, and proactiveness at both individual and organizational levels. In 2021, entrepreneurial spirit gained official recognition at the national level in China. Within China's institutional context, it has been distilled into five dimensions: patriotism, innovation, integrity and law-abiding behavior, social responsibility, and international vision. Research confirms that entrepreneurial spirit promotes digital transformation [9], new productive forces [10], and outward investment [11]. As a key endogenous force driving corporate development, entrepreneurial spirit plays a vital role in enhancing business performance [12].

Innovation constitutes the pivotal mechanism of entrepreneurial spirit, enabling the effective identification, adoption, and diffusion of technology [13]. As a frontier technology characterized by high uncertainty and significant potential, AI aligns closely with the cognitive orientation and strategic foresight of innovative entrepreneurs. However, few studies have explicitly linked entrepreneurial spirit to corporate AI capability.

Therefore, this paper aims to examine the relationship between entrepreneurial spirit and corporate

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AI capability and, on this basis, further investigate the underlying mechanisms and heterogeneity. The contributions of this study are threefold. First, it advances research on entrepreneurial spirit by identifying its significant impact on technological development. Second, it contributes to the literature on AI capability by highlighting the often-overlooked role of human factors. Third, it provides valuable practical guidance for firms seeking to enhance their AI capabilities and for policymakers designing supportive frameworks.

The remainder of the paper is organized as follows: Section 2 introduces the theoretical framework and research hypothesis. In Section 3, we conduct a comprehensive empirical study to identify the relationship between entrepreneurial spirit and AI capability. In Section 4, we analyze the baseline results and carry out several robustness checks. We further investigate four transmission channels and conduct heterogeneity analysis. Section 5 concludes the paper.

## 2. Theoretical Analysis and Hypothesis Development

### *2.1 Entrepreneurial Spirit and Corporate AI Capability*

According to Upper Echelons Theory, firms' strategic choices and outcomes are largely influenced by managers' cognitive traits and psychological preferences [14]. Therefore, entrepreneurial spirit shapes firms' behavioral logic. The impact of entrepreneurial spirit on corporate AI primarily operates through two aspects: resource allocation and risk tolerance.

First, entrepreneurial spirit emphasizes innovation orientation and forward-looking strategic planning, which can encourage firms to engage in breakthrough innovation activities. Because AI technology aligns closely with the strategic agenda of innovative entrepreneurs, it serves as a key driver for increasing corporate R&D investment in this area. Furthermore, the international vision embedded in entrepreneurial spirit positions firms to track global AI frontiers and advance their own AI development.

Second, the development and application of AI technologies are characterized by long investment cycles and high failure risks, requiring firms to undertake substantial risks. According to Entrepreneurial Orientation theory, risk-taking is one of the core elements of entrepreneurial spirit [15]. Leaders with strong entrepreneurial spirit exhibit greater risk tolerance and long-term strategic orientation in the AI domain, enabling them to make forward-looking arrangements that facilitate the growth of AI capability. Therefore, we propose the following hypothesis:

Hypothesis 1: Entrepreneurial spirit enhances corporate AI capability.

### *2.2 Underlying Mechanisms of Entrepreneurial Spirit's Impact on AI Capability*

#### *2.2.1 Internal Control*

Internal control is an important mechanism for achieving strategic objectives, ensuring operational efficiency, and maintaining information reliability. The integrity and law-abiding nature of entrepreneurial spirit promotes compliance-oriented operations and institutional development, thereby strengthening governance structures and enhancing control processes to establish effective internal control systems. Sound internal control can support the development of corporate AI capability in multiple ways, such as improving operational efficiency and enhancing risk identification. Accordingly, we propose the following hypothesis:

Hypothesis 2: Entrepreneurial spirit enhances corporate AI capability by improving internal control.

#### *2.2.2 Managerial Myopia*

Managerial myopia refers to managers' tendency to excessively focus on short-term performance while neglecting long-term value creation. Managerial short-termism inhibits long-term corporate investment [16]. In contrast, the innovation orientation and forward-looking thinking embedded in entrepreneurial spirit enable managers to shift their focus from short-term financial indicators to long-term strategic value. When managerial myopia is effectively mitigated, firms are better able to implement long-term strategic planning in the AI domain and promote technological accumulation and capability improvement through sustained resource investment. Accordingly, we propose the following hypothesis:

Hypothesis 3: Entrepreneurial spirit enhances corporate AI capability by mitigating managerial myopia.

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#### *2.2.3 Collaborative Culture*

Collaborative culture refers to shared values and behavioral norms characterized by mutual trust, cooperation, and knowledge sharing among organizational members. The open innovation philosophy advocated by entrepreneurial spirit emphasizes cross-boundary collaboration and knowledge sharing, which helps firms cultivate an inclusive and collaborative organizational climate [17]. The development and application of AI technologies involve multiple specialized domains, including algorithms, data, and business operations, requiring close cooperation among different functional departments [18]. A strong collaborative culture can reduce internal communication costs, facilitate the effective transmission and integration of AI-related knowledge, and thereby promote AI development. Accordingly, we propose the following hypothesis:

Hypothesis 4: Entrepreneurial spirit enhances corporate AI capability by fostering a collaborative culture.

#### *2.2.4 Employee Incentives*

Employee incentives refer to managerial practices through which firms stimulate employees' motivation and creativity by means of compensation, promotion, and other reward systems. The social responsibility awareness embedded in entrepreneurial spirit encourages firms to pay attention to employees' needs and to establish fair compensation systems. Meanwhile, the innovation orientation advocated by entrepreneurial spirit promotes the establishment of incentive mechanisms linked to innovation performance, thereby encouraging employees to participate actively in technological innovation.

The development and application of AI technologies rely heavily on highly skilled professionals. Strong employee incentives help firms attract scarce AI talent and enhance the reliability and stability of existing technical teams, thereby strengthening the foundation for AI development. Accordingly, we propose the following hypothesis:

Hypothesis 5: Entrepreneurial spirit enhances corporate AI capability by strengthening employee incentives.

## 3. Empirical Analysis

### *3.1 Data*

We collect data from Chinese A-share listed companies from 2012 to 2024 as the research sample. To ensure data validity, the sample data are processed as follows: (1) excluding samples labeled as ST or *ST in the current year; (2) excluding samples from the financial industry; (3) excluding samples with missing data; (4) winsorizing all continuous variables at the 1st and 99th percentiles to mitigate the influence of outliers. The data used in this paper are primarily sourced from the iFinD financial terminal and the CSMAR database.

### *3.2 Variable Definitions*

#### *3.2.1 Artificial Intelligence Capability*

Following mainstream research, we construct a proxy for corporate AI capability (*AI*) using text analysis based on the research of Yao, et al. [19]. We extract keyword frequencies from firms' annual reports (2012–2024) and calculate the natural logarithm of one plus the frequency. Finally, the values are scaled by a factor of 10 to enhance numerical readability.

#### *3.2.2 Entrepreneurial Spirit*

Following the study of Yu, et al. [11], we utilize the entrepreneurial spirit index (*ES*) provided by Zhang [20]. It employs objective quantitative data to assess the level of entrepreneurial spirit, ensuring a scientific evaluation. The specific composition of this index is shown in Table 1.

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*Table 1: Entrepreneurial Spirit.*

| First-level Indicator | Second-level | Assessment Content |
|---|---|---|
| Patriotism 20.00% | Tax Contribution 10.00% | Absolute Tax Value (Log-transformed) 10.00% |
| | Common Prosperity 10.00% | Share of Labor Income 10.00% |
| Innovation 35.00% | Innovation Potential 5.00% | Entrepreneur's Education Level 5.00% |
| | Innovation Input 20.00% | R&D Expenditure 10.00% |
| | | R&D Human Resources Input 10.00% |
| | Innovation Performance 10.00% | Patents Output per Capita 10.00% |
| Integrity and Law-abiding Behavior 10.00% | Integrity 5.00% | Information Disclosure Distortion 5.00% |
| | Law-abiding Behavior 5.00% | Violations 5.00% |
| Social Responsibility 20.00% | Social Donations 10.00% | Contributed Value 10.00% |
| | Stable Employment 10.00% | Net New Jobs Created 10.00% |
| International Vision 15.00% | Depth of Internationalization 7.50% | Ratio of Overseas Sales to Total Sales 7.50% |
| | Breadth of Internationalization 7.50% | Number of Regions with Overseas Subsidiaries 7.50% |

Note: Percentages indicate indicator weights determined via government document text analysis, expert surveys, and big data model validation.

### *3.2.3 Control variables*

We employ the following control variables referring to the existing literature: asset-liability ratio (*Lev*), cash ratio (*Cash*), return on assets (*ROA*), fixed asset ratio (*PPE*), shareholding ratio of the largest shareholder (*Shrholder1*), institutional investor shareholding ratio (*Total_io*), total asset turnover (*Tat*), and firm size (*Size*). Detailed variable definitions are presented in Table 2.

*Table 2: Control Variables Definitions.*

| Variable | Definition |
|---|---|
| *Lev* | Total liabilities / total assets * 100% |
| *Cash* | (Monetary capital + trading financial assets) / current liabilities * 100% |
| *ROA* | Net profit / average total assets * 100% |
| *PPE* | Fixed assets / total assets * 100% |
| *Shrholder1* | Number of shares held by the largest shareholder/ total number of shares * 100% |
| *Total_io* | Number of shares held by institution / total number of shares * 100% |
| *Tat* | Total Operating Revenue / [(Beginning Total Assets + Ending Total Assets) / 2] |
| *Size* | Natural logarithm of the total number of employees |
| *Age* | Sample date – establishment date |

### *3.2.4 Descriptive analysis*

The descriptive statistics of the variables are reported in Table 3. The standard deviation of the dependent variable, *AI*, is greater than its mean, indicating significant variation in AI capability among Chinese listed companies. Furthermore, the median is lower than the mean, suggesting that the majority of samples have low AI capability, while a smaller number of samples with high AI capability pull up the average. The mean of the explanatory variable, *ES* (32.523), is far greater than its standard deviation (6.320), indicating that the disparity in entrepreneurial spirit among listed companies is relatively small.

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*Table 3: Descriptive Statistics.*

| VarName | N | Mean | SD | Min | P25 | Median | P75 | Max |
|---|---|---|---|---|---|---|---|---|
| *AI* | 32621 | 10.359 | 12.872 | 0.000 | 0.000 | 6.931 | 17.918 | 47.274 |
| *ES* | 32621 | 32.523 | 6.320 | 19.942 | 27.711 | 32.167 | 36.549 | 49.962 |
| *ROA* | 32621 | 3.466 | 6.743 | -23.779 | 1.018 | 3.574 | 6.836 | 21.508 |
| *Lev* | 32621 | 41.538 | 19.881 | 5.926 | 25.758 | 40.699 | 55.986 | 90.343 |
| *Total_io* | 32621 | 38.830 | 22.876 | 0.246 | 20.018 | 39.105 | 56.715 | 86.705 |
| *Cash* | 32621 | 104.539 | 151.375 | 4.117 | 26.672 | 51.602 | 111.747 | 947.839 |
| *Tat* | 32621 | 0.637 | 0.429 | 0.083 | 0.364 | 0.539 | 0.779 | 2.630 |
| *Shrholder1* | 32621 | 32.517 | 14.492 | 8.020 | 21.310 | 30.080 | 42.000 | 71.740 |
| *Age* | 32621 | 20.288 | 6.000 | 8.000 | 16.000 | 20.000 | 24.000 | 38.000 |
| *Size* | 32621 | 7.697 | 1.189 | 4.927 | 6.868 | 7.625 | 8.451 | 10.933 |
| *PPE* | 32621 | 21.640 | 15.528 | 0.347 | 9.617 | 18.390 | 30.314 | 68.794 |

### *3.3 Model*

To examine whether and how entrepreneurial spirit enhances corporate AI capability, we paper construct the following panel data regression model:

$$AI_{i,t} = \beta_0 + \beta_1 ES_{i,t} + \beta_2 Controls_{i,t} + \delta_t + \gamma_k + \varepsilon_{i,t} \quad (1)$$

$$Med_{i,t} = \beta_0 + \beta_1 ES_{i,t} + \beta_2 Controls_{i,t} + \delta_t + \gamma_k + \varepsilon_{i,t} \quad (2)$$

$$AI_{i,t} = \beta_0 + \beta_1 ES_{i,t} + \beta_2 Med_{i,t} + \beta_3 Controls_{i,t} + \delta_t + \gamma_k + \varepsilon_{i,t} \quad (3)$$

Model (1) serves as the baseline regression model, where i represents the firm, and t represents the year. $AI_{i,t}$ represents the artificial intelligence capability. $ES_{i,t}$ represents the entrepreneurial spirit. $Controls_{i,t}$ denotes the control variables, and $\varepsilon_{i,t}$ is the random error term. Additionally, the model controls for year fixed effects $\delta_t$ and industry fixed effects $\gamma_k$. Models (2) and (3) are employed to examine the mediation effects [21], with Med denoting the corresponding mediator variables. The remaining specifications are identical to those in Model (1).

## 4. Empirical Results

### *4.1 Baseline Regression*

The baseline regression results are reported in Column (1) of Table 4. The coefficient of entrepreneurial spirit is significantly positive at the 1% level, indicating that entrepreneurial spirit enhances corporate AI capability. The signs of the estimated coefficients on the control variables are broadly in line with expectations. Thus, Hypothesis 1 is supported.

Columns (2) to (6) of Table 4 report the regression results of AI capability on the five sub-dimensions of entrepreneurial spirit: *Patriotism*, *Innovation*, *Integrity* (Integrity and law-abiding behavior), *International* (International Vision), and *Social* (Social Responsibility). The results show that *Innovation*, *International*, and *Social* are significantly positive, whereas *Patriotism* and *Integrity* are insignificant. This suggests that the promoting effect of entrepreneurial spirit on AI capability primarily stems from the innovation dimension, while social responsibility and international vision also play positive roles. In contrast, patriotism and integrity and law-abiding behavior do not exhibit significant effects.

*Table 4: Baseline Regression and Sub-dimension of Entrepreneurial Spirit.*

| | (1) *AI* | (2) *AI* | (3) *AI* | (4) *AI* | (5) *AI* | (6) *AI* |
|---|---|---|---|---|---|---|
| *ES* | 0.245*** | | | | | |
| | (11.633) | | | | | |
| *Patriotism* | | 0.010 | | | | |
| | | (0.780) | | | | |
| *Innovation* | | | 0.171*** | | | |
| | | | (13.351) | | | |
| *Integrity* | | | | 0.006 | | |
| | | | | (1.218) | | |

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| | | | | | | |
|---|---|---|---|---|---|---|
| *International* | | | | | 0.013** | |
| | | | | | (2.208) | |
| *Social* | | | | | | 0.021** |
| | | | | | | (2.293) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| *N* | 32619 | 32619 | 32619 | 32619 | 32619 | 32605 |
| adj. $R^2$ | 0.529 | 0.522 | 0.534 | 0.522 | 0.522 | 0.522 |

Note: ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively; t-statistics based on standard errors clustered by firm are reported in parentheses. The same applies to the following tables.

### *4.2 Robustness tests*

#### *4.2.1 Replacing independent and dependent variables*

First, following Ma and Liu [9], we decompose entrepreneurial spirit into innovation spirit, risk-taking spirit, and contractual spirit, and construct an alternative entrepreneurial spirit index (*ES2*). The results, reported in Column (1) of Table 5, show that *ES2* remains significantly positive at the 1% level, supporting our main conclusion.

Next, we replace the dependent variable with two alternative measures: *AItech* and *AI2*. *AItech* is an AI technology indicator provided by the CSMAR database, constructed following Wu, et al. [22]. *AI2* is constructed by calculating the proportion of the frequency of AI-related keywords used in the preceding analysis relative to the total word count of the annual report, and then multiplying this proportion by 10 for scaling purposes. The regression results are presented in Columns (2) and (3) of Table 5. The coefficients of entrepreneurial spirit remain significantly positive at the 1% level, further confirming the robustness of our findings.

*Table 5: Robustness Checks.*

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| | *AI* | *AItech* | *AI2* | *AI* | *AI* |
| *ES* | | 0.015*** | 0.005*** | 0.324*** | 0.049*** |
| | | (9.469) | (7.765) | (11.099) | (3.109) |
| *ES2* | 8.062*** | | | | |
| | (3.518) | | | | |
| Control variables | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | No |
| Firm FE | No | No | No | No | Yes |
| *N* | 36079 | 32622 | 32560 | 11955 | 32593 |
| adj. $R^2$ | 0.516 | 0.430 | 0.400 | 0.517 | 0.790 |

#### *4.2.2 Subsample Regression*

Drawing on the research approach of Cohen, et al. [23], we use 2021 as a cutoff point, marking the year in which entrepreneurial spirit received national-level recognition in China. We re-estimate the model using the subsample from 2021 onward. The results, reported in Column (4) of Table 5, show that entrepreneurial spirit remains significantly positive at the 1% level, indicating that our conclusions are robust.

#### *4.2.3 Alternative Fixed Effects Specification*

We modify the fixed effects specification in the baseline regression by controlling for firm and year fixed effects instead. The results are presented in Column (5) of Table 5. After altering the fixed effects, *ES* remains significantly positive. Therefore, our main findings continue to be supported.

#### *4.2.4 Endogeneity Analysis*

To address potential endogeneity concerns, we first employ the average entrepreneurial spirit of other firms in the same province and year as an instrumental variable (*IV1*). Since entrepreneurial culture tends to persist and diffuse within regions [24], *IV1* is likely correlated with a focal firm's entrepreneurial spirit, satisfying the relevance condition, while unlikely to directly affect the firm's AI capability, satisfying

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the exogeneity requirement. The first-stage and second-stage regression results are reported in Columns (1) and (2) of Table 6. The under-identification and weak-instrument tests confirm the validity of the instrumental variable. The first-stage coefficient is significant and has the expected sign, while the second-stage results show that entrepreneurial spirit remains significantly positive, indicating that our conclusions hold.

Additionally, following Xu, et al. [10], we use provincial per capita cultivated land area in 1978 as an alternative instrumental variable (*IV2*). Since China's reform and opening-up began in 1978, regions with lower per capita cultivated land area faced stronger incentives for non-agricultural entrepreneurship, likely fostering stronger entrepreneurial spirit (relevance condition). Meanwhile, this historical land endowment does not directly affect contemporary corporate AI capability (exogeneity condition). The regression results are reported in Columns (3) and (4) of Table 6. *IV2* satisfies the under-identification and weak-instrument tests. In the first stage, *IV2* is significantly negative, consistent with expectations. In the second stage, entrepreneurial spirit remains significantly positive at the 5% level, once again confirming the robustness of our conclusions.

*Table 6: Endogeneity.*

| | (1) *ES* | (2) *AI* | (3) *ES* | (4) *AI* |
|---|---|---|---|---|
| *ES* | | 0.352*** | | 0.661** |
| | | (4.985) | | (2.400) |
| *IV1* | 0.713*** | | | |
| | (31.562) | | | |
| *IV2* | | | -0.588*** | |
| | | | (-4.973) | |
| Control variables | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| p-value of F test | 0.000 | | 0.000 | |
| Cragg-Donald Wald F | 4044.531 | | 203.604 | |
| Kleibergen-Paap rk Wald F | 996.164 | | 24.728 | |
| *N* | 32602 | 32602 | 31733 | 31733 |
| adj. $R^2$ | | 0.051 | | 0.011 |

### *4.3 Mechanism Analysis*

#### *4.3.1 Internal Control*

Following Wu and Chang [25], we use the DIB Internal Control Index as a proxy for internal control (*IC*), where higher values indicate better quality. To test mediation effect, we adopt the three-step procedure [21], supplemented by the Sobel test [26]. Columns (1) and (2) of Table 7 report the regression results. The coefficients of *ES* and *IC* are both significant and consistent with our hypotheses. And the Sobel statistic is positive and significant at the 5% level. Thus, Hypothesis 3 is supported.

*Table 7: Internal Control and Managerial Myopia.*

| | (1) *IC* | (2) *AI* | (3) *Myopia* | (4) *AI* |
|---|---|---|---|---|
| *ES* | 3.116*** | 0.241*** | -0.039*** | 0.240*** |
| | (15.187) | (11.381) | (-3.738) | (11.419) |
| *IC* | | 0.001** | | |
| | | (2.522) | | |
| *Myopia* | | | | -0.099*** |
| | | | | (-6.437) |
| Control variables | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| Sobel | 0.004** | | 0.040** | |
| *N* | 32608 | 32608 | 32426 | 32426 |
| adj. $R^2$ | 0.211 | 0.529 | 0.148 | 0.531 |

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#### *4.3.2 Managerial Myopia*

Drawing on Hu, et al. [27], we measure managerial myopia (*Myopia*) as the proportion of myopia-related keywords within the Management Discussion and Analysis section of annual reports, with higher scores reflecting more severe myopia. The regression results are presented in Columns (3) and (4) of Table 7. The results show that the coefficients for *ES* and *Myopia* are both statistically significant with the expected signs, and the Sobel test statistic is also significant. Therefore, Hypothesis 3 is supported.

#### *4.3.3 Collaborative culture*

Following Pan, et al. [17], we measure corporate collaborative culture (*Cooperation*) via textual analysis, constructing the proxy as the natural logarithm of (keyword frequency + 1), where higher values indicate a stronger culture. The regression results are reported in Columns (1) and (2) of Table 8. The coefficients of *ES* and *Cooperation* are both significantly positive at the 1% level, and the Sobel statistic is also significantly positive, supporting Hypothesis 4.

*Table 8: Cooperation Culture and Employee Incentive.*

| | (1) *Cooperation* | (2) *AI* | (3) *Salary* | (4) *AI* |
|---|---|---|---|---|
| *ES* | 0.013*** | 0.210*** | 0.436*** | 0.205*** |
| | (8.041) | (10.366) | (24.622) | (10.031) |
| *Cooperation* | | 2.650*** | | |
| | | (19.716) | | |
| *Salary* | | | | 0.091*** |
| | | | | (5.383) |
| Control variables | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| Sobel | 0.016*** | | 0.040*** | |
| *N* | 32426 | 32426 | 32613 | 32613 |
| adj. $R^2$ | 0.277 | 0.549 | 0.436 | 0.531 |

#### *4.3.4 Employee Incentives*

Employee incentives primarily stem from employee compensation. Therefore, we measure the level of employee incentives using the average employee salary. The regression results are presented in Columns (3) and (4) of Table 8. The coefficients of *Salary* and *AI*, as well as the Sobel statistic, are all significantly positive at the 1% level, supporting Hypothesis 5.

### *4.4 Heterogeneity Analysis*

#### *4.4.1 Firm-Level Heterogeneity*

State-owned enterprises (SOEs) and private enterprises differ substantially in their operating models and organizational structures, which may influence the effectiveness of entrepreneurial spirit. We divide the sample into SOEs and private firms and conduct subsample regressions. The results, reported in Columns (1) and (2) of Table 9, indicate that entrepreneurial spirit promotes AI capability in both groups, but the effect is stronger in private enterprises.

*Table 9: Firm-level Heterogeneity.*

| | (1) Private *AI* | (2) State Owned *AI* | (3) Female *AI* | (4) Male *AI* | (5) Younger *AI* | (6) Older *AI* |
|---|---|---|---|---|---|---|
| *ES* | 0.268*** | 0.177*** | 0.417*** | 0.235*** | 0.301*** | 0.199*** |
| | (9.858) | (5.398) | (4.277) | (11.016) | (7.760) | (5.039) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| adj. $R^2$ | 0.520 | 0.518 | 0.524 | 0.532 | 0.490 | 0.561 |

Prior studies show that leader characteristics, such as gender [28] and age [29], affect corporate decision-making and performance. Therefore, we analyze heterogeneity based on chairperson gender and age. For age, we define the “younger” group as chairpersons below the 25th percentile and the “older”

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group as those above the 75th percentile.

The results for gender heterogeneity are presented in Columns (3) and (4) of Table 9. The findings suggest that the positive effect of entrepreneurial spirit on AI capability is more pronounced in firms led by female chairpersons. The results for age heterogeneity, shown in Columns (5) and (6) of Table 9, indicate that younger chairpersons are better able to leverage entrepreneurial spirit to enhance corporate AI capability.

#### *4.4.2 Regional-Level Heterogeneity*

First, regional education levels affect the quality of labor supply, and AI development relies heavily on high-skilled human capital. Following Andrews [30], we measure provincial education levels using per capita fiscal expenditure on education. Provinces below the 25th percentile are classified as low-education regions, while those above the 75th percentile are classified as high-education regions. The regression results, reported in Columns (1) and (2) of Table 10, show that the positive effect of entrepreneurial spirit on AI capability is stronger in provinces with higher education levels.

Furthermore, AI development depends on local digital infrastructure. More advanced digital infrastructure facilitates corporate AI development. Following Chao, et al. [31], we construct a digital infrastructure dictionary to analyze provincial government work reports, using the proportion of related keywords as a proxy for digital infrastructure development. Regions below the 25th percentile are classified as having underdeveloped digital infrastructure, while those above the 75th percentile are classified as having well-developed digital infrastructure. The grouped regression results are reported in Columns (3) and (4) of Table 10. The findings indicate that in regions with more developed digital infrastructure, entrepreneurial spirit exerts a stronger promoting effect on corporate AI capability.

*Table 10: Region-level Heterogeneity.*

| | (1) Low Education | (2) High Education | (3) Under Developed | (4) Well-Developed |
|---|---|---|---|---|
| | *AI* | *AI* | *AI* | *AI* |
| *ES* | 0.259*** | 0.265*** | 0.239*** | 0.253*** |
| | (10.183) | (10.309) | (10.287) | (10.709) |
| Control variables | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| *N* | 13040 | 12011 | 16668 | 15937 |
| adj. $R^2$ | 0.528 | 0.508 | 0.529 | 0.530 |

## 5. Conclusion

Using data from A-share listed companies in China from 2012 to 2024, this paper examines the relationship between entrepreneurial spirit and corporate AI capability. The empirical results show that entrepreneurial spirit significantly enhances corporate AI capability. This finding remains robust after a series of robustness and endogeneity checks.

Furthermore, this paper investigates the transmission mechanisms through which entrepreneurial spirit promotes AI capability. The results confirm four mediating channels: improving internal control quality, mitigating managerial myopia, fostering a collaborative corporate culture, and strengthening employee incentives.

Finally, we conduct both firm-level and regional-level heterogeneity analyses. The results indicate that the positive effect of entrepreneurial spirit on AI capability is more pronounced in privately owned enterprises, firms led by younger chairpersons, firms led by female chairpersons, firms located in provinces with higher education levels and firms located in provinces with more developed digital infrastructure.

## References

*[1] K. Kanazawa, D. Kawaguchi, H. Shigeoka, and Y. Watanabe, "AI, Skill, and Productivity: The Case of Taxi Drivers," National Bureau of Economic Research Working Paper Series, vol. No. 30612, 2022.*

ISSN 2616-5902 Vol. 8, Issue 3: 147-157, DOI: 10.25236/AJBM.2026.080318

*[2] L. Wang and Y. Chen, "Artificial intelligence and corporate investment efficiency: Evidence from China," Emerging Markets Review, vol. 68, p. 101314, 2025.*
*[3] M. Han, H. Shen, J. Wu, and X. Zhang, "Artificial Intelligence and Firm Resilience: Empirical Evidence from Natural Disaster Shocks," Information Systems Research, vol. 36, no. 4, pp. 2116-2133, 2025.*
*[4] Y. Liu, J. Song, B. Zhou, and J. Liu, "Artificial intelligence applications and corporate ESG performance," International Review of Economics & Finance, vol. 104, p. 104559, 2025.*
*[5] P. Mikalef et al., "Enabling AI capabilities in government agencies: A study of determinants for European municipalities," Government Information Quarterly, vol. 39, no. 4, p. 101596, 2022.*
*[6] M. Cubric, "Drivers, barriers and social considerations for AI adoption in business and management: A tertiary study," Technology in Society, vol. 62, p. 101257, 2020.*
*[7] M. Wang and X. Pan, "Drivers of Artificial Intelligence and Their Effects on Supply Chain Resilience and Performance: An Empirical Analysis on an Emerging Market," Sustainability, vol. 14, no. 24, p. 16836, 2022.*
*[8] M. M. Mariani, I. Machado, V. Magrelli, and Y. K. Dwivedi, "Artificial intelligence in innovation research: A systematic review, conceptual framework, and future research directions," Technovation, vol. 122, p. 102623, 2023.*
*[9] Y. Ma and S. Liu, "Entrepreneurs' Spirit,Digital Transformation and Business Model Innovation," On Economic Problems, no. 11, pp. 40-50, 2024.*
*[10] L. Xu, X. Du, X. Yang, and Y. Zhang, "Entrepreneurship and the Development of New Quality Productive Forces:Micro-Level Evidence from A-Share Listed Companies," East China Economic Management, vol. 39, no. 09, pp. 20-30, 2025.*
*[11] G. Yu, M. Guo, and T. Li, "Entrepreneurship and Corporate Outward Foreign Direct Investment," Journal of Beijing Technology and Business University (Social Sciences), vol. 40, no. 05, pp. 34-45, 2025.*
*[12] H. Lin, W. Fang, and G. Wei, "The Impact of Entrepreneurial Spirituality on Business Performance: Based on the Survey of Private Enterprise Executives in Fujian China," Frontiers in Psychology, vol. 13, p. 900852, 06/09 2022.*
*[13] J. Li, Y. Li, and L. Xie, "Schumpeter in the Digital Age:Entrepreneurship and Technological Diffusion," Journal of Technology Economics, vol. 43, no. 09, pp. 45-55, 2024.*
*[14] X. Yang and X. Yang, "External parachuting and innovation investment: mediating effect of entrepreneurial spirit," International Entrepreneurship and Management Journal, vol. 19, no. 4, pp. 1643-1671, 2023.*
*[15] D. Miller, "The Correlates of Entrepreneurship in Three Types of Firms," Management Science, vol. 29, no. 7, pp. 770-791, 1983.*
*[16] C. S. U. Hussain, Z. Chenghu, A. Shoaib, and S. Zia, "Does managerial climate awareness affect green bond issuance? The moderating role of managerial myopia," Finance Research Letters, vol. 85, p. 107979, 2025.*
*[17] J. Pan, Y. Pan, and Y. Ma, "Is Cooperation Important? Collaboration Culture and Innovation," Journal of Financial Research, no. 01, pp. 148-167, 2019.*
*[18] V. Uren and J. S. Edwards, "Technology readiness and the organizational journey towards AI adoption: An empirical study," International Journal of Information Management, vol. 68, p. 102588, 2023.*
*[19] J. Yao, K. Zhang, L. Guo, and X. Feng, "How Does Artificial Intelligence Improve Firm Productivity?Based on the Perspective of Labor Skill Structure Adjustment," Journal of Management World, vol. 40, no. 02, pp. 101-116+133+117-122, 2024.*
*[20] S. Zhang. The Entrepreneurial Spirit Database of Listed Companies in China, Peking University Open Research Data Platform, 2024.*
*[21] R. Baron and D. Kenny, "The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations," Journal of Personality and Social Psychology, vol. 51, pp. 1173-1182, 01/01 1986.*
*[22] F. Wu, H. Hu, H. Lin, and X. Ren, "Enterprise Digital Transformation and Capital Market Performance:Empirical Evidence from Stock Liquidity," Journal of Management World, vol. 37, no. 07, pp. 130-144+10, 2021.*
*[23] D. A. Cohen, A. Dey, and T. Z. Lys, "Real and Accrual-Based Earnings Management in the Pre- and Post-Sarbanes-Oxley Periods," The Accounting Review, vol. 83, no. 3, pp. 757-787, 2008.*
*[24] M. Fritsch and M. Wyrwich, "The Long Persistence of Regional Entrepreneurship Culture: Germany 1925–2005," SSRN Electronic Journal, 06/01 2012.*
*[25] X. Wu and W. Chang, "Shareholdings by insurance institutions, internal control, and corporate financial robustness," Finance Research Letters, vol. 89, p. 109271, 2026.*
*[26] M. E. Sobel, "Asymptotic Confidence Intervals for Indirect Effects in Structural Equation Models,"*

ISSN 2616-5902 Vol. 8, Issue 3: 147-157, DOI: 10.25236/AJBM.2026.080318

*Sociological Methodology, vol. 13, pp. 290-312, 1982.*
*[27] N. Hu, F. Xue, and H. Wang, "Does Managerial Myopia Affect Long-term Investment?Based on Text Analysis and Machine Learning," Journal of Management World, vol. 37, no. 05, pp. 139-156+11+19-21, 2021.*
*[28] R. W. Fairlie and A. M. Robb, "Gender differences in business performance: evidence from the Characteristics of Business Owners survey," Small Business Economics, vol. 33, no. 4, pp. 375-395, 2009.*
*[29] P. Azoulay, B. F. Jones, J. D. Kim, and J. Miranda, "Age and High-Growth Entrepreneurship," American Economic Review: Insights, vol. 2, no. 1, pp. 65-82, 2020.*
*[30] R. Andrews, "Local education and social care in England, Scotland, and Wales: spending patterns, priorities, and prospects," Oxford Review of Economic Policy, vol. 41, no. 1, pp. 41-63, 2025.*
*[31] X. Chao, Y. Lian, and L. Luo, "Impact of New Digital Infrastructure on High-quality Development of Manufacturing," Finance and Trade Research, vol. 32, no. 10, pp. 1-13, 2021.*