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What Makes Fire Safety Special Campaign Policies Actionable? A Policy Evaluation Framework

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Abstract

Fire safety special campaigns are an important policy instrument for addressing prominent fire risks, undertaking anticipatory risk governance, and organizing intensive publicity and education activities. However, existing studies have focused primarily on the governance processes and implementation effects of special campaigns, while paying insufficient attention to how policy texts create governance actions that are executable and capable of being sustained. In this study, we introduce the concept of policy actionability and develop a policy evaluation framework for fire safety special campaign policies based on policy grounding, action design, implementation enabling, and governance follow-through. Using the Policy Modeling Consistency (PMC) index model and PMC surfaces, we evaluate six representative policies selected from a corpus of 25 central-level policy documents. Our results show that fire safety special campaign policies generally demonstrate strong action design, with a relatively comprehensive specification of governance targets, action tasks, and policy instrument configurations, whereas greater variation exists in responsibility systems, coordination mechanisms, implementation support, supervision and evaluation, and long-term governance. Different policy activation logics are associated with distinct actionability configurations, indicating that clearly defined action tasks constitute only the foundation of policy actionability. Effective linkages among responsibility allocation, coordination mechanisms, implementation support, supervision, and feedback are also essential for translating policy arrangements into governance action. The selected policies show substantial variation in governance follow-through, particularly in provisions for long-term governance. Future improvements in fire safety special campaign policies should therefore preserve the advantages of concentrated deployment and rapid action while placing greater emphasis on translating the outcomes of special campaigns into routine governance, institutionalization, and continuous monitoring.

Keywords: fire safety special campaign; policy actionability; policy evaluation framework; PMC index model; governance follow-through; long-term governance

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1. Introduction

As urban spaces become increasingly concentrated, modes of production and business operations continue to evolve, and new technologies and emerging business models become more deeply embedded in social and economic activities, the sources, settings, and transmission pathways of the risks confronting fire safety become increasingly complex [1]. While routine regulation provides a foundation for fire risk governance, its effectiveness

depends on continuing oversight, access to expertise, and coordination among responsible bodies. Research on existing residential buildings has identified gaps in regulatory oversight across the building life cycle [2]. Evidence from England and Wales has further shown uneven engagement of fire authorities in building approval processes [3], while research on performance-based regulation has identified expertise asymmetries that constrain regulatory assessment [4]. When fires recur, risks accumulate in key places, or broad social mobilization is required within a short period, these implementation demands give particular relevance to targeted and concentrated action arrangements [5,6]. In China, the special campaign has become a distinctive policy instrument in fire safety governance, enabling risk screening, hazard rectification, regulatory enforcement, publicity and education, and capacity building within specified periods through the definition of governance targets, the concentration of administrative resources, the specification of phased tasks, and strengthened organizational mobilization [5–7].

Existing research on fire safety has provided an important foundation for understanding policy through studies of preventive behavior, risk communication, intervention outcomes, and implementation conditions. Research from the Philippines has examined factors associated with the perceived effectiveness of fire prevention preparedness [8], while a study of Ghanaian market fires highlighted two-way communication between authorities and traders [9]. In the United States, an evaluation of the American Red Cross Home Fire Campaign found that household visits were associated with greater smoke-alarm provision and escape-plan preparedness [10]. Research on Swedish municipalities identified unclear responsibilities, resource constraints, and interorganizational collaboration as challenges in implementing individualized fire safety [11]. Together, these studies highlight the practical importance of connecting preventive measures with public participation and organizational support.

In policy evaluation, studies of fire safety education policies in China have combined text mining with the PMC index model to examine policy content, instrument configurations, and structural weaknesses [12]. This model organizes coded policy elements into a hierarchical indicator system to quantify policy content coverage and identify structural strengths and gaps [13]. In the present study, building on these contributions, we examine how fire safety special campaign texts configure the conditions for coordinated, time-bounded action.

Closely related research on campaign-style governance has paid greater attention to why concentrated action can rapidly generate governance capacity and how such governance relates to routine governance [5,6]. Relevant studies have conceptualized campaign-style mobilization as a governance mechanism capable of altering established organizational routines, sharpening goal focus, and concentrating resource allocation [6,14]. Other studies have shown that concentrated and campaign-based governance can facilitate organizational mobilization and rapid goal attainment within a limited period, though repeated campaigns may also be affected by organizational inertia, implementation deviations, and insufficient institutional linkage [15,16]. Research on crisis governance has further identified vertical command, horizontal coordination, resource provision, and multi-actor cooperation as important conditions for the operation of concentrated action, while the institutional, network, and organizational foundations generated through routine governance can also shape how such campaigns function in practice [17,18]. While these studies explain the organizational dynamics and implementation conditions of concentrated governance, a complementary policy design question concerns how campaign texts connect tasks with responsibilities, coordination, resources, and follow-up arrangements. Examining these connections can identify which implementation conditions are explicitly provided when campaigns are deployed and where policy design could be strengthened.

Research on policy design and policy evaluation has provided another theoretical basis for addressing this issue. Policy design involves more than simply specifying governance objectives; it requires alignment among objectives, instruments, and implementation arrangements [19,20]. Research on policy capacity has further suggested that policy realization depends not only on analytical capacity but also on organizational capacity, resource conditions, and combinations of capacities across governance levels [21]. In quantitative policy evaluation, the PMC index model has been used to identify internal consistency and the specific strengths and weaknesses in policy texts through multi-input–output variable systems [13] and has been applied in areas such as public health emergency policy, fire safety education, and safe development demonstration city policies [12,22–24]. Existing PMC studies have emphasized policy content coverage and internal consistency [12,13,22–24]. For time-bounded special campaigns, our study extends that focus to the connections among task deployment, implementation support, and subsequent governance.

Against this background, we introduce policy actionability as the central concept for understanding fire safety special campaign policies. Policy actionability refers to the quality of being actionable, defined as the extent to which a policy translates risk judgments and governance objectives into clear and executable action arrangements while providing structural conditions for implementation and continuation through responsibility allocation, interdepartmental coordination, implementation resources, supervision and feedback, and long-term governance. This perspective shifts analytical attention from what a policy contains to how it creates the conditions for action.

This understanding further implies that evaluating fire safety special campaign policies requires moving beyond isolated assessments of individual tasks or policy instruments. In this study, we conceptualize policy actionability as a continuous structure composed of policy grounding, action design, implementation enabling, and governance follow-through. Policy grounding provides the basis for campaign activation and goal setting; action design translates governance requirements into concrete tasks, policy instruments, and implementation processes; implementation enabling provides practical implementation conditions through responsibility systems, coordination mechanisms, and implementation support; and governance follow-through sustains concentrated action through information communication, supervision and feedback, and long-term governance.

Building on this analytical perspective, we examine the policy design conditions that make fire safety special campaign policies actionable. Central-level fire safety special campaign policies are systematically collected and classified according to their policy activation logic as risk-responsive special campaigns, risk-anticipatory special campaigns, and publicity and education special campaigns, after which representative policies from each type are selected for comparative evaluation. Methodologically, our study reconstructs a policy evaluation framework based on the basic principles of the PMC index model [13] and the governance characteristics of fire safety special campaigns, decomposing policy actionability into policy grounding, action design, implementation enabling, and governance follow-through. Rather than treating policy scores as the primary analytical objective, we use structural differences across policy types to identify the policy design elements that support the formation, implementation, supervision, and continuation of governance actions.

2. Materials and Methods

2.1. Research Framework

The policy actionability of a fire safety special campaign policy is structured through policy grounding, action design, implementation enabling, and governance follow-through: policy grounding establishes the basis for campaign activation by identifying the prevailing fire risk situation, prominent governance problems, and practical governance needs; action design

translates governance objectives into concrete action tasks and policy instruments [19,20]; implementation enabling provides the organizational conditions for action through responsibility allocation, interdepartmental coordination, and organizational and resource support [7,21,25]; and governance follow-through further supports sustained governance through supervision and evaluation, information feedback, and long-term governance [26–28]. Policy actionability therefore reflects the extent to which policy grounding, action design, implementation enabling, and governance follow-through form a coherent and interconnected policy structure.

Based on this understanding, our study follows a research process consisting of indicator system development, quantitative evaluation, and comparative analysis. First, policy actionability is operationalized through policy grounding, action design, implementation enabling, and governance follow-through, and further decomposed into primary variables and secondary variables suitable for textual identification and binary coding, thereby forming a policy evaluation framework for fire safety special campaign policies. The PMC index model is then applied to quantitatively evaluate representative policies, while the PMC surface is used to visualize their structural characteristics across the evaluation variables [13]. On this basis, risk-responsive special campaigns, risk-anticipatory special campaigns, and publicity and education special campaigns are comparatively analyzed to identify structural differences in policy actionability under different policy activation logics.

These three analytical stages connect the construction of our evaluation framework with the quantitative assessment and comparative interpretation of different policy types. The policy evaluation framework operationalizes policy actionability through policy grounding, action design, implementation enabling, and governance follow-through; the PMC index and PMC surface are then used to quantify and visualize the structural characteristics of representative policies [13]; and comparative analysis is subsequently conducted across risk-responsive special campaigns, risk-anticipatory special campaigns, and publicity and education special campaigns to identify differences in their actionability configurations. Policy collection and classification provide the empirical basis for these analytical stages, rather than constituting separate stages of the research process. The overall research framework is presented in Figure 1.

2.2. Data Collection and Processing

In this study, we construct a policy corpus of publicly issued central-level fire safety special campaign policies. The policy search was conducted through 31 December 2025, primarily using the official websites of the Chinese central government, the Ministry of Emergency Management, the National Fire and Rescue Administration, and other relevant central government departments. Cross-references among policy documents were also traced to supplement and verify the search results. The search combined keywords including "fire safety," "fire risk," "special campaign," "special rectification," "special governance," "comprehensive governance," "hazard investigation and rectification," "fire prevention and control," and "fire safety publicity" to identify central-level policy documents with concentrated campaign characteristics as comprehensively as possible.

The inclusion of fire safety special campaign policies was determined primarily by policy level, governance objectives, and action characteristics. Eligible policies had to be issued independently or jointly by the State Council Work Safety Committee and its Office, the Ministry of Emergency Management, the National Fire and Rescue Administration, or other central government departments, and implemented nationwide or across relevant national sectoral systems. The policy content had to focus primarily on fire risk prevention, hazard rectification, supervision and inspection, publicity and education, or capacity building, while specifying relatively clear governance targets, action tasks, implementation periods, or phased arrangements. General laws and regulations, development plans, tech-

nical standards, accident notifications, routine administrative notices, and implementation plans formulated by local governments in response to central requirements were excluded. For each campaign deployment, the principal policy text specifying its objectives, tasks, and implementation arrangements was retained. A subsequent follow-up deployment was treated as a separate textual unit when it specified substantive action tasks, organizational arrangements, and an implementation period. Related deployments were identified as belonging to the same policy sequence and interpreted accordingly.

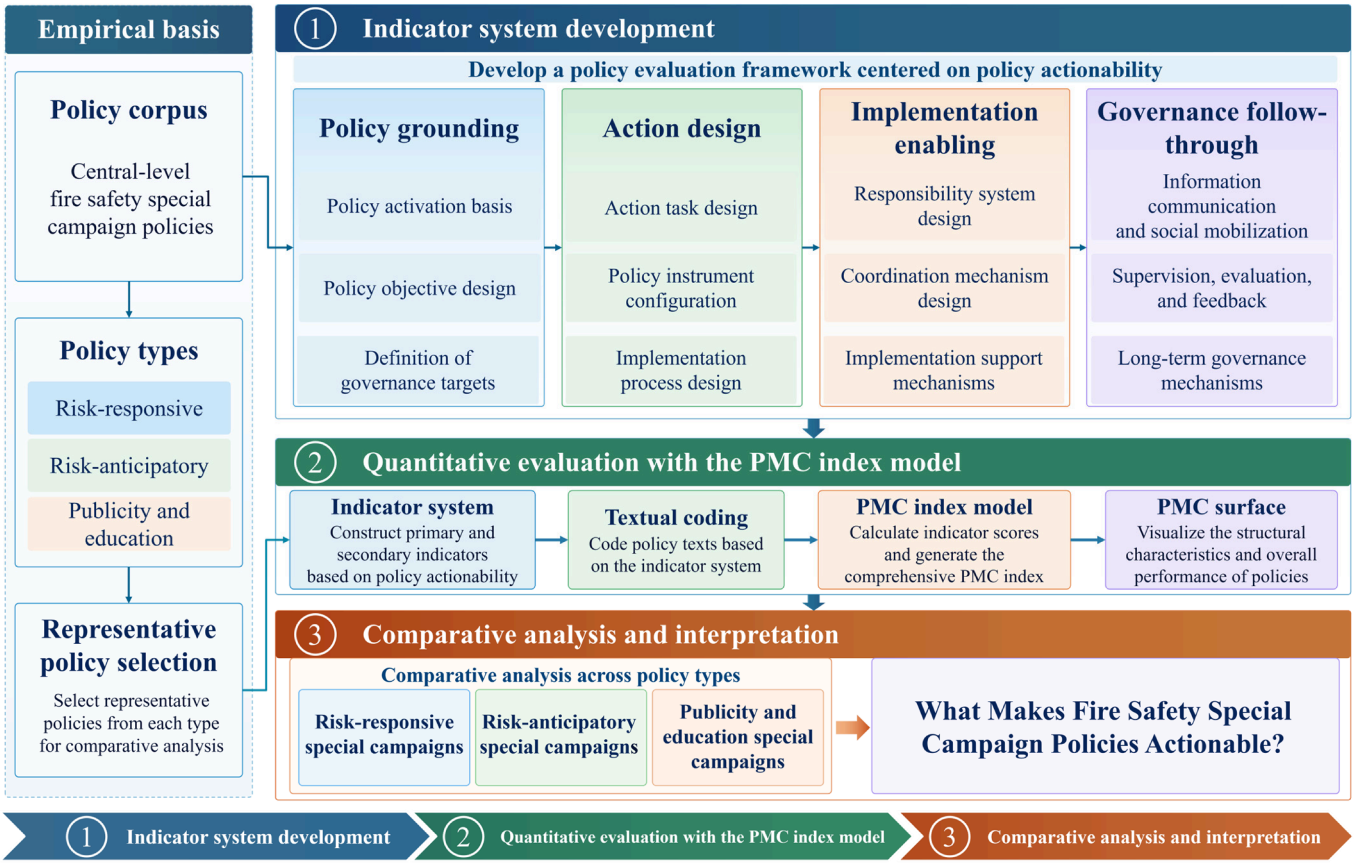

Figure 1. Research framework for fire safety special campaign policies.

Following policy retrieval, screening, and textual verification based on these criteria, the final policy corpus consisted of 25 central-level fire safety special campaign policies. These policies covered different forms of special campaigns involving risk governance, hazard rectification, supervision and inspection, publicity and education, and capacity building, providing the textual basis for identifying different policy activation logics and their associated policy actionability. During text processing, each formal policy document and its constituent appendices were treated as a complete unit of analysis. Policy background, objectives, governance scope, major tasks, implementation procedures, responsibility allocation, coordination arrangements, support measures, supervision and feedback, and long-term governance were systematically organized. When a main document and its appendices jointly constituted a complete action plan, the appendices were incorporated into the same policy text for analysis, while duplicate forwarding documents were excluded. Coding was based on the substantive provisions explicitly specified in each policy document and its constituent appendices.

For policy type identification, classification was based on the policy activation logic of the special campaign. Risk-responsive special campaign policies are primarily triggered by fire risks that have already occurred or become concentrated and visible, including repeated

recent fires of a similar type, major fire incidents, concentrated exposure of prominent fire hazards, or a marked increase in existing risks. Their defining characteristic is a concentrated governance response to risks that have already become manifest. Risk-anticipatory special campaign policies are initiated in advance on the basis of risk characteristics in key sectors and places, seasonal or stage-specific changes in risk, persistent risks identified through previous governance activities, and the possibility of risk recurrence. Their defining characteristic is the deployment of preventive governance before new adverse risk consequences become concentrated. Follow-up review campaigns conducted after an earlier round of special governance are also classified as risk-anticipatory special campaign policies when their activation is driven primarily by the recurrence of hazards, the persistence of risks, and the need to consolidate previous governance outcomes rather than by a newly occurring fire incident. Publicity and education special campaign policies arise primarily from continuing needs for fire safety knowledge dissemination, risk awareness, behavioral capacity building, and social mobilization, and use concentrated publicity and education activities to strengthen fire safety awareness and action capacity among the public and key target groups. As policy instruments such as inspection, rectification, publicity, and training may appear across different types of special campaigns, the specific governance instruments employed are not used as the direct basis for policy classification. Of the 25 policy documents in the corpus, 12 (48.0%) were classified as risk-responsive, 7 (28.0%) as risk-anticipatory, and 6 (24.0%) as publicity and education policies.

2.3. Development of the Policy Evaluation Framework

2.3.1. Analytical Dimensions of Policy Actionability

Fire safety special campaign policies are characterized by concentrated deployment, task orientation, and phased implementation [5–7]. Their evaluation therefore needs to consider not only whether policy content is complete, but also whether the policy can translate identified risks into concrete action and provide the necessary conditions for implementation and subsequent continuation. Based on the definition of policy actionability adopted in this study, the actionability of a special campaign policy is reflected primarily in whether risk judgments and governance objectives can be translated into explicit action arrangements, and whether policy designs concerning responsibility allocation, coordination mechanisms, implementation support, supervision and feedback, and long-term governance can jointly sustain policy implementation [19–21,25,27,28].

Following the operational logic through which a special campaign progresses from activation and action formation to implementation and continuation, we evaluate policy actionability through policy grounding, action design, implementation enabling, and governance follow-through: policy grounding addresses why a special campaign is initiated, what governance objectives it is intended to achieve, and which governance targets it prioritizes; action design examines how governance objectives are translated into concrete tasks, policy instruments, and implementation processes [19,20]; implementation enabling focuses on who is responsible for specific actions, how different actors coordinate, and what supporting conditions are available for implementation [21,29]; and governance follow-through examines how policy requirements are communicated to governance targets and wider society, how implementation is supervised and informed by feedback, and how the outcomes of phased governance are further converted into sustained governance arrangements [28,30]. The primary variables corresponding to policy grounding, action design, implementation enabling, and governance follow-through, together with their core questions, are presented in Table 1.

Table 1. Evaluation dimensions, primary variables, and core questions of policy actionability.

Evaluation Dimension	Primary Variables	Core Questions
Policy grounding	F_1: Policy activation basis	Why does the special campaign need to be initiated?
	F_2: Policy objective design	What governance objectives is the special campaign intended to achieve?
	F_3: Definition of governance targets	What risks, places, and governance targets does the special campaign primarily address?
Action design	F_4: Action task design	Into what concrete actions should the governance objectives be translated?
	F_5: Policy instrument configuration	Which policy instruments are used to support implementation?
	F_6: Implementation process design	Through what process and pace is the special campaign implemented?
Implementation enabling	F_7: Responsibility system design	Who is responsible for the special campaign and its specific tasks?
	F_8: Coordination mechanism design	How do different responsible actors coordinate their actions?
	F_9: Implementation support mechanisms	What organizational and resource support is required for implementation?
Governance follow-through	F_{10}: Information communication and social mobilization	How is policy information communicated to governance targets and translated into social participation?
	F_{11}: Supervision, evaluation, and feedback	How is implementation supervised, how are problems identified, and how are corrective actions undertaken?
	F_{12}: Long-term governance mechanisms	How are the outcomes of the special campaign translated into sustained governance arrangements?

2.3.2. Specification of Primary and Secondary Variables

Building on the analysis of policy grounding, action design, implementation enabling, and governance follow-through, we further operationalize policy actionability into 12 primary variables and, in light of the characteristics of fire safety special campaigns in terms of risk governance, concentrated action, interdepartmental coordination, and sustained governance, develop 50 secondary variables, as shown in Table 2. The secondary variables are designed to correspond closely to the substantive content of special campaign policies, rather than directly adopting broad generic variables commonly used in general policy evaluation, such as policy attributes, policy level, or policy duration. At the same time,

relative independence among variables is emphasized to minimize the repeated coding of the same policy content across different primary variables. The number of secondary variables under each primary variable is determined by the conceptual scope and practical complexity of the corresponding policy component, rather than by a requirement for formal numerical symmetry.

Table 2. Policy actionability evaluation indicator system for fire safety special campaign policies.

Primary Variables	Secondary Variables
F_1: Policy activation basis	$F_{1\text{-}1}$: Assessment of the fire safety risk situation and emerging trends; $F_{1\text{-}2}$: Identification of prominent fire hazards and practical governance problems; $F_{1\text{-}3}$: Specification of the activation context and direct triggering factors of the special campaign; $F_{1\text{-}4}$: Basis in fire safety laws, policies, and higher-level policy directives.
F_2: Policy objective design	$F_{2\text{-}1}$: Clear overall governance objectives of the special campaign; $F_{2\text{-}2}$: Clear priority fire safety governance objectives and task orientations; $F_{2\text{-}3}$: Clear expected governance outcomes and criteria for goal attainment.
F_3: Definition of governance targets	$F_{3\text{-}1}$: Definition of priority fire risks and hazard types; $F_{3\text{-}2}$: Definition of priority sectors and the scope of fire safety-related places; $F_{3\text{-}3}$: Definition of key fire safety responsible actors and governance targets; $F_{3\text{-}4}$: Definition of critical periods, risk scenarios, and key governance stages.
F_4: Action task design	$F_{4\text{-}1}$: Clear core governance tasks of the fire safety special campaign; $F_{4\text{-}2}$: Effective decomposition of overall governance tasks into specific action items; $F_{4\text{-}3}$: Dedicated tasks targeting major and difficult fire safety problems; $F_{4\text{-}4}$: Clear implementation content and operational requirements for specific tasks; $F_{4\text{-}5}$: Clear task completion requirements and expected governance outcomes.
F_5: Policy instrument configuration	$F_{5\text{-}1}$: Use of fire risk screening and supervisory inspection instruments; $F_{5\text{-}2}$: Use of fire safety administrative enforcement and accountability instruments; $F_{5\text{-}3}$: Use of fire safety technical standards and engineering control instruments; $F_{5\text{-}4}$: Use of fire safety training, guidance, and capacity-building instruments; $F_{5\text{-}5}$: Use of fire safety publicity, guidance, and social mobilization instruments.
F_6: Implementation process design	$F_{6\text{-}1}$: Clear implementation period and completion deadlines for the fire safety special campaign; $F_{6\text{-}2}$: Clear phased implementation arrangements; $F_{6\text{-}3}$: Clear key time points and stage-specific governance requirements; $F_{6\text{-}4}$: Clear mechanisms for process coordination, progress reporting, and adaptive adjustment.
F_7: Responsibility system design	$F_{7\text{-}1}$: Clear lead departments and overall coordination responsibilities for the fire safety special campaign; $F_{7\text{-}2}$: Clear division of fire safety responsibilities and task responsibilities among relevant departments; $F_{7\text{-}3}$: Clear fire safety governance responsibilities of local governments and grassroots authorities; $F_{7\text{-}4}$: Clear fire safety responsibilities of organizations and business entities.

Table 2. *Cont.*

Primary Variables	Secondary Variables
F_8: Coordination mechanism design	$F_{8\text{-}1}$: Establishment of horizontal interdepartmental coordination mechanisms for fire safety governance; $F_{8\text{-}2}$: Establishment of vertical coordination mechanisms across administrative levels; $F_{8\text{-}3}$: Establishment of coordination mechanisms between territorial management and sectoral fire safety regulation; $F_{8\text{-}4}$: Establishment of mechanisms for fire risk and hazard information sharing and interagency consultation; $F_{8\text{-}5}$: Establishment of mechanisms for joint fire safety inspections, joint enforcement, and case referral.
F_9: Implementation support mechanisms	$F_{9\text{-}1}$: Organizational leadership and implementation personnel support for the fire safety special campaign; $F_{9\text{-}2}$: Financial, equipment, and material resource support for fire safety governance; $F_{9\text{-}3}$: Technical, data, and professional expertise support for fire safety governance.
F_{10}: Information communication and social mobilization	$F_{10\text{-}1}$: Effective communication of fire safety policy requirements and special campaign information; $F_{10\text{-}2}$: Targeted fire risk communication and safety messaging for priority groups; $F_{10\text{-}3}$: Establishment of channels and feedback mechanisms for public participation in fire safety governance; $F_{10\text{-}4}$: Participation of social organizations, industry associations, and grassroots actors in fire safety governance.
F_{11}: Supervision, evaluation, and feedback	$F_{11\text{-}1}$: Supervisory inspections and implementation monitoring of the fire safety special campaign; $F_{11\text{-}2}$: Clear requirements for identifying fire risk problems, providing feedback, and undertaking rectification; $F_{11\text{-}3}$: Reinspection, acceptance, case closure, and closed-loop management of fire hazard rectification; $F_{11\text{-}4}$: Assessment and evaluation of fire safety governance outcomes of the special campaign; $F_{11\text{-}5}$: Fire safety accountability, accountability interviews, and implementation correction.
F_{12}: Long-term governance mechanisms	$F_{12\text{-}1}$: Effective integration of special fire safety governance measures into routine governance; $F_{12\text{-}2}$: Translation of special governance experience into institutional rules and technical standards; $F_{12\text{-}3}$: Establishment of continuous monitoring and adaptive governance mechanisms for fire risks and hazards; $F_{12\text{-}4}$: Campaign review and feedback and continuous improvement of fire safety governance approaches.

More specifically, policy grounding identifies the policy foundations of a special campaign through the policy activation basis, policy objective design, and definition of governance targets. Action design focuses on action task design, policy instrument configuration, and implementation process design, reflecting the extent to which governance objectives are translated into concrete actions [19,20,31,32]. Implementation enabling assesses the organizational and resource foundations for implementation through responsibility system design, coordination mechanism design, and implementation support mechanisms [25,33]. Governance follow-through captures the capacity for continued follow-up after implementation through information communication and social mobilization [9,34], supervision, evaluation, and feedback, as well as long-term governance [35].

2.3.3. Coding Rules for Secondary Variables

To improve the consistency and reproducibility of the policy actionability evaluation, we establish a unified binary coding scheme for the 50 secondary variables. A variable is coded as 1 when the policy text explicitly specifies the corresponding policy arrangement and provides identifiable substantive content concerning governance requirements, responsibility relationships, implementation approaches, or institutional mechanisms. A variable is coded as 0 when the relevant content is absent, when the policy contains only general or principle-based statements, or when the text does not provide sufficient evidence to determine that a substantive arrangement has been established. Coding is based on the formal policy text and its constituent appendices. Regardless of whether the same policy requirement appears once or repeatedly, the variable is coded solely according to whether the relevant criterion is satisfied, without assigning additional weight for frequency of occurrence. The distinction between substantive provisions and general statements is determined against the operational definition of each indicator. Depending on the criterion, identifiable evidence may include specified responsibilities, coordination procedures, resource commitments, implementation schedules, or monitoring and evaluation arrangements.

The coding of secondary variables places particular emphasis on distinguishing general statements of intent from substantive institutional arrangements; for example, statements such as "strengthen interdepartmental coordination" or "form joint working efforts" are not, by themselves, sufficient to establish the presence of interdepartmental coordination. The corresponding variable is coded as 1 only when the policy further specifies concrete coordination mechanisms, such as joint inspections, joint enforcement, information sharing, interagency consultation, or case referral. Similarly, the identification of long-term governance cannot rely solely on general statements such as "establish a long-term mechanism" or "continue to advance implementation." Instead, the policy must contain specific arrangements concerning linkage with routine governance, institutionalization, continuous monitoring, or campaign review, feedback, and continuous improvement.

Ten experts participated in coding and quality assurance, eight of whom served as independent coders while the remaining two performed subsequent review and adjudication. The eight coders, with complementary backgrounds in fire safety, public policy, emergency management, risk communication, and policy evaluation, were organized into four pairs corresponding to policy grounding, action design, implementation enabling, and governance follow-through. Before formal coding, a common coding manual was developed to specify indicator definitions, evidence requirements, and criteria for distinguishing substantive provisions from general statements. A pilot exercise using policy documents outside the six evaluated cases was conducted to clarify ambiguous criteria before the manual was finalized. Each pair then independently coded all indicators within its assigned dimension across the six policy documents and their constituent appendices, ensuring two independent judgments for each of the 300 policy–indicator combinations.

Coding reliability was assessed before discussion, review, or adjudication. Cohen's kappa coefficients for the pairs responsible for policy grounding, action design, implementation enabling, and governance follow-through were 0.84, 0.87, 0.81, and 0.83, respectively. The nominal Krippendorff's alpha for the common coding task completed by all eight coders was 0.85. After the reliability assessment, the two additional experts reviewed the coding records and supporting policy provisions, with particular attention to disagreements. Disputed judgments were resolved by reference to the finalized coding manual and original policy texts, and the reasons for the final decisions were documented. The reconciled coding matrix was then used to calculate the primary-variable scores and PMC indices.

2.4. Research Method

In this study, we employ the PMC index model to quantitatively evaluate fire safety special campaign policies. The PMC index model establishes a hierarchical relationship between primary variables and secondary variables, thereby converting structural information contained in policy texts into computable data and subsequently aggregating the variables to generate an overall policy evaluation result [13]. Based on the policy evaluation framework developed above, the coding results of the 50 secondary variables are used as the input data for the PMC index model.

The model adopts a hierarchical equal-weighting scheme: the 12 primary variables receive equal weight in the PMC index, while secondary variables receive equal weight within their respective primary variables. According to Equation (1), the binary-coded secondary variables are transformed into model input data. On this basis, the score of each primary variable is calculated using Equation (2), which takes the arithmetic mean of the values of the secondary variables associated with that primary variable. Here, a indexes the 12 primary variables, i indexes the secondary variables within each primary variable, and b denotes the number of secondary variables under F_a. Consequently, the effective contribution of an individual secondary variable to the total index depends on the number of secondary variables within its parent variable. This structure gives each primary policy design component equal aggregate weight:

$$F = \begin{cases} 1, & \text{if the policy text satisfies the corresponding coding criterion} \\ 0, & \text{otherwise} \end{cases} \tag{1}$$

$$F_a = \sum_{i=1}^{b} \frac{F_{a-i}}{b} \tag{2}$$

After the scores of the 12 primary variables are obtained, they are aggregated according to Equation (3) to calculate the PMC index for each fire safety special campaign policy under evaluation. Because the value of each primary variable ranges from 0 to 1, the theoretical range of the PMC index constructed in this study is [0,12]:

$$PMC = \left(\begin{array}{l} \left[\sum_{i=1}^{4} \frac{F_{1-i}}{4}\right] + \left[\sum_{i=1}^{3} \frac{F_{2-i}}{3}\right] + \left[\sum_{i=1}^{4} \frac{F_{3-i}}{4}\right] \\ + \left[\sum_{i=1}^{5} \frac{F_{4-i}}{5}\right] + \left[\sum_{i=1}^{5} \frac{F_{5-i}}{5}\right] + \left[\sum_{i=1}^{4} \frac{F_{6-i}}{4}\right] \\ + \left[\sum_{i=1}^{4} \frac{F_{7-i}}{4}\right] + \left[\sum_{i=1}^{5} \frac{F_{8-i}}{5}\right] + \left[\sum_{i=1}^{3} \frac{F_{9-i}}{3}\right] \\ + \left[\sum_{i=1}^{4} \frac{F_{10-i}}{4}\right] + \left[\sum_{i=1}^{5} \frac{F_{11-i}}{5}\right] + \left[\sum_{i=1}^{4} \frac{F_{12-i}}{4}\right] \end{array} \right) \tag{3}$$

A higher PMC index indicates that a policy covers a broader range of the policy design elements incorporated into the policy evaluation framework developed in this study. The PMC index reflects the completeness of the structural conditions provided by the policy text across policy grounding, action design, implementation enabling, and governance follow-through, rather than the actual governance performance achieved after policy implementation. On this basis, the PMC surface is further used to visualize structural differences across the primary variables. Following the indicator structure of policy grounding, action design, implementation enabling, and governance follow-through, F_1~F_{12} are arranged into a 3 × 4 matrix. Specifically, Primary Variable 1 corresponds sequentially to F_1, F_4, F_7, and F_{10}; Primary Variable 2 corresponds to F_2, F_5, F_8, and F_{11}; and Primary Variable 3 corresponds to F_3, F_6, F_9, and F_{12}. The horizontal axis represents policy grounding, action design, implementation enabling, and governance follow-through, while the vertical axis represents the position of each primary variable within the corresponding evaluation dimension. The

PMC surface is constructed from this matrix to provide an intuitive representation of the structural strengths and weaknesses of different policies in terms of policy actionability.

3. Results

3.1. Policies Evaluated and Overall Evaluation Results

Based on the overall corpus of central-level fire safety special campaign policies, we further select representative policies that clearly reflect different policy activation logics and policy structural characteristics for PMC index evaluation and comparative presentation. Representative policies are selected from risk-responsive special campaigns, risk-anticipatory special campaigns, and publicity and education special campaigns for evaluation and comparison. Representativeness is understood in terms of the cases' capacity to illustrate the governance settings and deployment stages relevant to the research question. Specifically, P_1 and P_2 represent concentrated governance responses triggered after fire risks have become manifest; P_3 and P_4 represent anticipatory governance arrangements developed in response to potential risks, persistent risks, and the possibility of risk recurrence; and P_5 and P_6 represent fire safety publicity and education activities targeting key groups and the broader public. Evaluating these representative policies using the PMC index makes it possible to further compare the structural characteristics and differences in policy actionability under different policy activation logics, governance tasks, and deployment stages. The policy type, date of issuance, policy title, and issuing authority are presented in Table 3. The secondary-variable scores for the six evaluated policies and the detailed results of the PMC index model are available in the Supplementary Materials.

Based on the binary coding results for the 50 secondary variables, the scores of the 12 primary variables (F_1~F_{12}) were calculated for the 6 policies, from which the corresponding PMC index values were obtained. The overall evaluation results are presented in Figure 2. The PMC index values range from 6.34 to 11.17, revealing relatively clear structural differences across policy types. P_1~P_4 all score above 9, indicating that special campaigns oriented toward governance and rectification exhibit relatively extensive structural coverage in terms of policy grounding, task design, responsibility allocation, and implementation arrangements. By contrast, P_5 and P_6 receive lower overall scores, with comparatively narrower coverage of the framework's indicators concerning responsibility systems, coordination mechanisms, supervision and evaluation, and long-term governance.

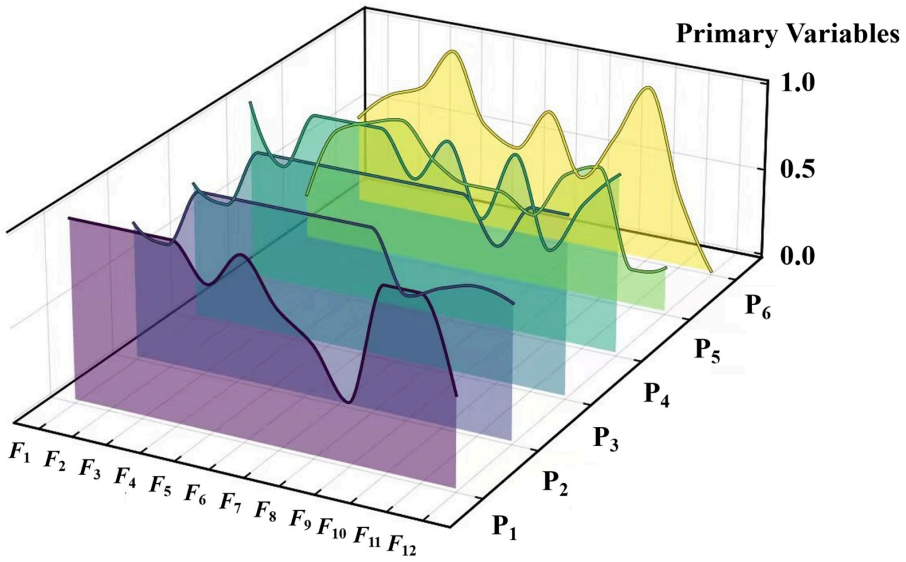

Figure 2. PMC index evaluation results for representative fire safety special campaign policies.

Table 3. Basic information on the fire safety special campaign policies evaluated.

Policy	Type	Date of Issuance	Policy Title	Issuing Authority
P_1	Risk-responsive special campaign policy	26 January 2024	Notice on Launching a Concentrated Campaign for Fire Safety Hazard Elimination and Rectification	National Fire and Rescue Administration
P_2		15 May 2018	Notice on Carrying Out Comprehensive Fire Safety Governance for Electric Bicycles	Office of the State Council Work Safety Committee
P_3	Risk-anticipatory special campaign policy	3 July 2018	Work Plan for the Special Fire Safety Rectification of Large Commercial Complexes	Office of the State Council Work Safety Committee
P_4		24 October 2019	Notice on Conducting a Follow-up Review of the Special Fire Safety Rectification of Large Commercial Complexes	Office of the State Council Work Safety Committee
P_5	Publicity and education special campaign policy	30 June 2023	Notice on Carrying Out the 2023 Summer Special Campaign for Fire Safety Publicity and Education	National Fire and Rescue Administration; Ministry of Education
P_6		18 October 2024	2024 National Fire Safety Publicity Month Action Plan	Office of the State Council Work Safety Committee

The overall distribution of the 12 primary variables shows that F_3, Definition of governance targets, F_4, Action task design, and F_5, Policy instrument configuration, are generally well developed. In particular, F_4 maintains relatively high scores across all six policies, indicating that fire safety special campaign policies generally translate broad governance requirements into relatively clear action tasks. By comparison, greater variation is observed across policies in F_8, Coordination mechanism design; F_9, Implementation support mechanisms; F_{11}, Supervision, evaluation, and feedback; and F_{12}, Long-term governance mechanisms. These differences reflect the specific arrangements covered by each policy text. For F_8, P_2 and P_3 cover all five coordination indicators, whereas P_5 and P_6 specify horizontal interdepartmental and vertical administrative coordination, resulting in scores of 0.40. For F_9, all six policies specify organizational and personnel support: P_3 and P_4 additionally cover financial and material resources and technical and professional support, producing scores of 1.00; P_2, P_5, and P_6 cover organizational and technical support, scoring 0.67; and P_1 scores 0.33 for organizational and personnel support. For F_{11}, P_1 and P_3 cover all five indicators. P_5 specifies implementation monitoring, while P_6 additionally specifies outcome evaluation, explaining their respective scores of 0.20 and 0.40. F_{12} scores span the full range from 0 to 1: P_3 and P_4 cover all four long-term governance indicators within their linked policy sequence; P1 specifies integration into routine governance and continuous monitoring, scoring 0.50; P_2 additionally covers institutionalization, scoring 0.75; and P_5 specifies campaign review and improvement, scoring 0.25. These results show how provisions for routine governance, institutionalization, continuous monitoring, and review and improvement are configured across the selected policy texts.

Although the overall PMC index captures the extent of structural coverage within the evaluation framework, it does not fully reveal internal variation across the primary variables. In the following sections, we therefore conduct within-type comparisons of risk-responsive special campaigns, risk-anticipatory special campaigns, and publicity and education special campaigns, and use the PMC surface to identify differences in the actionability configurations formed across policy grounding, action design, implementation enabling, and governance follow-through.

3.2. Evaluation Results for Risk-Responsive Special Campaign Policy

Risk-responsive special campaign policies are primarily triggered by fire risks that have already become manifest, concentrated exposure to fire safety hazards, or other pressing fire safety problems. Policy design therefore needs to translate risk identification into governance deployment within a relatively short period. The PMC index values of P_1 and P_2 are 9.98 and 10.39, respectively, indicating relatively strong policy actionability and well-developed action design. However, the rapid translation of fire safety risks into governance action does not necessarily imply equally developed arrangements for responsibility coordination, implementation support, and long-term governance. To further illustrate differences in implementation enabling and governance follow-through following fire risk response, Figure 3 presents the PMC surfaces of P_1 and P_2.

P_1 scores 1.00 on F_1, Policy activation basis; F_2, Policy objective design; F_3, Definition of governance targets; F_4, Action task design; F_6, Implementation process design; F_{10}, Information communication and social mobilization; and F_{11}, Supervision, evaluation, and feedback. This pattern indicates that the policy establishes a relatively complete risk-response structure around prominent fire risks and fire safety hazards. Clearly defined governance targets and action tasks enable fire safety risks to be rapidly translated into concrete actions such as inspection, rectification, and supervision, while a clearly specified implementation process further enhances the operability of concentrated governance. The score of 1.00 on F_{11} also indicates that P_1 establishes arrangements for rectification, follow-up inspection and acceptance, and supervision and feedback after fire safety hazards are identified, thereby creating a relatively complete implementation loop for concentrated hazard elimination.

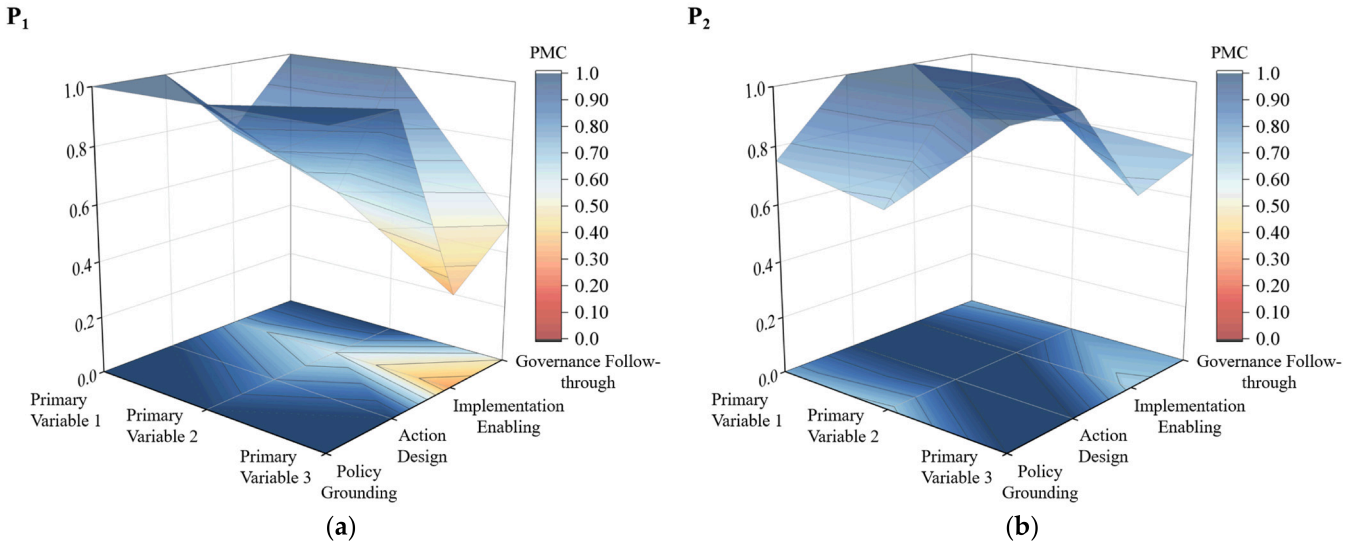

Figure 3. PMC surfaces of risk-responsive special campaigns. (**a**) PMC surface of P_1. (**b**) PMC surface of P_2.

The main structural weaknesses of P_1 are concentrated in F_8, Coordination mechanism design, F_9, Implementation support mechanisms, and F_{12}, Long-term governance mechanisms, with F_9 scoring only 0.33 and F_{12} scoring 0.50. These results suggest that a policy centered on rapid hazard elimination and concentrated rectification can quickly generate fire safety governance action, while still exhibiting limitations in interdepartmental coordination, resource support, and institutional continuation after the special campaign ends. The policy actionability of P_1 is therefore more strongly concentrated in fire risk response, governance task implementation, and the supervision and rectification of hazards, whereas the institutional arrangements required to extend the outcomes of special fire safety governance into routine governance and institutionalization remain comparatively underdeveloped.

P_2 scores 1.00 on F_3, Definition of governance targets; F_4, Action task design; F_5, Policy instrument configuration; F_6, Implementation process design; F_7, Responsibility system design; and F_8, Coordination mechanism design. This pattern reflects a relatively complete governance structure for electric bicycle fire hazards, extending from the identification of risk targets and specification of concrete tasks to the allocation of fire safety responsibilities and interdepartmental coordination. The policy covers multiple governance stages, including production, sales, and use, and combines policy instruments such as supervision and inspection, administrative regulation, technical standards, and publicity and education. It also further clarifies the fire safety governance responsibilities of relevant departments, creating a relatively close linkage between action design and implementation.

The relative weaknesses of P_2 are mainly reflected in F_2, Policy objective design, F_9, Implementation support mechanisms, F_{10}, Information communication and social mobilization, and F_{12}, Long-term governance mechanisms, which score 0.67, 0.67, 0.75, and 0.75, respectively. Although the policy establishes relatively well-developed arrangements for fire safety responsibility allocation and interdepartmental coordination and also begins to address continued governance after the special campaign, further improvement remains possible in the specification of goal attainment criteria, resource inputs, and long-term governance arrangements. Overall, P_1 places greater emphasis on rapid fire safety governance and closed-loop rectification after risks become manifest, whereas P_2 exhibits a more balanced policy actionability structure across fire safety responsibility systems, interdepartmental coordination, and follow-up governance arrangements.

3.3. Evaluation Results for Risk-Anticipatory Special Campaign Policy

Risk-anticipatory special campaign policies are primarily initiated on the basis of advanced judgments about the characteristics of key sectors and places, the evolution of fire risks, and prior fire safety governance practices. Their policy focus lies in completing governance deployment before risks become concentrated and manifest. P_3 and P_4 are linked deployments within the same policy sequence; in particular, P_3 establishes the initial rectification campaign, whereas P_4 specifies a subsequent follow-up review. Their separate scores describe the design of the two documents and are interpreted as a comparison within this sequence. The PMC index values of P_3 and P_4 are 11.17 and 10.32, respectively, indicating relatively high levels of policy actionability. Whether anticipatory assessment of fire safety risks can be effectively translated into governance action depends not only on the early identification of potential risks, but also on whether governance tasks, responsibility coordination, implementation support, and sustained governance are effectively connected. Figure 4 further illustrates the actionability structures formed on the basis of anticipatory risk assessment through the PMC surfaces of P_3 and P_4.

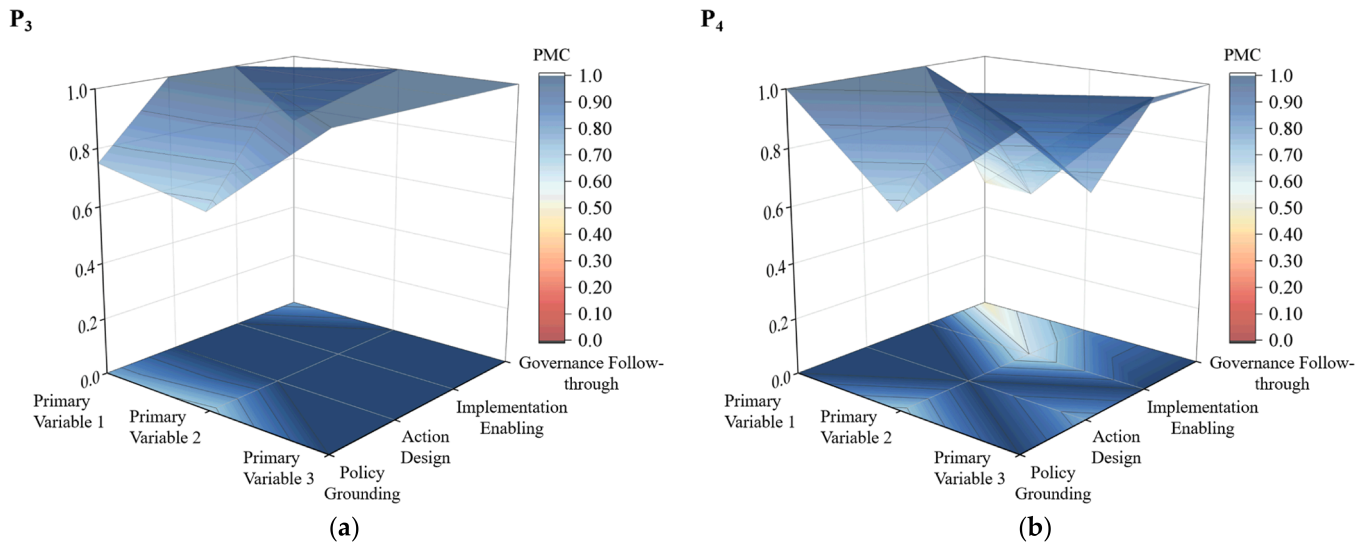

Figure 4. PMC surfaces of risk-anticipatory special campaigns. (**a**) PMC surface of P_3. (**b**) PMC surface of P_4.

P_3 exhibits the most balanced overall structure, in which F_3, Definition of governance targets, through F_9, Implementation support mechanisms, together with F_{11}, Supervision, evaluation, and feedback, and F_{12}, Long-term governance mechanisms, all score 1.00, while the main differences appear in F_1, Policy activation basis, F_2, Policy objective design, and F_{10}, Information communication and social mobilization. The policy clearly defines the fire risks associated with large commercial complexes, priority governance settings, and key fire safety stages, and further establishes a relatively complete linkage among governance tasks, policy instruments, implementation processes, fire safety responsibility systems, interdepartmental coordination, and implementation support. The score of 1.00 for F_{12} is particularly noteworthy, indicating that P_3 not only deploys current fire safety rectification tasks but also incorporates the consolidation of governance outcomes, their translation into institutional rules and standards, continued supervision, and experience-based learning into policy design, thereby extending anticipatory risk governance into long-term governance.

P_3 scores 0.75 on F_1, Policy activation basis, and 0.67 on F_2, Policy objective design, suggesting that the policy provides a relatively clear account of the fire risks faced by large commercial complexes and the corresponding governance direction, while the activation context of the special campaign and the criteria for goal attainment could be specified in greater detail. The score of 0.75 for F_{10}, Information communication and social mobilization, indicates that the policy is primarily organized around government departments, sectoral regulation, and the fire safety responsibilities of key organizations, while interactive participation by the broader public is not its principal governance approach. Overall, P_3 presents a relatively complete actionability configuration grounded in anticipatory fire safety risk assessment, centered on systematic action design, and supported by responsibility allocation, interdepartmental coordination, implementation support, and long-term governance.

P_4 conducts a "follow-up review" of the earlier special fire safety rectification campaign for large commercial complexes and scores 1.00 on F_1, Policy activation basis; F_3, Definition of governance targets; F_4, Action task design; F_5, Policy instrument configuration; F_7, Responsibility system design; F_9, Implementation support mechanisms; and F_{12}, Long-term governance mechanisms. These results indicate that the follow-up review is not simply a repetition of earlier fire safety rectification tasks. Instead, it further examines whether fire hazards recur, whether fire safety responsibilities continue to be fulfilled by relevant organizations, and whether the outcomes of previous special governance can

be consolidated. The score of 1.00 for F_{12} also shows that the policy connects special governance with routine fire safety management, institutional and standard development, and subsequent improvement.

The main structural gaps of P_4 are found in F_8, Coordination mechanism design, and F_{10}, Information communication and social mobilization, which score 0.60 and 0.50, respectively, while F_6, Implementation process design, and F_{11}, Supervision, evaluation, and feedback, score 0.75 and 0.80. These results indicate that, although P_4 has a relatively strong long-term governance orientation, its arrangements for fire safety risk information sharing, coordinated action across actors, and broader social participation remain comparatively limited. Within this policy sequence, both documents specify follow-up governance arrangements associated with concentrated rectification. The corresponding scores reflect the coverage of these arrangements in each document.

3.4. Evaluation Results for Publicity and Education Special Campaign Policy

The policy activation logic of publicity and education special campaign policy primarily arises from the continuing need to disseminate fire safety knowledge, enhance risk awareness, and strengthen public capacity. Their policy structures therefore place greater emphasis on fire safety information dissemination, education and training, and social mobilization. The PMC index values of P_5 and P_6 are 6.34 and 7.24, respectively, lower overall than those of the risk-responsive special campaigns and risk-anticipatory special campaigns. These differences, however, should not be interpreted simply as deficiencies in policy content; rather, they reflect a distinct actionability configuration of publicity and education campaigns. Because fire safety publicity and education policies generate action primarily through information outreach, capacity building, and social participation, their policy actionability needs to be assessed in relation to the structural performance of action design, information communication, supervision and feedback, and long-term governance. Figure 5 presents the PMC surfaces of P_5 and P_6.

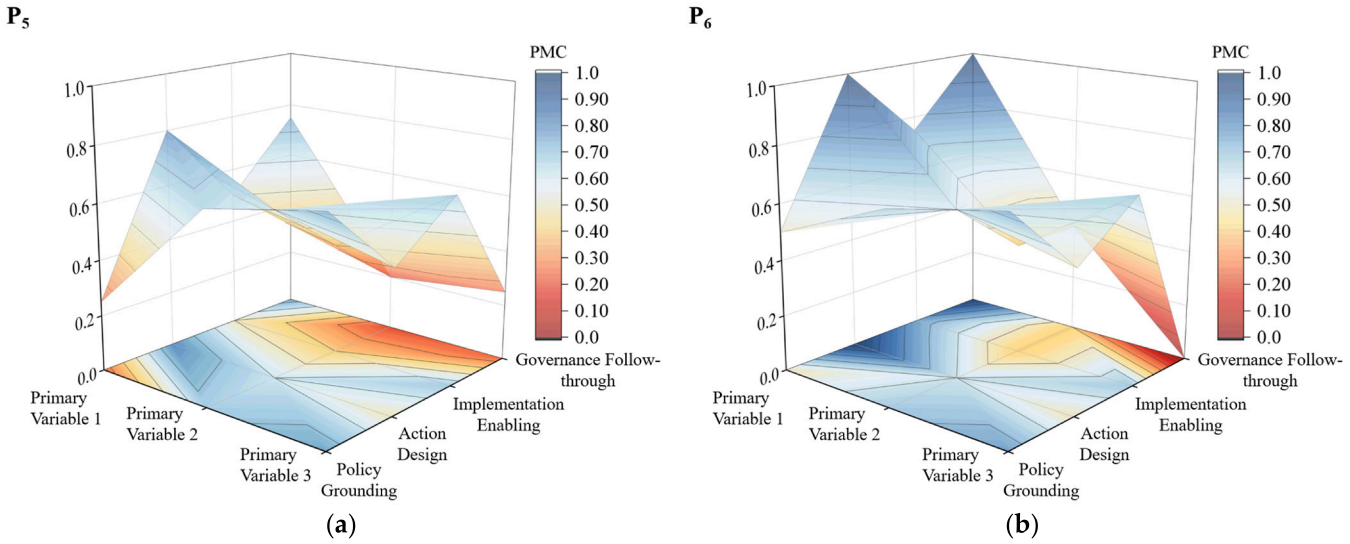

Figure 5. PMC surfaces of publicity and education special campaigns. (**a**) PMC surface of P_5. (**b**) PMC surface of P_6.

P_5 scores 0.80 on F_4, Action task design, and 0.75 on F_{10}, Information communication and social mobilization, indicating that the fire safety publicity and education campaign targeting teachers and students includes relatively clear activity tasks and information dissemination arrangements. The score of 0.75 on F_3, Definition of governance targets, further suggests that the policy clearly identifies campus fire safety risks, school settings,

and teachers and students as its principal governance targets. Activities such as fire safety education, practical exercises, and related inspections enable publicity and education objectives to be translated into concrete action rather than remaining at the level of general promotional requirements.

P_5 scores 0.25 on F_1, Policy activation basis; 0.40 on F_8, Coordination mechanism design; 0.20 on F_{11}, Supervision, evaluation, and feedback; and 0.25 on F_{12}, Long-term governance mechanisms. These results show that, although its fire safety publicity and education tasks are relatively specific, the policy remains comparatively weak in its activation basis, interdepartmental coordination, post-implementation supervision and evaluation, and long-term governance. The particularly low scores for F_{11} and F_{12} indicate that the policy chain linking the implementation of publicity and education activities to outcome evaluation, continuous improvement, and institutionalized fire safety governance is not yet fully developed. The policy actionability of P_5 is therefore concentrated primarily on the organization and implementation of fire safety education activities and outreach to key target groups, while greater scope remains for strengthening the sustained consolidation of governance outcomes after the campaign.

P_6 exhibits more prominent characteristics of fire safety information dissemination and social mobilization. Both F_4, Action task design, and F_{10}, Information communication and social mobilization, score 1.00, indicating that National Fire Safety Publicity Month translates policy objectives into concrete action through diversified activities, media communication, fire safety skills training, social participation, and publicity and education targeted at key groups. The score of 0.75 for F_7, Responsibility system design, also indicates that the organizational responsibilities of relevant departments and actors are relatively clearly specified, providing an organizational foundation for large-scale social mobilization.

P_6 scores 0.40 on both F_8, Coordination mechanism design, and F_{11}, Supervision, evaluation, and feedback, while F_{12}, Long-term governance mechanisms, scores 0. This pattern indicates that its policy actionability is concentrated primarily within the implementation period of Fire Safety Publicity Month. The policy is capable of generating strong fire safety social mobilization, knowledge dissemination, and risk information outreach, but it does not yet establish sufficiently developed institutional arrangements for embedding the outcomes of fire safety publicity and education into routine governance, institutionalization, continuous monitoring, and feedback-based improvement after the campaign ends. The mechanism through which concentrated publicity and education activities are converted into sustained governance capacity therefore represents a notable structural weakness of P_6.

Taken together, P_5 and P_6 display an actionability configuration centered on fire safety information dissemination, educational activities, and social mobilization, which differs clearly from the risk governance-oriented special campaigns that emphasize hazard screening, administrative regulation, and closed-loop rectification. These findings further suggest that improving publicity and education special campaigns does not simply require increasing the number of fire safety publicity activities. More importantly, stronger linkages are needed between publicity and education activities and fire safety responsibility fulfillment, coordinated governance, outcome evaluation, and long-term governance. In particular, F_{12} scores only 0.25 for P_5 and 0 for P_6, indicating that the transformation of periodic fire safety publicity and education into sustained fire safety governance is a key area for strengthening the policy actionability of publicity and education special campaigns.

4. Discussion

4.1. Policy Actionability Is Not Equivalent to the Specificity of Action Tasks

The evaluation results first show that the policy actionability of fire safety special campaign policies cannot be understood simply in terms of whether sufficiently specific

governance tasks are provided. F_4, Action task design, performs strongly across the selected policies. Even P_5 and P_6, which have relatively lower PMC index values, score 0.80 and 1.00 on F_4, respectively. This indicates that translating broad governance requirements into specific activities and action tasks has become a common design feature of fire safety special campaign policies. Special campaigns are inherently characterized by concentrated tasks, explicit timeframes, and a strong action orientation. Specific task deployment therefore provides an important basis for campaign implementation, though task specificity alone does not explain overall policy actionability.

A more important feature of policy actionability lies in whether different policy components form an interconnected action structure. Policy grounding provides the risk basis, governance objectives, and target boundaries for a special campaign, thereby giving policy action a clear problem orientation. Action design further translates governance objectives into concrete tasks, policy instruments, and implementation processes. Implementation enabling creates the conditions for execution through responsibility allocation, interdepartmental coordination, and implementation support. Governance follow-through sustains policy action through information communication, supervision and feedback, and long-term governance. Together, policy grounding, action design, implementation enabling, and governance follow-through constitute the structural basis through which fire safety special campaign policies are translated from policy intent into governance action. Policy actionability therefore depends on continuity and linkage across different policy components rather than on the adequacy of any single element [36,37].

The evaluation results for individual policies further support this interpretation: P_1 scores highly on policy activation, governance targets, action tasks, implementation processes, and supervision and feedback, but scores only 0.33 on F_9, Implementation support mechanisms, and 0.50 on F_{12}, Long-term governance mechanisms. This indicates that the rapid formation of concentrated governance action does not necessarily mean that adequate resource support and follow-up governance arrangements are established simultaneously. P_6 scores 1.00 on both F_4, Action task design, and F_{10}, Information communication and social mobilization, while remaining relatively weak in F_8, Coordination mechanism design; F_{11}, Supervision, evaluation, and feedback; and F_{12}, Long-term governance mechanisms. This similarly demonstrates a clear distinction between concrete activity deployment and complete policy actionability. In this sense, having actions is not equivalent to being actionable; policies with stronger policy actionability require structural connections between concrete actions and responsibility allocation, coordination mechanisms, implementation support, supervision and feedback, and sustained governance [2,36–38].

The advantages of concentrated deployment and rapid mobilization enable fire safety special campaigns to establish clear action design within a relatively short period. However, the risks confronting fire safety governance do not disappear when a special campaign ends, while risk actors, risk settings, and governance conditions continue to change. Therefore, policy actionability requires not only the rapid translation of governance requirements into concrete tasks during a specific period, but also relatively stable organizational and institutional conditions for implementation and subsequent continuation [6,21,36,37]. The evaluation of special campaign policies consequently needs to move beyond the number of tasks and the specificity of measures and examine whether a complete policy action chain is formed across different policy components.

4.2. Actionability Configurations Under Different Policy Activation Logics

The selected fire safety special campaign policies exhibit different actionability configurations, and these structural differences are closely associated with their policy activation logics and governance objectives. The risk-responsive special campaigns represented by

P_1 and P_2 need to respond rapidly to fire risks that have already become manifest and to prominent governance problems. They therefore score highly in the definition of governance targets, action task design, and implementation process design, while strengthening responses to existing risks through inspection, enforcement, rectification, and supervision. The risk-anticipatory special campaigns represented by P_3 and P_4 place greater emphasis on advanced deployment based on the characteristics of key places, patterns of risk evolution [39], and continuing governance needs, and display relatively complete linkages among action design, responsibility allocation, implementation support, and long-term governance [40–42]. The publicity and education special campaigns represented by P_5 and P_6 rely more heavily on knowledge dissemination, capacity building, and social mobilization to generate action [43]. Their strengths are therefore concentrated in action tasks and information communication, while institutional arrangements for coordination mechanisms, supervision and feedback, and long-term governance are relatively limited.

These differentiated actionability configurations indicate that the PMC index should not be interpreted simply as a ranking of policy quality across different types of special campaigns. The relatively lower overall scores of publicity and education special campaigns are directly related to their reliance on information dissemination, education and training, and social participation to achieve governance objectives; administrative enforcement, hazard rectification, and case closure are not their central policy functions. By contrast, risk-responsive and risk-anticipatory special campaigns have stronger institutional requirements for responsibility allocation, interdepartmental coordination, supervision and rectification, and implementation support, making more complete structures on these variables more likely. The analytical value of the PMC index therefore lies not only in showing differences in overall scores, but also in revealing how different policy activation logics shape the internal structure of policy actionability and whether the resulting policy configurations are capable of supporting their intended governance objectives.

More notable differences across the policies are concentrated in governance follow-through, particularly long-term governance. P_3 and P_4 both score 1.00 on F_{12}; in addition to deploying current governance tasks, these policies address routine governance, the translation of governance experience into institutional rules and standards, continued supervision, and experience-based review and improvement, thereby creating policy arrangements through which the outcomes of special governance can extend into subsequent governance [35,44]. P_1 exhibits a relatively complete supervision and rectification structure but scores only 0.50 on F_{12}, indicating that concentrated hazard elimination produces a strong structure for phased governance while leaving further room to strengthen the connection between the special campaign and routine management. P_5 and P_6 score 0.25 and 0 on F_{12}, respectively, further indicating that policies centered on concentrated publicity and social mobilization provide comparatively limited arrangements for sustained governance after campaign activities conclude. For periodic publicity-and-education campaigns such as P_5, F_{12} concerns arrangements linking the time-bounded activity to subsequent educational practice. Relevant provisions may include incorporating campaign materials and training practices into routine fire safety education ($F_{12\text{-}1}$) and using campaign review and feedback to improve subsequent activities ($F_{12\text{-}4}$).

The scores reveal differences in the coverage of supervision, feedback, and long-term governance arrangements across the selected policy texts. Supervision, evaluation, and feedback maintain the integrity of the implementation process through problem identification, rectification and reinspection, outcome evaluation, and implementation correction [26–28]. Long-term governance further provides institutional conditions through which risk information, governance experience, technical standards, and collaborative relationships generated during special campaigns can be incorporated into subsequent governance [30,35,44,45].

Without supervision and feedback, structural disconnections may emerge between policy deployment and concrete implementation. Without long-term governance, even a policy with relatively complete phased action arrangements may lack the institutional support required to translate its governance outcomes into routine governance on a continuing basis. Establishing institutional connections links concentrated task deployment and short-term mobilization with provisions for sustained governance, including routine management, institutionalization, and continuous monitoring.

This finding further broadens the understanding of the governance value of special campaigns. Fire safety special campaigns not only perform risk governance tasks during specific periods; the risk identification results, responsibility relationships, coordination experience, and governance instruments generated during implementation can also become important institutional resources for subsequent fire safety governance. Whether phased governance experience can be further embedded in routine governance, institutionalization, and continuous monitoring constitutes an important policy condition for extending concentrated governance into sustained governance, and also makes governance follow-through a key consideration in future policy design [35,45].

4.3. Research Contributions and Governance Implications of the Policy Evaluation Framework

The main conceptual and methodological contribution of this study lies in reorganizing the evaluation logic of fire safety special campaign policies around policy actionability and, on this basis, developing a policy evaluation framework tailored to the characteristics of special campaigns. Policy actionability shifts analytical attention from what policy texts cover to how policies create governance actions that can be implemented and sustained, thereby making the structural conditions connecting policy design and actual implementation an explicit object of evaluation. Building on this understanding, our study integrates policy grounding, action design, implementation enabling, and governance follow-through within a unified analytical framework and operationalizes them through 12 primary variables and 50 secondary variables. Compared with directly applying generic PMC variables, this framework simultaneously captures why a special campaign is initiated, how governance requirements are translated into concrete tasks, how actions receive responsibility and resource support, and how phased governance outcomes are extended into long-term governance, thereby enhancing the explanatory capacity of the PMC index model for fire safety special campaign policies.

The empirical contribution of this study lies in identifying the actionability configurations associated with different policy activation logics and further showing that the most informative differences across policies do not primarily arise from whether action tasks are specific, but rather from implementation enabling and governance follow-through. The selected risk-responsive, risk-anticipatory, and publicity and education special campaigns each exhibit policy structures with different emphases, indicating that special campaigns can generate policy actionability through different pathways. More broadly, existing fire safety research has also highlighted multiple pathways for reducing fire risk, ranging from individual preparedness and preventive behavior to public risk awareness and community- or household-based interventions [8,10,46]. At the same time, the pronounced variation in F_{12}, Long-term governance mechanisms, further demonstrates that whether special campaigns provide arrangements for routine governance, institutionalization, continuous monitoring, and continuous improvement is an important component of the structural completeness of policy actionability. This finding enables comparisons of fire safety special campaign policies to move beyond overall PMC scores and focus more closely on how different policies organize, support, and sustain action.

Further improvement of fire safety special campaign policies requires greater attention to the completeness of the policy action chain and the incorporation of governance follow-through into policy design from the outset. At the stages of policy grounding and action design, stronger alignment should be established among risk judgments, governance targets, policy objectives, and concrete tasks, such that special campaigns are grounded in clearer problem identification. At the stage of implementation enabling, responsibility allocation, interdepartmental coordination, resource support, and information sharing should be strengthened to provide stable implementation conditions for concrete governance tasks [3,38]. At the stage of governance follow-through, problem identification, rectification and reinspection, outcome evaluation, and responsibility correction should be connected into a complete closed-loop rectification process, while long-term governance should be incorporated into the initial design of special campaigns [47]. Effective measures, technical experience, and collaborative relationships generated through special governance should be further integrated into routine governance and translated into institutional rules and standards, while continuous monitoring and campaign review and feedback should support ongoing improvement [3,30,35,48]. In this way, fire safety special campaigns can gradually extend beyond phased risk governance and become sustained institutional resources for strengthening fire safety governance.

5. Conclusions

In this study, we developed a policy evaluation framework centered on policy actionability for central-level fire safety special campaign policies and applied the PMC index model to comparatively evaluate representative policies across three types of special campaigns. Policy actionability was decomposed into four interconnected dimensions—namely, policy grounding, action design, implementation enabling, and governance follow-through—and further operationalized through 12 primary variables and 50 secondary variables to identify how these dimensions are configured across different policies. Our results reveal that fire safety special campaign policies generally exhibit strong action design, with relatively well-developed arrangements for defining governance targets, designing action tasks, and configuring policy instruments. By contrast, more pronounced differences were observed across policies in responsibility systems, coordination mechanisms, implementation support, supervision and evaluation, and long-term governance. These findings indicate that the principal differences among special campaign policies lie not in whether they specify concrete actions, but in whether they provide complete and sustained conditions for implementing those actions.

Different policy activation logics further shape distinct actionability configurations. Risk-responsive special campaigns place greater emphasis on rapid deployment, concentrated governance, and supervision and rectification after fire risks become manifest. Risk-anticipatory special campaigns, based on the advanced identification of potential risks, more readily form structures that connect task configuration, responsibility coordination, implementation support, and sustained governance. Publicity and education special campaigns rely primarily on information dissemination, education and training, and social mobilization to generate policy action, and therefore demonstrate particular strengths in public outreach and capacity building. Comparisons across the three policy types indicate that policy actionability should not be understood as a single policy score or simply as the extent of policy content coverage. Different special campaigns may develop different policy structures according to their governance objectives, but stronger policy actionability consistently requires effective linkages among action tasks, responsibility allocation, interdepartmental coordination, implementation resources, and supervision and feedback.

Our findings provide a clear answer to our central research question: what makes a fire safety special campaign policy truly actionable is not the number or specificity of its action tasks, but whether the policy establishes a complete policy action chain in which risk judgments support governance objectives, governance objectives are translated into concrete tasks, those tasks receive organizational, responsibility, and resource support, implementation is continuously supervised and adjusted through feedback, and phased governance outcomes are further incorporated into routine governance, institutionalization, and continuous monitoring. Within this chain, the selected policies vary in the extent to which they specify governance follow-through, particularly long-term governance arrangements. Special campaigns possess institutional advantages in concentrating resources, strengthening mobilization, and accelerating implementation, but their governance value cannot be assessed solely by the number of inspections, rectification activities, or publicity tasks completed during the campaign period. Whether the risk information, technical experience, collaborative relationships, and effective practices generated through special governance can be consolidated into institutional arrangements and routine governance capacity determines whether a special campaign can extend beyond phased action and contribute to the sustained strengthening of fire safety governance.

In this study, we evaluated the design provisions of selected central-level policy documents without tracing their implementation or the development of complete policy sequences. Future research could incorporate local-level policies and longitudinal implementation evidence to examine how arrangements evolve across related documents and translate into governance practices and outcomes. Our study also retained a common indicator system, as its purpose was to examine policy actionability configurations within a shared analytical structure. However, the relevance of some indicators varies with campaign objectives and scope, and the two documents selected for each type provide a limited basis for validating type-specific modules or theoretical score ceilings. Cross-type total scores therefore combine differences in shared design coverage and function-specific arrangements. Addressing this applicability issue remains an important direction for further development. Future research could draw on a broader policy corpus and domain expert assessments to validate indicator applicability, develop a common core supplemented by type-specific modules, and establish corresponding theoretical score ceilings.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/fire9110497/s1; Table S1: Secondary-variable scores; Table S2: PMC index model results.

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