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RESEARCH ARTICLE

Priority decision-making for green projects in project portfolio optimization: The joint mechanism of environmental attitudes and social norms

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ABSTRACT

In the context of sustainable development, optimizing green project priority decisions through project portfolio management has become a key issue for enterprises. Based on the theory of planned behavior and social norms, this study constructed a theoretical model that combines psychological factors and social factors. It aims to explore the joint effect mechanism of environmental attitudes and social norms on green project priority decisions. The study used a questionnaire survey method to collect data from 294 business managers from industries such as manufacturing, information technology, and finance. The scales used included the New Ecological Paradigm Scale, Social Norm Scale, and Project Priority Evaluation Scale. Data analysis was conducted using SPSS 25.0 and the PROCESS plugin to examine the main and moderating effects. The results showed that environmental attitudes had a significant positive impact on the priority of green projects ($\beta=0.39$, $p<0.001$), and social norms played a positive moderating role in the relationship between the two ($\beta=0.18$, $p<0.01$). Research has shown that green project decision-making is not only driven by individual attitudes but also strengthened by external regulatory environments. However, the research samples mainly come from specific industries and regions, and the universality of the conclusions needs further verification. Practically, enterprises should focus on cultivating managers' environmental values and actively shaping and utilizing social norms to promote higher priority for green projects in resource allocation.

Keywords: project portfolio management; green projects; priority decision-making; environmental attitude; social norms; moderating effect

1. Introduction

Currently, the world is actively promoting "dual carbon" sustainable development. In this context, corporate strategic decision-making is facing unprecedented transformation pressure. As a key link in undertaking strategic implementation, how Project Portfolio Management (PPM) can effectively screen and prioritize green projects has become a core issue[1]. Traditional project portfolio optimization models mainly rely on financial indicators such as net present value and return on investment. However, green projects often have characteristics such as positive externalities, long-term returns, and strategic value, making purely economic decision-making frameworks frequently run into difficulties in practice. In addition, existing

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research mostly focuses on the performance results or macro-system impacts of green projects, but generally ignores the interactive mechanism between internal psychology and external social situations in the micro-decision-making process. Specifically, existing literature has not yet fully revealed the following key questions: how does a decision-maker's stable Environmental Attitude (EA) serve as an intrinsic psychological motivation to influence their choices in the specific context of project portfolio decision-making? Do external Social Norms (SNs) act independently on decision-making? Do they interact with internal attitudes to jointly shape the final priority of green projects? The linkage mechanism of this "psychological social" factor constitutes the core research gap of this study.

This study aims to construct an integrated theoretical framework that systematically elucidates the intrinsic relationship between EAs, SNs, and Green Project Priority (GPP) decision-making. This study is based on the reality of corporate PPM and aims to address the core question of how EAs drive GPP decisions and what role SNs play in this process. Therefore, this study takes EAs as the intrinsic driving variable and SNs as the key situational moderating variable. It incorporates them into a unified "psychological social" analysis framework to reveal the joint mechanism for the priority of green projects. Through empirical testing, this study hopes to offer a new perspective for understanding the micro-decision-making basis of corporate sustainable transformation and provide practical management inspiration for managers to optimize resource allocation and improve strategic agility in complex situations.

2. Literature review and theoretical basis

The complexity of prioritizing green projects fundamentally stems from their multidimensional value attributes. Traditional PPM theory has long relied on financial indicators as the core decision-making basis. However, green projects often have significant positive externalities and long-term return characteristics, which makes it difficult for economic evaluation frameworks that rely solely on financial indicators to comprehensively measure their value. Therefore, it is necessary to go beyond a single economic rationality perspective and incorporate behavioral preferences and situational factors into the analytical framework to deepen the understanding of the decision-making problem. At the individual decision-making level, EA is regarded as a key psychological factor affecting green behavior[2]. Rooted in classic social psychological frameworks such as the Planned Behavior Theory (PBT) and Value-Belief-Norm Theory, EAs are defined as individuals' stable evaluations and behavioral tendencies toward environmental protection. Many studies have shown that positive EAs can effectively predict individual pro-environmental behavior[3-5]. In an organizational context, decision-makers are boundedly rational individuals, and their inherent environmental values and beliefs will inevitably penetrate into the project evaluation and selection process and become the internal engine driving green preferences. However, when making organizational decisions, decision-makers are also affected by external social situations. SNs can be divided into injunctive norms and descriptive norms. The former refers to society’s rules about what behaviors should be permitted or prohibited, while the latter refers to the perception of others’ general behavior[6]. In the business environment, policies and regulations, industry benchmarks, and the expectations of investors and consumers all constitute strong normative pressure. These norms set critical situational boundaries for decision-making by shaping decision makers' perceptions of appropriate behavior, signaling legitimacy, and exerting pressure for compliance.

In summary, although existing literature has separately revealed the importance of EAs and SNs, there is still a lack of research exploring the combined effects of the two in the specific context of project portfolio decision-making. Attitude may constitute the initial psychological inclination of decision-making, while SN may regulate the intensity of the transformation of this inclination into actual decision-making behavior. Therefore, integrating PPM, EA, and SN theories to construct a "psychological social" interaction model has

become the key to systematically revealing the internal mechanism of GPP decision-making. Existing research has achieved rich results in the impact of EA on pro-environmental behavior and the impact of SNs on decision-making. However, there is still a gap in empirical research on jointly modeling EA and SN in the PPM field to test their joint mechanism on green project priorities. This study is dedicated to filling this important research gap. In terms of system implementation, research on sustainable transformation mechanisms is increasingly focusing on strategic interaction and collaborative governance among multiple stakeholders. For example, Yin S et al. used a multi-agent evolutionary game model to reveal the coordination of interests and policy driving mechanisms among local governments, enterprises, power grids, and farmers in promoting the development of distributed photovoltaics in rural areas[7]. This study reveals how policy norms interact with the interests and strategies of multiple stakeholders at the macro-system level, ultimately driving the implementation and diffusion of green technologies. This provides important interdisciplinary perspectives and methodological insights for understanding the transmission mechanism of SN between micro-decision-making and macro-system implementation, and helps to broaden the theoretical depth of this study.

3. Research hypotheses and theoretical models

Given the above literature foundation, a theoretical model is built to explore the joint influence mechanism of EAs and SNs on GPP decision-making. This model uses EA, GPP, and SN as the independent, dependent, and moderating variables. It systematically examines the interaction between psychological factors and social factors, as shown in **Figure 1**.

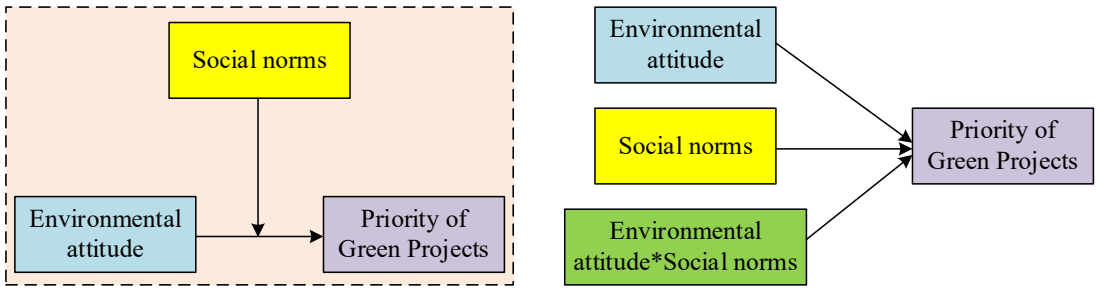

Figure 1. The model diagram.

In **Figure 1**, this model aims to systematically examine the interaction mechanism of "psychological-social" factors. EA, as an individual's stable psychological tendency, is the intrinsic basis for driving green decision-making[8]. When decision makers hold a positive EA, they will have a deeper recognition of the ecological value and long-term significance of green projects, thereby giving them a higher weight in resource allocation. This intrinsic value recognition will be transformed into specific decision-making preferences. Even in the face of uncertain economic returns, policymakers are more likely to support green projects that align with their values. This study puts forward hypothesis 1 (H1): EA has a significant positive impact on GPP. However, organizational decision-making does not occur in isolation, and the role of internal attitudes is often restricted or strengthened by external social situations[9]. SNs play an important boundary role here. That is, when strong injunctive norms or universal descriptive norms are perceived, these external signals provide the decision-maker with a basis for behavioral legitimacy in making choices, and can also enhance the decision-maker's confidence in acting based on personal attitudes through the social identity mechanism. A strong social normative environment can provide external legitimacy for decision-making, thus amplifying the predictive power of EAs on decision-making behavior. Conversely, in a normatively

weak environment, even with positive attitudes, decision makers may be hesitant due to a lack of support. Based on this, hypothesis 2 (H2) is proposed: SNs moderate positively in the correlation between EA and GPP; that is, the stronger the SNs, the more significant the positive impact of EA on priorities.

4. Research design

To test the proposed theoretical hypotheses, this paper utilizes a questionnaire survey method for empirical analysis. Data collection is conducted through a professional online survey platform (Questionnaire Star), with managers involved in project investment decisions in enterprises as the target group. A total of 328 questionnaires are recovered during the survey, and 294 valid questionnaires are obtained after strict screening, with an effective recovery rate of 89.6%. The sample covers multiple industries such as manufacturing, information technology, and finance, and the average tenure of decision-makers is 7.5 years. **Table 1** shows the specific statistics.

Table 1. Demographic characteristics (N=294).

Characteristic	Category	%	Characteristic	Category	%
Gender	Male	58.1	Education	Bachelor's Degree	42.5
	Female	41.9		Master's Degree or Above	52.8
Age	Under 30	16.3		Others	4.7
	31-40	45.2	Position	Senior Management	23.6
	41-50	28.9		Middle Management	51.8
	Over 50	9.6		Junior Management	24.6
Industry	Manufacturing	32.9	/	/	/
	Information Technology	25.6	/	/	/
	Finance	18.3	/	/	/
	Others	23.2	/	/	/

In **Table 1**, among them, men account for 58.1% and women account for 41.9%. The age distribution is mainly 31-40 years old (45.2%), and the educational background is mostly those with a master's degree or above (52.8%). The position composition is dominated by middle-level managers (51.8%), with an average tenure of 7.5 years. The industry distribution covers manufacturing (32.9%), information technology (25.6%), and other fields. Variables are measured using mature scales. Among them, the EA is measured utilizing the New Ecological Paradigm (NEP) scale, covering dimensions such as ecological balance and growth limits[10]. This scale uses Likert's five-point scoring method and contains 15 items, which have good reliability and validity. The measurement of SNs mainly refers to the research framework of norm focus theory by Cialdini et al., and is appropriately revised based on Lindenberg et al.[11,12]. The scale contains a total of 8 items, of which the injunctive norm and descriptive norm dimensions each contain 4 items, and the Cronbach's α Coefficient (CAC) is 0.82. The measurement of GPP refers to the item selection standard scale in Cooper et al.'s PPM study[13]. This scale evaluates decision-makers' inclination towards green projects in resource allocation through six items, measuring decision intention rather than actual decision behavior. The Cronbach's alpha coefficient of this scale is 0.88. In terms of analysis method, this study uses the PROCESS plug-in in SPSS 25.0 software to conduct hypothesis testing. The specific process is shown in **Figure 2**.

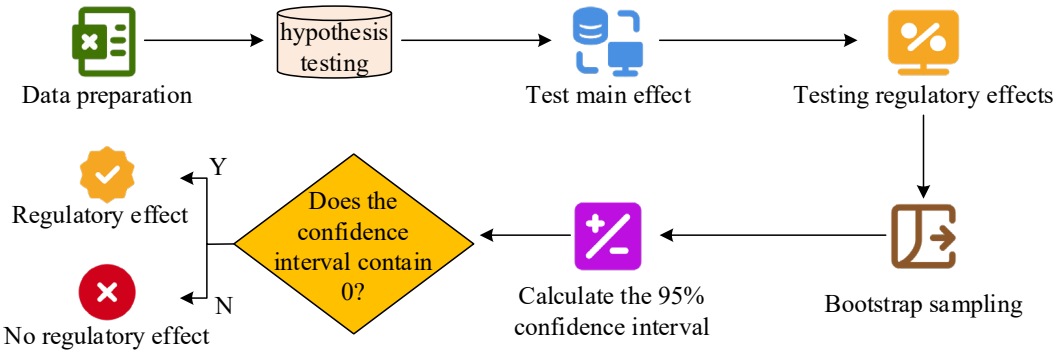

Figure 2. Schematic diagram of analysis process (Source: https://iconpark.oceanengine.com/home).

First, Model 1 is taken to test the primary effect of EA on GPP (corresponding to H1). Next, Model 7 is used to analyze the moderating effect, using the Bootstrap method to extract 5,000 samples and calculate a 95% Confidence Interval (95%CI) to test the moderating effect of SN on the relationship between EA and GPP (corresponding to H2). During the analysis, all continuous variables are centered to make sure interpretive reliability of the interaction terms.

5. Data analysis

Before the data analysis, in addition to conducting Harman single-factor tests, confirmatory factor analysis is used to further test the common method bias using the marker variable method. The results show that the model fit does not significantly improve due to the addition of a marker variable, indicating that the problem of common method bias is not severe. At the same time, variance inflation factor diagnosis is performed on all predictor variables, and the VIF values are all below 2, indicating that there is no serious multicollinearity problem. This study first counts and analyzes the main variables, as shown in **Table 2**.

Table 2. Statistical data.

Variable	Mean	SD	EA	SN	GPP	Tenure	Firm Size
EA	5.12	0.86	1				
SNs	5.35	0.79	0.28**	1			
GPP	4.98	0.91	0.42**	0.31**	1		
Tenure	7.50	4.26	0.08	0.12*	0.06	1	
Firm Size	3.45	1.18	0.15*	0.19**	0.11*	0.23**	1

Note: **p<0.05, **p< 0.01.*

In **Table 2**, the sample's mean values on the three core variables of EA (M=5.12, SD=0.86), SN (M=5.35, SD=0.79), and GPP (M=4.98, SD=0.91) are all at high levels. This shows that the managers interviewed generally hold positive EA, perceive strong SN pressure, and give green projects more priority in project decision-making. In the correlation analysis, EA and GPP are positive (r=0.42, p<0.01), which provides preliminary support for H1, indicating that managers with more positive EAs are more likely to give priority to green projects. SN and GPP also show a significant positive correlation (r=0.31, p<0.01), while EA and SN are positive (r=0.28, p<0.01), which lays the foundation for testing the moderating effect of SN. In addition, for control variables, enterprise size has a weak positive connection with GPP (r=0.11, p<0.05), while the effect of tenure is not significant (p>0.05). The correlation coefficients between each variable are at moderate levels, with the highest being 0.42. Furthermore, this article uses Harman's single-factor test to measure common method bias. In the exploratory factor analysis, the variance explanation rate

of the first factor extracted before rotation is 34.2%, which is lower than the critical standard of 40%. There are 4 factors with eigenvalues >1, and the cumulative variance explanation rate reaches 72.8%, but the first factor does not explain most of the variance. This shows that there is no multicollinearity problem and meets the basic requirements for subsequent testing. After completing the multicollinearity test, this study then uses the PROCESS plug-in developed by Hayes to conduct hypothesis testing to test the primary effect of EA on GPP, as shown in **Table 3**.

Table 3. Main effect test results.

Predictor	β	SE	t	*p*	95% Confidence Interval	VIF
Constant	2.15	0.28	7.68	0.000	[1.60, 2.70]	-
Tenure	0.02	0.01	1.84	0.067	[-0.00, 0.04]	1.08
Firm Size	0.05	0.04	1.25	0.212	[-0.03, 0.13]	1.12
Environmental Attitude	0.39	0.04	9.75	0.000	[0.32, 0.46]	1.15
Model Summary: $R^2 = 0.19$, $F = 22.85$, $p < 0.001$						

Table 3 presents the main effect test results of the impact of EA on the GPP. According to the analysis results, after controlling for tenure and company size, EA shows a significant positive impact on GPP (β=0.39, t=9.75, p<0.001), with a 95% confidence interval of [0.32, 0.46], excluding zero values. This model explains 19% of the variance in GPP (R^2=0.19). This result supports H1, that is, the more positive the EA of decision makers, the higher the priority they give to green projects in project portfolio decisions. In the coefficient size, for every unit growth in EA, GPP increases by 0.39 units, which shows that EA has a high explanatory power in green project decision-making. Regarding control variables, the impact of tenure (β=0.02, p=0.067) and enterprise size (β=0.05, p=0.212) on GPP has not reached the significance level (p>0.05). This shows that the two factors of tenure and company size have a limited direct impact on GPP in the research model. Finally, to test the moderating effect of SN, this study uses Model 1 for analysis, as shown in **Table 4**.

Table 4. Moderating effect test results.

Predictor	β	SE	t	*p*	95% Confidence Interval	VIF
Constant	2.08	0.27	7.70	0.000	[1.55, 2.61]	-
Tenure	0.02	0.01	1.91	0.057	[-0.00, 0.04]	1.09
Firm Size	0.04	0.04	1.10	0.273	[-0.03, 0.11]	1.17
Environmental Attitude	0.37	0.04	9.25	0.000	[0.29, 0.45]	1.32
Social Norms	0.16	0.04	4.00	0.000	[0.08, 0.24]	1.24
Environmental Attitude × Social Norms	0.18	0.06	3.00	0.003	[0.07, 0.29]	1.11
Model Summary: ΔR^2=0.03, F = 9.00, p=0.003; Total R^2=0.22						

Table 4 presents the test results of the moderating effect of SN on the relationship between EA and GPP. The analysis results show that after controlling for the influence of tenure and company size, the interaction term between EA and SN has a significant positive impact on GPP (β=0.18, t=3.00, p=0.003), with a 95% confidence interval of [0.07, 0.29] excluding zero values. This interaction term explains an additional 3% of the variance of GPP (ΔR^2=0.03), and the total explanatory variance of the model is 22% (R^2=0.22), indicating a significant moderating effect of SNs. H2 is supported. Specifically, SN strengthens the positive impact of EA on GPP; that is, the stronger the SN perceived by decision makers, the more obvious the

promotion effect of their EA on GPP. The coefficients of each variable show that the main effects of EA (β=0.37) and SN (β=0.16) (all $p<0.001$) both reach statistical levels, indicating that both have independent explanatory power on GPP. Among the control variables, the impact of tenure (β=0.02, $p=0.057$) and company size (β=0.04, $p=0.273$) is still not significant, indicating that the model results have good stability. This finding reveals the interactive mechanism between EA and SN in influencing green project decisions, and emphasizes the important boundary role of the external SN environment in strengthening the transformation of internal attitudes into actual decision-making behavior.

6. Discussion and conclusion

This study reveals the intrinsic mechanism of GPP decision-making by constructing a theoretical model that integrates EA and SN. Empirical evidence shows that EA, as an internal psychological driving factor, has a significant positive impact on GPP. This finding is consistent with the perspective of the PBT and confirms the penetration of decision-makers' personal values in organizational decision-making [14]. The study also finds that SN has a positive moderating role in the relationship between EA and GPP; that is, when decision makers perceive stronger SN, the impact of their EA on decision-making behavior will be further strengthened. This finding reveals the joint action mechanism of "psychological-social" factors, indicating that green project decisions not only depend on the internal attitude of the decision-maker, but are also deeply affected by the external normative environment.

In terms of theoretical contributions, this study mainly has the following three points: firstly, by introducing SN theory into PPM decision-making research, the traditional analytical framework that relies on economic rationality in this field is broken through, and a "psychological social" dual-driving model is constructed. Secondly, the moderating effect of SN on the relationship between EA and GPP is empirically tested, revealing how external normative environments strengthen the mechanism of transforming internal psychological tendencies into actual decisions, and deepening the understanding of the boundary conditions of attitude behavior relationships. Thirdly, it provides a theoretical framework and empirical support for cross-level research on the interaction between individual cognition and social context in organizational decision-making. In terms of practical implications, the research conclusions provide specific and context specific management insights for enterprises to optimize green project decisions. Firstly, at the internal management level, enterprises should incorporate the cultivation of environmental values into executive development projects and enhance the management team's understanding of the connotation of sustainable development through workshops, case studies, and other methods, rather than just staying at the slogan level. Secondly, in terms of institutional construction, enterprises should establish incentive mechanisms that link green performance with promotion and compensation, and clearly incorporate the GPP into the investment decision-making process, providing institutional guarantees for managers who uphold EA. Furthermore, in terms of shaping external contexts, enterprises should actively track and promote green benchmark practices within the industry, actively participate in the development of industry environmental standards, and thus shape normative pressures that are conducive to green decision-making. Especially when facing resistance to transformation, managers can strategically reference normative signals such as external policy requirements and customer expectations to provide a legitimate basis for green projects to obtain resources.

In addition, the conclusions of this study also have important implications for multinational corporations and cross-cultural management contexts. In the context of global operations, enterprises face diverse institutional environments, cultural values, and regulatory pressures. When multinational corporations formulate globally unified GPP strategies, they need to fully consider the differences in environmental regulation intensity, public environmental awareness, and SN between host countries and home countries.

For example, in areas where EAs are generally high and directive norms are strict, headquarters can give local management greater autonomy to actively respond to local needs. In markets with weaker regulations, it is necessary to compensate for the lack of external motivation through internal value transmission and global standard implementation. At the same time, enterprises should pay attention to the integration of environmental values among cross-cultural teams, reduce green decision-making friction caused by cultural differences through training and communication, and enhance the overall sustainability and strategic consistency of global project portfolios.

To sum up, this study confirms the synergistic effect of EA and SN in GPP decision-making, and provides theoretical and practical inspiration for understanding the micro-mechanism of sustainable transformation of organizations. However, despite this, the study still has certain limitations. Firstly, in terms of the sample, the data in this study mainly come from managers of some industries and regions in China. Although the sample has a certain representativeness, the cultural background, institutional environment, and special stages of industrial development may limit the universality of the conclusions. For example, there are significant differences in the intensity of environmental policies, types of SNs, and cultural values among different countries or regions, which may affect the mechanism of the interaction between EA and SN. Secondly, in terms of research methodology, this study uses cross-sectional data. Although it can reveal the correlation and moderating effects between variables, it is difficult to capture temporal evidence of the dynamics and causal relationships in the decision-making process. The GPP decision-making itself may be a complex process that constantly evolves over time, information updates, and organizational learning. In addition, this study mainly focuses on the two core variables of EA and SN and does not fully consider other potentially important influencing factors. For example, resource constraints within the organization, heterogeneity of the executive team, or broader external institutional pressures are factors that may come into play in more complex models. Future research can be further expanded in the following areas: firstly, in terms of samples and contexts, the research framework can be attempted to be applied to more diverse cultural and institutional backgrounds, such as conducting cross national comparative studies to test the boundary conditions and cross-cultural applicability of theoretical models. Secondly, in terms of research methods, longitudinal research design or case tracking method can be used. These methods can dynamically capture the complete decision-making chain of green projects from proposal, evaluation to final prioritization, thereby more clearly revealing the causal logic and evolutionary paths between variables. In addition, in terms of theoretical models, future research can introduce more diverse explanatory variables and mechanisms. For example, the role of green self-efficacy, organizational green culture, or the use of digital technologies in decision-making processes can be explored. It is even possible to construct multi-level integrated models that simultaneously examine linkage effects at the individual, organizational and institutional levels. The purpose is to reveal the complex mechanism of GPP decision-making more comprehensively and systematically.

Conflicts of interest

The authors declare no conflicts of interest.

References

1. Cheng B, Li Z, Qiu B, et al. Does collective decision-making promote SOEs' green innovation? Evidence from China[J]. Journal of Business Ethics, 2024, 191(3): 481-500.
2. Hansen L K, Svejvig P. Principles in project portfolio management: Building upon what we know to prepare for the future[J]. Project Management Journal, 2023, 54(6): 607-628.

3. Miller L B, Rice R E, Gustafson A, et al. Relationships among environmental attitudes, environmental efficacy, and pro-environmental behaviors across and within 11 countries[J]. Environment and Behavior, 2022, 54(7-8): 1063-1096.
4. Mónus F. Environmental education policy of schools and socioeconomic background affect environmental attitudes and pro-environmental behavior of secondary school students[J]. Environmental Education Research, 2022, 28(2): 169-196.
5. Bala R, Singh S, Sharma K K. Relationship between environmental knowledge, environmental sensitivity, environmental attitude and environmental behavioural intention–a segmented mediation approach[J]. Management of Environmental Quality: An International Journal, 2023, 34(1): 119-136.
6. Gelfand M J, Gavrilets S, Nunn N. Norm dynamics: Interdisciplinary perspectives on social norm emergence, persistence, and change[J]. Annual Review of Psychology, 2024, 75(1): 341-378.
7. Yin S, Wang Y, Zhang Q. Mechanisms and implementation pathways for distributed photovoltaic grid integration in rural power systems: A study based on multi-agent game theory approach[J]. Energy Strategy Reviews, 2025, 60101801-101801.
8. Sh. Ahmad F, Rosli N T, Quoquab F. Environmental quality awareness, green trust, green self-efficacy and environmental attitude in influencing green purchase behaviour[J]. International Journal of Ethics and Systems, 2022, 38(1): 68-90.
9. Qin B, Song G. Internal motivations, external contexts, and sustainable consumption behavior in China—Based on the TPB-ABC integration model[J]. Sustainability, 2022, 14(13): 7677.
10. Ijaz A, Malik S. IMPACT OF NEW ECOLOGICAL PARADIGM ON ECOLOGICAL ANXIETY AND ECOLOGICAL GRIEF. MEDIATING ROLE OF CLIMATE CHANGE WORRY AMONG YOUNG ADULTS[J]. Pakistan Journal of Social Science Review, 2025, 4(4): 113-128.
11. Cikara M, Martinez J E, Lewis Jr N A. Moving beyond social categories by incorporating context in social psychological theory[J]. Nature Reviews Psychology, 2022, 1(9): 537-549.
12. Tang G, Ren S, Wang M, et al. Employee green behaviour: A review and recommendations for future research[J]. International Journal of Management Reviews, 2023, 25(2): 297-317.
13. Cooper R G, Sommer A F. Dynamic portfolio management for new product development[J]. Research-Technology Management, 2023, 66(3): 19-31.
14. Rozenkowska K. Theory of planned behavior in consumer behavior research: A systematic literature review[J]. International Journal of Consumer Studies, 2023, 47(6): 2670-2700.