

Green Development System and Senior Student Teams' Sustainable Entrepreneurial Improvisation in Guizhou Province, China: Impact of Social Mindfulness and Resilient Leadership

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[**Abstract**] Government support is the main cause of promoting sustainable entrepreneurship, and green system is associated with improvisation. Therefore, using a sample of 201 senior students from 30 teams in Guizhou Province, China, the relationship between the green development system and senior student teams' sustainable entrepreneurial improvisation, the mediating effect of social mindfulness, and the facilitating effect of resilient leadership were investigated. The results confirm for the first time that green development system is positively related to senior student teams' sustainable entrepreneurial improvisation in Guizhou Province, China; that social mindfulness has a partial mediating effect; that resilient leadership is able to promote the relationship between green development system and senior student teams' sustainable entrepreneurial improvisation; and that resilient leadership is not able to promote the relationship between social mindfulness and senior student teams' sustainable entrepreneurial improvisation. This suggests that entrepreneurial teams of senior students in Guizhou Province needs not only a sound green entrepreneurial environment, but also a combination of positive attitudes and adaptive abilities with the goodness traits on the part of team leaders to adequately promote their behaviors of responding to unexpected events instantly in the process of sustainable entrepreneurship.

[**Key words**] green development system; social mindfulness; resilient leadership; sustainable entrepreneurial improvisation

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1 Formulation of the research question

Xie et al. (2023), Xu and Cui (2022), and Wu et al. (2023) pointed out that entrepreneurial improvisation is a key factor in the development of start-ups. However, Xiong (2022) emphasized that acquiring entrepreneurial improvisation is extremely difficult. Comparatively, Shi and Yang (2021), Sun et al. (2019), and Ni and Han (2023) noted that organizations can establish a well-developed long-term development system to structure and advance the development of entrepreneurial improvisation. However, Flaminiano (2024), Fultz and Hmieleski (2021), and Zarooni (2021) noted that entrepreneurial improvisation research has been conducted mainly on entrepreneurs and employees of start-ups. At the same time, Falloji and Nuiami (2024), and Liu et al. (2023) emphasized that entrepreneurial improvisation is a complex performance and the variability in the level that

each individual possesses is very high. Therefore, Xiong (2022) argued that it is difficult for individuals to grow entrepreneurial improvisation in SMEs in China. Meanwhile, Chen (2022), Guo (2022), Li (2022), Li (2023), Lu (2022), Shen et al. (2023), and Zhao and Wang (2022) emphasized that, for most of the small firms in China, they do not have the resources to support the long-term growth of improvisation behaviors of their employees, and they want the employees to be able to fully utilize their talents immediately after joining the company. As Ye and Mai (2018) stated, the inexperience of start-ups leads to a high incidence of improvisational behaviors that are inefficient or result in a waste of resources during the start-up process. At the same time, Ma et al. (2021) emphasized that improvisation is a spontaneous behavior that deviates from plans or practices and is often guided by the actors' intuition, with a high degree of uncertainty about its outcome. Therefore, there are obvious shortcomings and distortions in previous studies. On the other hand, Aga (2023), Miço and Cungu (2023), and Setiawan and Basri (2023) stated that for students, it is the schools' education about entrepreneurship and related elements that are the key to their growth. Thus, Balachandra (2019), Barbosa and Davel (2022), Djatmika and Rahayu (2021), Hamburg (2021), and Willemsen et al. (2021) emphasized that entrepreneurship education in higher education can enable students to learn and acquire improvement through specialized training.

On the other hand, Chaudhary et al. (2023), Holzmann and Gregori (2023), and Sreenivasan and Suresh (2023) suggested that there is a global need for sustainable development. As a result, Chen et al. (2023), Larsen and Bogers (2014), and Murtaza et al. (2024) stated that traditional entrepreneurial improvisation is no longer sufficient to meet the entrepreneurial needs of China, and indeed developing countries. As stated by Emon and Kha (2023), Shabbir (2023), and Usman et al. (2024), the future of entrepreneurship is focused on sustainable growth. Therefore, there is an urgent need to incorporate sustainable elements, develop new theories, and identify the antecedent and process factors that influence it to fit and drive the future global economy.

2 Introduction

Carvalho (2023), Jarboui and Alrikabi (2023), and Mafimisebi et al. (2023) pointed out that the difficulty of accessing resources for start-ups often constrains improvisation in the face of shocks brought about by uncertain environments, making it difficult for them to quickly seize turnaround opportunities. Furthermore, Feng and Chen (2024), Sischarenco (2023), and Wu et al. (2023) emphasized that improvisation is crucial for start-ups as a key strategy for new firms to respond effectively to unexpected events. Thus, Akhtar and Mohamad (2024), Hadida and Odiase (2024), Masaitytė and Jurėnienė (2023) stated that the importance of improvisation behaviors for the survival and development of start-ups has become more pronounced and that the question of whether and how start-up teams can effectively carry out entrepreneurial improvisation has come into focus.

Furthermore, the studies of Souchon et al. (2016), and Shabbir et al. (2021) showed that environmental turbulence is associated with entrepreneurial improvisation. Furthermore, the studies of Liu et al. (2023), and Vera and Crossan (2023) also confirmed that leadership, personality, and traits are strongly linked to improvisation. However, it is not clear how green development system relates to senior student teams' sustainable entrepreneurial improvisation and whether the relationship is influenced by social mindfulness and resilient leadership.

On the other hand, Adenutsi (2023), Arejiogbe et al. (2023), Nor (2024), Ipinnaiye and Olaniyan (2023), Setiawan et al. (2023), Si et al. (2020), and Zhang et al. (2023) noted that how to reduce poverty through entrepreneurship is a global focus and an important interdisciplinary research question. In addition, He et al. (2022), Hong et al. (2022), and Tian et al. (2021) pointed out that Guizhou Province used to be an

extremely poor region, and although it has made some achievements in poverty reduction in recent years, it is still in the lower middle class compared to the economic level of other provinces. Therefore, Huang and Wang (2022), Liu and Hong (2022), and Pu (2023) argued that how to revitalize the future economy of Guizhou Province, China is a key issue. In addition, Liu and Xiao (2021), Luo (2022), and Zhao et al. (2022) emphasized that entrepreneurship education in higher vocational schools is not good, students' entrepreneurial ability and skills are insufficient, and their mentality is not good in Guizhou Province, China, etc., and that there is an urgent need to explore ways to improve the cultivation of core entrepreneurship abilities among senior students, to promote the future of entrepreneurship in the local area.

Therefore, the purpose of this study is to investigate the relationship between green development system and senior student teams' sustainable entrepreneurial improvisation in Guizhou Province, China, as well as the mediating role of social mindfulness and the facilitating effect of resilient leadership, to identify the main factors and the mediating and facilitating mechanisms that influence senior student teams' sustainable entrepreneurial improvisation in Guizhou Province, China.

3 Literature review and hypothesis development

3.1 Sustainable entrepreneurial improvisation

Traditionally, Cunha et al. (1999) defined entrepreneurial improvisation as the behavior of an entrepreneurial team to react spontaneously and immediately to unexpected events by integrating existing cognitions, emotions, and resources. With the need for sustainable development, sustainable entrepreneurial improvisation has emerged. Therefore, this study defines it as the behavior of a sustainable entrepreneurial team that reacts spontaneously and instantly to unexpected events by integrating existing cognitions, emotions, and resources.

3.2 Green development system and senior student teams' sustainable entrepreneurial improvisation

According to Li et al. (2019), green development system is a combination of regulatory, normative, and cognitive elements designed to promote overall ecological, economic, and social improvements. In addition, sustainable entrepreneurship improvisation is described as the behavior of sustainable entrepreneurship teams to react spontaneously and instantly to unexpected events by integrating existing cognitions, emotions, and resources. On the other hand, the studies of Souchon et al. (2016), and Shabbir et al. (2021) showed that environmental turbulence is negatively related to entrepreneurial improvisation. On the contrary, the study of Jia et al. (2023) also found that error management climate is positively related to entrepreneurial improvisation. As stated by Hu (2018), environmental factors are the main factors affecting entrepreneurial improvisation. Meanwhile, Ma et al. (2021) emphasized that it is important to get external support during the creation of a new business, making it survive better in the market. This is because a well-developed external green entrepreneurship system allows sustainable entrepreneurial teams to access technological, financial, and conservation support more easily, which increases the teams' belief in sustainable entrepreneurship, and in turn helps them to better cope with the behaviors of reacting to unexpected events when they occur. Hence the hypothesis:

H1: Green development system positively affects senior student teams' sustainable entrepreneurial improvisation.

3.3 The mediating role played by social mindfulness

Tian et al. (2020) described social mindfulness as a good trait of an individual to perceive the state of others, respect each other's choices, and be willing to make concessions in interpersonal situations. Abubakar et al. (2023), and Xie et al. (2018) found that entrepreneurship policies and education are related to students' traits. In addition, Dou et al. (2018a) found that social kindness is associated with cooperative behavior. Also, Dou et

al.'s study (2018b) found that social mindfulness has a facilitating effect in interpersonal interaction and cooperation. Therefore, this study argues that diverse external resource support can awaken individuals' good traits and make them more humble through social mindfulness, which can help to increase the trust of sustainable entrepreneurship team members, reduce their psychological defenses, and ultimately further enhance senior student teams' sustainable entrepreneurial improvisation. Hence the hypothesis:

H2: Social mindfulness has a positive mediating effect between green development system and senior student teams' sustainable entrepreneurial improvisation.

3.4 The moderating role played by resilient leadership

Ferrer and Caridad (2017) stated that resilient leadership means that the leader possesses a positive attitude and the ability to adapt to the environment, and can adapt quickly to adversity and adopt effective coping strategies to get out of it and bounce back from it, and develop responsible and resilient individuals through traits such as clear thinking, drive to succeed, inspiration, influence, self-learning ability, and empathy. Furthermore, Korzynski (2013) found that online environments are positively correlated with leadership. On the other hand, Su et al. (2022) suggested that leadership is a key mechanism for facilitating improvisation. As stated by Giustiniano et al. (2020), Lin and Liao (2020), and Shelton et al. (2022), resilient leadership plays a key role in spreading resilience and finding a balance between reacting and adapting, conveying confidence to others, exerting influence, allowing recipients to perceive resilience, being inspired and motivated to cope with shocks, helping individuals to become more resilient, transforming stress and shocks into new energy, and helping individuals and organizations to successfully cope with adversity or challenges and grow. Thus, the interaction of green development system and resilient leadership can further reduce the hindrances of entrepreneurial teams and activate the passion and trust of members, which will ultimately drive their behaviors to cope with unexpected events instantly in the process of sustainable entrepreneurship. Hence the hypothesis:

H3: Resilient leadership has a positive moderating effect between green development system and senior student teams' sustainable entrepreneurial improvisation.

Zhang et al. (2021) found that social mindfulness traits are positively correlated with resilient leadership. In addition, Gerpott et al. (2020), Dou et al. (2018a), and Doesum et al. (2020) stated that social kindness in the interpersonal interaction builds intimacy and trust and enhances the tendency to share knowledge. On the other hand, Ma et al. (2021), and Su et al. (2022) suggested that leadership is a central mechanism for facilitating improvisation. Dorsum et al. (2022), Sajjad and Shahbaz (2020), and Wang et al. (2023) argued that this is due to the respect and sense of freedom that the team members feel during the interpersonal interaction, which also enhances their tendency to share knowledge. A sense of freedom also improves their actions towards sustainable development, which will drive the entrepreneurial teams to respond instantly to unexpected events in the sustainable entrepreneurship process. Therefore, the interaction of social mindfulness and resilient leadership can build intimacy and trust for entrepreneurial teams and promote their knowledge sharing, which will stimulate their creativity and cohesion, and ultimately drive their behaviors in responding to unexpected events instantly in the process of sustainable entrepreneurship.

H4: Resilient leadership has a positive moderating effect between social mindfulness and senior student teams' sustainable entrepreneurial improvisation.

4 Methodology

4.1 Research framework

Construct the framework based on the hypotheses, as shown in Figure 1 below:

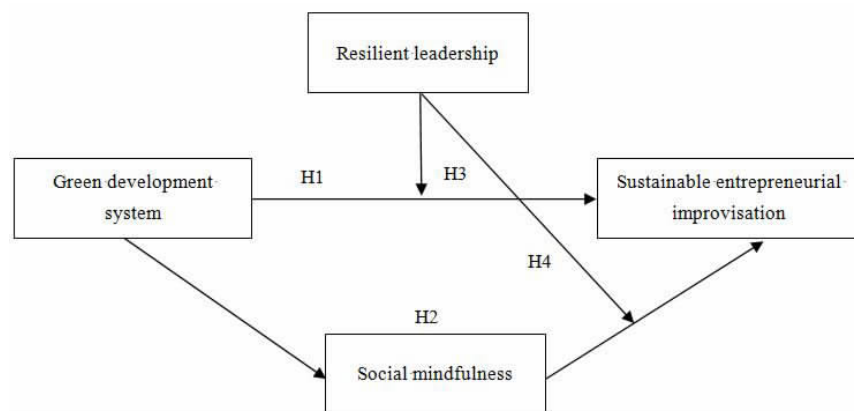


Figure 1. Depiction of the study's framework

4.2 Samples and procedures

The survey was conducted from March to May 2024, using purposive sampling. 30 teams of senior students in Guizhou Province, China were selected as samples. An electronic questionnaire was used to investigate their perceptions of green development system, social mindfulness, resilient leadership, and sustainable entrepreneurship improvisation. The final valid samples are 201 (validity rate 80.4%). All of them were e-commerce students and were practicing green entrepreneurship projects in a digital environment.

4.3 Measures

Green development system scale: adapted from Li et al.'s (2019) instrument, divided into system and norm for green development, 2 factors with 7 items (SRMR = 0.05). Example: Guizhou provincial government has policies to support the development of green talents.

Social mindfulness scale: designed by Tian et al. (2021), divided into kindness and respect ($\alpha = 0.70$), modesty and respectfulness ($\alpha = 0.78$), tolerance and understanding ($\alpha = 0.75$), and positivity and openness ($\alpha = 0.72$), 4 factors with 17 items.

Resilient leadership scale: designed by Zhan et al. (2023), divided into "An xin ding zhi" and "Quan da tong bian", 2 factors with 8 items ($\alpha = 0.927$).

Sustainable entrepreneurship improvisation scale: adapted from Vera and Crossan's (2015) instrument ($\alpha = 0.943$), with the addition of sustainable elements, 1 factor with 7 items (SRMR = 0.04). Example: my team can handle unexpected events on the spot during sustainable entrepreneurship.

The questionnaire is measured in a 5-equal method, with gender, number of team members, whether they are from Guizhou Province, and whether they are ethnic minorities as demographic variables.

5 Results

5.1 Distribution of population characteristics

Female students are the most prevalent in the sample, accounting for about 92.54%. This is because these students are implementing their entrepreneurship in a digital environment, which requires hosting marketing campaigns and interacting with customers on online platforms. As a result, the number of female students is much higher than that of male students, whereas male students are mostly involved in supportive work such as photography and scene-setting. The number of the team is the most in the range of 3-5 students, accounting for about 83.08%. The majority of the students are from Guizhou Province, accounting for about 62.19%. The majority of the students are ethnic minorities, accounting for about 69.15% (as shown in Table 1).

Table 1. Distribution of population characteristics

Background variables	Category	N	%
Gender	Male	15	7.46
	Female	186	92.54
	3-5	167	83.08
Number of team members	6-8	31	15.42
	9 or more	3	1.49
Whether they are from Guizhou Province	Yes	125	62.19
	No	76	37.81
Whether they are ethnic minorities	Yes	139	69.15
	No	62	30.85

Note: N=201.

5.2 Model fit

The model fit shows a good match with SRMR=0.05 (as shown in Table 2).

Table 2. Root mean square error

	Initial sample	Mean	95%	99%
Saturated model	0.05	0.037	0.039	0.040
Estimated model	0.05	0.037	0.039	0.040

Note: * = $p < 0.05$.

5.3 Correlation analysis

The correlation matrix (as shown in Table 3) shows that green development system is positively correlated with senior student teams' sustainable entrepreneurial improvisation ($\beta = 0.544$ ***, $p < 0.001$), and hypothesis H1 is valid.

Table 3. Narrative and correlation coefficient matrix

Variables	M	SD	1	2	3	4
1. Green development system	3.570	0.783	0.766			
2. Social mindfulness	3.560	0.990	0.533 ***	0.823		
3. Resilient leadership	3.572	0.792	0.132 ***	0.498 ***	0.724	
4. Senior student teams' sustainable entrepreneurial improvisation	3.641	0.840	0.544 ***	0.521 ***	0.440 ***	0.792
α			0.931	0.893	0.878	0.867
CR			0.849	0.849	0.814	0.771
AVE			0.576	0.562	0.505	0.601

Note: * = $p < 0.05$.

5.4 Regression analysis

Regression analysis (as shown in Table 4) shows that green development system and social mindfulness simultaneously have a significant positive effect on senior student teams' sustainable entrepreneurial improvisation ($\beta = 0.274$ ***, 0.284 ***, $p < 0.001$), and hypothesis H2 is partially valid according to the rule of the stepwise method.

Table 4. Regression analysis

	Sustainable entrepreneurial improvisation	Social mindfulness	Sustainable entrepreneurial improvisation	
	M1	M2	M3	M4
Gender	0.041	0.016	0.053	0.045
Number of team members	0.104 *	0.026	0.122 *	0.097
Whether they are from Guizhou Province	0.141 *	0.042	0.145 *	0.129 *
Whether they are ethnic minorities	0.086	0.014	0.104 *	0.090 *
Green development system	0.406 ***	0.463 ***		0.274 ***
Social mindfulness			0.411 ***	0.284 ***
R^2	0.189	0.216	0.194	0.253
$Adj R^2$	0.181	0.208	0.185	0.243
F	21.949 ***	25.921 ***	22.624 ***	27.191 ***
DW	1.934	1.943	1.952	2.001

Note: * = $p < 0.05$.

5.5 Regulation analysis

Regulation analysis (as shown in Table 5) shows that the interaction between green development system and resilient leadership is significant ($\beta = 0.216$ ***, $p = 0.000$), suggesting that resilient leadership can promote the relationship between green development system and senior student teams' sustainable entrepreneurial improvisation, and that hypothesis H3 is valid. In addition, the interaction between social mindfulness and resilient leadership is not significant ($\beta = 0.085$), indicating that the resilient leadership cannot contribute to the relationship between social mindfulness and senior student teams' sustainable entrepreneurial improvisation, and hypothesis H4 is not valid.

Table 5. Regulation analysis

	Senior student teams' sustainable entrepreneurial improvisation					
	M1	M2	M3	M4	M5	M6
Gender	0.041	0.023	0.024	0.053	0.081	0.076
Number of team members	0.104 *	0.087	0.093	0.122 *	0.071	0.075
Whether they are from Guizhou Province	0.141 *	0.118 *	0.109 *	0.145 *	0.103 *	0.105 *
Whether they are ethnic minorities	0.086	0.082	0.081	0.104 *	0.009	0.019
Green development system	0.406 ***	0.378 ***	0.371 ***	0.411 ***	0.401 ***	0.402 ***
Resilient leadership		0.277 ***	0.268 ***			
Green development system \times resilient leadership			0.216 ***			
Social mindfulness					0.224 ***	0.231 ***
Social mindfulness \times resilient leadership						0.085
R^2	0.189	0.264	0.310	0.194	0.308	0.130
$Adj R^2$	0.181	0.255	0.301	0.185	0.302	0.123
F	21.94 ***	28.90 ***	31.61 ***	22.62 ***	50.77 ***	28.15
DW			1.905			2.021

Note: * = $p < 0.05$.

As depicted in Figure 2, resilient leadership reinforces the relationship between green development system and senior student teams' sustainable entrepreneurial improvisation.

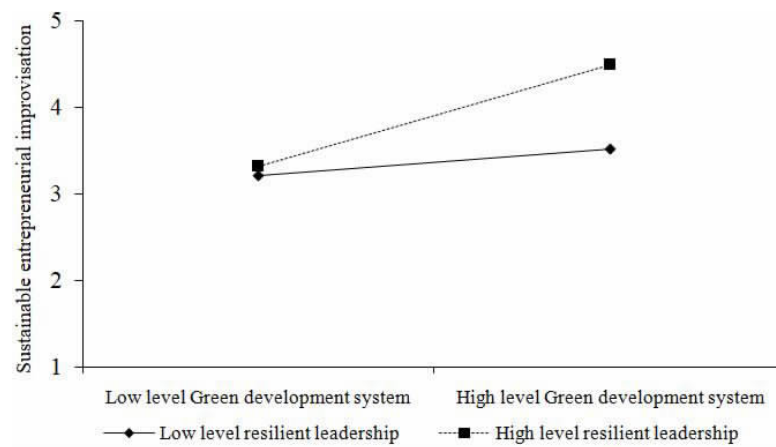


Figure 2. Moderating effect of resilient leadership on the relationship between green development system and senior student teams' sustainable entrepreneurial improvisation

As depicted in Figure 3, resilient leadership does not facilitate the relationship between social mindfulness and senior student teams' sustainable entrepreneurial improvisation.

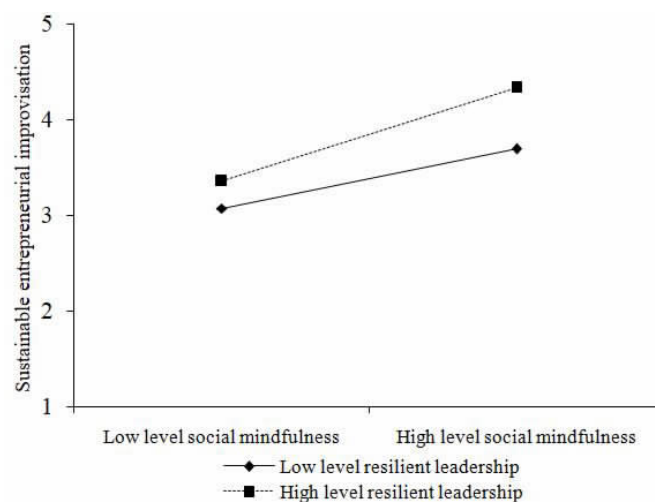


Figure 3. Moderating effect of resilient leadership on the relationship between social mindfulness and senior student teams' sustainable entrepreneurial improvisation

6 Discussion

6.1 Discussion and conclusion

The results of the study confirm for the first time that green development system has a positive relationship with senior student teams' sustainable entrepreneurial improvisation in Guizhou Province, China. Therefore, for the senior student entrepreneurial teams in Guizhou Province, China, the Guizhou provincial government in China may encourage technological innovation instead of simply copying and following the model of entrepreneurship through the construction of systems such as intellectual property rights and environmental protection, and green human resources development, which will help the development of entrepreneurial teams. In addition, the financial support from the Guizhou provincial government in China for green entrepreneurial activities may attract more students to join entrepreneurial activities and promote sustainable entrepreneurial improvisation and practical

actions. As Huang and Chen (2022), Misztal and Kowalska (2023), Qu and Liu (2022), Safi et al. (2022), and Zhao et al. (2023) said, government departments need to construct a sound green development system, which is the decisive factor for the development of entrepreneurial talents and the rise of sustainable industries.

The findings confirm for the first time that social mindfulness partially has mediating effect between the green development system and the senior student teams' sustainable entrepreneurial improvisation in Guizhou Province, China. This is because external multiple resource support can awaken individuals' good traits and make them more humble through social mindfulness, which helps to increase the trust of sustainable entrepreneurship team members, reduce their psychological defenses, and ultimately further enhance senior student teams' sustainable entrepreneurial improvisation.

The results of the study confirm for the first time that resilient leadership has a facilitating effect between green development system and senior student teams' sustainable entrepreneurial improvisation in Guizhou Province, China. Therefore, it can be shown that the interaction between green development system and resilient leadership can further reduce the obstacles of entrepreneurial teams and activate the passion and trust of members, which will ultimately promote their behaviors to instantly cope with unexpected events in sustainable entrepreneurship.

The findings suggest that senior student teams' resilient leadership does not promote the influence of social mindfulness on sustainable entrepreneurial improvisation in Guizhou Province, China. As suggested by Wang et al. (2023), Yan et al. (2022), and Zhao et al. (2022), this may be due to the great variability of social mindfulness of each individual. Therefore, the interaction between social mindfulness and resilient leadership cannot promote the formation of senior student teams' sustainable entrepreneurial improvisation in Guizhou Province, China.

6.2 Research contribution

By constructing a cross-level model of environmental (green development system), organizational (resilient leadership), team (sustainable entrepreneurial improvisation), and individual (social mindfulness) factors, this study confirms the impact of green development system on senior student teams' sustainable entrepreneurial improvisation in Guizhou Province, China, as well as the mediating and facilitating roles of social mindfulness and resilient leadership. This not only fills in the research on the impact of green development system on senior student teams' sustainable entrepreneurial improvisation, but also expands the intermediate path between the two, which is a groundbreaking contribution to empirical research in the field of sustainable entrepreneurship.

6.3 Suggestions

At present, green development has become a global consensus, and how to meet sustainable development has become the focus. With the help of relevant measures and methods of green development system construction, the construction of China's ecological system and green economic growth can be effectively promoted, which is an important practical work that needs to be improved. The conclusions of this study help Guizhou Province, China to better understand the green development system and its role in economic development and structural change, which in turn provides an important theoretical basis and recommendation reference for the government's related work. Therefore, this study combines the conclusions to make recommendations on the following points:

Firstly, it is suggested that the government of Guizhou Province should strengthen both cognitive and normative environments for green development when building green development system. On the one hand, while realizing that different types of policy initiatives have different effects, attention should be paid to the interactions between different measures, especially after incorporating the green development concept. On the other hand, attention should be paid to the systematic and synergistic effects between the dimensions of the institutional environment,

aiming for optimal effects at the overall level.

Secondly, it is suggested that higher vocational schools in Guizhou Province should cultivate leaders with resilience characteristics, and strengthen their resilience training for groups of senior students with leadership potential, which can also contribute to the development of resilience among team members and help them cope with crises and changes more effectively.

Finally, it is suggested that higher vocational schools in Guizhou Province should target at team members of higher vocational students with social mindfulness characteristics with a long-term professional development system for social mindfulness to help them enhance their traits in interpersonal interactions, which will better facilitate the development of entrepreneurial teams.

6.4 Limitations and future research directions

This study only discusses the relationship and the process mechanism between green development system and senior student teams' sustainable entrepreneurial improvisation in Guizhou Province, China, and suggests that future research should continue to explore these in other dimensions. For example, are digital resilience and data leadership linked to senior student teams' sustainable entrepreneurial improvisation? In addition, the exploration of boundary conditions for the relationship between green development systems and senior student teams' sustainable entrepreneurial improvisation can be continued, e. g. , collaborative research and development, the extent of the teams' use of AI technology, and ecosystems for sustainable development and digital integration. Conversely, Shamil et al. (2022), Shahzad et al. (2022), and Zhu and Han (2023) noted that future research may discuss the impact of institutional pressures on sustainable entrepreneurship, exploring the uncharted territories of sustainable entrepreneurship from the perspective of reverse thinking. Finally, research can also be conducted expanding into Southeast Asia. In particular, social mindfulness originates in China, suggesting that future research may be more meaningful to argue for its impact and mechanism within Southeast Asian culture based on the Southeast Asian cultural context.

References:

- [1] Xie X. , Zhang Y. , Liu Y. , Zhou G. The Impact of Innovation Platform Empowerment on Boundary-spanning Search for Startups: Role of Improvisational Capability and Environmental Uncertainty [J]. Chinese Journal of Research on Economics and Management, 2023, 44(5): 36-55.
- [2] Xu G. , Cui X. Effect of Ambidextrous Entrepreneurial Improvisation on the New Venture Performance of Technological New Ventures[J]. Chinese Journal of Beihua University (Social Sciences), 2022, 23(3): 83-91.
- [3] Wu J. , Arndt F. , Ma H. , Hughes P. , Tang S. Learning from Improvisation in New Ventures [J]. Journal of Innovation & Knowledge, 2023, 8(2): 3566-3587.
- [4] Xiong L. Improvise to Win: The Relationship Between Entrepreneurial Improvisation and Start-up Competitive Advantage[J]. Asian Business & Management, 2022, 21(2): 184-204.
- [5] Chen H. Research on the Demand for Innovative Talents in Marketing of Small and Medium-sized Enterprises under the Background of Internet Plus[J]. Chinese Journal of PR Magazine, 2022(9): 94-96.
- [6] Guo X. Problems and Suggestions on Human Resource Development and Management in Small and Medium-sized Enterprises[J]. Chinese Journal of Talent Lookout, 2022(4): 87-88.
- [7] Li L. Strengthening Business Administration Training to Improve Enterprise Management[J]. China Small Medium Enterprises, 2022(9): 184-186.
- [8] Li B. Study on the Forecast of Trends in Talent Demand in the Management Disciplines of Small and

Medium-sized Enterprises[J]. Chinese Journal of Market Modernization, 2023(11): 71-73.

[9] Lu X. Research on Digital Talent Development of Small and Medium-sized Enterprises in the Context of Digital Economy[J]. Chinese Journal of Market Research Information (General Edition), 2022(24): 139-141.

[10] Shen T., Zheng Z., Chai M. Survey on Digital Talent Demand of Small and Medium-sized Enterprises in Hebei Province[J]. Chinese Journal of Science Technology and Industry, 2023, 23(14): 27-32.

[11] Zhao Y., Wang T. Report on E-commerce Talent Demand of Small and Medium-sized Enterprises in Shandong Province[J]. China Small Medium Enterprises, 2022(7): 175-176.

[12] Ni Y., Han P. Inclusive Leadership and Employees' Improvisational Behavior: Influencing Mechanisms and Recommendations[J]. Service Science and Management, 2024, 13(3): 349-356.

[13] Shi G., Yang Y. On How to Be Creative in Haste: A Study on the Effect of Time Pressure on Employees' Creativity—Mediating Mechanisms Based on Improvisation and Sense of Being Trusted[J]. Chinese Journal of Xinjiang State Farms Economy, 2021(4): 81-92.

[14] Sun Y., He S., Sang R., Fu J. A Mechanistic Study on the Influence of Corporate Social Work Platforms on Employees' Improvisation Ability—based on the Perspective of Online Social Networks[J]. Chinese Journal of Management World, 2019(3): 157-168.

[15] Flaminiano J. P. Entrepreneurial Bricolage: A Key to Innovation for SMEs in a Developing Economy [J]. Small Business International Review, 2024, 8(1): 1-15.

[16] Fultz A. E., Hmieleski K. M. The Art of Discovering and Exploiting Unexpected Opportunities: The Roles of Organizational Improvisation and Serendipity in New Venture Performance [J]. Journal of Business Venturing, 2021, 36(4): 1-17.

[17] Al Zarooni M. I. The Effect of Leaders Strategic Improvisation and TQM on SME's Performance: Examining Mediating Role of Corporate Entrepreneurship [J]. Turkish Journal of Computer and Mathematics Education (TURCOMAT), 2021, 12(4): 403-412.

[18] Al Falloji Y. E., Al Nuiami S. A. The Impact of Organizational Improvisation on Entrepreneurial Performance: An Analytical Research at the Ministry of Education in Iraq[J]. Eximia, 2024(13): 246-262.

[19] Liu J., Zhou X., Wang Q. The Influence of Entrepreneurial Leadership on Employee Improvisation in New Ventures: Based on Cognitive-affective Processing System Framework[J]. Kybernetes, 2023, 52(9): 3566-3587.

[20] Ye Z., Mai Y. Explorative Improvisation and Exploitative Improvisation: A Study on Entrepreneurial Improvisation from the Ambidexterity Perspective[J]. Chinese Journal of Nankai Business Review, 2018(4): 16-25.

[21] Ma H., Wu J., Guo H., Ge B. Research on Improvisation in the Field of Entrepreneurship: Antecedents, Consequences and Boundary Condition[J]. Chinese Journal of Management World, 2021, 37(5): 211-229.

[22] Aga M. K. The Mediating Role of Perceived Behavioral Control in the Relationship Between Entrepreneurship Education and Entrepreneurial Intentions of University Students in Ethiopia [J]. Journal of Innovation and Entrepreneurship, 2023, 12(1): 1-18.

[23] Miço H., Cungu J. Entrepreneurship Education, a Challenging Learning Process Towards Entrepreneurial Competence in Education[J]. Administrative Sciences, 2023, 13(1): 1-21.

[24] Setiawan A., Basri J. B. Evaluation of Entrepreneurship Education for University Students: A Scale Development Study[J]. Pegem Journal of Education and Instruction, 2023, 13(2): 243-251.

[25] Balachandra L. The Improvisational Entrepreneur: Improvisation Training in Entrepreneurship Education [J]. Journal of Small Business Management, 2019(S1): 60-77.

- [26] Barbosa F. P. , Davel E. Organizational Improvisation: Challenges and Perspectives for Management Education[J]. *Cadernos EBAPE*, 2022(19) : 1016–1030.
- [27] Djatmika E. T. , Rahayu W. P. Entrepreneurial Intention: The Moderating Role of Improvisation on Student Faculty of Economics, State University of Malang[J]. *Journal of Business and Management Review*, 2021, 2(4) : 318–335.
- [28] Hamburg I. Social Measures and Disruptive Innovations in Entrepreneurship Education to Cope with COVID-19[J]. *Advances in Social Sciences Research Journal*, 2021, 8(1) : 70–80.
- [29] Chaudhary S. , Kaur P. , Alofaysan H. , Halberstadt J. , Dhir A. Connecting the Dots? Entrepreneurial Ecosystems and Sustainable Entrepreneurship as Pathways to Sustainability [J]. *Business Strategy and the Environment*, 2023, 32(8) : 5935–5951.
- [30] Holzmann P. , Gregori P. The Promise of Digital Technologies for Sustainable Entrepreneurship: A Systematic Literature Review and Research Agenda[J]. *International Journal of Information Management*, 2023 (68) : 1–14.
- [31] Sreenivasan A. , Suresh M. Exploring the Contribution of Sustainable Entrepreneurship Towards Sustainable Development Goals: A Bibliometric Analysis[J]. *Green Technologies and Sustainability*, 2023(1) : 1–14.
- [32] Chen L. , Yuan M. , Lin H. , Han Y. , Yu Y. , Sun C. Organizational Improvisation and Corporate Green Innovation: A Dynamic Capability Perspective[J]. *Business Strategy and the Environment*, 2023, 32(8) : 5686–5701.
- [33] Larsen H. , Bogers M. Innovation as Improvisation “in the Shadow” [J]. *Creativity and Innovation Management*, 2014, 23(4) : 386–399.
- [34] Murtaza S. H. , Khan A. , Mustafa S. M. Eco-centric Success: Stakeholder Approaches to Sustainable Performance via Green Improvisation Behavior and Environmental Orientation in the Hotel Industry[J]. *Business Strategy and the Environment*, 2024(1) : 1–14.
- [35] Willemsen S. , Witschge T. , Sauer S. Improvisation and Entrepreneurial Journalism: Reimagining Innovation[J]. *Journalism Studies*, 2021, 22(11) : 1487–1503.
- [36] Emon M. M. , Khan T. The Impact of Cultural Norms on Sustainable Entrepreneurship Practices in SMEs of Bangladesh[J]. *Indonesian Journal of Innovation and Applied Sciences (IJIAS)*, 2023, 3(3) : 201–209.
- [37] Shabbir M. S. Exploring the Relationship Between Sustainable Entrepreneurship and the United Nations Sustainable Development Goals: A Comprehensive Literature Review [J]. *Sustainable Development*, 2023, 31 (4) : 3070–3085.
- [38] Usman F. O. , Kess-Momoh A. J. , Ibeh C. V. , Elufioye A. E. , Ilojiana V. I. , Oyeyemi O. P. Entrepreneurial Innovations and Trends: A Global Review: Examining Emerging Trends, Challenges, and Opportunities in the Field of Entrepreneurship, with a Focus on How Technology and Globalization Are Shaping New Business Ventures[J]. *International Journal of Science and Research Archive*, 2024, 11(1) : 552–569.
- [39] Carvalho A. A Duality Model of Dynamic Capabilities: Combining Routines and Improvisation [J]. *Administrative Sciences*, 2023, 13(3) : 1–18.
- [40] Jarboui A. , Alrikabi E. H. The Effect of Strategic Improvisation in Achieving Organizational Brilliance: An Analytical Study in a Sample of Private Iraqi Commercial Banks[J]. *Asian Journal of Economics, Business and Accounting*, 2023, 23(21) : 50–61.
- [41] Mafimisebi O. P. , Obembe D. , Ogunsade A. I. Planned, Improvised or Resilience: Small Business Owner-managers’ Perception and Response to Crises in Crisis-prone Environments [J]. *Journal of General*

Management, 2023(23): 1-22.

[42] Feng X. , Chen S. Nirvana Rebirth, the Impact of Dynamic Absorptive Capacity and Resource Bricolage on Dual Innovation, and on the Interference of Improvisation[J]. International Journal of Economics and Business Research, 2024, 27(2): 324-349.

[43] Sischarenco E. “Prepared to Face the Unexpected”: Dynamic Enterprises in Italy as a Model of Resilience[J]. Journal of Business Anthropology, 2023, 12(2): 214-233.

[44] Akhtar T. , Mohamad M. Market Orientation (Mo), Strategic Flexibility (Sf), and Organizational Improvisation (Oi): A Path to Business Performance [J]. Educational Administration: Theory and Practice, 2024, 30(5): 9481-9495.

[45] Hadida A. L. , Odiase N. O. The Routledge Companion to Improvisation in Organizations [M]. London: Routledge, 2024(1): 367-388.

[46] Masaitytė D. , Jūrėnienė V. Improvisation in the Management of Lithuanian Art Organisations [J]. International Journal of Financial Research, 2023, 14(2): 79-92.

[47] Souchon A. L. , Hughes P. , Farrell A. M. , Nemkova E. , Oliveira J. S. Spontaneity and International Marketing Performance[J]. International Marketing Review, 2016, 33(5): 671-690.

[48] Shabbir S. , Danish R. Q. , Rehman M. , Hasnain M. , Asad H. An Empirical Investigation of Environmental Turbulence and Fear in Predicting Entrepreneurial Improvisation[J]. Journal of Open Innovation: Technology, Market, and Complexity, 2021, 7(2): 1-16.

[49] Vera D. , Crossan M. M. Character-enabled Improvisation and the New Normal: A Paradox Perspective [J]. Management Learning, 2023, 54(1): 77-98.

[50] Adenutsi D. E. Entrepreneurship, Job Creation, Income Empowerment and Poverty Reduction in Low-income Economies[J]. Theoretical Economics Letters, 2023, 13(6): 1579-1598.

[51] Arejiogbe O. E. , Moses C. L. , Salau O. P. , Onayemi O. O. , Agada S. A. , Dada A. E. , Obisesan O. T. Bolstering the Impact of Social Entrepreneurship and Poverty Alleviation for Sustainable Development in Nigeria[J]. Sustainability, 2023, 15(8): 1-19.

[52] Nor A. I. Entrepreneurship Development as a Tool for Employment Creation, Income Generation, and Poverty Reduction for the Youth and Women[J]. Journal of the Knowledge Economy, 2024(23): 1-24.

[53] Ipinnaiye O. , Olaniyan F. An Exploratory Study of Local Social Innovation Initiatives for Sustainable Poverty Reduction in Nigeria[J]. Sustainable Development, 2023, 31(4): 2222-2239.

[54] Setiawan H. H. , Yuda T. K. , Susantyo B. , Sulubere M. B. , Ganti M. , Habibullah H. , Sabarisman M. , Murni R. Scaling up Social Entrepreneurship to Reduce Poverty: Exploring the Challenges and Opportunities Through Stakeholder Engagement[J]. Frontiers in Sociology, 2023(8): 1-7.

[55] Si X. , Yan Y. , Fu Y. Research and Future Direction on the Frontier Theory of Entrepreneurship and Poverty Reduction[J]. Chinese Journal of Management World, 2020, 36(11): 194-206.

[56] Zhang Y. , Yang C. , Yan S. , Wang W. , Xue Y. Alleviating Relative Poverty in Rural China Through a Diffusion Schema of Returning Farmer Entrepreneurship[J]. Sustainability, 2023, 15(2): 1-19.

[57] He T. , Liao H. , Sun P. , Shi M. , Liu Y. , Qing L. Coupling Relationship Between Potential of Rural Revitalization and Labor Resources in Poor Mountainous Areas in Southwest China: A Case of Wangmo County in Guizhou Province[J]. Chinese Journal of Areal Research and Development, 2022, 41(1): 145-150.

[58] Hong M. , Lou L. , Gong L. , Li F. Informal Institutions of Local Knowledge Evolution and Poverty Governance Mechanism in Ethnic Minority Areas: An Analysis Based on a Case Study in Youniang Village, A Miao

Village in Guizhou Province[J]. *China Rural Survey*, 2022(5): 21-43.

[59] Tian T. , Li B. , Zuo T. The Emergence of “the Lazy Poor”: A New Interpretation Framework for the Occurrence of Poverty[J]. *Rural Economy*, 2021(2): 37-47.

[60] Huang W. , Wang G. To Promote Economic Leapfrog Development in Underdeveloped Areas with Green Development: A Data Analysis Based on Guizhou Province [J]. *Journal of Guizhou China University (Social Sciences)*, 2022, 40(1): 77-83.

[61] Liu H. , Hong Y. The New Urbanization Path of “Inverted U-shaped” Urban-rural Income Gap in Underdeveloped Areas—Based on the Practical Test of Guizhou Province[J]. *Journal of Guizhou University of Finance and Economics*, 2022(6): 98-108.

[62] Pu R. Study on the Economic Development of Minority Areas—Taking Sanbao Dong Village in Guizhou Province as an Example[J]. *Economic Research Guide*, 2023(4): 15-17.

[63] Liu X. , Xiao Z. The Mode of Research-teaching Synergy Promotes the Development of Innovation and Entrepreneurship Training for College Students[J]. *China Continuing Medical Education*, 2021, 13(27): 60-64.

[64] Luo Z. Research on the Status Quo and Development Countermeasures of Public Welfare Entrepreneurship Education in Guizhou Colleges and Universities in the Context of Double-creation Era [J]. *Chinese Journal of PR Magazine*, 2022(12): 127-129.

[65] Zhao Q. Research on the Status Quo of Innovation and Entrepreneurship Education of Intermediate Tourism Management Major in Guizhou Province[J]. *China Science and Technology Journal Database (Scientific Research)*, 2022(5): 5-8.

[66] Hu W. , Ahmed F. , Su Y. Transactive Memory System and Entrepreneurial Team Performance: The Impact of Ability to Improvise and Market Competition [J]. *International Journal of Emerging Markets*, 2023, 18(12): 6234-6259.

[67] Luo X. R. , Mai Y. , Ye Z. When Do Close Ties to Service Intermediaries Lead to Entrepreneurial Improvisation? [J]. *Strategic Entrepreneurship Journal*, 2023, 17(3): 612-632.

[68] Sun W. , Hou X. , Liang L. , Bi X. Many Roads Lead to Rome: How Improvisation and Absorptive Capacity Affect Entrepreneurial Orientation and New Venture Performance Relationship [J]. *Plos One*, 2023, 18(3): 1-19.

[69] Cunha M. P. , Cunha J. D. , Kamoche K. Organizational Improvisation: What, When, How, and Why [J]. *International Journal of Management Reviews*, 1999, 1(3): 299-341.

[70] Li Y. , Li H. , Pang Y. , Li J. Institutional Environment of Green Development, Entrepreneurial Activities and Economic Development[J]. *Forum on Science and Technology in China*, 2019(11): 146-154.

[71] Jia J. , Liu M. , Xiong L. , Sun B. Dual-path Research on the Influence of Error Management Climate on Entrepreneurial Improvisation[J]. *Chinese Journal of Management Science*, 2023, 36(2): 3-16.

[72] Hu L. , Gu J. , Wu J. , Lado A. A. Regulatory Focus, Environmental Turbulence, and Entrepreneur Improvisation[J]. *International Entrepreneurship and Management Journal*, 2018, 14(1): 129-148.

[73] Tian Y. , Wang L. , Xu Y. Research Status and Prospect of Social Mindfulness[J]. *Chinese Journal of Advances in Psychology*, 2020, 10(8): 1069-1078.

[74] Abubakar A. , Mourgan F. H. , Al Kharusi B. , Elfitori C. M. Impact of Entrepreneurial Education, Trait Competitiveness and Psychological Capital on Entrepreneurial Behavior of University Students in GCC[J]. *Journal of Enterprising Communities: People and Places in the Global Economy*, 2023, 17(5): 1022-1044.

[75] Xie X. , Li C. , Duan X. Policy Support, Personal Characteristics and Entrepreneurial Willingness of

College Students—Analysis Based on Questionnaire Survey of College Students in Henan Province[J]. Chinese Journal of Zhengzhou University of Aeronautics, 2018, 36(5): 62-73.

[76] Dou K. , Liu Y. , Wang Y. , Nie Y. Willingness to Cooperate: Emotion Enhancement Mechanism of Perceived Social Mindfulness on Cooperative Behavior[J]. Chinese Journal of Acta Psychologica Sinica, 2018a, 50(1): 101-114.

[77] Dou K. , Nie Y. , Wang Y. , Liu Y. Trust or Defence? The Enhancing Effect of Perceived Social Mindfulness on Cooperative Behavior during Interactive Game[J]. Chinese Journal of Psychological Science, 2018b, 41(2): 390-396.

[78] Korzynski P. Online Social Networks and Leadership: Implications of a New Online Working Environment for Leadership[J]. International Journal of Manpower, 2013, 34(8): 975-994.

[79] Su X. , Jiang X. , Lin W. , Xu A. , Zheng Q. Organizational Innovative Climate and Employees' Improvisational Behavior: The Mediating Role of Psychological Safety and the Moderating Role of Creative Self-efficacy[J]. Sage Open, 2022, 12(4): 1-21.

[80] Giustiniano L. , E-Cunha M. P. , Simpson A. V. , Rego A. , Clegg S. Resilient Leadership as Paradox Work: Notes from COVID-19[J]. Management and Organization Review, 2020, 16(5): 971-985.

[81] Lin T. , Liao Y. Future Temporal Focus in Resilience Research: When Leader Resilience Provides a Role Model[J]. Leadership & Organization Development Journal, 2020, 41(7): 897-907.

[82] Shelton C. D. , Hein S. D. , Phipps K. A. Positive and Proactive Leadership: Disentangling the Relationships Between Stress, Resilience, Leadership Style and Leader Satisfaction/Well-being[J]. International Journal of Organizational Analysis, 2022, 30(2): 408-429.

[83] Zhang J. , Zheng W. , Zhao N. Research on the Multi-level Influence Mechanism of Leader Mindfulness on Organizational Members' Resilience[J]. Human Resources Development of China, 2021, 38(10): 108-121.

[84] Gerpott F. H. , Fasbender U. , Burmeister A. Respectful Leadership and Followers' Knowledge Sharing: A Social Mindfulness Lens[J]. Human Relations, 2020, 73(6): 789-810.

[85] Van Doesum N. J. , de Vries R. E. , Blokland A. A. , Hill J. M. , Kuhlman D. M. , Stivers A. W. , Tybur J. M. , Van Lange P. A. Social Mindfulness: Prosocial the Active Way[J]. The Journal of Positive Psychology. 2020, 15(2): 183-193.

[86] Van Doesum N. J. , Murphy R. O. , Gallucci M. , Aharonov-Majar E. , Athenstaedt U. , Au W. T. , Bai L. , Böhm R. , Bovina I. , Buchan N. R. , Chen X. P. Reply to Komatsu et al. : From Local Social Mindfulness to Global Sustainability Efforts? [J]. Proceedings of the National Academy of Sciences, 2022(4): 1-2.

[87] Sajjad A. , Shahbaz W. Mindfulness and Social Sustainability: An Integrative Review[J]. Social Indicators Research, 2020, 150(1): 73-94.

[88] Wang Y. , Zhang J. , Wang F. , Xu W. , Liu W. Do Not Think Any Virtue Trivial, and Thus Neglect It: Serial Mediating Role of Social Mindfulness and Perspective Taking[J]. Chinese Journal of Acta Psychologica Sinica, 2023a, 55(4): 626-641.

[89] Zhan X. , Wang T. , Guo Y. , Zhu Z. Resilient Leadership: Structure Dimensions, Scale Development and Test[J]. Chinese Journal of Management Science, 2023, 36(1): 46-61.

[90] Ferrer S. , Caridad E. Resilient Leadership and Quality of Life from Counseling: An Analytic Review[J]. Orientación Y Sociedad, 2017(17): 95-101.

[91] Vera D. , Crossan M. Improvisation and Innovative Performance in Teams[J]. Organization Science, 2005, 16(3): 203-224.

- [92] Huang Y. , Chen C. Exploring Institutional Pressures, Firm Green Slack, Green Product Innovation and Green New Product Success: Evidence from Taiwan's High-tech Industries [J]. Technological Forecasting and Social Change, 2022(174): 1-12.
- [93] Misztal A. , Kowalska M. Factors of Green Entrepreneurship in Selected Emerging Markets in the European Union[J]. Environment, Development and Sustainability, 2023(23): 1-24.
- [94] Qu K. , Liu Z. Green Innovations, Supply Chain Integration and Green Information System: A Model of Moderation[J]. Journal of Cleaner Production, 2022(10): 1-12.
- [95] Wang H. , Xu Y. , Yue S. , Chen Y. The Impact of Perceived Social Mindfulness on Trust Repair: The Moderating Role of Social Distance and Temporal Distance[J]. Chinese Journal of Psychological Science, 2023b, 46(1): 113-120.
- [96] Yan Y. , Liu Y. , Ding F. The Effects of Theory of Mind and the Pattern of Social Interactions on the Development of Social Mindfulness in Junior High School Students [J]. Chinese Journal of Psychological Development and Education, 2022, 38(4): 485-494.
- [97] Zhao X. , Li D. , Yang X. The Relationship Between Preschoolers' Understanding of Considerate Socially-mindful Actions and Theory of Mind[J]. Chinese Journal of Acta Psychologica Sinica, 2022, 54(8): 892-904.
- [98] Safi A. , Chen Y. , Zheng L. The Impact of Energy Productivity and Eco-innovation on Sustainable Environment in Emerging Seven (E-7) Countries: Does Institutional Quality Matter? [J]. Frontiers in Public Health, 2022(10).
- [99] Zhao J. , Rahman S. U. , Afshan S. , Ali M. S. , Ashfaq H. , Idrees S. Green Investment, Institutional Quality, and Environmental Performance: Evidence from G-7 Countries Using Panel NARDL Approach [J]. Environmental Science and Pollution Research, 2023, 30(45): 100845-100860.
- [100] Shamil M. M. , Shaikh J. M. , Pauline H. O. , Krishnan A. External Pressures, Managerial Motive and Corporate Sustainability Strategy: Evidence from a Developing Economy[J]. Asian Journal of Accounting & Governance, 2022(18): 17-36.
- [101] Shahzad F. , Du J. , Khan I. , Wang J. Decoupling Institutional Pressure on Green Supply Chain Management Efforts to Boost Organizational Performance: Moderating Impact of Big Data Analytics Capabilities [J]. Frontiers in Environmental Science, 2022(10): 1-13.
- [102] Zhu J. , Han M. Impact of Institutional Pressure on Green Innovation of Manufacturing Enterprises[J]. Chinese Journal of Science and Technology Management, 2023, 25(5): 73-96.