# ENTREPRENEURIAL SELF-EFFICACY AND INNOVATION PERFORMANCE IN CHINESE TECHNOLOGY-BASED NEW VENTURES: THE MEDIATING ROLE OF ENTREPRENEURIAL MOTIVATION*

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## Abstract

This research article aims to: 1) examine the direct effect of entrepreneurial self-efficacy (ESE) on innovation performance in Chinese technology-based new ventures; 2) test whether entrepreneurial motivation mediates the relationship between ESE and innovation performance; 3) conduct a quantitative research study collecting data from 740 founders and senior managers of Chinese technology-based new ventures across 29 regions; analyze the data using confirmatory factor analysis (CFA) to validate the measurement model and structural equation modeling (SEM) with bias-corrected bootstrapping (5,000 resamples) to test the direct and mediated hypotheses.

The research results found that: 1) Entrepreneurial self-efficacy has a significant and direct positive effect on innovation performance ($\beta$ = 0.361, $p < .001$), confirming that stronger efficacy beliefs support persistent innovation effort, proactive opportunity pursuit, and successful execution of innovation

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projects in Chinese technology-based new ventures. 2) Entrepreneurial self-efficacy significantly and positively predicts entrepreneurial motivation ($\beta$ = 0.636, $p < .001$), and entrepreneurial motivation in turn positively influences innovation performance ($\beta$ = 0.262, $p < .001$), indicating that psychological confidence in one's entrepreneurial capabilities is a powerful driver of sustained motivational engagement. 3) Entrepreneurial motivation serves as a significant full mediator in the relationship between ESE and innovation performance (indirect $\beta$ = 0.167, 95% CI [0.126, 0.217]), demonstrating complementary mediation whereby ESE enhances innovation performance both directly through efficacy-related behavioral tendencies and indirectly by energizing motivational states that sustain innovation commitment over time.

**Keywords:** Entrepreneurial Self-Efficacy, Innovation Performance, Entrepreneurial Motivation, Chinese Technology-Based New Ventures

## Introduction

Under China's national innovation-driven development strategy and the continuing momentum of "mass entrepreneurship and innovation," technology-based new ventures have emerged as a critical organizational form for transforming knowledge into marketable products, supporting high-quality economic development, and strengthening national innovation capacity. Technology-based new ventures can rapidly commercialize scientific and technological achievements, create high-skill employment, and stimulate new markets through continuous innovation. Within this broader transformation, entrepreneurship has been increasingly recognized not only as a market-oriented activity but also as a form of social action that can generate economic value while responding to social needs and improving social welfare (Zhang, 2023). Entrepreneurs play a decisive role in shaping innovation performance because they initiate venture creation, define strategic direction, and allocate scarce

resources; their behavioral choices and influence on organizational outcomes are shaped by both external conditions and individual cognition (Hmieleski & Baron, 2008).

Entrepreneurial self-efficacy (ESE) refers to individuals' beliefs in their ability to successfully perform key entrepreneurial tasks such as identifying opportunities, mobilizing resources, managing risks, and introducing new products. As a cognitive resource, ESE shapes how entrepreneurs appraise their capabilities and make behavioral choices under conditions of uncertainty. Entrepreneurs with high ESE tend to set more challenging goals, maintain greater persistence when facing obstacles, and proactively engage in problem-solving and resource mobilization, thereby increasing the likelihood that innovative initiatives are initiated and brought to fruition. Entrepreneurial motivation (EM) functions as the core psychological force driving entrepreneurs to initiate and sustain entrepreneurial action, including the pursuit of innovation-related opportunities. Prior studies suggest that ESE and EM are mutually reinforcing: efficacy beliefs enhance motivation by elevating confidence in goal attainment and tolerance for risk, and this heightened motivational drive then channels effort into innovation activities (Shan & Heo, 2019; Yang, 2015).

Despite growing scholarly interest in ESE, two important gaps remain. First, a contextual gap persists because much evidence is derived from Western or generalized entrepreneurial settings, providing limited insight into how ESE operates within China's distinctive institutional environment and the fast-evolving conditions faced by technology-based new ventures. Second, a theoretical gap exists regarding the motivational mechanisms through which ESE translates into innovation performance at the firm level—prior research has often emphasized organizational-level determinants of innovation while leaving individual-level psychological pathways underspecified. Accordingly, this study addresses these gaps by developing and testing a mediation framework in which ESE is proposed

to enhance innovation performance both directly and indirectly through entrepreneurial motivation. By focusing on Chinese technology-based new ventures, the study offers context-sensitive evidence and clarifies a key psychological transmission mechanism linking founder cognition to innovation outcomes.

## Research Objectives

1. To examine the direct effect of entrepreneurial self-efficacy on innovation performance in Chinese technology-based new ventures.

2. To test whether entrepreneurial motivation mediates the relationship between entrepreneurial self-efficacy and innovation performance in Chinese technology-based new ventures.

## Literature Review

### 1. Entrepreneurial Self-Efficacy and Innovation Performance

Self-efficacy, rooted in Bandura's (1991) Social Cognitive Theory, refers to individuals' beliefs in their capacity to organize and execute courses of action required to produce specific outcomes. In the entrepreneurial context, ESE shapes how entrepreneurs assess their capabilities and make behavioral choices about opportunity pursuit, resource mobilization, and innovation investment. ESE encompasses multiple task-specific dimensions including marketing, innovation management, risk-taking, and financial control—each of which has implications for the entrepreneur's capacity to generate and sustain innovation activities.

Ahlin et al. (2014) proposed that ESE is a key personal strength influencing firm innovation, with evidence linking ESE to firms' entrepreneurial orientation and innovativeness. Their research demonstrated that the relationship between ESE and innovation is particularly strong when entrepreneurial challenges require creative and non-routine problem-solving responses. Ng and Lucianetti (2016)

further demonstrated that self-efficacious entrepreneurs exhibit greater confidence in experimentation and adaptive learning, enabling more effective responses to failure and environmental change—ultimately improving firm-level innovative outcomes. Higher self-efficacy tends to be associated with stronger innovation outcomes regardless of innovation type, including product, process, and business model innovations.

Urban and Wood (2017) argued that ESE strengthens opportunity recognition and risk-taking orientation, which directly facilitates product and process innovation in competitive markets. In the Chinese context, Zhang (2023) highlighted that in dynamic, technology-intensive environments, ESE may be especially consequential for overcoming resource constraints and institutional uncertainty, supporting the translation of entrepreneurial intentions into concrete innovation activities. Chen and Zhou (2017) further confirmed that founders with higher ESE are more confident in their ability to engage in innovation practices, providing important context-specific evidence relevant to the present study.

**2. Entrepreneurial Motivation and Innovation Performance**

Entrepreneurial motivation refers to the psychological drive that prompts individuals to initiate entrepreneurial activities and sustains their engagement in the entrepreneurial journey. It encompasses multiple motivational dimensions including intrinsic motivations (such as the desire for achievement, autonomy, and personal growth) and extrinsic motivations (such as financial gain and social recognition). These motivational drivers not only encourage entrepreneurs to start ventures but also sustain their efforts through the inevitable setbacks and challenges of the innovation process.

Carsrud and Brännback (2011) argued that entrepreneurial motivations—such as achievement needs or desire for independence—strongly influence both the direction and intensity of entrepreneurial activities. When motivation is high, entrepreneurs allocate more time and resources to R&D, creative problem-

solving, and other innovation-generating processes, while exhibiting greater perseverance in pursuing innovations through development and commercialization. Bierwerth et al. (2015) conducted a meta-analysis linking internal entrepreneurial orientations driven by motivation with improved performance and innovation in small businesses, concluding that motivation is a critical and consistent determinant of entrepreneurial innovation success across different cultural and industry contexts.

**3. The Mediating Role of Entrepreneurial Motivation**

The theoretical logic connecting ESE to innovation performance through motivational mechanisms has been supported by emerging empirical evidence. Shan and Heo (2019) demonstrated that ESE significantly strengthens entrepreneurial motivation by enhancing individuals' confidence, goal commitment, and risk tolerance, as well as their capacity to cope with challenges and leverage social support networks. This motivation not only encourages individuals to initiate entrepreneurial activities but also helps them persist through the entrepreneurial journey, sustaining forward momentum even when encountering difficulties.

Nuryanto et al. (2019) reported a significant positive effect of self-efficacy on entrepreneurial motivation, while Bernardus et al. (2020) showed that self-efficacy influences entrepreneurial intention and subsequent action through motivational mechanisms. Yang (2015) further demonstrated that entrepreneurship education programs that strengthen ESE also produce increases in entrepreneurial motivation, providing evidence that ESE and EM co-evolve in response to the same cognitive inputs. Taken together, these findings suggest that entrepreneurial motivation may serve as a key psychological pathway transmitting the effect of ESE to innovation performance, forming the theoretical basis for the mediation hypothesis tested in this study.

## Research Methodology

This study employs a quantitative research design using a structured questionnaire survey to enable hypothesis testing and mediation analysis across a large sample of Chinese technology-based new ventures, providing generalizable insights into the relationships among ESE, EM, and innovation performance.

The target population comprised Chinese technology-based new ventures operating across multiple high-tech industries. A proportionate stratified random sampling approach was employed, drawing from a sampling frame of 3,466 ventures spanning 29 regions of China. A total of 800 questionnaires were distributed to founders and senior managers. After data screening procedures, 740 valid responses were retained, yielding an effective response rate of 92.5%.

All constructs were measured with multi-item scales adapted from established sources. ESE was measured using a 22-item scale refined by McGee et al. (2009), covering five dimensions: marketing, innovation, management, risk-taking, and financial control (5-point Likert scale). Innovation performance was assessed with 5 items capturing the frequency and impact of venture innovations, rated on a 5-point scale. Entrepreneurial motivation was measured with a 24-item scale by Vijaya and Kamalanabhan (1998), covering intrinsic and extrinsic motivational drivers (5-point scale).

Data were analyzed using a two-stage analytical strategy. In the first stage, confirmatory factor analysis (CFA) was performed to validate measurement model reliability and validity, including composite reliability (CR) and average variance extracted (AVE). In the second stage, structural equation modeling (SEM) with bias-corrected bootstrapping (5,000 resamples) was used to test the direct and mediated hypotheses at the 0.05 significance level.

## Conceptual Framework

Drawing on Social Cognitive Theory and expectancy-based perspectives, this study proposes that ESE enhances innovation performance both directly and indirectly through entrepreneurial motivation. Figure 1 illustrates the conceptual framework, showing the direct path from ESE to innovation performance (H1), ESE to entrepreneurial motivation (H2), entrepreneurial motivation to innovation performance (H3), and the full mediation path ESE ⟶ EM ⟶ Innovation Performance (H4).

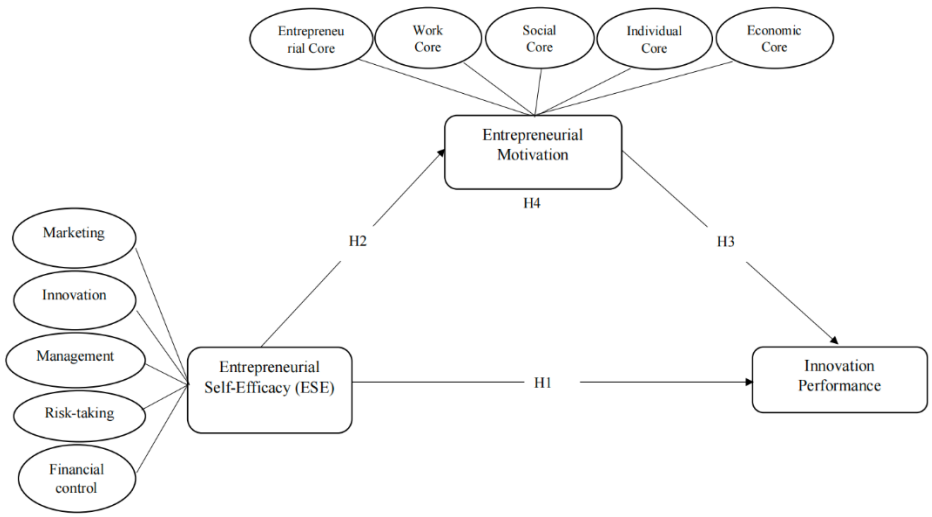



**Figure 1** Conceptual Framework (Source: Constructed by the researcher)

## Research Results

### 1. Reliability Analysis

All measurement scales demonstrated excellent internal consistency. As shown in Table 1, Cronbach's alpha coefficients for ESE, innovation performance (IP), and EM were 0.982, 0.936, and 0.979 respectively—all well above the recommended threshold of 0.70. The overall scale yielded a coefficient of 0.984, confirming a highly stable measurement structure.

**Table 1** Reliability Testing Results

| Variable Scale | Number of Items | Cronbach's Alpha (>0.7) |
|---|---|---|
| Entrepreneurial Self-Efficacy (ESE) | 22 | 0.982 |
| Innovation Performance (IP) | 5 | 0.936 |
| Entrepreneurial Motivation (EM) | 24 | 0.979 |
| Total | 51 | 0.984 |

**2. Convergent Validity Analysis**

Convergent validity was confirmed through CFA. Factor loadings ranged from 0.72 to 0.95 (most above 0.80, all $p < 0.001$). Composite reliability (CR) values for all constructs exceeded 0.90, and average variance extracted (AVE) values ranged from 0.746 to 0.799—all exceeding the 0.50 benchmark. These results confirm strong convergent validity.

**3. Discriminant Validity Analysis**

Discriminant validity was evaluated using the Fornell-Larcker criterion. As shown in Table 2, the square root of each construct's AVE (diagonal) exceeds all inter-construct correlations, confirming satisfactory discriminant validity. Although ESE is moderately correlated with EM ($r = 0.636$) and IP ($r = 0.681$), its AVE square root (0.894) exceeds both values.

**Table 2** Discriminant Validity Analysis Results

| Construct | ESE | EM | IP |
|---|---|---|---|
| ESE | 0.894 | | |
| EM | 0.636 | 0.869 | |
| IP | 0.681 | 0.595 | 0.864 |

Note. Bold diagonal values represent the square root of AVE; off-diagonal values are inter-construct correlations. ESE: Entrepreneurial Self-Efficacy; EM: Entrepreneurial Motivation; IP: Innovation Performance.

**4. Structural Equation Modeling Analysis**

The SEM model fit indices confirmed adequate model fit: $\chi^2/df = 2.10$, CFI = 0.96, TLI = 0.95, SRMR = 0.037, RMSEA = 0.045, all within recommended thresholds. Figure 2 presents the structural equation model.

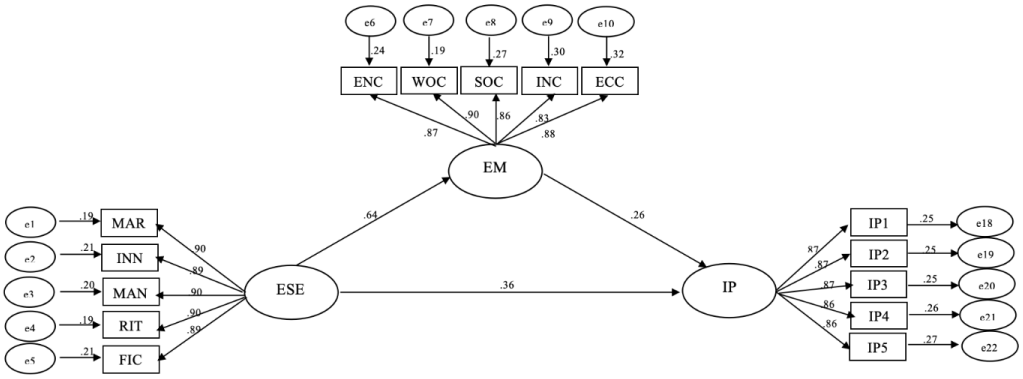



**Figure 2** Structural Equation Model (Source: Constructed by the researcher)

Table 3 presents the direct effects. The path from ESE to IP was significant ($\beta$ = 0.361, p < .001), supporting H1. ESE strongly predicted EM ($\beta$ = 0.636, p < .001), supporting H2. The path from EM to IP was also significant ($\beta$ = 0.262, p < .001), supporting H3.

**Table 3** Direct Effects in the Mediation Model

| Direct Effects | Standardized $\beta$ | S.E. | C.R. | P | Hypothesis |
|---|---|---|---|---|---|
| ESE ⟶ IP | 0.361 | 0.046 | 8.161 | 0.000 | H1 Supported |
| ESE ⟶ EM | 0.636 | 0.027 | 22.415 | 0.000 | H2 Supported |
| EM ⟶ IP | 0.262 | 0.036 | 7.928 | 0.000 | H3 Supported |

Table 4 presents the mediated (indirect) effect. The indirect effect of ESE on IP via EM was significant ($\beta$ = 0.167, 95% CI [0.126, 0.217]), providing strong support for H4. This indicates complementary mediation: ESE exerts a significant positive effect on IP both directly and indirectly through enhanced entrepreneurial motivation.

**Table 4** Indirect (Mediated) Effects

| Indirect Effects | Standardized $\beta$ | S.E. | 95% CI Lower | 95% CI Upper | Hypothesis |
|---|---|---|---|---|---|
| ESE ⟶ EM ⟶ IP | 0.167 | 0.023 | 0.126 | 0.217 | H4 Supported |

## Discussion

The findings provide support for all four hypotheses and contribute several important insights. Regarding H1, ESE exerts a significant positive effect on innovation performance ($\beta$ = 0.361, $p < .001$) in Chinese technology-based new ventures. This finding aligns with prior evidence that entrepreneurs with stronger efficacy beliefs set more challenging innovation goals, sustain effort under uncertainty, and engage more proactively in problem-solving and resource mobilization, thereby increasing the likelihood that innovative ideas are generated and successfully implemented (Ng & Lucianetti, 2016; Urban & Wood, 2017). The observed relationship is theoretically consistent with Social Cognitive Theory, which posits that self-efficacy beliefs shape goal setting, effort allocation, and persistence under challenging conditions (Bandura, 1991). Extending these insights to the Chinese context, Zhang (2023) highlights that in dynamic, technology-intensive environments, ESE may be especially consequential for overcoming resource constraints and institutional uncertainty, facilitating the translation of entrepreneurial intentions into measurable innovation outcomes. The strength of this direct effect suggests that investments in ESE development

among technology entrepreneurs are likely to yield tangible improvements in venture-level innovation.

For H2, the finding that ESE significantly and positively predicts entrepreneurial motivation ($\beta$ = 0.636, $p < .001$) is consistent with prior evidence that efficacy beliefs strengthen entrepreneurs' confidence in goal attainment, sustain effort under uncertainty, and reinforce commitment to entrepreneurial action (Shan & Heo, 2019; Yang, 2015). The particularly strong path coefficient from ESE to EM suggests that psychological confidence in entrepreneurial capabilities is a powerful predictor of motivational engagement. In technology-intensive settings characterized by high uncertainty and rapid change, such motivation is especially valuable because it helps entrepreneurs maintain engagement with challenging innovation-related tasks when setbacks and resource pressures arise.

For H3, the positive influence of EM on innovation performance ($\beta$ = 0.262, $p < .001$) aligns with Carsrud and Brännback (2011), who argued that high motivation leads entrepreneurs to allocate more time and resources toward R&D and creative problem-solving. This finding is further corroborated by Bierwerth et al. (2015), whose meta-analysis linked motivation-driven entrepreneurial orientations with improved innovation performance across diverse organizational contexts. Highly motivated entrepreneurs set more ambitious innovation goals, invest greater effort and resources in opportunity development, and persevere more effectively through the difficulties inherent in commercializing new technologies—collectively enhancing observable innovation performance at the firm level.

Most critically, the confirmation of H4 demonstrates that entrepreneurial motivation serves as a significant mediator between ESE and innovation performance (indirect $\beta$ = 0.167, 95% CI [0.126, 0.217]). This mediation pattern is consistent with expectancy-based theoretical perspectives: efficacy beliefs

strengthen entrepreneurs' expectations of successful outcomes, which elevates motivation to pursue innovation-oriented goals; this heightened motivational drive then channels effort and resources into innovation activities, generating stronger performance outcomes. The complementary mediation pattern—whereby both the direct effect of ESE and the indirect effect via EM are significant—indicates that ESE influences innovation performance through multiple pathways: directly through efficacy-related behavioral tendencies such as persistence and proactive action, and indirectly by energizing the motivational states that sustain innovation commitment over time. This finding advances the theoretical understanding of how individual-level cognition translates into innovation outcomes in technology-based new ventures.

## Conclusion

This study developed and tested a mediation framework linking ESE to innovation performance through entrepreneurial motivation in Chinese technology-based new ventures. Based on survey data from 740 entrepreneurs and rigorous SEM analysis, the results yield four key conclusions. First, ESE has a significant direct positive effect on innovation performance ($\beta$ = 0.361), confirming that efficacy beliefs function as a critical psychological resource that supports persistent innovation effort, proactive opportunity pursuit, and consistent execution of innovation projects. Second, ESE significantly predicts entrepreneurial motivation ($\beta$ = 0.636), indicating that confidence in one's entrepreneurial capabilities is a powerful driver of motivational engagement and sustained commitment to entrepreneurial action. Third, entrepreneurial motivation positively influences innovation performance ($\beta$ = 0.262), confirming its role as a behavioral engine that converts innovation aspirations into implementable projects and measurable innovation outputs. Fourth, entrepreneurial motivation serves as a significant mediator in the ESE–innovation

performance relationship (indirect $\beta$ = 0.167), indicating complementary mediation whereby ESE influences innovation performance through both direct efficacy-related pathways and motivation-driven behavioral mechanisms.

These findings contribute to entrepreneurship and innovation research in three important ways. First, the study provides context-sensitive empirical evidence from Chinese technology-based new ventures—an underrepresented context in prior research dominated by Western samples—demonstrating that the innovation-enhancing effects of ESE can generalize across institutional environments while remaining sensitive to their distinctive features. Second, the study clarifies a key psychological transmission mechanism linking founder cognition to innovation outcomes by demonstrating that entrepreneurial motivation mediates the ESE–innovation performance relationship, advancing ongoing efforts to unpack the "black box" connecting individual cognition to firm-level performance. Third, the study contributes a parsimonious yet empirically grounded three-construct framework that explains innovation outcomes at the individual-psychological level, complementing literature that has emphasized organizational-level determinants of innovation in new ventures.

## Recommendations

### 1. Theoretical Recommendations

Future research should expand the explanatory scope by examining additional mediators such as entrepreneurial learning behaviors and strategic flexibility, as well as moderators such as environmental dynamism and team composition. Longitudinal research designs are recommended to test whether changes in ESE precede changes in motivation and subsequent innovation, and whether innovation success feeds back into efficacy beliefs over time. Comparative studies across different institutional contexts and non-technology

industries would also help identify boundary conditions for the ESE ⟶ EM ⟶ innovation performance mechanism.

**2. Practical Recommendations**

For venture support programs and incubators, interventions designed to strengthen founders' ESE—including capability-oriented training, structured mentoring, and guided experiential learning—are recommended to improve entrepreneurs' confidence in managing innovation-related uncertainty. For innovation-oriented ventures, organizational arrangements that sustain entrepreneurs' motivational drive should be prioritized, such as clear innovation goal articulation, milestone-based evaluation systems, and incentive alignment. At the policy level, innovation grants, entrepreneurship competitions, and recognition schemes can reinforce motivation by providing external validation and tangible resource support. For investors and accelerators, screening and coaching practices should place greater emphasis on founders' ESE and motivational profiles, as these psychological factors are closely linked to sustained innovation effort and innovation outcomes.

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