WEP Warwick Evans Publishing

International Journal of Social Sciences and Public Administration

ISSN: 3005-9836 (Print), ISSN: 3005-9585 (Online)
Volume 10, Number 9, Year 2026
DOI: https://doi.org/10.62051/ijsspa.v10n9.02



How Does Positive Reinforcement Accountability Mitigate the Innovation-Inhibiting Effect of Negative Reinforcement Accountability?

Siqi Ma

Sichuan University, Chengdu 610040, China

ABSTRACT

Accountability is a central institutional mechanism shaping whether grassroots civil servants engage in reform and innovation. Yet existing research has largely examined individual accountability types or components in isolation, leaving the configurational effects of different accountability elements underexplored. Treating accountability as an overarching institutional construct, this study distinguishes positive reinforcement accountability from negative reinforcement accountability and examines how their joint configuration shapes innovative behavioral intention. We conduct a 2 × 2 between-subjects vignette-based survey experiment with 240 respondents pre-screened for relevant grassroots public-sector work experience and test risk preference as a moderator. The results show, first, that positive reinforcement accountability significantly increases innovative behavioral intention, whereas negative reinforcement accountability exerts an overall inhibitory effect. The effect size for positive reinforcement accountability ($\eta^2 = 0.467$) is approximately 8.34 times that for negative reinforcement accountability ($\eta^2 = 0.056$). Second, the two dimensions interact significantly: high positive reinforcement accountability substantially attenuates the inhibitory effect of high negative reinforcement accountability. Third, risk preference significantly moderates this interaction. The interaction is significant among respondents with high risk preference ($F = 34.96$, $p < 0.001$) but not among those with low risk preference ($F = 1.11$, $p > 0.05$). Taken together, the findings show that the behavioral consequences of grassroots accountability depend not simply on the strength of constraints, but on how support and incentives are configured alongside monitoring and sanctions.

KEYWORDS

Accountability Mechanism; Positive Reinforcement Accountability; Negative Reinforcement Accountability; Innovative Behavioral Intention.

1. INTRODUCTION

Grassroots civil servants are the frontline actors through whom national policies are translated into day-to-day implementation. Their willingness to identify problems, improve procedures, and experiment with service innovations has direct implications for the effectiveness of grassroots governance and citizens' perceived gains from public services. In 2018, the General Office of the CPC Central Committee issued the Opinions on Further Encouraging Cadres to Take on New Responsibilities and Make New Achievements in the New Era, explicitly calling for greater enthusiasm for reform, innovation, and difficult problem solving [1]. At the same time, the 2019 revision of the Regulations of the Communist Party of China on Accountability reaffirmed strict accountability for failures of responsibility [2], further strengthening institutional constraints on public officials. Together, these developments create a consequential tension. Grassroots governance requires officials to exercise initiative, redesign processes, and explore new solutions, yet inspections, performance assessments, and responsibility investigations also make unsuccessful experimentation

Content from this work may be used under the terms of CC BY-NC 4.0 licence (https://creativecommons.org/licenses/by-nc/4.0/).
Published by Warwick Evans Publishing.

potentially costly. Understanding how accountability can enforce responsibility without crowding out reasonable scope for innovation is therefore central to explaining grassroots civil servants' innovative behavioral intention.

Accountability, however, does not exert a uniformly positive or negative influence on grassroots officials' behavior. Control-oriented and sanction-oriented accountability emphasizes monitoring, punishment, and responsibility investigation and may trigger threat appraisal, risk avoidance, and blame-avoidance strategies that suppress innovative exploration [3, 4, 5]. By contrast, trust-based and performance-facilitating accountability emphasizes communication, learning, protection from undue liability, and organizational support, thereby reducing perceived innovation risk and encouraging officials to act proactively [6, 7]. Tan Haibo and Jiang Wuyue further show that accountability arrangements combining higher-quality communication with positive consequences are more conducive to grassroots officials' willingness to innovate [8]. This body of work suggests that the behavioral consequences of accountability depend on its internal design and value orientation rather than on a simple assumption that stricter accountability necessarily produces better performance.

In practice, supportive and constraining elements rarely operate in isolation. Communication, incentives, monitoring, and sanctions often coexist, and their particular combination may create qualitatively different institutional environments. Yet most studies have examined trust-support elements and control-sanction elements separately, leaving their joint operation insufficiently understood. Romzek and Ingraham's analysis of cross-pressures of accountability suggests that when actors face simultaneous and potentially competing responsibility demands, behavioral responses need not equal the simple sum of each pressure and may instead be nonlinear [9]. Tu similarly decomposes accountability into components such as monitoring intensity, discussion quality, reward-based consequences, and punishment-based consequences and shows that different component combinations generate distinct behavioral outcomes [10]. A configurational perspective is therefore better suited than a single-type approach to explaining innovation choices under complex accountability conditions.

The effects of accountability may also depend on individual risk preference. Innovation is inherently uncertain, and individuals differ in how they evaluate prospective gains, the consequences of failure, and exposure to responsibility. Tan Xinyu and Piao Long identify risk-avoidance preference as an important psychological pathway shaping whether grassroots leaders are willing to assume responsibility and take action [11], while Pratt conceptualizes risky choice as jointly determined by risk preference and risk perception [12]. The same accountability configuration may therefore elicit different responses from officials with different risk preferences. Incorporating risk preference into the analysis can help explain why identical institutional signals produce heterogeneous innovation responses.

Building on these gaps, this study asks three questions. First, how do positive reinforcement accountability and negative reinforcement accountability independently affect grassroots civil servants' innovative behavioral intention? Second, do the two dimensions interact, such that high positive reinforcement accountability attenuates the inhibitory effect of high negative reinforcement accountability? Third, does risk preference condition this interaction? Drawing on conservation of resources theory [13, 14] and the theory of planned behavior [15], we test these questions in a 2×2 between-subjects vignette-based survey experiment. In doing so, the study shifts attention from the isolated effects of accountability types to the behavioral consequences of accountability configurations and the individual heterogeneity that conditions them.

2. LITERATURE REVIEW AND RESEARCH HYPOTHESES

(1) Accountability Mechanisms and Their Internal Components. In public administration, accountability has evolved from a narrow emphasis on holding actors responsible to a broader process

involving explanation, answerability, evaluation, and consequences. Romzek and Dubnick conceptualize accountability as a responsibility relationship in which public organizations and their members must explain and justify their conduct to external authorities [16]. Mulgan emphasizes information provision, explanation, and sanctions as core components [17], while Bovens defines accountability as a social relationship in which an actor must explain and justify conduct to a forum, respond to questioning, and accept consequences [18]. From the perspective of felt accountability, Schillemans et al. further argue that formal accountability arrangements influence behavior only insofar as actors perceive and interpret them [19]. Accountability is thus better understood as a composite institutional process encompassing responsibility requirements, monitoring and communication, evaluation, and consequence arrangements rather than as synonymous with ex post punishment.

In the Chinese context, Lin Hongchao conceptualizes accountability as a rule system covering the full process of determining and pursuing responsibility [20]. Song Tao distinguishes administrative accountability from related concepts such as administrative supervision and disciplinary sanctions [21], whereas Zhang Xianming and Yang Nan emphasize its responsibility-constraining function from a principal-agent perspective [22]. At the same time, Li Yanwei and Xu Chenbi argue that accountability in Chinese public administration is expected not only to constrain the exercise of power but also to facilitate effective performance and improve governance capacity [23]. An adequate account of grassroots accountability must therefore consider both its monitoring-and-sanctioning function and the communication, support, tolerance, and outcome incentives that may facilitate effective performance.

The literature has also differentiated accountability according to its internal structure and normative orientation. Mansbridge distinguishes control-based from trust-based accountability [6]. Xiong Yihan and Zhang Chuanzheng distinguish sanction-oriented accountability from performance-facilitating accountability and argue that the latter can reduce perceived innovation risk through exemption provisions [7]. Xiong Yihan and Xie Zhenda further identify a possible psychological shift from deterrence to commitment in how accountability operates [24]. Building on two-factor theory, Tu reorganizes the dimensions of the "accountability cube" into positive- and negative-reinforcement components and extends the framework to distinguish laissez-faire from combined reward-and-punishment accountability [10]. In this framework, positive reinforcement encompasses communication quality and reward-based outcomes intended to motivate officials through dialogue, positive feedback, and recognition, whereas negative reinforcement encompasses monitoring intensity and punishment-based outcomes intended to regulate behavior through oversight, sanctions, and deterrence. Tan Haibo and Jiang Wuyue subsequently apply this framework to grassroots officials in China and find distinct effects of the two reinforcement mechanisms on willingness to innovate [8].

In this study, "positive reinforcement accountability" and "negative reinforcement accountability" are used as operational labels for two orientations embedded within accountability interactions; neither term treats reward or punishment in isolation as equivalent to accountability itself. Positive reinforcement accountability emphasizes communication support, resource provision, and positive recognition within the accountability relationship. Negative reinforcement accountability emphasizes monitoring and assessment, sanctions and responsibility investigation, and risk constraints. The two are therefore treated as distinct dimensions of a broader accountability mechanism encompassing the definition of responsibility, evaluation of conduct, and allocation of consequences. The experiment independently manipulates high and low levels of each dimension to examine how their configurations shape grassroots civil servants' innovative behavioral intention.

(2) Accountability Elements and Grassroots Civil Servants' Innovative Behavioral Intention. Innovative behavior refers broadly to the generation, promotion, and implementation of new ideas, methods, or procedures at work [25]. Janssen conceptualizes innovative work behavior as comprising idea generation, idea promotion, and idea realization [26]. In the context of grassroots governance in

China, Tan Xinyu further emphasizes its public-value orientation, discretionary character, and risk-bearing features [27]. The theoretical outcome of interest in this study is innovative behavior; however, because a vignette experiment does not directly observe innovation in actual administrative settings, the empirical dependent variable is innovative behavioral intention. It is measured through self-reported "I would..." items that capture respondents' intended innovative actions under a specified accountability condition.

Research linking accountability to innovation can be organized into three related strands. A facilitating strand argues that trust, support, exemption from liability, and developmental evaluation reduce the perceived risks of innovation and increase willingness to innovate [8, 7, 28]. An inhibiting strand shows that intensive monitoring, punishment, and responsibility pressure may induce risk avoidance, blame avoidance, and even symbolic or formalistic innovation [3, 4, 5, 29]. A more recent conditional strand examines how accountability effects vary across task contexts, individual risk preferences, and combinations of accountability components [9, 10]. Taken together, this literature suggests that the relevant question is not whether accountability simply promotes or inhibits innovation, but which accountability elements, in which combinations, generate particular behavioral responses.

Positive reinforcement accountability combines high-quality communication, organizational support, positive feedback, and reward-based consequences. In a government service reform scenario experiment, Tan Haibo and Jiang Wuyue find that accountability arrangements with stronger positive incentives and a trust orientation significantly increase grassroots officials' willingness to innovate [8]. Xiong Yihan and Zhang Chuanzheng similarly argue that performance-facilitating accountability reduces perceived innovation risk through exemption and protection mechanisms [7], while Yin Runfeng and Zhu Yingjun show that development-oriented performance appraisal is more conducive to innovative behavior than evaluation-oriented appraisal [28]. Conservation of resources theory provides a complementary explanation: communication support, organizational recognition, and anticipated rewards replenish the psychological and action resources needed for innovation [13, 14]. Positive reinforcement accountability should therefore strengthen innovative behavioral intention.

Hypothesis 1: Positive reinforcement accountability has a positive effect on grassroots civil servants' innovative behavioral intention.

Hypothesis 1a: Grassroots civil servants exposed to high positive reinforcement accountability will report stronger innovative behavioral intention than those exposed to low positive reinforcement accountability.

Negative reinforcement accountability, by contrast, is manifested in intensive monitoring and inspections, performance-assessment pressure, responsibility tracing, and punitive consequences. Tu Wenyan and Gong Ting show that control-oriented accountability does not necessarily reduce blame avoidance and may instead intensify strategic blame-avoidance behavior [5]. Wang Rui and Ni Xing document mixed effects of accountability on grassroots behavior, suggesting that excessive negative responsibility pressure can alter officials' behavioral strategies [3]. Li Tao identifies a structural paradox in which overly strong accountability becomes counterproductive [4], and Lang Mei's experimental evidence similarly suggests that performance accountability can suppress officials' innovative behavior [29]. From a conservation-of-resources perspective, sustained monitoring, anticipated punishment, and responsibility pressure consume scarce psychological resources and encourage safer, lower-risk courses of action. High negative reinforcement accountability should therefore weaken innovative behavioral intention.

Hypothesis 2: Negative reinforcement accountability has a negative effect on grassroots civil servants' innovative behavioral intention.

Hypothesis 2a: Grassroots civil servants exposed to high negative reinforcement accountability will report weaker innovative behavioral intention than those exposed to low negative reinforcement accountability.

(3) Interaction Between Positive and Negative Reinforcement Accountability. Accountability environments in real organizations typically combine supportive and constraining elements. Crossing the two dimensions produces four configurations. Low positive reinforcement × high negative reinforcement creates a control-oriented context in which strong constraints are paired with limited support. High positive reinforcement × high negative reinforcement creates a combined reward-and-punishment context characterized by both incentives and pressure. High positive reinforcement × low negative reinforcement creates a trust-oriented context in which greater support is coupled with weaker punitive deterrence. Low positive reinforcement × low negative reinforcement creates a laissez-faire context in which both incentives and explicit constraints are weak.

The central theoretical question is whether positive reinforcement accountability changes how grassroots civil servants interpret and respond to negative reinforcement accountability. From a signaling perspective, accountability arrangements communicate organizational expectations about behavioral boundaries, experimentation, and the consequences of outcomes. When positive reinforcement accountability is high, high-quality communication, resource support, reward-based consequences, and room for reasonable trial and error jointly signal that improvement is encouraged and bounded experimentation is acceptable. Under these conditions, monitoring and sanctions may be interpreted less as a blanket threat to innovation and more as boundary-setting and goal calibration. When support and positive feedback are absent, the same monitoring and sanctions are more likely to be experienced as high-risk pressure. Tu's analysis of multidimensional accountability components likewise shows that different combinations of accountability elements can produce distinct behavioral consequences [10].

Conservation of resources theory offers a complementary mechanism. Positive reinforcement accountability provides organizational recognition, communication support, resources, and tolerance for reasonable error. These resources can offset, at least in part, the psychological pressure, attentional depletion, and defensive responses generated by negative reinforcement accountability [13, 14]. Accordingly, when positive reinforcement accountability is high, grassroots civil servants may retain sufficient resources to invest in innovative exploration even under intensive monitoring and strong sanction expectations. When positive reinforcement accountability is low, by contrast, the resource losses associated with high negative reinforcement accountability are not replenished, making resource-protection strategies—such as conservative implementation and reduced innovative effort—more likely. Agency theory likewise suggests that the behavioral consequences of constraints depend on how they are paired with incentives [30].

Research on cross-pressures of accountability provides additional support for this configurational logic [9]. Zhu Maoying et al. show that strong incentives can produce dual effects and that different combinations of incentives and constraints lead to differentiated behavioral outcomes [31]. Wu Jinxing and Zhu Zhe likewise find that grassroots officials' blame-avoidance strategies are contingent on institutional context [32]. Taken together, these arguments lead to the following hypotheses.

Hypothesis 3: Positive reinforcement accountability and negative reinforcement accountability interact in shaping grassroots civil servants' innovative behavioral intention.

Hypothesis 3a: When positive reinforcement accountability is low, high negative reinforcement accountability will significantly reduce grassroots civil servants' innovative behavioral intention.

Hypothesis 3b: When positive reinforcement accountability is high, the inhibitory effect of high negative reinforcement accountability on grassroots civil servants' innovative behavioral intention will be attenuated.

(4) Moderating Role of Risk Preference. Innovation entails uncertainty and risk, and grassroots civil servants with different risk preferences may therefore respond differently to the same accountability configuration. Pratt conceptualizes risky choice as jointly shaped by risk preference and risk perception [12]. Su Lanlan and Kong Rong show that risk preference affects how individuals weigh the expected benefits and risks of innovation [33]. In the public sector, Clark argues that public entrepreneurship requires some willingness to bear risk even though public employees tend, on average, to be relatively risk averse [34]. Risk preference may therefore influence not only baseline innovative behavioral intention but also sensitivity to the mix of supportive and constraining accountability signals.

This moderating argument does not imply that individuals with stronger risk preferences are necessarily more innovative. Rather, they may respond more strongly to changes in the risk-return signals embedded in the accountability environment. When positive reinforcement accountability is high, high-risk-preference individuals may be more willing to convert organizational support and prospective benefits into innovative effort. Conversely, when negative reinforcement accountability is high and support is weak, they may also respond more sharply to responsibility exposure and the consequences of failure. Their innovative behavioral intention should therefore vary more across accountability configurations, whereas low-risk-preference individuals may respond more consistently across institutional conditions. Evidence on risk-avoidance preference among grassroots leaders is consistent with this expectation [11].

Hypothesis 4: Risk preference moderates the interaction between positive reinforcement accountability and negative reinforcement accountability in predicting grassroots civil servants' innovative behavioral intention.

Hypothesis 4a: Compared with low-risk-preference individuals, high-risk-preference individuals will be more sensitive to changes in positive- and negative-reinforcement accountability configurations.

3. RESEARCH DESIGN

(1) Experimental Design and Scenario Selection. This study uses a 2 (positive reinforcement accountability: high vs. low) × 2 (negative reinforcement accountability: high vs. low) between-subjects vignette experiment. Crossing the two dimensions yields four accountability configurations: high support × high monitoring, a combined reward-and-punishment configuration (T1); low support × high monitoring, a control-oriented configuration (T2); high support × low monitoring, a trust-oriented configuration (T3); and low support × low monitoring, a laissez-faire configuration (T4). These scenarios represent combinations of two experimental dimensions rather than four mutually exclusive accountability types. Random assignment reduces the likelihood that pre-existing participant differences systematically drive between-condition differences and allows the main and interaction effects of the two accountability dimensions to be identified under controlled conditions.

The vignette is set in a government service reform project-the "one website, one service hall, one visit" reform-and describes a fictional official, Liu Ming, in the third person to reduce social-desirability bias. This setting was selected for three reasons. First, government service reform is both policy-continuous and practically salient: from reforms aimed at streamlining administration, delegating powers, strengthening regulation, and improving services, through one-stop online government services, to the more recent initiative of "efficiently getting one matter done," reform tasks have continued to extend to the grassroots level. Second, process reengineering, data sharing, service-window optimization, and cross-departmental coordination depend heavily on frontline staff identifying problems and experimenting with new approaches. Third, the same domain is subject to top-down inspections, performance appraisal, citizen evaluation, and responsibility investigation,

making it well suited to capture the tension between standardized implementation and innovative trial and error.

Positive reinforcement accountability is manipulated primarily through communication quality and reward-based consequences. In the high condition, superiors proactively follow reform progress, take Liu Ming's views seriously, coordinate resources, and offer commendations or development opportunities for substantive achievements; these forms of support and positive feedback are weaker in the low condition. Negative reinforcement accountability is manipulated primarily through monitoring intensity and punitive consequences. The high condition features more frequent progress checks, explicit responsibility tracing, and performance deductions, whereas the low condition reduces both monitoring frequency and sanction pressure. Crossing these two dimensions produces the four experimental conditions.

(2) Sample and Procedure. The survey experiment was administered through Credamo, an online research platform that supports respondent screening, random assignment, data collection, and quality control. The study used purposive pre-screening from the platform's respondent pool and therefore relies on a nonprobability sample. Respondents who met the eligibility criteria were then randomly assigned by the platform to one of the four experimental conditions. Eligibility was determined through both platform filters and pre-survey screening questions, and participation was limited to currently employed individuals with public-sector work experience or work experience related to grassroots government services. A total of 274 questionnaires were collected. Fifteen were excluded because of abnormal completion times or failure to meet the platform's basic quality-control criteria, seven failed attention checks, and twelve showed patterned responses or logical inconsistencies. The final analytic sample comprised 240 respondents, with group sizes of 61, 59, 59, and 61, respectively.

The analytic sample comprised 240 respondents: 129 women (53.75%) and 111 men (46.25%). Respondents aged 40 or younger accounted for 80.42% of the sample; 56.25% were rank-and-file staff or below; 70.00% had no more than 10 years of service; and 97.92% held at least a bachelor's degree. The sample therefore largely reflects younger and middle-aged frontline personnel and is well aligned with the grassroots government-service reform context examined here.

(3) Measurement of Variables. Although the theoretical outcome of interest is grassroots civil servants' innovative behavior, the vignette experiment does not directly observe innovative action in real work settings. The empirical dependent variable is therefore defined as innovative behavioral intention. Measurement is adapted from Janssen's scale [26] and covers three stages-idea generation, idea promotion, and idea realization-using six items on a five-point Likert scale: "I would look for new technologies, processes, or work methods"; "I would propose creative solutions"; "I would proactively share innovative ideas with colleagues and supervisors"; "I would actively seek resources to support the implementation of innovative ideas"; "I would translate innovative ideas into concrete work measures"; and "I would develop implementation plans for innovative initiatives and actively advance their execution." The six-item scale demonstrated high internal consistency (Cronbach's $\alpha = 0.953$).

Risk preference, the moderating variable, was measured with a three-item scale adapted from Su Lanlan and Kong Rong [33] on a five-point Likert scale (Cronbach's $\alpha = 0.865$). Using the sample median as the cutoff, 96 respondents were classified as low in risk preference and 144 as high in risk preference. The models control for gender, age, rank, years of service, education, public service motivation, and questionnaire completion time. Public service motivation was measured with three items (Cronbach's $\alpha = 0.671$). Because it serves only as a control and is measured with a short scale, it was retained and controlled for in the regression analyses.

(4) Randomization and Balance Tests. Balance tests found no significant pre-treatment differences across the four experimental conditions in gender, age, rank, years of service, education, or questionnaire completion time (all $p > 0.05$), indicating that random assignment was successful.

(5) Manipulation Checks. The questionnaire included four manipulation-check items and one scenario-engagement item, all measured on five-point Likert scales. C1 ("The supervision and inspection by Liu Ming's superior department are very intensive") and C3 ("Liu Ming's organization imposes very strong penalties") assess negative reinforcement accountability. C2 ("The superior department is willing to communicate with Liu Ming and values his ideas") and C4 ("Liu Ming's organization provides very strong rewards") assess positive reinforcement accountability. C5 ("Overall, I can clearly imagine and place myself in the work scenario described above") assesses respondents' understanding of and engagement with the vignette.

Table 1 reports the manipulation checks. Respondents in the high positive reinforcement accountability condition perceived significantly stronger rewards and greater attention to communication than those in the low condition. Respondents in the high negative reinforcement accountability condition perceived significantly stronger penalties and more intensive monitoring than those in the low condition. All four differences were significant at $p < 0.001$, indicating that both experimental dimensions were successfully manipulated.

Table 1. Manipulation-Check Results

Manipulated Dimension	Check Item	Low-Level M	High-Level M	t	p
Positive reinforcement accountability	C4 Reward intensity	1.333	4.167	-40.088	<0.001
Positive reinforcement accountability	C2 Attention to communication	1.617	4.533	-42.827	<0.001
Negative reinforcement accountability	C3 Penalty intensity	1.483	4.417	-37.991	<0.001
Negative reinforcement accountability	C1 Monitoring intensity	1.742	4.608	-35.039	<0.001

The mean score on the scenario-engagement item (C5) was 4.558 (SD = 0.618), well above the scale midpoint of 3, indicating that respondents were generally able to understand and engage with the grassroots government service reform vignette.

4. EMPIRICAL RESULTS

(1) Descriptive Statistics. Table 2 presents descriptive statistics for the core variables. The mean level of innovative behavioral intention was 3.554 (SD = 1.153), above the midpoint of 3 on the five-point scale; mean risk preference was 3.608 (SD = 0.898). Across the four conditions, T3 (high support × low monitoring, trust-oriented) produced the highest innovative behavioral intention (M = 4.421), whereas T2 (low support × high monitoring, control-oriented) produced the lowest (M = 2.302), a difference of 2.119 points. T1 (high support × high monitoring, combined reward-and-punishment) had a mean of 4.254. Although lower than T3, this value was substantially higher than T4 (low support × low monitoring, laissez-faire; M = 3.227). The descriptive pattern is consistent with a positive association between positive reinforcement accountability and innovative behavioral intention and suggests that the effect of negative reinforcement accountability may depend on the level of positive reinforcement accountability.

Table 2. Descriptive Statistics of Core Variables and Group Means

Variable	N	Mean	SD	T1	T2	T3	T4
Innovative behavioral intention	240	3.554	1.153	4.254	2.302	4.421	3.227
Risk preference	240	3.608	0.898	3.583	3.517	3.650	3.683

Note: T1 = high positive reinforcement accountability × high negative reinforcement accountability (combined reward-and-punishment); T2 = low positive reinforcement accountability × high negative reinforcement accountability (control-oriented); T3 = high positive reinforcement accountability × low negative reinforcement accountability (trust-oriented); T4 = low positive reinforcement accountability × low negative reinforcement accountability (laissez-faire).

(2) Two-Way Analysis of Variance. Table 3 reports the two-way ANOVA results. Positive reinforcement accountability had a significant main effect ($F = 242.63$, $p < 0.001$, $\eta^2 = 0.467$): innovative behavioral intention was significantly higher in the high than in the low positive reinforcement condition, supporting Hypotheses 1 and 1a. Negative reinforcement accountability also had a significant main effect ($F = 29.20$, $p < 0.001$, $\eta^2 = 0.056$): overall, innovative behavioral intention was significantly lower under high than under low negative reinforcement accountability, supporting Hypotheses 2 and 2a.

The interaction between positive and negative reinforcement accountability was also significant ($F = 14.07$, $p < 0.001$, $\eta^2 = 0.027$). Thus, the behavioral effect of one accountability dimension depends on the level of the other, providing evidence of a configurational effect beyond their separate main effects. Hypothesis 3 is supported.

Table 3. Results of the Two-Way ANOVA

Source of Variation	df	F	p	η^2
Positive reinforcement accountability	1	242.63	<0.001	0.467
Negative reinforcement accountability	1	29.20	<0.001	0.056
Positive × Negative reinforcement accountability	1	14.07	<0.001	0.027
Error	236			

(3) Simple-Effects Analysis. Because the interaction was significant, simple-effects tests were conducted (Table 4). When positive reinforcement accountability was low, innovative behavioral intention differed significantly between the high and low negative reinforcement conditions ($\Delta M = -0.925$, $t = -6.47$, $p < 0.001$, Cohen's $d = 1.19$), indicating a strong inhibitory effect of negative reinforcement accountability. When positive reinforcement accountability was high, however, the difference between the high and low negative reinforcement conditions was no longer significant ($\Delta M = -0.167$, $t = -1.17$, $p = 0.244$, Cohen's $d = 0.22$). This pattern indicates that high positive reinforcement accountability substantially attenuates the inhibitory effect of negative reinforcement accountability, supporting Hypotheses 3a and 3b.

Viewed from the opposite direction, high positive reinforcement accountability increased innovative behavioral intention by 1.194 points relative to low positive reinforcement accountability when negative reinforcement accountability was low ($t = 8.36$, $p < 0.001$). When negative reinforcement accountability was high, the increase was 1.952 points ($t = 13.67$, $p < 0.001$). The marginal benefit of positive reinforcement accountability is therefore especially pronounced under stronger negative reinforcement accountability, consistent with the expectation that supportive resources can compensate for constraining pressure.

Table 4. Results of Simple-Effects Tests

Condition	ΔM	t	p	Cohen's d
Low support × high monitoring vs. low support × low monitoring	-0.925	-6.47	<0.001	1.19
High support × high monitoring vs. high support × low monitoring	-0.167	-1.17	0.244	0.22

(4) Moderating Effect of Risk Preference. Hierarchical regression analysis was used to test the moderating role of risk preference (Table 5). Model 1 included demographic controls and questionnaire completion time and was not significant overall ($R^2 = 0.009$, $F = 0.36$). Model 2 added positive reinforcement accountability, negative reinforcement accountability, risk preference, and public service motivation, increasing explanatory power substantially ($R^2 = 0.573$, adjusted $R^2 = 0.554$, $F = 30.69$, $p < 0.001$). In Model 2, the coefficients for positive reinforcement accountability, negative reinforcement accountability, and risk preference were 1.612 ($p < 0.001$), -0.574 ($p < 0.001$), and 0.206 ($p = 0.001$), respectively. Model 3 added the two-way interaction terms; the positive reinforcement accountability × negative reinforcement accountability interaction was positive and significant ($b = 0.675$, $p = 0.001$), and R^2 increased to 0.621. Model 4 further added the three-way interaction. The coefficient for positive reinforcement accountability × negative reinforcement accountability × risk preference was positive and significant ($b = 1.086$, $p < 0.001$). Model 4 explained 66.4% of the variance ($R^2 = 0.664$; adjusted $R^2 = 0.643$) and was significant overall ($F = 31.70$, $p < 0.001$), supporting Hypothesis 4.

Table 5. Hierarchical Regression Results (Unstandardized Coefficients b)

Variable	M1	M2	M3	M4
Gender	-0.057	-0.106	-0.150	-0.091
Age	0.060	0.193**	0.153**	0.138*
Rank	-0.035	-0.051	-0.030	-0.049
Years of service	-0.107	-0.306**	-0.249**	-0.230**
Education	-0.097	0.020	0.068	0.082
Completion time	-0.000	-0.001	-0.000	-0.000
Positive reinforcement accountability	—	1.612***	1.212***	0.749***
Negative reinforcement accountability	—	-0.574***	-1.227***	-1.630***
Risk preference	—	0.206**	0.469***	0.792***
Public service motivation	—	0.107	0.170	0.115
Positive × Negative reinforcement accountability	—	—	0.675**	1.462***
Positive reinforcement accountability × Risk preference	—	—	-0.099	-0.694***
Negative reinforcement accountability × Risk preference	—	—	-0.440***	-1.001***
Positive × Negative reinforcement accountability × Risk preference	—	—	—	1.086***
Constant	4.122***	3.525***	3.661***	3.818***
N	240	240	240	240
R^2	0.009	0.573	0.621	0.664
Adjusted R^2	-0.016	0.554	0.599	0.643
F	0.36	30.69***	28.49***	31.70***

Note: *p < 0.05, **p < 0.01, ***p < 0.001. Risk preference and public service motivation were mean-centered.

To clarify the form of the moderation, the sample was split at the median of risk preference and separate two-way ANOVAs were estimated. The positive reinforcement accountability × negative reinforcement accountability interaction was not significant in the low-risk-preference group ($F = 1.11$, $p > 0.05$), but was significant and comparatively large in the high-risk-preference group ($F = 34.96$, $p < 0.001$, $\eta^2 = 0.194$). A three-way ANOVA likewise produced a significant positive reinforcement accountability × negative reinforcement accountability × risk-preference-group interaction ($F = 21.82$, $p < 0.001$), consistent with the hierarchical regression results. These findings indicate that high-risk-preference respondents are more sensitive to changes in accountability configurations, supporting Hypothesis 4a.

(5) Robustness Checks. The results were robust to three alternative specifications. The three-way interaction remained positive and significant with and without controls ($b = 1.086$ and 1.139, respectively; both $p < 0.001$); replacing the median risk-preference split with the sample mean (3.608) did not alter the conclusions; and, after excluding 19 extreme completion-time cases ($N = 221$), both main effects, the two-way interaction, and the three-way interaction remained significant (three-way $b = 1.022$, $p < 0.001$).

5. DISCUSSION AND CONCLUSION

Using a 2 × 2 between-subjects vignette-based survey experiment with 240 respondents, this study examines how positive and negative reinforcement accountability jointly shape grassroots civil servants' innovative behavioral intention and whether that relationship varies with risk preference. Three results stand out. Positive reinforcement accountability increases innovative behavioral intention, whereas negative reinforcement accountability has an overall inhibitory effect. More importantly, the two dimensions interact: high positive reinforcement accountability substantially attenuates the inhibitory effect of high negative reinforcement accountability. This configurational effect is itself heterogeneous, with high-risk-preference respondents reacting more strongly to changes in the accountability mix than low-risk-preference respondents. The main effect of positive reinforcement accountability was also substantially larger than that of negative reinforcement accountability ($\eta^2 = 0.467$ vs. 0.056), underscoring the comparatively strong role of supportive accountability arrangements in the experimental setting.

The first theoretical contribution is to shift the analysis from the linear effect of a single accountability type to the configuration of accountability elements. Prior studies have separately documented the risks of control-oriented and sanction-oriented accountability and the benefits of trust-based and performance-facilitating accountability. Much less is known about what happens when supportive and constraining elements are manipulated simultaneously. By treating accountability as an overarching construct and positive and negative reinforcement accountability as two experimentally manipulable dimensions, this study shows that their behavioral consequences are not merely additive. What matters is how the two dimensions are combined. This configurational perspective offers a more fine-grained account of the internal structure of accountability and its behavioral consequences.

Second, the findings are consistent with a resource-compensation account derived from conservation of resources theory. Communication support, resource provision, positive feedback, and reward-based consequences can supply resources that partly offset the psychological pressure and defensive resource expenditure associated with intensive monitoring and anticipated punishment. Under such conditions, civil servants may retain sufficient resources to invest in innovative exploration even when negative reinforcement accountability is high. A signaling interpretation points in the same direction: strong positive reinforcement may lead officials to view monitoring and sanctions as boundary-setting devices rather than as a blanket threat to experimentation. These mechanisms are theoretically plausible, but they were not directly measured in the present study and should therefore be treated as explanations to be tested rather than as established mediating processes.

Third, the study introduces risk preference as a source of heterogeneity in the effects of accountability configurations. High-risk-preference respondents were significantly more sensitive to changes in the combination of positive and negative reinforcement accountability than their low-risk-preference counterparts. The result does not imply that stronger risk preference mechanically increases innovation. Rather, risk preference appears to amplify responsiveness to the risk-return signals embedded in institutional arrangements: stronger support is associated with a larger increase in innovative behavioral intention, whereas strong monitoring and sanctions combined with weak support are associated with a sharper decline. This finding extends research on accountability by showing that the same institutional configuration can produce different behavioral responses across individuals.

The findings also carry practical implications. Grassroots innovation governance should avoid equating accountability with ever-stronger monitoring and responsibility investigation. Clear responsibility boundaries and necessary oversight remain important, but they should be accompanied by high-quality communication, problem-solving support, access to resources, and credible positive feedback. Rewards, moreover, should not be treated as an independent substitute for accountability. As outcome arrangements embedded in an accountability system, they are most likely to support innovation when combined with process communication and reasonable tolerance or exemption mechanisms. The policy objective is therefore not simply to "reward more," but to build an accountability configuration in which responsibilities are clear, support is adequate, and rewards and sanctions are proportionate. Finally, individual differences in risk preference warrant attention. Accountability adjustments may exert stronger behavioral effects among officials who are more responsive to institutional risk-return signals, whereas lower-risk-preference officials may require complementary mechanisms such as public service motivation, perceived organizational support, and career development.

Several limitations qualify these conclusions. First, the dependent variable is self-reported innovative behavioral intention following a brief vignette, not directly observed innovative behavior in actual administrative work. The causal claim should therefore be limited to the effect of accountability conditions on stated innovative behavioral intention and should not be generalized directly to long-term innovative behavior or innovation performance. Future research could combine field experiments, supervisor evaluations, multi-wave designs, and objective indicators of innovative output. Second, respondents were recruited through Credamo using purposive pre-screening rather than probability sampling. Because eligibility was based primarily on public-sector work experience or grassroots government service experience, the sample may differ from the wider population of grassroots civil servants in age, education, region, and occupational position. External validity and population representativeness thus require further assessment. Third, the present study focuses on risk preference as a moderator; future work could examine public service motivation, organizational identification, psychological safety, and tolerance-for-error climate. Fourth, the experiment reduces a complex accountability environment to two dimensions and does not examine finer-grained variation in accountability actors, stages of intervention, procedural fairness, or continuous levels of intensity. Fifth, the proposed resource-compensation and signal-reconstruction mechanisms are inferred theoretically rather than tested through direct measures of mediating processes.

REFERENCES

[1] General Office of the CPC Central Committee. (2018, May 20). *Opinions on further encouraging cadres to take on new responsibilities and make new achievements in the new era*. (in Chinese). Retrieved June 24, 2026.

[2] Central Committee of the Communist Party of China. (2019, September 4). *Regulations of the Communist Party of China on accountability*. (in Chinese). Retrieved June 24, 2026.

[3] Wang, R., & Ni, X. (2024). The mixed effects of accountability and strategic changes in blame-avoidance behavior at the grassroots level. *Jianghan Tribune*, (1), 52–59. (in Chinese).

[4] Li, T. (2024). The structural paradox of strong accountability and its resolution. *Jianghan Tribune*, (9), 56–61. (in Chinese).

[5] Tu, W. Y., & Gong, T. (2022). Can control-oriented accountability effectively curb blame avoidance? An analysis based on the internal logic of official behavior and institutional norms. *Administrative Tribune*, *29*(5), 52–60. (in Chinese).

[6] Mansbridge, J. (2014). What is political science for? *Perspectives on Politics*, *12*(1), 8–17.

[7] Xiong, Y. H., & Zhang, C. Z. (2025). Performance-facilitating accountability: On the necessity of exemption clauses. *Social Sciences*, (7), 104–116. (in Chinese).

[8] Tan, H. B., & Jiang, W. Y. (2025). How does performance accountability affect grassroots officials' willingness to innovate? A scenario experiment based on government-service reform projects. *Chinese Public Administration*, *41*(5), 124–137. (in Chinese).

[9] Romzek, B., & Ingraham, P. (2000). Cross pressures of accountability: Initiative, command, and failure in the Ron Brown plane crash. *Governance*, *13*(2), 193–217.

[10] Tu, W. (2024). Unpacking the accountability cube and its relationship with blame avoidance. *Public Management Review*, *26*(3), 701–723.

[11] Tan, X. Y., & Piao, L. (2022). Supporting those who take responsibility: A study of the "trickle-down effect" of responsibility-taking among grassroots leading cadres. *Public Management Review*, *4*(2), 43–70. (in Chinese).

[12] Pratt, J. W. (1964). Risk aversion in the small and the large. *Econometrica*, *32*(1–2), 122–136.

[13] Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, *44*(3), 513–524.

[14] Hobfoll, S. E., Halbesleben, J., Neveu, J. P., & Westman, M. (2018). Conservation of resources in the organizational context: The reality of resource caravans. *Journal of Management*, *44*(5), 1778–1796.

[15] Tan, X. Y. (2021). Mechanisms through which multilevel contextual variables influence grassroots civil servants' innovative behavior from the perspective of the theory of planned behavior. *Chinese Journal of Management*, *18*(7), 1001–1011. (in Chinese).

[16] Romzek, B. S., & Dubnick, M. J. (1987). Accountability in the public sector: Lessons from the Challenger tragedy. *Public Administration Review*, *47*(3), 227–238.

[17] Mulgan, R. (2000). Comparing accountability in the public and private sectors. *Australian Journal of Public Administration*, *59*(1), 87–97.

[18] Bovens, M. (2007). Analysing and assessing accountability: A conceptual framework. *European Law Journal*, *13*, 447–468.

[19] Schillemans, T., Overman, S., Fawcett, P., & Noordhoek, M. (2021). Understanding felt accountability. *Governance*, *34*(3), 893–916.

[20] Lin, H. C. (2014). Principles of attributing responsibility in accountability systems for public crisis management. *China Legal Science*, (4), 267–285. (in Chinese).

[21] Song, T. (2005). Clarifying the concept and connotations of administrative accountability. *Journal of Shenzhen University (Humanities & Social Sciences)*, (2), 42–46. (in Chinese).

[22] Zhang, X. M., & Yang, N. (2019). Clarifying political accountability and related concepts. *Theoretical Investigation*, (4), 18–24. (in Chinese).

[23] Li, Y. W., & Xu, C. B. (2024). Felt accountability in public administration: An analytical framework and research prospects. *Chinese Public Administration Review*, *17*(1), 178–195+200. (in Chinese).

[24] Xiong, Y. H., & Xie, Z. D. (2025). From deterrence to commitment: The psychological mechanisms of accountability and learning behavior. *Nanjing Journal of Social Sciences*, (12), 73–82+93. (in Chinese).

[25] West, M. A., & Farr, J. L. (1990). *Innovation and creativity at work: Psychological and organizational strategies*. John Wiley.

[26] Janssen, O. (2003). Innovative behaviour and job involvement at the price of conflict and less satisfactory relations with co-workers. *Journal of Occupational and Organizational Psychology*, *76*(3), 347–364.

[27] Tan, X. Y. (2021). The content and structure of grassroots civil servants' innovative behavior: Evidence from the Chinese context. *Public Administration and Policy Review*, *10*(1), 81–101. (in Chinese).

[28] Yin, R. F., & Zhu, Y. J. (2013). Goal orientation in performance appraisal and employee innovative behavior: The mediating role of error management culture. *Science of Science and Management of S.&T.*, *34*(2), 174–180. (in Chinese).

[29] Lang, M. (2022). Reinforcement or distortion? An experimental study of the effects of performance accountability on officials' innovative behavior. *Social Science Research*, (1), 38–47. (in Chinese).

[30] Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360.

[31] Zhu, M. Y., Wei, S., Huang, J., et al. (2025). Blame avoidance or responsible action? The dual effects and differentiated mechanisms of strong incentives: An empirical study based on structural equation modeling. *Public Administration and Policy Review*, *14*(3), 151–168. (in Chinese).

[32] Wu, J. X., & Zhu, Z. (2023). Blame-avoidance logic and collaborative governance from an "actor" perspective: A scenario experiment. *Public Management Review*, *5*(3), 131–151. (in Chinese).

[33] Su, L. L., & Kong, R. (2020). Social networks, risk preference, and the innovation performance of entrepreneurial farmers: A mediating-effect analysis based on innovation capability. *Journal of Agro-Forestry Economics and Management*, *19*(2), 133–141. (in Chinese).

[34] Clark, A. (2016). Toward an entrepreneurial public sector: Using social exchange theory to predict public employee risk perceptions. *Public Personnel Management*, *45*(4), 335–359.