

Bridging Passion and Performance: The Mediating Role of Improvisation Behavior in New Startup Ventures

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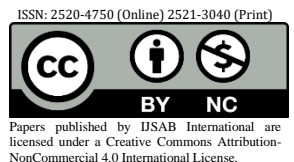
Abstract

This research examines the relationship between entrepreneurial passion, improvisation behavior, and entrepreneurial performance in the context of New startups. Drawing on identity theory, effect logic theory, and affective interpersonal commitment theory, a theoretical model was constructed and empirically tested using data from 456 entrepreneurs in China's first-tier cities. Results indicate a significant positive correlation between entrepreneurial passion and improvisation behavior, with both harmonious and coercive passion influencing creativity, externality, and persistence. Improvisation behavior partially mediates the relationship between entrepreneurial passion and performance. Additionally, institutional support and cognitive flexibility were found to positively moderate the relationship between improvisation behavior and performance. Findings underscore the importance of entrepreneurial passion and improvisation in enhancing performance outcomes and offer practical insights for entrepreneurs and policymakers.



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1. Introduction

1.1 Background of Study

Entrepreneurship, crucial for economic development and individual success globally, involves identifying, evaluating, and exploiting opportunities to create value (Cai et al., 2021). It is pivotal for innovation, economic growth, and knowledge transfer (Zahra, Nielsen, & Bogner, 1999). China's rapid economic growth over the past three decades has fostered millions of entrepreneurs, contributing significantly to GDP and employment (Sun & Zuo, 2024). However, navigating China's complex institutional environment presents challenges, necessitating research on improvisational behavior among Chinese entrepreneurs (Caseiro & Coelho, 2018). Despite its potential, most startups face early failures due to resource constraints and unpredictable events (Marmer et al., 2011). The ability to improvise in response to such challenges is vital for business survival (Crossan, 1998). Understanding how entrepreneurs apply improvisation strategies to make rapid decisions amid uncertainties is crucial (Hmieleski, 2009). Entrepreneurial passion, exemplified by founders like Li Bin from NIO, fuels business creation and growth (Sun & Zuo, 2024). However, unforeseen events like the COVID-19 pandemic test entrepreneurs' resilience and adaptability (Sun, 2023). Despite facing global challenges like rising trade protectionism, entrepreneurial passion remains pivotal for startup success (Sun & Zuo, 2023). Research should explore how entrepreneurs leverage their passion to navigate crises and sustain business operations (Stenholm & Renko, 2016). Startups often encounter institutional hurdles such as policy uncertainty, inadequate regulations, and intellectual property issues (Sun & Zuo, 2023). These challenges hinder strategic decision-making and innovation, impacting entrepreneurial performance (Bertello et al., 2022). Strengthening policy support and intellectual property protection is imperative to foster a conducive environment for startup growth (Sun & Zuo, 2022). Research on entrepreneurship in China must address the challenges and opportunities inherent in its institutional environment. Understanding the interplay between entrepreneurial passion, improvisation behavior, and institutional support is essential for fostering sustainable startup ecosystems.

1.2 Problem Statement

In a globalized context, unforeseeable events underscore the need for a deeper understanding of resilience to promote performance. Traditional research has often overlooked uncertainty and unpredictable conditions, relying on prediction-based strategies that may falter in turbulent markets (Alvarez & Parker, 2009). Entrepreneurial behavior in such contexts requires improvisation, as detailed plans become inadequate (Bundy et al., 2017). Effect logic theory offers a means-driven approach emphasizing affordable losses and adaptability to unexpected events (Sarasvathy, 2001). It suggests entrepreneurs focus on utilizing existing resources to navigate challenges (Perry, Chandler, & Markova, 2012). Entrepreneurial improvisation, increasingly recognized as pivotal, enables startups to adapt to adversity (Hmieleski & Corbett, 2008). Research interest in entrepreneurial improvisation has surged due to its efficacy in turbulent environments (Baker, Miner, & Eesley, 2003). Organizations realize formal planning may not guarantee success, prompting the need for adaptability (Grant, 2003). Improvisation allows organizations to respond spontaneously, learning and evolving as events unfold (Vera & Crossan, 2004). This adaptive approach is crucial for startups facing adversity and unexpected events (Best & Gooderham, 2015). Entrepreneurial improvisation, rooted in effect logic theory, offers a promising avenue for startups to navigate uncertainties effectively. Embracing adaptability and spontaneity enables entrepreneurs to respond to challenges dynamically, enhancing business performance in turbulent environments.

1.3 Research Questions and Objectives

This dissertation aims to address specific inquiries regarding entrepreneurial passion and improvisation behavior:

- (1) What mechanism underlies the impact of entrepreneurial passion on entrepreneurial performance?
- (2) How does entrepreneurial passion influence the improvisation behavior of entrepreneurs?
- (3) What role does entrepreneurs' improvisation behavior play in entrepreneurial performance?
- (4) How does improvisation behavior mediate the relationship between entrepreneurial passion and performance?
- (5) What impact does institutional support have on the link between improvisation behavior and performance?
- (6) How does cognitive flexibility influence the relationship between improvisation behavior and performance?

This study seeks to investigate the determinants of entrepreneurial performance, particularly the interplay between entrepreneurial passion and improvisation behavior. Previous research has highlighted the significant link between entrepreneurial passion and performance. However, considering the positive outcomes associated with entrepreneurial improvisation, this study focuses on startups in first-tier Chinese cities. Drawing on identity theory, effect logic theory, affective interpersonal commitment theory, and contingency theory, the study aims to explore the antecedents, outcomes, and boundary conditions of entrepreneurial improvisation behavior. The specific objectives include:

- (1) Confirming the association between entrepreneurial passion and performance.
- (2) Examining how entrepreneurial passion influences entrepreneurs' spontaneous behaviors.
- (3) Investigating the relationship between improvisation behavior and entrepreneurial performance.
- (4) Assessing the mediating role of improvisation behavior.
- (5) Analyzing the moderating impact of institutional support.
- (6) Exploring the moderating effect of cognitive flexibility.

1.4 Theoretical and Practical Significance

This study contributes theoretically by analyzing the influence of entrepreneurial passion on improvisation behavior, drawing from social cognitive theory and effect logic theory. It explores the cyclical interaction between emotional and cognitive factors and entrepreneurial behavior, emphasizing the impact of entrepreneurial passion on improvisation behavior (Font et al., 2016; Dooley and Schreckhise, 2016). Additionally, it clarifies the relationship between improvisation behavior and outcomes, bridging the gap between theoretical frameworks. By examining the mediating role of improvisation behavior between entrepreneurial passion and performance, it enhances understanding of the heterogeneity in this relationship. Moreover, by introducing moderating variables like institutional support and cognitive flexibility, it expands the theoretical boundaries of research on improvisation behavior. Practically, this study provides insights for entrepreneurs facing plan failures and uncertainty. It suggests embracing improvisation concepts like "the army will stop, the water will cover" to compensate for planning limitations and respond effectively to uncertainty (Moorman and Miner, 1998; Mine et al., 2001; Mai et al., 2015). Furthermore, it highlights the importance of aligning entrepreneurial passion with appropriate improvisation behaviors to enhance performance. While entrepreneurial passion drives business growth, entrepreneurs must also leverage improvised behaviors to navigate challenges effectively. Leveraging institutional support and cognitive flexibility can further enhance the impact of improvised behavior on entrepreneurial

performance, underscoring the importance of seeking and utilizing institutional support for entrepreneurial endeavors.

2. Literature Review

2.1 Entrepreneurial Passion

Entrepreneurial passion is defined as the driving force behind entrepreneurs' pursuit of their dreams and an indicator of their enthusiasm for business creation (Foo et al., 2009; Chen et al., 2009). Scholars, led by Cardon et al. (2009), conceptualized entrepreneurial passion as strong positive emotions directed towards entrepreneurial activities that are deeply meaningful to an individual's identity. This passion is characterized by a cyclical interaction between emotional and cognitive factors, driving entrepreneurs to overcome obstacles and persist in their endeavors (Font et al., 2016; Dooley and Schreckhise, 2016). Entrepreneurial passion is commonly defined from six perspectives: emotional, dual, motivational, personal trait, cognitive, and cognitive perspective of others (Chen et al., 2009; Vallerand et al., 2003; Cardon et al., 2009). The emotional perspective, particularly emphasized by Cardon and colleagues, highlights passion as intense positive emotions consciously directed towards meaningful entrepreneurial activities (Cardon et al., 2009). Meanwhile, the dual perspective, proposed by Vallerand et al. (2003), distinguishes between harmonious passion, stemming from autonomous internalization, and compulsive passion, arising from controlled internalization. From a motivational standpoint, entrepreneurial passion is seen as a powerful driver that surpasses other motivations such as achievement or independence (Muellere et al., 2017). Scholars also view passion as a stable individual trait over time, emphasizing the interaction between personal traits and entrepreneurial success (Baum and Locke, 2004). Additionally, entrepreneurial passion is perceived as a strong emotional state that influences cognitive and behavioral performance (Chen et al., 2009). Two primary methods categorize entrepreneurial passion dimensions: Vallerand et al. (2003) and Cardon et al. (2013). Vallerand et al. (2003) delineate harmonious passion, driven by autonomous internalization, and compulsive passion, arising from controlled internalization. Conversely, Cardon et al. (2013) define three dimensions: passion for invention, creation, and development. However, inconsistency exists among scholars regarding the application and measurement of these dimensions, hindering a comprehensive understanding of entrepreneurial passion (Stenholm and Renko, 2016).

2.2 Entrepreneurial Improvisation Behavior

Entrepreneurial improvisation behavior, a burgeoning topic in entrepreneurship research, originated from artistic realms before being adopted in management. Initially linked with jazz, improvisation transcended into various domains including healthcare, education, and disaster relief. Weick (1993) pioneered its integration into management, while Baker et al. (2003) extended it to entrepreneurship. Moorman and Miner (1998a, b) defined improvisation as "the fusion of conscious extraneous composition and execution of novel actions," emphasizing the amalgamation of planning and execution. This essence of improvisation, characterized by the shortening of the design-to-execution interval (Moorman and Miner, 1998a), resonates across diverse contexts, from organizational to personal levels. Entrepreneurial improvisation embodies deliberate, spontaneous, and novel actions by entrepreneurs (Hmieleski et al., 2013). Scholars delineate improvisation behavior into dimensions, primarily focusing on organizational levels. Moorman and Miner (1998a) highlight extemporaneity and creativity, while Vera and Crossan (2005) emphasize creativity and spontaneity. At the personal level, Hmieleski and Corbett (2006) outline creativity, extemporaneity, and persistence as key dimensions. Recent research further delves into exploratory and exploitative improvisation behaviors (Xiong et al., 2019). Improvisation behavior is influenced by various factors at individual, team, and organizational levels. Individual antecedents include network factors

(Hultman et al., 2019), entrepreneurial cognition (Charoensukmongkol, 2019), and regulatory focus (Hu et al., 2018). Outcome variables range from performance indicators to stress levels (Charoensukmongkol, 2019; Tabesh and Vera, 2020). Boundary conditions encompass environmental dynamism (Hmieleski, 2009), personal traits (Ribeiro et al., 2011), and situational intensity (De Clercq et al., 2020). At the team level, cognitive factors and shared knowledge influence improvisation (Leybourne and Sadler Smith, 2006), impacting performance and project outcomes (Lee et al., 2017). While some scholars advocate for the positive impact of improvisation on innovation and performance (Hmieleski and Corbett, 2008), others caution about its potential negative effects (Bergh and Lim, 2008). The relationship between improvisation behavior and entrepreneurial performance is heterogeneous, with studies suggesting an inverted U-shaped relationship (Xie et al., 2016).

2.3 Entrepreneurial Performance

Entrepreneurial performance, a crucial concept in entrepreneurship research, encompasses task completion and goal achievement during the entrepreneurial process (Low & MacMillan, 1988). Goal theory emphasizes outcome attainment, while system resource theory focuses on resource acquisition (Low & MacMillan, 1988). At the personal level, it involves entrepreneurs' work behavior and outcomes, and at the organizational level, it pertains to input-output dynamics over time (Low & MacMillan, 1988). Scholars such as Armstrong (2000) and Chandler and Hanks (2007) have underscored the need for systematic analysis and identification of indicators to evaluate entrepreneurial performance comprehensively. Previous studies have highlighted various factors influencing entrepreneurial performance, including knowledge heterogeneity, entrepreneurial orientation, and team composition (Rodan & Gahmic, 2004; Zahra & Garvis, 2000; Wu et al., 2014; Hu et al., 2014; Li, 2016). Entrepreneurial performance is pivotal for the success and development of entrepreneurial ventures (Angela, 1998), contributing to economic growth, technological advancement, and employment opportunities globally (Coombes et al., 2011; Goodale et al., 2011). Scholars often employ entrepreneurial performance as a primary metric to gauge enterprise effectiveness (Kang & Hu, 2017). Recent research by Sudejin and Du (2022) explores the relationship between entrepreneurial orientation, improvisation ability, and international entrepreneurial performance, revealing the significant contributions of entrepreneurial orientation dimensions and the mediating role of improvisation ability. Understanding and enhancing entrepreneurial performance are crucial for fostering entrepreneurial success and organizational effectiveness.

2.4 Cognitive Flexibility

Cognitive flexibility, vital in cognitive psychology and strategic management, has garnered attention in entrepreneurship research, particularly since Comegys' seminal work (Comegys, 1976). It denotes managers' capacity to engage in various cognitive activities, emphasizing reflection on diverse perspectives and incorporating them into decision-making (Laureiro Martínez & Brusoni, 2018). Spiro and Jeng (1990) define it as the ability to construct reactive knowledge, crucial in dynamic situations. Cognitive flexibility correlates positively with positive psychological traits and cognitive skills (Çelikkaleli, 2014; Jain, 2016), making it essential for entrepreneurship (Anson, 2017). Research also links it to metacognitive adaptability, crucial in uncertain environments (Michael & Dean, 2009). Hodgkinson and Healey (2011) suggest that cognitive flexibility enables individuals to identify problem elements and adopt reflective perspectives, facilitating adaptive decision-making. Studies have noted its significance in cross-cultural contexts (Shaffer et al., 2012) and creativity (Bledow et al., 2013). Although research on cognitive flexibility and entrepreneurship remains limited, scholars propose its crucial role in navigating diverse knowledge domains and exploring entrepreneurial opportunities (Marxt et al., 2018).

2.5 Institutional Support

Institutional support, crucial in enterprise innovation, encompasses both internal resources and external institutional environments (Tang et al., 2008; Ge et al., 2017). Emerging economies face institutional gaps hindering strategic orientations, especially in markets with immature intermediaries and legal systems (Bruton et al., 2008; Yamakawa et al., 2008). Governments offer support to mitigate these constraints, shaping entrepreneurial behavior and strategic choices (Peng et al., 2009). This support includes financial incentives, legitimacy recognition, policy guidance, and knowledge dissemination (Li & Atuahene Gima, 2001; Peng & Luo, 2000). Formal support involves direct government measures like subsidies and intellectual property rights, while informal support relies on political connections (Xin et al., 1996; Adomako et al., 2018). Scholars emphasize the intertwined nature of regulatory, normative, and cultural cognitive elements in institutional frameworks (Hirsch, 1997; Hoffman, 1999; Scott, 2014). Institutional support is gauged through various scales measuring government policies, technical assistance, and financial aid (Li & Atuahene, 2001a, b; Sun et al., 2018).

2.6 Theoretical Basis

Entrepreneurship is increasingly attracting scholarly attention, leading to the emergence of new theoretical frameworks to explain entrepreneurial behavior. One such framework is Effect Logic Theory, which posits two main types of decision-making logic: "causal" logic and "effect" logic. Causal logic emphasizes prediction and planning based on existing methods, while effect logic emphasizes adaptability, experimentation, and means-driven approaches (Sarasvathy, 2001). Effect logic is particularly relevant for entrepreneurs facing uncertain environments, where detailed plans may become ineffective (Alvarez and Parker, 2009). Instead, entrepreneurs improvise and leverage available resources to navigate challenges (Alvarez and Parker, 2009). Identity Theory, rooted in symbolic interactionism, posits that individuals' self-concepts are shaped by their interactions with society (Stryker, 1968). For entrepreneurs, entrepreneurial identity serves as a significant source of motivation, guiding their behavior and decision-making (Gruber and Mac Millan, 2017). Identity theory suggests that entrepreneurs are driven by the need to maintain identities associated with their roles, fostering passion for entrepreneurial activities (Cardon et al., 2009). Emotional Interpersonal Commitment Theory highlights the emotional intensity individuals experience in relationships tied to specific identities (Shafiq and Akram Rana, 2016). For entrepreneurs, maintaining relationships associated with their entrepreneurial identity is crucial for affirmation and support (Navis and Glynn, 2011). Emotional interpersonal commitment compels entrepreneurs to engage in activities related to their identity to sustain these relationships (Petriglieri, 2011). Contingency Theory emphasizes the importance of adapting organizational strategies to fit specific environmental circumstances (Lawrence and Lorsch, 1967). In entrepreneurship, where ventures face dynamic environments, contingency theory provides a framework for understanding how improvisational behaviors can drive success (Mai Yiyuan et al., 2016). Scholars have applied contingency theory to explore the complex relationships between entrepreneurial actions and organizational growth, considering external and internal factors (Balabanis and Katsikea, 2003). These theoretical perspectives offer valuable insights into the complexities of entrepreneurship, providing frameworks to understand the drivers of entrepreneurial behavior and organizational success.

2.7 Hypotheses and Conceptual Model

The research aims to analyze the relationship between entrepreneurial passion, improvisation behavior, institutional support, cognitive flexibility, and entrepreneurial performance. It hypothesizes how entrepreneurial passion influences behavior and performance. It also

explores the mediating effect of improvisation behavior and the moderating effects of institutional support and cognitive flexibility. Entrepreneurial passion, divided into harmonious and compulsive passion, is expected to positively affect entrepreneurial performance (Law et al., 2019). Additionally, it is proposed that entrepreneurial passion positively influences improvisation behavior, which in turn positively affects entrepreneurial performance. This mediation is suggested to occur through the dimensions of creativity, extemporaneity, and persistence in improvisation behavior (Sun & Zuo, 2023). Institutional support and cognitive flexibility are posited to moderate the relationship between improvisation behavior and entrepreneurial performance, with support and flexibility enhancing the positive effects of improvisation behavior on performance (Sun et al., 2024).

The hypotheses of this study are as follows:

H1: Entrepreneurial passion positively affects entrepreneurial performance.

H1a: Harmonious passion is positively correlated with entrepreneurial performance.

H1b: Compulsive passion is positively correlated with entrepreneurial performance.

H2: Entrepreneurial passion positively influences entrepreneurial improvisation behavior.

H2a: Harmonious passion is positively correlated with creativity.

H2b: Harmonious passion is positively correlated with extemporaneity.

H2c: Harmonious passion is positively correlated with persistence.

H2d: Compulsive passion is positively correlated with creativity.

H2e: Compulsive passion is positively correlated with extemporaneity.

H2f: Compulsive passion is positively correlated with persistence.

H3: Improvisation behavior of entrepreneurs positively affects entrepreneurial performance.

H3a: Creativity is positively correlated with entrepreneurial performance.

H3b: Extemporaneity is positively correlated with entrepreneurial performance.

H3c: Persistence is positively correlated with entrepreneurial performance.

H4: Improvisation behavior of entrepreneurs plays a mediating role between entrepreneurial passion and entrepreneurial performance.

H4a: Creativity plays a mediating role between harmonious passion and entrepreneurial performance.

H4b: Creativity plays a mediating role between compulsive passion and entrepreneurial performance.

H4c: Extemporaneity plays a mediating role between harmonious passion and entrepreneurial performance.

H4d: Extemporaneity plays a mediating role between compulsive passion and entrepreneurial performance.

H4e: Persistence plays a mediating role between harmonious passion and entrepreneurial performance.

H4f: Persistence plays a mediating role between compulsive passion and entrepreneurial performance.

H5: Institutional support has a positive moderating effect on the relationship between entrepreneurial improvisation behavior and entrepreneurial performance.

H5a: Institutional support has a positive moderating effect on the relationship between creativity and entrepreneurial performance.

H5b: Institutional support has a positive moderating effect on the relationship between extemporaneity and entrepreneurial performance.

H5c: Institutional support has a positive moderating effect on the relationship between persistence and entrepreneurial performance.

H6: Cognitive flexibility has a positive moderating effect on the relationship between entrepreneurial improvisation behavior and entrepreneurial performance.

H6a: Cognitive flexibility has a positive moderating effect on the relationship between creativity and entrepreneurial performance.

H6b: Cognitive flexibility has a positive moderating effect on the relationship between extemporaneity and entrepreneurial performance.

H6c: Cognitive flexibility has a positive moderating effect on the relationship between persistence and entrepreneurial performance.

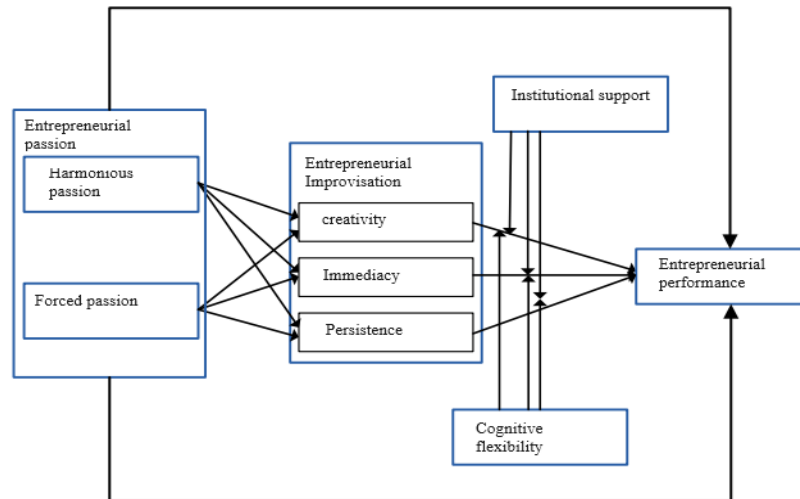


Figure 2-1 Conceptual Model

The theoretical framework integrates elements from effect logic theory, identity theory, emotional interpersonal commitment theory, and contingency theory. The model depicts how these theories intersect to explain the relationships among variables. New startups serve as the focal point of the study, with the model aiming to elucidate the factors influencing entrepreneurial improvisation behavior and its impact on performance. The conceptual model illustrates the interplay between entrepreneurial passion, improvisation behavior, institutional support, cognitive flexibility, and entrepreneurial performance, providing a visual representation of the proposed relationships (Sun et al., 2024).

3. Methodology

3.1 Research Method

The methodology section adopts a mixed research method integrating qualitative and quantitative approaches to enhance the understanding of entrepreneurial passion, improvisation behavior, and performance. Qualitative methods include literature analysis and case studies, drawing on 165 academic articles and employing a multi-case study design (Bartlett & Vavrus, 2017; Crowe et al., 2011). Quantitative research, conducted via a survey questionnaire among 456 new startups in four Chinese cities, utilizes SPSS 26.0 and AMOS 26.0 for structural equation modeling (Harrison et al., 2017). The process involves questionnaire design, data collection, variable measurement, bias estimation, and analytical techniques application, ensuring rigorous empirical testing of theoretical hypotheses (Yin, 2014).

3.2 Questionnaire Design

The questionnaire design process prioritizes simplicity, comprehensibility, and logic while avoiding repetition, utilizing a 5-point Likert scale for semantic differentiation (Baxter & Jack, 2008). Closed-ended questions are chosen to minimize respondent misunderstanding, facilitate comparison across respondents or groups, and reduce respondent fatigue (Yin, 2014).

The questionnaire layout emphasizes professionalism and aesthetics, with sections covering company information, respondent characteristics, and key variables: entrepreneurial passion, improvisation behavior, performance, institutional support, and cognitive flexibility, all rated on a 5-point Likert scale (Sun & Zuo, 2024). Scales for core variables are sourced from reputable dissertations, ensuring conceptual validity and reliability (Baxter & Jack, 2008). Pre-testing involved exploratory interviews, academic reviews, and a pilot study with entrepreneurs, yielding modifications for improved clarity and effectiveness (Crowe et al., 2011). Confirmatory research targets entrepreneurs from new startups in first-tier Chinese cities, aiming to ensure data reliability and analysis credibility through sample verification and quality improvement (Baxter & Jack, 2008; Crowe et al., 2011).

3.3 Data Collection and Sample Characteristics

Data collection for this study focused on entrepreneurs involved in establishing new businesses in first-tier cities in China. The criteria for selecting sample enterprises included factors such as city location, age of the company, and size of the company (Law et al., 2019; Sun & Zuo, 2022). Sample enterprises were chosen from Beijing, Shanghai, Guangzhou, and Shenzhen, with the age limit set to companies established within 10 years to capture different stages of development (Cardon & Kirk, 2015). Furthermore, only companies with fewer than 250 employees were included, aiming to focus on small enterprises facing resource scarcity and environmental turbulence (Taylor & Banks, 1992; Morse, Fowler, & Lawrence, 2007). Private companies controlled by their founders were chosen to ensure freedom in decision-making (Kiss & Barr, 2015). Data collection involved a multi-step process, including preliminary surveys, formal surveys, and verification through multiple samples within companies (Sun & Zuo, 2024). The author, who participated in technology innovation training, leveraged connections in the entrepreneurial community to identify potential respondents (Sun & Zuo, 2022). A large-scale formal survey was then conducted, sending questionnaires to 250 founders, with a focus on minimizing individual cognitive biases (Sun & Zuo, 2023). Ultimately, 456 valid questionnaires were collected, representing an effective response rate of 91.2% (Sun & Zuo, 2024). The sample characteristics highlight the distribution of enterprises based on age, city location, scale, industry, respondent's age, gender, and educational background (Sun & Zuo, 2023). The study employed control variables such as enterprise age, size, industry, gender, entrepreneurial experience, and educational background to mitigate potential biases (Short et al., 2010). Statistical tests confirmed the absence of non-response bias and common method bias, ensuring the validity of the collected data (Boso, Story, & Cadogan, 2013; Cote & Buckley, 1987). Variable measurement involved assessing entrepreneurial passion, improvisation behavior, performance, institutional support, and cognitive flexibility using Likert scale-based questionnaires (Sun & Zuo, 2023). The items for each dimension were sourced from established scales in the literature, ensuring reliability and validity (Hmieleski & Corbett, 2006; Vallerand et al., 2003). Additionally, the study considered both financial and non-financial indicators to measure entrepreneurial performance, reflecting investment return rate, market share, sales growth rate, and employee growth rate (Antonicic & Hisrich, 2001; Dong Baobao et al., 2021). Overall, the research methodology employed rigorous sampling techniques, robust data collection procedures, and validated measurement scales to investigate the relationship between various factors and entrepreneurial outcomes.

3.5 Analysis Methods

Measurement in quantitative research hinges on validity and reliability, which are crucial for establishing credibility. Validity ensures that variables measure what they're supposed to, while reliability ensures consistency. Using AMOS 26.0 and maximum likelihood estimation, this study conducted confirmatory factor analysis (CFA) to assess reliability and validity.

Reliability was evaluated using Cronbach's alpha and comprehensive reliability, with Cronbach's alpha values ranging from 0.715 to 0.898, indicating high scale reliability. Convergence validity was assessed through mean variance extraction (AVE), factor loadings, and t-values. Discriminant validity was established by ensuring that correlations between constructs were less than the square root of their AVE. Results confirmed discriminant validity for all measures. CFA, a crucial statistical technique in social science research, tests how well measured variables represent a theoretical structure. This study employed CFA to assess unidimensionality/consistency of constructs. CFA helped establish reliability through comprehensive reliability (CR) and AVE, and also confirmed convergent and discriminant validity of scales. Using the maximum likelihood method, the study ensured a robust analysis. Fit indices including χ^2 , RMSEA, CFI, and others were assessed to evaluate overall model fit. The study hypothesized that entrepreneurial improvisation behavior mediates the relationship between entrepreneurial passion and performance. Testing this involved a stepwise regression method. Significant regression coefficients indicated the presence of main effects and mediating effects. Three conditions were met to establish a mediating effect, distinguishing between complete and partial mediation. The moderating framework proposed by Baron and Kenny was utilized to test hypotheses concerning the influence of moderating variables on the relationship between independent and outcome variables. Multiple regression analysis was employed to assess interaction effects. The moderating variable's impact on the association between predictor and outcome variables was scrutinized, with the interaction term representing the moderating effect. Overall, the study employed rigorous statistical techniques to analyze reliability, validity, mediating, and moderating effects, ensuring robust findings in understanding the relationships between variables.

4. Results and Discussion

4.1 Descriptive Statistics and Correlation Analysis

Descriptive statistics and correlation analysis were conducted to assess the relationships between independent and dependent variables, a prerequisite for hierarchical regression analysis. Descriptive statistics, including mean and standard deviation, were examined to ensure the data's normality and range. The correlation matrix presented in Table 4-1 illustrates the relationships among the variables.

Table 4-1 Descriptive Statistics and Correlation Matrix

	AV	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Age	7.20	1.125	1													
Scale	15.82	3.88	.637**	1												
Inds	1.25	.435	-.007	-.021	1											
Gend	1.58	.494	.012	.016	.102*	1										
EE	1.59	.492	.073	.165**	-.034	-.073	1									
EdB	2.02	.773	.022	.099*	-.069	.053	.076	1								
HP	3.2353	1.01020	-.019	-.089	-.002	.021	-.077	.079	1							
FP	3.2208	1.00505	-.033	-.064	.003	.026	-.010	.090	.166**	1						
Creat	2.7963	1.08909	-.038	-.063	.048	.054	-.064	.026	.392**	.064**	1					
Ext	3.247	1.0635	-.075	-.100*	.015	.013	-.108*	.084	.257**	.220**	.195**	1				
Persist	3.5905	1.03479	-.115*	-.143**	-.023	-.051	-.051	.083	.434**	.420**	.405**	.439**	1			
EP	3.353	1.0266	.019	.071	.028	.018	-.093*	.055	.337**	.131**	.240**	.208**	.430**	1		
CF	3.57675	.898871	-.008	-.036	-.033	.014	-.056	-.016	.414**	.359**	.405**	.436**	.236**	.356**	1	
IS	3.6234	.94433	-.057	-.102*	-.008	.067	-.042	.013	.368**	.356**	.405**	.400**	.195**	.367**	.171**	1

The analysis revealed that all variables exhibited normal distributions, with mean values and standard deviations within acceptable ranges. Regarding correlations, significant associations were observed between several variables, providing initial support for the study's hypotheses and indicating the potential for exploring complex relationships further. For instance, the correlation coefficients highlighted significant associations between variables such as

enterprise scale and entrepreneurial experiences ($r = 0.165, p < 0.01$), indicating a positive relationship. Similarly, entrepreneurial performance exhibited significant correlations with various factors, including age of the enterprise ($r = 0.071, p < 0.05$) and cognitive flexibility ($r = 0.131, p < 0.01$), suggesting potential influences on performance outcomes. Furthermore, the correlation analysis revealed significant relationships between passion types (harmonious and forced) and entrepreneurial performance. Harmonious passion demonstrated a positive correlation with performance ($r = 0.337, p < 0.01$), while forced passion exhibited a weaker positive correlation ($r = 0.240, p < 0.01$). This suggests that individuals with a stronger sense of harmonious passion may achieve higher entrepreneurial performance. Additionally, institutional support displayed significant correlations with entrepreneurial performance ($r = 0.171, p < 0.01$) and other variables, indicating its potential role in facilitating entrepreneurial success. Overall, the correlation analysis provided valuable insights into the interplay between various factors influencing entrepreneurial outcomes. In conclusion, the findings from the descriptive statistics and correlation analysis underscore the importance of considering multiple factors in understanding entrepreneurial performance. These results lay the groundwork for further exploration through hierarchical regression modeling, facilitating a deeper understanding of the complex relationships among variables.

4.2 The Relationship Between Entrepreneurial Passion and Entrepreneurial Performance

Empirical analysis investigated the association between entrepreneurial passion and performance. Initially, control variables affecting performance were tested (Model 1). Subsequently, the impact of control variables and entrepreneurial passion (harmonious and compulsive) on performance was assessed (Model 2).

Table 4-2 Regression Analysis of Entrepreneurial Passion and Performance

Variable	Entrepreneurial Performance M 1	Collinearity VIF	Entrepreneurial Performance M 2	Collinearity VIF
Enterprise Age	.044	1.690	.011	1.701
Enterprise Scale	-.091	1.742	-.007	1.762
Industry	.027	1.017	.026	1.017
Gender	.006	1.020	-.007	1.021
Entrepreneurial Experience	-.085	1.040	-.057*	1.057
Educational Background	.071	1.025	-.004	1.035
Harmonious Passion			.401***	4.098
Forced Passion			.384***	4.061
R ²	.018		.582	
Adjustment R ²	.005		.574	
F	1.399		77.645***	

In Model 1, control variables such as enterprise age, size, industry, gender, entrepreneurial experience, and education level did not significantly affect performance. Model 2 integrated harmonious and compulsive passion, revealing significant relationships with performance. Harmonious passion positively influenced performance ($\beta = 0.401, p < 0.001$), supporting H1a. Similarly, compulsive passion had a positive impact ($\beta = 0.384, p < 0.001$), affirming H1b. Literature review revealed inconsistent conclusions regarding the passion-performance relationship. While some scholars suggest a positive correlation, others propose negative or nonlinear associations. This study, drawing on identity and affective interpersonal commitment theories, confirms that both harmonious and compulsive passion enhance performance. Harmonious passion positively impacts performance by fostering intense positive feelings during meaningful entrepreneurial activities. Entrepreneurs, driven by self-identity reinforcement, exhibit behaviors aligning with their role expectations, thus enhancing performance.

Compulsive passion, rooted in internal or interpersonal pressures, also positively influences performance. Driven by a sense of obligation, entrepreneurs invest more energy into activities, driven by self-affirmation or social acceptance, thereby improving performance. In conclusion, this study offers a nuanced understanding of how entrepreneurial passion drives performance, underscoring the significance of managing passion effectively for entrepreneurial success.

4.3 The Relationship Between Entrepreneurial Passion and Improvisation Behavior of Entrepreneurs

Empirical analysis explored the impact of entrepreneurial passion on the creative dimension of improvisation behavior. Initially, control variables were tested (Model 1). Subsequently, the impact of these variables and entrepreneurial passion on creativity was assessed (Model 2). Multicollinearity issues were mitigated by centering variables around the mean and calculating variance inflation factors (VIF). Model 1 revealed no significant impact of control variables on creativity. Model 2 indicated a positive and significant relationship between harmonious passion and creativity ($\beta=0.523$, $p<0.001$), supporting H2a. Additionally, compulsive passion positively influenced creativity ($\beta=0.315$, $p<0.001$), affirming H2b.

Table 4-3 Regression Analysis of Entrepreneurial Passion and Creativity

Variable	Creativity Model 1	Collinearity Vif	Creativity Model 2	Collinearity Vif
Enterprise Age	.003	1.690	-.037	1.701
Enterprise Scale	-.059	1.742	.035	1.762
Industry	.043	1.017	.042	1.017
Gender	.045	1.020	.032	1.021
Entrepreneurial Experience	-.053	1.040	-.017	1.057
Educational Background	.036	1.025	-.044	1.035
Harmonious Passion			.523***	4.098
			.315***	4.061
R ²	.012		.658	
Adjustment R ²	-.001		.652	
F-Value	.947		107.618***	

Similar procedures were followed to examine the relationship between entrepreneurial passion and the externality dimension of improvisation behavior. Control variables were first tested (Model 1), followed by assessment of their impact along with entrepreneurial passion on externality (Model 2). No significant impact of control variables on externality was observed in Model 1. Model 2 demonstrated a positive and significant relationship between harmonious passion and externality ($\beta=0.519$, $p<0.001$), supporting H2c. Compulsive passion also positively influenced externality ($\beta=0.267$, $p<0.001$), affirming H2d.

Table 4-4 Regression Analysis of Entrepreneurial Passion and Externality Relationship

Variable	Extemporaneity Model 1	Collinearity Vif	Extemporaneity Model 2	Collinearity Vif
Enterprise Age	-.018	1.690	-.056	1.701
Enterprise Scale	-.082	1.742	.008	1.762
Industry	.017	1.017	.016	1.017
Gender	.001	1.020	-.012	1.021
Entrepreneurial Experience	-.100	1.040	-.064**	1.057
Educational Background	.101	1.025	.026	1.035
Harmonious Passion			.519***	4.098
			.267***	4.061
R ²	.029		.590	
Adjustment R ²	.016		.598	
F-Value	2.134**		83.012***	

Similarly, the relationship between entrepreneurial passion and the persistence dimension of improvisation behavior was examined. Control variables were first tested (Model 1), followed by assessment of their impact along with entrepreneurial passion on persistence (Model 2). No significant impact of control variables on persistence was observed in Model 1. Model 2 indicated a positive and significant relationship between harmonious passion and persistence ($\beta=0.269$, $p<0.05$), supporting H2e. Additionally, compulsive passion positively influenced persistence ($\beta=0.177$, $p<0.05$), affirming H2f.

Table 4-5 Regression Analysis of Entrepreneurial Passion and Persistence

Variable	Persistence Model 1	Collinearity Vif	Persistence Model 2	Collinearity Vif
Enterprise Age	-.035	1.690	-.056	1.701
Enterprise Scale	-.123	1.742	-.074	1.762
Industry	-.014	1.017	-.015	1.017
Gender	-.055	1.020	-.062	1.021
Entrepreneurial Experience	-.040	1.040	-.022	1.057
Educational Background	.101	1.025	.059	1.035
Harmonious Passion			.269**	4.098
			.177**	4.061
R ²	.035		.218	
Adjustment R ²	.022		.204	
F-Value	2.740**		15.535***	

This study integrates identity theory, emotional interpersonal commitment theory, effect logic theory, and contingency theory to explore how entrepreneurial passion drives improvisation behavior. Harmonious passion, characterized by intrinsic motivation, positively influences creativity, externality, and persistence. Entrepreneurs driven by harmonious passion focus on the process rather than outcomes, adopt heuristic strategies, and persistently execute improvised strategies. Compulsive passion, driven by external pressures, also positively impacts creativity, externality, and persistence. Entrepreneurs with compulsive passion creatively navigate crises, actively respond to external expectations, and persist in achieving enterprise goals. Overall, entrepreneurial passion plays a crucial role in fostering improvisation behavior, thereby enhancing business development in dynamic environments. In conclusion, this study underscores the importance of entrepreneurial passion in facilitating spontaneous behavior among entrepreneurs. While improvisation behavior offers a viable strategy for business growth, the presence of entrepreneurial passion is essential for breaking conventional norms, adopting external governance, and persistently driving enterprise growth.

4.4 The Relationship Between Improvisation Behavior of Entrepreneurs and Entrepreneurial Performance

Empirical analysis investigated the influence of entrepreneurial improvisation behavior on entrepreneurial performance. Initially, control variables impacting entrepreneurial performance were assessed (Model 1). Subsequently, the effects of these variables and improvisation behavior (i.e., creativity, externality, and persistence) on entrepreneurial performance were examined (Model 2). To mitigate potential multicollinearity, all variables were centered around the mean, and variance inflation factors (VIF) were calculated. The highest VIF value was 2.087, below the recommended threshold of 10, indicating no significant multicollinearity issues.

Table 4-6 Regression Analysis on Entrepreneur Improvisation Behavior and Performance

Variable	Entrepreneurial Performance		Collinearity	
	Modle1	Vif	Modle2	Vif
Enterprise Age	.044	1.690	.052	1.692
Enterprise Scale	-.091	1.742	-.024	1.759
Industry	.027	1.017	.003	1.020
Gender	.006	1.020	-.010	1.030
Entrepreneurial Experience	-.085	1.040	-.023	1.051
Educational Background	.071	1.025	.010	1.043
Extemporaneity			.463***	2.009
Persistence			.345***	2.087
R ²	.135		.091**	1.303
Adjustment R ²	.793		.629	
F-Value	1.399		.622	
			84.138***	

Model 1 results showed no significant impact of control variables on entrepreneurial performance. In Model 2, creativity exhibited a significant positive impact on entrepreneurial performance ($\beta=0.463$, $p<0.001$), supporting H3a. Similarly, externality positively influenced entrepreneurial performance ($\beta=0.345$, $p<0.001$), affirming H3b. Persistence also had a significant positive impact on entrepreneurial performance ($\beta=0.091$, $p<0.05$), supporting H3c. In entrepreneurship research, improvisation's importance has garnered attention. However, existing studies present varied relationships between improvisation behavior and entrepreneurial performance, with some suggesting no clear association. Given this ambiguity, this study delves into the relationship, drawing on effect logic theory and contingency theory. Findings indicate that entrepreneurial improvisation behavior (creativity, externality, and persistence) effectively enhances entrepreneurial performance. Creativity positively impacts entrepreneurial performance. Startups often lack concrete plans, frequently undergoing strategic changes. Creativity serves as a heuristic, promoting performance improvement by adapting to changing circumstances and assembling resources efficiently. Externality positively influences entrepreneurial performance, especially under crisis conditions. Intuitive decision-making becomes crucial, as entrepreneurs respond externally to manage crises and ensure enterprise survival and performance improvement. In transitional economies like China, improvisation becomes vital, particularly in environments with limited resources and underdeveloped institutional structures. Persistence positively impacts entrepreneurial performance by guiding entrepreneurs through difficulties and supporting their efforts in achieving business goals. Persistence emphasizes resilience and adaptability, enabling entrepreneurs to persist in pursuing their objectives despite challenges. In summary, this study provides a comprehensive analysis of the relationship between entrepreneurial improvisation behavior and performance. Drawing on contingency theory, it underscores the importance of improvisation in navigating strategic changes and achieving entrepreneurial success in dynamic environments.

4.5 The Mediating Effect of Entrepreneurial Improvisation Behavior

This study conducted hierarchical regression analysis using SPSS (version 26.0, IBM) to examine the conceptual model and hypotheses. Given the prevalence of small sample sizes in entrepreneurial research, regression analysis was preferred over structural equation modeling to avoid issues with model fitting. The analysis followed the causal stepwise regression method recommended by Baron and Kenney (1986) to test the hypotheses. Firstly, the study tested the control variables' impact on entrepreneurial performance (Model 1). Secondly, it examined the influence of entrepreneurial passion on creativity (Model 2) and the subsequent impact of creativity on entrepreneurial performance (Model 3). Subsequently, the study added creativity

as a mediating variable and tested its impact on entrepreneurial performance (Models 4 and 5). The same procedure was followed for examining the mediating effects of externality and persistence. Multicollinearity issues were addressed by centering variables around the mean and calculating the variance inflation factor (VIF) for all regression models.

Table 4-7 Testing Creativity's Mediating Role

Variable	Entrepreneurial Performance		Creativity	Entrepreneurial Performance	
	Model 1	Model 2	Model 3	Model 4	Model 5
	.044	.011	-.037	.042	.025
Enterprise Age	-.091	-.007	.035	-.048	-.020
Enterprise Scale	.027	.026	.042	-.004	.010
Industry	.006	-.007	.032	-.027	-.018
Gender	-.085	-.057*	-.017	-.046	-.051
Entrepreneurial Experience	.071	-.004	-.044	.045	.012
Educational Background				.337***	.367***
Creativity		.401***	.523***		.209**
Harmonious Passion		.384***	.315***		.268***
R ²	.018	.582	.658	.554	.628
Adjustment R ²	.005	.574	.652	.547	.620
F	1.399	77.645***	107.618***	79.549***	83.507***

The results indicated significant relationships between variables. For instance, in Model 2, both harmonious passion and coercive passion significantly impacted entrepreneurial performance ($\beta=.401$, $p<0.001$; $\beta=.384$, $p<0.001$, respectively). Similarly, in Model 3, both types of passion significantly influenced creativity ($\beta=.523$, $p<0.001$; $\beta=.315$, $p<0.001$, respectively). These findings satisfied Baron and Kenny's conditions for mediating effects. Adding creativity as a mediator, the study found a significant positive impact on entrepreneurial performance ($\beta=.337$, $p<0.001$), meeting the conditions for mediation. Similar patterns were observed for the mediating effects of externality and persistence. The study confirmed the mediating roles of creativity, externality, and persistence between entrepreneurial passion and entrepreneurial performance. Creativity partially mediated the relationship between passion and performance, as did externality and persistence. These findings support the study's hypotheses regarding the mediating effects of entrepreneurial improvisation behavior. The findings underscore the importance of entrepreneurial improvisation behavior in translating entrepreneurial passion into performance. The study revealed that harmonious and coercive passion positively influence entrepreneurial performance, with creativity, externality, and persistence serving as mediators. Harmonious passion fosters a sense of control and flexibility, facilitating creative problem-solving and resource acquisition, thus enhancing performance. Coercive passion, driven by external commitments, sustains entrepreneurial efforts, particularly in resource-constrained environments, leading to improved performance. Similarly, externality, characterized by timely responses to crises and intuitive decision-making, mediates the relationship between passion and performance. Entrepreneurs leverage external opportunities and navigate uncertainties to capitalize on entrepreneurial passion, driving performance growth. Persistence, driven by emotional satisfaction and identity reinforcement, mediates the passion-performance link by sustaining entrepreneurial activities and enhancing survival abilities. In conclusion, entrepreneurial improvisation behavior, comprising creativity, externality, and persistence, plays a crucial mediating role in translating entrepreneurial passion into performance. Entrepreneurs should harness these behaviors to navigate challenges, seize opportunities, and ultimately enhance performance in the dynamic entrepreneurial landscape.

4.6 The Moderating Effect of Institutional Support

The empirical analysis investigated the moderating effect of institutional support on entrepreneurial performance. Firstly, the effects of control variables, creativity, externality, and persistence on entrepreneurial performance were examined individually. Then, institutional support was added as a moderating variable to test its relationship with entrepreneurial performance. Additionally, the interaction terms of institutional support with creativity, externality, and persistence were included to observe their potential impact on entrepreneurial performance.

Table 4-10 Moderating Effect of Institutional Support

Entrepreneurial Performance Variable	Model 1	Model 2	Model 3	Model 4
Enterprise Age	.044	.052	.052	.041
Enterprise Scale	-.091	-.024	-.022	.046
Industry	.027	.003	.004	.001
Gender	.006	-.010	-.011	.027
Entrepreneurial Experience	-.085	-.023	-.023	-.044
Educational Background	.071	.010	.011	.046
Creativity		.463***	.456***	.410***
Externalities		.345***	.338***	.368***
Persistence		.091**	.091**	.163***
Institutional Support			.353**	.123**
Creativity * Institutional Support				.333**
External * Institutional Support				.096*
Persistent * Institutional Support				.251***
R ²	.018	.629	.629	.558
Adjustment R ²	.005	.622	.621	.549
F	1.399	84.138***	75.562***	62.550***

The results showed that institutional support significantly influenced entrepreneurial performance ($\beta=.353$, $p<0.001$). Further analysis revealed that the interaction term of institutional support and creativity had a significant positive impact on entrepreneurial performance ($\beta=.333$, $p<0.01$), supporting the hypothesis that institutional support moderates the relationship between creativity and entrepreneurial performance (H5a). Similarly, the interaction terms of institutional support with externality ($\beta=.096$, $p<0.05$) and persistence ($\beta=.251$, $p<0.001$) also had significant positive effects on entrepreneurial performance, validating hypotheses H5b and H5c, respectively. In discussing these findings, it's evident that institutional support plays a crucial role in enhancing entrepreneurial performance. Specifically, institutional support provides tangible and intangible resources, such as funding and knowledge, which contribute to the success of startups. Moreover, it serves as a source of legitimacy, establishing broader boundaries for enterprise development through legislation and public policies. This legitimacy facilitates market acceptance of innovative products and services, thereby increasing resource acquisition and ultimately improving entrepreneurial performance. Furthermore, institutional support positively influences the relationship between entrepreneurial behavior (creativity, externality, and persistence) and performance. In transitional economies like China, where institutional environments may be uncertain, institutional support acts as a safety net for startups, reducing fear of failure and encouraging innovation. Additionally, institutional support helps mitigate the adverse effects of incomplete systems or policy uncertainties, enabling startups to adapt and respond effectively to regulatory challenges. Ultimately, institutional support fosters a conducive environment for entrepreneurial success by providing necessary resources and reducing institutional constraints. In conclusion, the study underscores the importance of institutional support in moderating the relationship between entrepreneurial behavior and performance. By providing resources, legitimacy, and regulatory assistance, institutional support empowers startups to

overcome challenges, innovate, and thrive in dynamic business environments, ultimately contributing to their success and performance.

4.7 The Regulatory Effect of Cognitive Flexibility

The empirical analysis investigated the regulatory effect of cognitive flexibility on entrepreneurial performance. Initially, the individual effects of control variables, creativity, externality, and persistence on entrepreneurial performance were examined. Subsequently, cognitive flexibility was introduced as a moderating variable to assess its relationship with entrepreneurial performance. Additionally, interaction terms between cognitive flexibility and creativity, externality, and persistence were included to evaluate their potential impact on entrepreneurial performance.

Table 4-11 Testing Cognitive Flexibility's Regulatory Effect

Entrepreneurial Performance Variable	Model 1	Model 2	Model 3	Model 4
Enterprise Age	.044	.052	.052	.045
Enterprise Scale	-.091	-.024	-.022	.041
Industry	.027	.003	.004	.013
Gender	.006	-.010	-.011	.036
Entrepreneurial Experience	-.085	-.023	-.023	.049
Educational Background	.071	.010	.011	.045
Creativity		.463***	.456***	.487***
Externalities		.345***	.338***	.360**
Persistence		.091**	.361***	.381***
Cognitive Flexibility			.030***	.163**
Creativity * Cognitive Flexibility				.124**
Cognitive Flexibility				.067
Persistence * Cognitive Flexibility				.126**
R ²	.018	.629	.631	.634
Adjustment R ²	.005	.622	.622	.623
F	1.399	84.138***	75.957***	58.824***

The results indicated that cognitive flexibility significantly influenced entrepreneurial performance ($\beta=.030$, $p<0.001$). Further analysis revealed a significant positive correlation between the interaction term of cognitive flexibility and creativity and entrepreneurial performance ($\beta=.124$, $p<0.01$), supporting the hypothesis that cognitive flexibility moderates the relationship between creativity and entrepreneurial performance (H6a). However, the interaction term of cognitive flexibility and externality did not have a significant positive impact on entrepreneurial performance ($\beta=.067$, $p>0.1$), leading to the rejection of hypothesis H6b. Conversely, the interaction term of cognitive flexibility and persistence showed a significant positive impact on entrepreneurial performance ($\beta=.126$, $p<0.01$), supporting hypothesis H6c. Cognitive flexibility plays a crucial role in influencing entrepreneurial behavior and performance. While it positively moderates the relationship between creativity and entrepreneurial performance, its impact on the relationship between externality and performance was not supported. However, cognitive flexibility was found to positively moderate the relationship between persistence and entrepreneurial performance. The research findings highlight the positive influence of cognitive flexibility on the relationship between creativity and entrepreneurial performance. Entrepreneurs often face the challenge of adapting their strategies to changing circumstances, and cognitive flexibility enables them to effectively navigate these challenges. Individuals with higher cognitive flexibility possess diverse cognitive reserves, allowing them to generate innovative solutions to complex problems. This ability facilitates entrepreneurial success by enabling entrepreneurs to balance exploratory and exploitative activities, ultimately enhancing performance.

However, the moderating effect of cognitive flexibility on the relationship between externality and entrepreneurial performance was not supported. While cognitive flexibility is beneficial for decision-making, it may also lead entrepreneurs to overlook risks associated with external factors. Highly cognitively flexible entrepreneurs may exhibit optimism bias and engage in heuristic thinking, which can hinder their ability to assess and respond to external challenges effectively. Consequently, the moderating effect of cognitive flexibility on the relationship between externality and performance was found to be ineffective. The research also demonstrates the positive influence of cognitive flexibility on the relationship between persistence and entrepreneurial performance. Strategic decisions made by entrepreneurs are influenced by their cognitive processes and beliefs. Cognitive flexibility enables entrepreneurs to adapt to changing environments and seize opportunities, enhancing their ability to achieve entrepreneurial goals. When faced with complex tasks or crises, cognitive flexibility helps entrepreneurs generate solutions quickly and maintain determination, ultimately improving the survival and performance of the enterprise. In conclusion, cognitive flexibility plays a significant role in shaping entrepreneurial behavior and performance. While it enhances the relationship between creativity and performance, its impact on the relationship between externality and performance is limited. However, cognitive flexibility positively moderates the relationship between persistence and performance, highlighting its importance in entrepreneurial success.

5. Conclusions

5.1 Summary

This dissertation synthesized various theoretical perspectives, including identity theory, effect logic theory, affective interpersonal commitment theory, and contingency theory, to construct a comprehensive model of the relationship between entrepreneurial passion, improvisation behavior, and entrepreneurial performance. Through empirical analysis involving 456 entrepreneurs from 250 New startups in China's first-tier cities, the study provided valuable insights into the mechanisms underlying entrepreneurial behaviors and their impact on performance. The results indicate a significant positive correlation between entrepreneurial passion and improvisation behavior, with both harmonious and coercive passion influencing creativity, externality, and persistence. Furthermore, all three dimensions of improvisation behavior were found to positively correlate with entrepreneurial performance. Hierarchical regression analysis revealed that improvisation behavior partially mediates the relationship between entrepreneurial passion and performance. Additionally, the study examined the moderating effects of institutional support and cognitive flexibility on the relationship between improvisation behavior and performance. Institutional support was found to positively moderate the relationship between creativity, externality, and persistence, and performance. Similarly, cognitive flexibility positively moderated the relationship between creativity and persistence, and performance. However, the moderating effect of cognitive flexibility on the relationship between externality and performance was not supported.

5.2 Practical Insights

In rapidly changing environments, entrepreneurial improvisation becomes crucial for New startups to navigate uncertainties and achieve success. Entrepreneurs must possess the ability to adapt to unforeseen circumstances and execute new plans effectively, as improvisation often becomes the only viable option when facing adversity. Harmonious and coercive passion play vital roles in entrepreneurship, driving entrepreneurs to persist despite challenges. Harmonious passion integrates entrepreneurial activities into one's self-concept, while coercive passion may arise from interpersonal commitments or obligations, both influencing entrepreneurial identity and behavior. Institutions serve as both constraints and incentives for

entrepreneurial endeavors. Institutional support can mitigate the adverse effects of institutional voids, fostering innovation and entrepreneurial success. However, policymakers must ensure that institutional support strikes a balance to prevent unintended consequences. Managers with high cognitive flexibility are better equipped to navigate strategic changes and capitalize on opportunities. Enhancing cognitive flexibility through interventions or organizational changes can facilitate adaptive decision-making and improve entrepreneurial performance.

5.3 Research Limitations and Future Directions

While this study contributes to theoretical and practical understanding of entrepreneurial behavior and performance, several limitations warrant consideration for future research:

- (1) Localization of Theories: Future studies should explore "localized" theories of entrepreneurial behavior to provide more robust theoretical frameworks for understanding entrepreneurship in specific cultural contexts.
- (2) Situational Factors: Consideration of local situational factors and development of culturally appropriate measurement scales can enhance the relevance and applicability of research findings in diverse settings.
- (3) Optimal Balance of Passion: Investigating the optimal balance between entrepreneurial passion and behavior is crucial to harnessing their positive effects while minimizing potential drawbacks.
- (4) Dynamic Relationships: Longitudinal studies and case tracking methods can elucidate the dynamic nature of entrepreneurial passion, behavior, and performance across different stages of venture development.

In conclusion, this study underscores the intricate interplay between entrepreneurial passion, improvisation behavior, and performance, offering valuable insights for entrepreneurs, policymakers, and scholars aiming to foster entrepreneurial success and innovation.

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