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Entrepreneurial orientation, entrepreneurial action learning, and entrepreneurial performance of SMEs in the post-pandamic era: The moderating role of dynamic capabilities

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ABSTRACT

This study aims to examine the relationship between the entrepreneurial orientation, entrepreneurial action learning, and entrepreneurial performance of small and medium-sized enterprises (SMEs) against the backdrop of the post-pandemic era while also exploring the moderating role of dynamic capability. Data from 629 SMEs in Sichuan Province was collected, and a partial least squares structural equation model (PLS-SEM) was employed for data analysis. The results indicate that entrepreneurial orientation has a positive relationship between entrepreneurial action learning, entrepreneurial action learning, and entrepreneurial performance. Entrepreneurial action learning mediates the relationship between entrepreneurial orientation and entrepreneurial performance. The moderation analysis further indicated that dynamic capability is a moderating variable in the relationship between entrepreneurial orientation and entrepreneurial performance and between entrepreneurial action learning and entrepreneurial performance. The practical contribution of this study lies in its provision of specific directions and recommendations for enhancing the entrepreneurial performance of SMEs.

Contribution/Originality: The findings of this study add to the body of theoretical research in this field by thoroughly examining the role of entrepreneurial action learning and the moderating effect of dynamic capability. The report also shows how SMEs grow to increase market value and profitability, which is crucial.

1. INTRODUCTION

The COVID-19 pandemic has significantly impacted the normal functioning of the world economy, causing enduring adverse effects globally (Hu, Chen, & Fu, 2022). Its influence on the global economic and social landscapes has become increasingly prominent (Zhao, Wen, Zou, Wang, & Chang, 2023). As the global pandemic gradually subsides, we enter the post-pandemic era, a period that not only presents unprecedented challenges to countries worldwide but also harbors new opportunities, particularly in the economic realm. During the process of economic recovery, businesses and industrial chains globally are adjusting, injecting new vitality into the economies of various regions. Against this backdrop, economic recovery has become a focal point of scholarly attention, especially in China. The recovery of the Chinese economy not only signifies steady growth for the nation itself but also had profound impacts on the global industrial chain and trade system. As one of the world's primary production and consumption markets, China's demand is driving the global market's recovery, exerting a significant influence on the global economy. In this process, SMEs are considered crucial drivers of the economy, contributing significantly

to most industries and nations (Li, Liu, Belitski, Ghobadian, & O'Regan, 2016). The vital role of SMEs is described in numerous studies (Avelar, Borges-Tiago, Almeida, & Tiago, 2024; Rashid, Abdullah, Khatib, Khan, & Akhter, 2024), which refer to SMEs as the "pillar" of many economies (Wymenga, Spanikova, Barker, Konings, & Canton, 2012) and the engine of economic growth (Tumaku & Agbeko, 2024). However, SMEs in developing countries face multiple constraints, including technological backwardness, inadequate skill levels in human resources, insufficient management systems, and the lack of entrepreneurial capabilities (HMA Herath & Mahmood, 2014). As a result, the performance of SMEs in most developing countries is generally at a low level. Given the significant role of SMEs (Gao, 2024; Zhang & Wang, 2023) especially in the economic growth of many Asian countries (Wu, Yan, & Umair, 2023) against the backdrop of the COVID-19 pandemic, the development issues of SMEs have become a focal point for many researchers. SMEs face unprecedented challenges in maintaining competitiveness and achieving sustainable growth. Therefore, to gain a deeper understanding of the dynamics of China's economic recovery in the post-pandemic era, this paper aims to investigate the relationship between entrepreneurial orientation (EO), entrepreneurial action learning (EAL), and entrepreneurial performance (EP). Additionally, it seeks to evaluate the moderating role of dynamic capability (DC) in further enhancing this relationship.

Since 2015, "Mass Entrepreneurship and Innovation" has become a national strategy in China and will be the new engine for economic development in the country for a long time to come (Fang, 2018). Entrepreneurship has become a crucial factor in promoting the development of SMEs. Therefore, the study of the EP of SMEs has been a focal point for many researchers, with EP being used as the dependent variable in various studies (Raharjo, Ausat, Risdwiyanto, Gadzali, & Azzaakiyyah, 2023; Yap, Keling, & Ho, 2023; and Yi, Meng, Linghu, & Zhang, 2023). To measure the entrepreneurial model of SMEs, previous literature has explained the relationship with EP through internal and external variables (Arshad, Sulaiman, & Yusr, 2024; Wijaya & Said, 2024). The strategic entrepreneurship theory suggests that entrepreneurial enterprises need to strengthen EO, focusing on the development of new products and the design of new business models with certain risks. It emphasizes actively analyzing and predicting the international business environment and uncovering potential business opportunities (Acosta, Crespo, & Agudo, 2018; Zhang, Ma, Wang, Li, & Huo, 2016). The organizational learning theory emphasizes knowledge acquisition, transformation, and application within the organization to achieve adaptability and innovation. It views the organization as a learning system that adapts to a changing environment through continuous experience accumulation and knowledge updates (Argyris & Schön, 1997). Entrepreneurship itself is considered a learning process (Fang, 2018). Zahra and George (2002) defined EAL as the learning that occurs in the entrepreneurial process through summarizing entrepreneurial experiences, utilizing external resources, and recruiting new employees into the entrepreneurial ranks (Zahra & George, 2017).

Research indicates that EO is crucial for the long-term survival and higher performance levels of enterprises (Herath & Mahmood, 2012). It represents the process of elevating entrepreneurial spirit to the organizational level. Effective learning behavior is considered the best tool for enterprises to respond to environmental changes and shape sustainable competitive advantages (Fang, 2018). To enhance the practical value of the situation, some scholars have explored variables such as network relationship intensity (Acosta et al., 2018), external environmental stability (Bhatti et al., 2023), executive characteristics (Yunusa, Abubakar, & Umar, 2023), knowledge endowment (Martin & Javalgi, 2019), and other variables as moderating effects on the relationship between EP and its antecedents. EO and EAL, as strategies for SMEs to adapt to changes in the post-pandemic era, have significant practical value. However, relying solely on these two factors may not be flexible enough when facing a constantly changing business environment. To enhance the situational application value of this study, the researchers introduced dynamic capability (DC) (Teece, Pisano, & Shuen, 1997) as a moderating variable. DC is considered in this study to strengthen the application effects of EO and EAL in the post-epidemic era. DC empowers enterprises with greater adaptability, allowing them to flexibly adjust strategies, integrate resources, and better adapt to external changes.

Building on the existing research, this study raises the following questions:

Research Question 1: What is the relationship between entrepreneurial orientation, entrepreneurial action learning, and entrepreneurial performance?

Research Question 2: Does dynamic capability moderate the relationship between entrepreneurial orientation and entrepreneurial performance?

Research Question 3: Does dynamic capability moderate the relationship between entrepreneurial action learning and entrepreneurial performance?

To answer the questions above, the focus of this research is on Sichuan province, China. Sichuan province, with its diverse economy and abundant resources, presents unique entrepreneurial environments and development opportunities for SMEs. The economic diversity, regional disparities, and adjustments in local policies provide rich material for SME entrepreneurship. By delving into the entrepreneurial background of SMEs in Sichuan province, this study seeks to reveal the impact of EO, EAL, and DC on EP in the context of economic recovery. This provides a profound understanding of the uniqueness of SMEs in Sichuan province and also contributes to understanding how SMEs can better adapt to change and achieve sustainable development in the post-pandemic era. This study fills a gap in the literature concerning the entrepreneurial performance of SMEs under specific temporal and regional conditions, considering antecedents and moderating effects.

2. LITERATURE REVIEW AND HYPOTHESES

The strategic entrepreneurship theory emphasizes that when facing uncertainty and competitive pressures, enterprises can gain a competitive advantage by seeking and exploiting new opportunities through innovative strategies (Hill, Jones, & Schilling, 2014). This theory posits that entrepreneurship is a crucial factor for organizational survival and development, with EO being the core concept representing a company's sensitivity and proactiveness toward entrepreneurial opportunities. Argyris and Schön (1997) introduced the concept of "double-loop learning," which emphasizes adjusting organizational assumptions and strategies while solving problems. In the entrepreneurial context, EAL involves the continuous adjustment of strategies and behaviors through actions and feedback. The viewpoint of DC deviates from traditional perspectives that emphasize the importance of acquiring or possessing resources sufficient to generate sustainable competitive advantages in the current business environment (Robb, Kim, & Lee, 2020). To cope with rapid market changes, the DC perspective provides an effective method (Teece, 2007). The core assumption of DC is that a company's performance is a byproduct of the reconfiguration, utilization, or integration of internal and external resources and capabilities (Wiklund & Shepherd, 2005). For SMEs, enhancing resource impact capabilities provides them with an opportunity for success in competitive markets. Advocating for an entrepreneurial approach is proposed to gain a deeper understanding of how companies apply and utilize their tangible and intangible resources in the strategic formulation process (Miller, 1983).

From the perspective of corporate strategic development, researching the orientation of organizational, entrepreneurial behavior has become crucial (Wiklund & Shepherd, 2005). EO refers to a process of formulating strategies, providing the foundation for SMEs to make entrepreneurial decisions and take action (Lumpkin & Dess, 1996). EO emphasizes the process of strategy formulation, laying the groundwork for entrepreneurial decision making and actions. Through EO, enterprises can formulate strategies when facing challenges to mitigate potential unfavorable outcomes due to the inefficient use of resources. However, formulating a strategy is only the beginning; true success lies in how well a company learns and adapts during the execution of that strategy. From the perspective of DC, companies use these capabilities to flexibly reconfigure, leverage, and integrate internal and external resources to exploit market opportunities. This underscores the need for companies to have the ability to learn continually in the face of a changing environment, enabling them to adjust to emerging market dynamics and challenges more effectively.

To improve the EP of SMEs, various capabilities need to be applied for success. Therefore, to investigate the enhancement of SMEs' EP in the post-pandemic era, this study integrates strategic entrepreneurship theory and organizational learning theory. From the perspective of DC, it assesses the interactions among EO, EAL, and EP in SMEs in Sichuan province, China. Companies use EO to determine strategic directions and execute strategies effectively through DC, and EAL provides a mechanism for continuous learning and adaptation during the execution process. This overall framework offers a more comprehensive and profound perspective for understanding the behaviors and decisions of enterprises in the entrepreneurial process. Drawing from the theoretical viewpoints mentioned earlier, this study presents the research model illustrated in Figure 1.

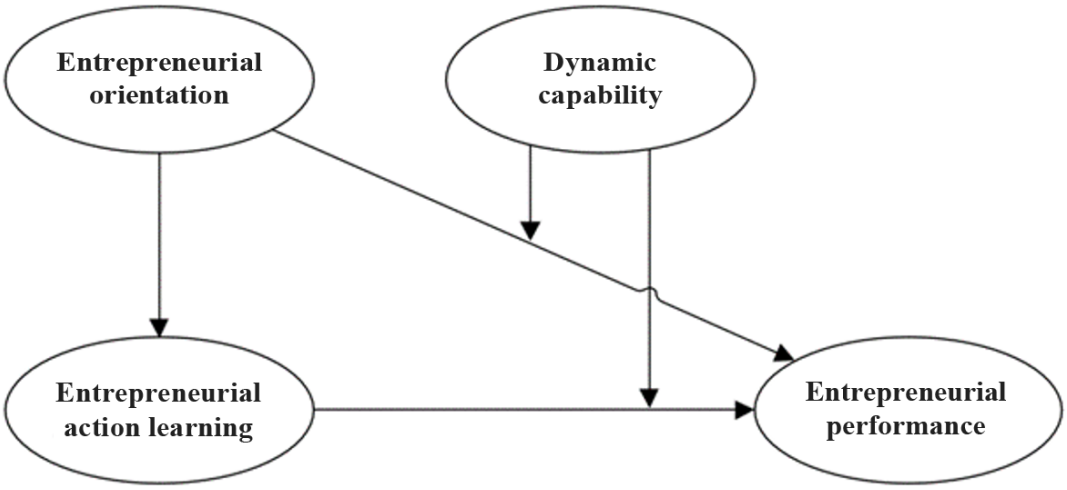

Figure 1. Framework.

2.1. Entrepreneurial Orientation (EO), Entrepreneurial Action Learning (EAL), and Entrepreneurial Performance (EP)

The impact of EO on EP has become a focal point in the research of strategic management scholars (Andrews & Ingham, 1972; Chandler, 1962; Schendel & Hofer, 1979). Enterprises with EO possess the capacity to identify fresh market prospects and take on innovative risks (Wiklund & Shepherd, 2003, 2005). Individual-level EO forms the overall framework for organizational decision making, driving the formulation of entrepreneurial strategic decisions related to vision (Simsek, Heavey, Veiga, & Souder, 2009). Currently, research on EO mainly revolves around the perspectives of resource reconfiguration, dynamic capability building, and the measurement dimensions of EO. This study extends the existing connotations and dimensions of EO by primarily focusing on four dimensions: collaborative innovativeness, risk sharing, proactive leadership, and dynamic competitiveness. Lussier and Pfeifer (2001) pointed out, based on empirical research on innovative SMEs, that EO can facilitate the rapid growth of SMEs. In their study of 50 small businesses in Florida, USA, Morris and Sexton (1996) found that EO has a significant positive impact on both the customer and growth aspects. Rauch and Watson (2004) also suggested that EO has a positive and significant influence on a firm's growth performance.

EAL refers to the process in which entrepreneurs, during the entrepreneurial journey, continuously adjust, reflect, and improve their entrepreneurial actions through practice, experiential accumulation, and cognitive processes (Rae, 2012). Dickfos, Cameron, and Hodgson (2014) pointed out that an amalgamated learning strategy that combines theoretical concepts with practical application via simulation resonates effectively with the developmental requirements of individuals. Learning-oriented companies acquire knowledge more rapidly than their competitors, designing methods that give them a competitive advantage in their offerings and products (Alsuwaidi, Alshami, & Akmal, 2021). Through the process of learning, companies gather insights about customer expectations, market fluctuations, and competitors' adoption of cutting-edge technologies to innovate new products and services to beat the competition (Kharabsheh, Ensour, & Bogolybov, 2017). From this perspective, numerous

studies have indicated that companies emphasizing learning exhibit a propensity for high levels of innovation (Baker & Sinkula, 2002; Tang, 2006). Knowledge is considered to be one of the paramount assets for entrepreneurial ventures (Fernhaber, Mcdougall - Covin, & Shepherd, 2009). Shin, Singh, and Pérez-Nordtvedt (2023) proposed that entrepreneurial ventures can develop strategic marketing capabilities by learning from external knowledge reservoirs. Additionally, Weerawardena, Mort, Salunke, Knight, and Liesch (2015) found that early internationalized companies in the United States and Australia enhanced their marketing capabilities through market-oriented learning. EAL can manifest in various ways, including acquiring information from internal and external sources, learning from other firms' experiences, aggregating novel and overt information, cultivating analytical and structured learning, encompassing knowledge procurement, disseminating information, interpretation, institutional recollection, and internal deliberation and dialogues within the organization (Bonfanti, Castellani, Giaretta, & Brunetti, 2019).

EP is a measure of the outcomes and effects of entrepreneurial activities (Wiklund & Shepherd, 2005). It serves as one of the standards for evaluating the results and effectiveness of entrepreneurship (Fang, 2018) and was used to assess whether entrepreneurial outcomes meet the expected standards (Rothschild, 1999). Shi, Wang, and Xing (2015) consider performance to be a comprehensive concept of the ultimate outcomes of business operations and a scale for measuring the degree of achieving business goals. In this field, Gibson et al. (2014) emphasized that EP is an entrepreneur's satisfaction with their entrepreneurial outcomes, serving as the fundamental method for evaluating performance. On the other hand, Rieckhoff and Larsen (2012) pointed out that EP measures the extent to which entrepreneurial firms achieve long-term and short-term business goals. Tang and Hull (2012) defined EP as an entrepreneur's satisfaction with the ultimate results of their business operations. Additionally, Beattie and Smith (2010) consider EP to be a crucial indicator for examining operational activities, and Weick (2015) sees it as a gauge of the degree to which entrepreneurial goals are achieved. In practical applications, Deshpandé, Grinstein, Kim, and Ofek (2013) view EP as a reflection of an entrepreneur's satisfaction with the achievement rate of business goals and operational results. Van Doorn, Heyden, Tröster, and Volberda (2015) defined EP as an entrepreneur's satisfaction with the final results of achieving expected goals.

2.2. Dynamic Capability (DC)

Teece et al. (1997) introduced the concept of DC, emphasizing the adaptability and innovativeness of organizations in responding to constantly changing environments. This concept encompasses an organization's sensitivity to external conditions and its ability to seize opportunities and address challenges by adjusting, changing, and reconfiguring existing resources and capabilities. DC is an integrated set of knowledge management activities (Nielsen, 2006). The term "dynamic capability" describes an organization's ability to adapt and respond to a constantly changing environment, encompassing flexibility, learning ability, and innovation capability (Eisenhardt & Martin, 2000). This concept emphasizes an organization's sensitivity to change and uncertainty, as well as its ability to adjust and transform. Verona and Ravasi (2003) describe DC as a combination of knowledge creation, acquisition, integration, and redeployment. According to Zahra, Sapienza, and Davidsson (2006) DC is the "plasticity and agility" displayed by an organization in the process of pursuing opportunities, adapting to environmental changes, and integrating resources. Wang, Klein, and Jiang (2007) suggest connecting knowledge with DC, explicitly proposing knowledge-based DC, defined as the absorption, creation, and application of knowledge. Previous studies have indicated that organizations with lower DC may face survival issues when enhancing performance (Wu et al., 2023). DC enables organizations to rapidly identify and seize market opportunities, flexibly adjust strategies and business models, and continuously learn and accumulate knowledge. It underscores an organization's adaptability and change capability to maintain a competitive advantage in a constantly evolving market environment.

When businesses possess DC to reconfigure their existing resources and capabilities in response to the constantly changing business environment, they can achieve high levels of performance (Wu et al., 2023). Teece (2007) proposed a tripartite classification of enterprise-level DC necessary for achieving optimal corporate structure. This classification not only emphasizes an organization's ability to perceive environmental changes but also highlights the capacity to seize opportunities and reconfigure resources, as well as the importance of continuous innovation anticipation and knowledge management. These aspects collectively constitute key elements for businesses to maintain a competitive advantage in an ever-evolving commercial environment. Enterprises with strong DC can engage in resource restructuring that adapts to environmental changes more quickly and efficiently, serving as a source for gaining a sustained competitive advantage and achieving superior corporate performance (Fainshmidt, Wenger, Pezeshkan, & Mallon, 2019).

The findings of Jantunen, Puumalainen, Saarenketo, and Kyläheiko (2005) suggest that when SMEs combine EO with organizational restructuring capabilities, they ensure competitive advantage and performance improvement. Resource integration capabilities not only provide them with the agility to adapt to changes but also prove crucial in dynamic environments.

In dynamic environments, market conditions and competitive situations may change rapidly (Sirmon & Hitt, 2009) and entrepreneurs play a proactive role in enhancing corporate performance by leveraging their resource integration capabilities. Opportunity-sensing capability involves the ability to identify market opportunities and capitalize on them in various ways (Man, Lau, & Chan, 2002). Enterprises need to possess sharp opportunity-sensing capabilities to swiftly detect market changes and opportunities.

2.3. Hypotheses

This study posits that there is a significant relationship between the EO, EAL, and EP of SMEs in the post-pandemic era, with DC playing a moderating role. The COVID-19 pandemic has had profound effects on economies and business operations worldwide (Ji et al., 2024). SMEs, as vital components of economies, face unprecedented challenges and opportunities in responding to the pandemic's impact and adapting to the new circumstances of the post-pandemic era (Rojas-García, Elias-Giordano, Quiroz-Flores, & Nallusamy, 2024; Shi, Liu, Fong, & Lan, 2024).

However, there is still a knowledge gap regarding the relationship between EO, EAL, and EP, and the role of DC. Specifically, there is a relative scarcity of empirical studies focusing on Chinese SMEs, which limits our in-depth understanding of these issues.

Based on the above discussion, this study proposes the following hypotheses:

H_1: EO positively influences the EP of SMEs.

H_2: EO positively influences the EAL of SMEs.

H_3: EAL positively influences the EP of SMEs.

H_4: DC has a positive moderating effect on the relationship between EO and EP.

H_5: DC has a positive moderating effect on the relationship between EAL and EP.

3. RESEARCH METHODS

3.1. Methodology and Tools

This study surveyed managers or founders of SMEs in Sichuan province via a questionnaire. By collecting data and employing structural equation modeling (SEM), the study estimated and analyzed the relationships between variables, thereby validating the hypotheses.

The questionnaire for this study consists of two parts. The first part collects personal and organizational information: gender, age, educational level, position, organizational nature, industry category, number of employees, years in operation, and annual sales. The second part gathers measurement information related to EO, EAL, dynamic capability, and EP. The questionnaire was validated by scholars and was slightly adjusted to align

with the business context in Sichuan province. A Likert five-point scale was employed, ranging from 1 to 5, indicating varying degrees of agreement, from strongly disagree to strongly agree.

EP is used to assess whether entrepreneurial outcomes meet expected standards (Rothschild, 1999). In this study, the focus is primarily on financial performance, considering the two dimensions of growth and profitability performance (Prajogo & Ahmed, 2006; Yusuf, 2002). Recognizing that different enterprises may excel in various aspects, overall performance is considered as a single dimension, providing a more comprehensive evaluation (Jaworski & Kohli, 1993). The measurement of EP involves 11 items across these three dimensions: growth performance (GP), profitability performance (PP), and overall performance (OP).

The classical measurement scale for EO was proposed by Miller (1983) and includes innovativeness, proactiveness, and risk taking.

Tang, Tang, Marino, Zhang, and Li (2008) and other scholars, while building on existing research, continued to use a scale developed in the American context (Covin & Slevin, 1989). They extensively discussed the three dimensions of EO in the unique Chinese environment. Considering the current distinctive Chinese context, this study investigates EO from four dimensions: collaborative innovation, leading mobility, risk sharing, and dynamic competition (Fang, 2018). Thus, EO is measured using 12 items across four dimensions: collaborative innovation (CI), leading mobility (LM), risk sharing (RS), and dynamic competition (DC1).

EAL can be manifested in various ways (Bonfanti et al., 2019). Ahuja (2001) categorized EAL into two dimensions: exploratory action learning and exploitative action learning. This study emphasizes the crucial role of transformative learning in the construction of entrepreneurial firm resources and the formation of innovation capabilities, serving as a vital step in implementing a catch-up strategy. Additionally, exploitative learning is further divided into transformative learning and developmental learning dimensions. Therefore, this study investigates EAL across three dimensions: exploratory learning (EL), transformative learning (TL), and developmental learning (DL), measured through 11 items.

According to Teece et al. (1997) and others, DC is the ability of an enterprise or organization to integrate, innovate, and adapt to changes using its resources and capabilities. This includes rapidly identifying new opportunities, adjusting strategic objectives, reconfiguring resources, and building new core competencies. The formation and development of DC are influenced by various factors. Building on previous research and considering the entrepreneurial context of Sichuan province, this study primarily investigates organizational restructuring capability (ORC), resource integration capability (RIC), and opportunity perception capability (OPC) within enterprises.

3.2. Sample Selection and Data Collection

This study employed a multi-stage sampling method. The first step was to select the most representative industry from the industry groups as the target. Per the Chinese National Economic Industry Classification and Code (GB/T 4754-2017), five industries with the highest number of entities were selected for this survey out of the 19 available industries.

These industries include wholesale and retail trade; leasing and business services; agriculture, forestry, animal husbandry, and fisheries; public administration, social security, and social organizations; and manufacturing. The second step involved stratified sampling from the selected five industries.

Table 1. Characteristics of the sample size.

Industry to which the enterprise belongs	Percentage (%)	Educational level	Percentage (%)	Annual sales (yuan)	Percentage (%)
Wholesale and retail trade	25.9	Specialized and below	31.6	1-5 million	17.6
Leasing and business services	5.4	Undergraduate	37.0	5-10 million	23.9
Agriculture, forestry, animal husbandry, and fisheries	20.0	Master's degree	28.5	10-20 million	25.1
Public administration, social security and social organizations	24.3	Doctoral student	2.9	20-25 million	20.2
Manufacturing	24.3	N/A	N/A	20-25 million	13.2

Note: N/A = Not applicable.

To ensure the authenticity and effectiveness of the data, questionnaires were completed by founders, entrepreneurs, or businesses management personnel. In terms of quantity, a total of 750 questionnaires were distributed for this study. After statistical collection, 645 questionnaires were completed and returned. Questionnaires with incomplete or abnormal content were excluded, resulting in a final valid sample size of 629 questionnaires. The effective response rate was 83.87%, and the sample size met the requirements of the structural equation model (SEM) (Kline, 2023). The characteristics of the sample size are presented in Table 1.

3.3. Data Analysis

This study employed descriptive statistics and partial least squares structural equation modeling (PLS-SEM) to analyze the data. Descriptive statistics were primarily conducted using SPSS 26.0 to present the respondents' demographics and each variable's characteristics. PLS-SEM was conducted using SmartPLS 4 software to estimate the path coefficients and factor loadings of the model, investigate the correlations between variables, assess the reliability and validity of the questionnaire, and evaluate the theoretical model.

In this study, Cronbach's alpha (α) coefficient was used to assess internal reliability, where a coefficient of 0.70 or above indicates that the measurement results are reliable (Henson, 2001). Composite reliability (CR) and average variance extracted (AVE) tests were conducted on each item to assess convergent validity (Straub, Boudreau, & Gefen, 2004). Generally, CR and AVE values above 0.7 and 0.5, respectively, are considered acceptable to support convergent validity (Diamantopoulos & Siguaw, 2000; Henson, 2001). In any study involving latent variables, assessing discriminant validity is necessary to prevent multicollinearity issues, and the heterotrait-monotrait (HTMT) criterion has high sensitivity and specificity in detecting discriminant validity problems (Hamid, Sami, & Sidek, 2017). Therefore, this study utilized the HTMT criterion to measure discriminant validity between variables.

4. ANALYSIS AND RESULTS

4.1. Descriptive Statistics

This study examined the relationships between entrepreneurial orientation (EO), entrepreneurial action learning (EAL), dynamic capability (DC), and entrepreneurial performance (EP), with DC serving as the moderating variable. The descriptive statistics for the variables comprise minimum, maximum, mean, standard deviation, skewness, and kurtosis. The analysis results are shown in Table 2.

Table 2. Descriptive statistics of variables (n = 629).

Variable	Min.	Max.	Mean	Standard deviation	Skewness	Kurtosis
EO	1.67	4.92	3.42	0.91	-0.01	-1.46
EAL	1.61	5.00	3.47	0.90	-0.08	-1.35
DC	1.60	5.00	3.47	0.88	-0.03	-1.45
EP	1.53	5.00	3.47	0.87	-0.02	-1.30

4.2. Reliability and Validity Testing

To test EO, EAL, DC, and EP, mature scales previously used by researchers were employed. Before conducting further analysis, it is necessary to perform convergent validity and reliability tests on the collected data. This study utilized SmartPLS for the examination, and the results are presented in Table 3. The findings indicate that the α coefficient test results range from 0.759 to 0.785, demonstrating that all variables possess good conceptual reliability (Diamantopoulos & Siguaw, 2000; Henson, 2001). The CR and AVE values exceed the specified thresholds, thereby validating the convergent validity and reliability of this study (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014; Hamid et al., 2017).

Table 3. Reliability and validity test results.

Latent variable	Observed variable	Factor loading	Alpha	CR	AVE
EO	CI	0.781	0.785	0.861	0.607
	LM	0.775			
	RS	0.797			
	DC1	0.764			
EAL	EL	0.832	0.773	0.868	0.687
	TL	0.824			
	DL	0.831			
DC	ORC	0.807	0.765	0.864	0.679
	RIC	0.831			
	OPC	0.835			
EP	GP	0.852	0.759	0.861	0.675
	PP	0.825			
	OP	0.787			

4.3. Correlation Analysis

The discriminant validity analysis results among the variables are displayed in Table 4.

Table 4. Correlation analysis among variables.

Variable	EO	EAL	DC	EP
EO	0.779			
EAL	0.442	0.829		
DC	0.338	0.427	0.824	
EP	0.434	0.366	0.357	0.821

The results indicate that the square root of the AVE values (diagonal values) surpasses the correlation values of the other variables. Therefore, the discriminant validity among the variables aligns with the research requirements (Henseler, Hubona, & Ray, 2016).

Furthermore, this study utilized HTMT ratio analysis to assess discriminant validity (Fornell & Bookstein, 1982). A HTMT ratio approaching 1 suggests inadequate discriminant validity in path analysis (Henseler et al., 2016). Therefore, to differentiate relationships between variables, HTMT ratios should be maintained below 1 (Henseler et al., 2016). The findings of the study are presented in Table 5, which indicates that these values are consistent with the predetermined thresholds. In conclusion, it can be inferred that discriminant validity was not problematic, validating the robustness of the research.

Table 5. HTMT analysis results.

Variable	EO	EAL	DC	EP	DC x EO
EAL	0.565				
DC	0.430	0.558			
EP	0.561	0.475	0.465		
DC x EO	0.240	0.384	0.148	0.423	
DC x EAL	0.392	0.171	0.207	0.402	0.359

4.4. Structural Equation Model Analysis

To further validate the hypotheses, this study employed PLS-SEM for further analysis and measurement. The outcomes of the path analysis are illustrated in Figure 2.

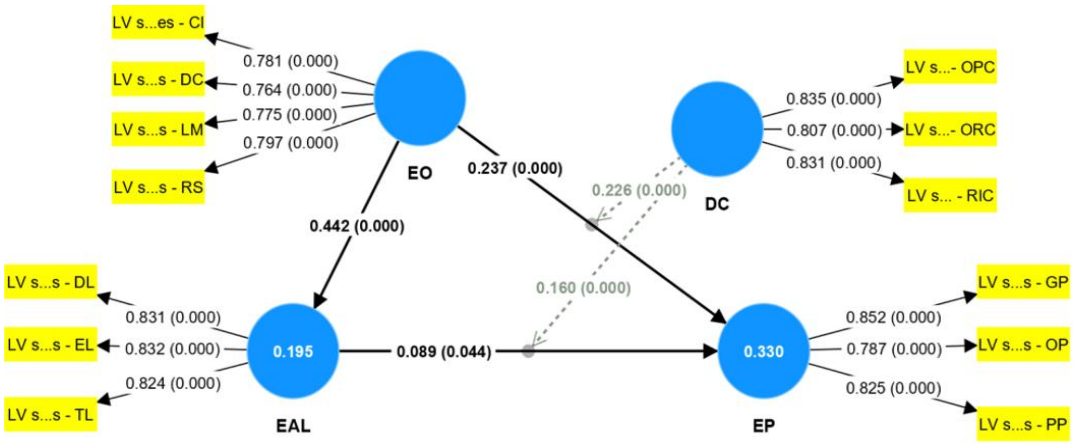

Figure 2. Path analysis results.

This study utilized bootstrapping tests to examine the significance of the model, and the hypothesis testing results for H1, H2, and H3 are presented in Table 6.

Table 6. SEM results (Direct effect).

Hypothesis	Relationship	β	SD	t	p	Result
H1	EO -> EP	0.237	0.044	5.422	0.000	Supported
H2	EO -> EAL	0.442	0.033	13.530	0.000	Supported
H3	EAL -> EP	0.089	0.045	2.010	0.044	Supported

In Table 6, for H1, the β value is 0.237, the SD value is 0.044, the t value is 5.422, and the p value is 0.000. Therefore, H1 is validated, indicating a positive influence of EO on EP. For H2, the β value is 0.442, the SD value is 0.033, the t value is 13.530, and the p value is 0.000, confirming the validity of H2, indicating a positive impact of EO on EAL. The test results for H3 have a β value of 0.089, an SD value of 0.045, a t value of 2.010, and a p value of 0.044 < 0.05. Thus, H3 is validated, indicating a positive influence of EAL on EP.

Table 7. SEM results (Moderating effect).

Hypothesis	Relationship	β	SD	t	p	Result
H4	DC x EO -> EP	0.226	0.042	5.364	0.000	Supported
H5	DC x EAL -> EP	0.160	0.044	3.596	0.000	Supported

The moderating effects of the hypothesis testing outcomes are displayed in Table 7. Concerning H4, the β value is 0.226, the SD value is 0.042, the t value is 5.364, and the p value is 0.000. Therefore, H4 is supported, indicating a

positive moderating impact of DC on the correlation between EO and EP. Regarding H5, the β value is 0.160, the SD value is 0.044, the t value is 3.596, and the p value is 0.000. Therefore, H5 is supported, indicating a positive moderating impact of DC on the correlation between EAL and EP.

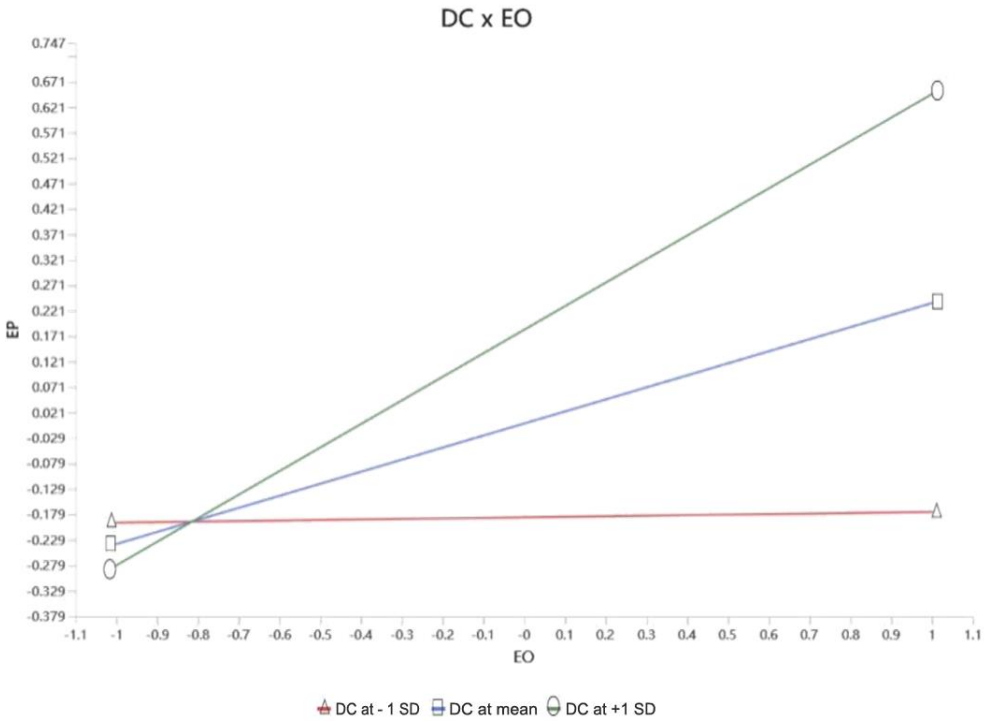

Figure 3. Moderating effect of DC on the relationship between EO and EP.

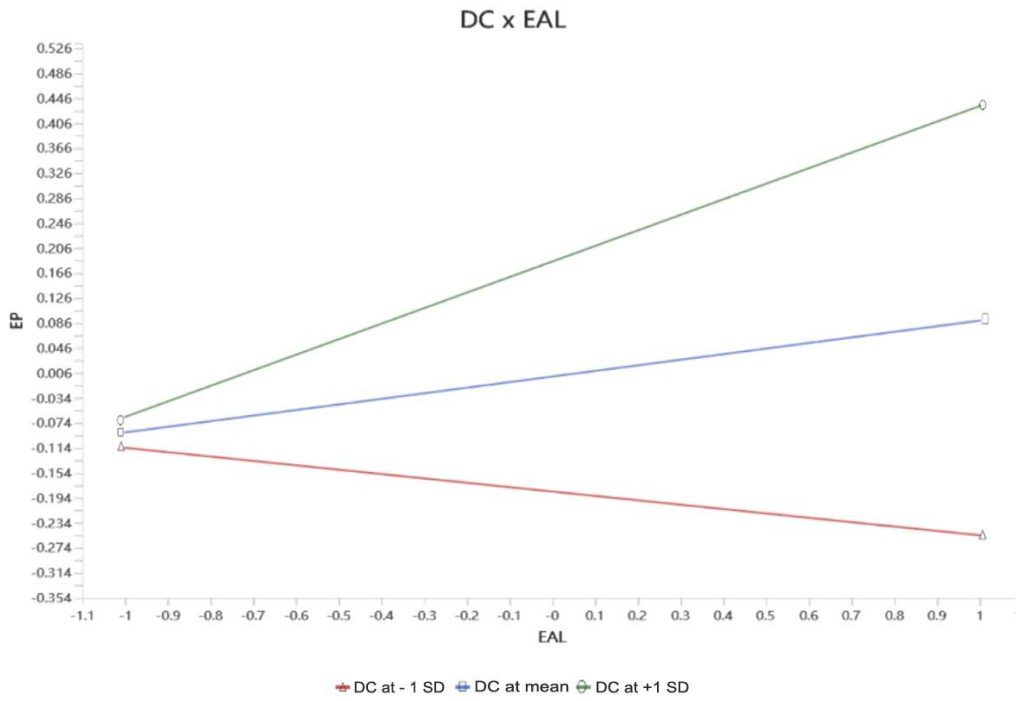

Figure 4. Moderating effect of DC on the relationship between EAL and EP.

Figure 3 and Figure 4 respectively depict the moderating impact of DC on the correlation between EO and EP, and between EAL and EP. From Figure 3 it is evident that DC strengthens the positive correlation between EO and EP. Figure 4 demonstrates how DC amplifies the favorable correlation between EAL and EP.

5. DISCUSSION AND CONCLUSION

5.1 Discussion

For business facing a fiercely competitive business environment in the post-epidemic era, enhancing EP has become one of the core objectives pursued by managers of SMEs. Improving EP not only involves enhancing profitability and asset management efficiency but also directly impacts the sustained development and establishment of competitive advantages for businesses. This study aims to delve into the relationship between EO, EAL, and EP, with a particular focus on the moderating role of DC. Research indicates that EO positively influences EP, a finding consistent with the study by Susanto et al. (2023) directly confirming previous research results regarding the direct impact of EO on EP (Milovanović, Fabić, & Bratić, 2023). Furthermore, the study concludes that EO has a positive influence on EAL, a finding consistent with previous research (Fang, 2018) which was based on entrepreneurial ventures in Hangzhou, China. The results of this study also confirm the positive impact of EAL on EP, consistent with previous research findings (Sawaean & Ali, 2020). EO has a positive impact on firm performance (Dos Santos, Da Silva, De Moraes, & De Oliveira Frascareli, 2023), although their study was based on research conducted on primary enterprises in Brazil. Pratikto, Winarno, and Restuningdiah (2023) demonstrated that learning contributes to enhancing knowledge in performance aspects and facilitates the development of entrepreneurial skills, which is crucial for business practitioners to improve performance and remain competitive and sustainable.

Furthermore, the study found that DC has a positive moderating effect between EO and EP. This finding aligns with the study by Makhloufi, Djermani, and Meirun (2024) in which green absorptive capacity was regarded as a dynamic capability and was found to have a positive moderating effect between managerial environmental concern and green entrepreneurial orientation. The study also found that DC has a positive moderating effect between EAL and EP. This finding aligns with the study by Abou-Foul, Ruiz-Alba, and López-Tenorio (2023) which found a positive moderating effect of dynamic capability between artificial intelligence capabilities and servitization.

5.2. Conclusion

In summary, this study demonstrates that EO has a positive impact on EP, EO has a positive impact on EAL, EAL has a positive impact on EP, and DC as a moderating variable further enhances the relationships between EO and EP, and between EAL and EP. These findings underscore the role of EAL in fostering EP, stimulating entrepreneurs' insights and practical wisdom, enabling businesses to adapt more flexibly to market challenges, and ultimately achieve outstanding business accomplishments.

The findings of this study further indicate that merely relying on the interaction between EO, EAL, and EP is incomplete, as many capabilities contribute to these relationships through their moderating effects (Robb et al., 2020). This discovery offers a strategic pathway for SMEs, suggesting that certain relationships may yield better results for businesses as they develop or enhance their EO and EAL. For instance, optimizing the entrepreneurial process and enhancing EP may be achieved by improving DC.

In conclusion, this study provides a thorough analysis of the relationship between EO, EAL, and EP. Incorporating DC into the research framework enhances the understanding of the entrepreneurial process in SMEs, thereby assisting scholars in gaining a deeper insight into strategies for coping with uncertainty in business environments.

The study employs a significant amount of empirical data and draws conclusions through quantitative analysis, offering practical and actionable recommendations at the empirical level.

6. STUDY LIMITATIONS

In this study, we only utilized SMEs from Sichuan province, China, as the sample. This limitation provides an opportunity for future research to expand the sample size. Although this study focuses on EO, EAL, and DC, it did not comprehensively consider other potential factors that may influence the performance of SMEs.

7. SUGGESTIONS

This study solely utilized quantitative analysis methods but was limited by the availability of data (such as incomplete coverage of industries). Future research could achieve more comprehensive results by employing broader and multi-level data collection strategies, including qualitative data. Moreover, further exploration of potential confounding factors could advance the in-depth development of the SME field.

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Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Data Availability Statement: Upon a reasonable request, the supporting data of this study can be provided by the corresponding author.
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