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Developing a Public Education Model Based on Social Governance in the Iranian Red Crescent Society

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Original Article

Abstract

INTRODUCTION: Public education grounded in social governance can strengthen community participation and preparedness in risk management. However, an integrated, context-specific model for organizing public education within the Iranian Red Crescent Society (IRCS) remains underdeveloped. This study aimed to develop such a model in the IRCS.

METHODS: This applied study used an exploratory sequential mixed-methods design. In the qualitative phase, Strauss and Corbin's systematic grounded theory was applied to semi-structured interviews with 20 IRCS experts and managers (purposive and snowball sampling), analyzed through open, axial, and selective coding. In the quantitative phase, a researcher-developed questionnaire based on the qualitative findings was administered to a stratified random sample from a population of approximately 3,600 IRCS trainers. Of 400 questionnaires distributed, 362 were returned (90.5%) and 347 were usable (86.75%). Content validity, reliability, and convergent and discriminant validity were assessed, and the measurement and structural models were evaluated using PLS-SEM.

FINDINGS: The qualitative analysis yielded a paradigmatic model of public education based on social governance. The measurement model demonstrated acceptable reliability and validity. Inter-organizational coordination had the highest intervening-condition coefficient (0.785; t = 19.401). Among causal conditions, volunteer and community-based capacities had the highest coefficient (0.597). Participatory educational planning (0.503) and improved educational program effectiveness (0.672) were the reported coefficients for strategies and consequences, respectively. The model explained 52% of the variance in strategies and 48% in consequences.

CONCLUSION: The model offers a context-specific framework emphasizing volunteer and community capacities, social participation, local networks, inter-organizational coordination, and participatory planning. Because the study was cross-sectional and non-interventional, results represent statistical associations, not causal effects. Longitudinal and intervention-based studies are recommended.

Keywords: Public education; Iranian Red Crescent Society (IRCS); Social governance; Grounded theory; Social participation; Risk management.

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Introduction

The Iranian Red Crescent Society (IRCS) plays an important role in disaster risk reduction, preparedness, and public education in Iran. Public education is an important component of disaster risk reduction because it can improve risk awareness, strengthen preparedness, and support the capacity of individuals and communities to respond to hazards (1-4). However, effective public education requires more than the provision of information. It also requires an understanding of community needs, the mobilization of local capacities, and coordination among the organizations and social groups involved in disaster risk management.

Public education can be organized in different ways, from the dissemination of risk information to approaches that actively involve communities in identifying needs, setting priorities, and developing preparedness activities. Community-based disaster risk reduction emphasizes the importance of local knowledge, participation, and community resources in reducing vulnerability and

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strengthening resilience (4-6). These considerations are relevant to the organization of public education within the IRCS, where educational activities must respond to diverse community needs and operate within an established organizational structure. Previous research on the IRCS has also highlighted the importance of a systematic approach to public education, including needs assessment, programme design, implementation, evaluation, motivational mechanisms, and the use of both conventional and distance education (7).

Governance provides a broader perspective for examining how public education can be organized and coordinated across institutional and community levels. Literature on good governance addresses the principles and quality of public administration, while collaborative governance focuses on cooperation among multiple actors to address shared public problems (8-10).

. Building on these related perspectives, the present study uses social governance as an analytical framework for examining public education as a shared process involving governmental institutions, civil society organizations, local actors, volunteers, and citizens. Within this framework, public education is not treated solely as an activity delivered by a single organization; it is understood as a process that may involve several actors in identifying educational needs, planning and implementing programmes, coordinating activities, and evaluating their results.

For analytical clarity, public education based on social governance is defined in this study as a participatory, multilevel process for designing, implementing, and evaluating risk-management education through cooperation among institutional and community actors. The framework focuses on three interconnected dimensions: stakeholder participation, horizontal and vertical networking, and the mobilization of social capital and local capacities. These dimensions reflect the relevance of collaboration, social relationships, and community resources to disaster preparedness and resilience (5,6,10). This definition provides the conceptual basis for examining how organizational arrangements and social capacities relate to the planning and delivery of public education within the IRCS.

An important starting point for the present study is the public education model developed by Pourkarimi for the IRCS (7). That study adopted a comprehensive and systemic approach to the organization of educational activities. The present study builds on this contribution by examining public education specifically through the lens of social governance. Its focus is on the relationships among organizational and social conditions, stakeholder participation, inter-organizational coordination, volunteer and community capacities, networking, and the strategies and consequences associated with public education. The research problem is therefore not the absence of a previous public education model, but the need to examine these governance-related dimensions together within a context-specific framework for the IRCS.

This focus is important because the organization of public education across institutional and community levels involves several interconnected requirements. These include coordination among organizations, the involvement of communities in identifying educational needs, the effective use of volunteer resources, and the connection of educational activities with local capacities. A model that identifies these conditions and clarifies their relationships with educational strategies and consequences may provide a more structured basis for planning and evaluating public education. It may also help decision-makers identify the organizational and social factors that require attention when coordinating educational activities across different levels.

Accordingly, this study aimed to develop and quantitatively examine a context-specific model of public education based on social governance in the IRCS. The qualitative phase used Strauss and Corbin's systematic grounded theory approach to identify and organize the causal, contextual, and intervening conditions, strategies, and consequences associated with public education based on social governance as the central phenomenon (11). In the quantitative phase, partial least squares Structural Equation Modeling (PLS-SEM) was used to examine the relationships among the constructs in the proposed model (12). By integrating qualitative model development with quantitative examination, the study sought to provide an empirically examined framework to inform the planning and organization of public education within the institutional and social context of the IRCS.

Methods

This applied study used an exploratory sequential mixed-methods design (qualitative–

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quantitative). The qualitative phase aimed to develop a context-specific model of public education based on social governance in the IRCS. The quantitative phase aimed to assess the measurement properties of the researcher-developed questionnaire and examine the structural relationships among the constructs of the proposed model. The two phases were linked by using the qualitative findings to develop the quantitative research instrument.

Qualitative Phase

The qualitative phase followed the systematic grounded theory approach of Strauss and Corbin (11). Data were collected through semi-structured interviews with 20 IRCS experts and managers experienced in public education and disaster risk management. Participants were selected through purposive and snowball sampling. Inclusion criteria were at least five years of relevant experience, familiarity with IRCS public education programmes, and willingness to participate. Participants included headquarters and provincial managers, representatives of Red Crescent Houses, and academic experts and consultants.

The interview guide comprised eight open-ended questions addressing the main components of the social governance-based public education model. Theoretical saturation was reached after 18 interviews, and two additional interviews yielded no substantially new categories. Interviews lasted approximately 45–75 minutes. Data collection and analysis proceeded concurrently.

Table 1. Characteristics of participants in the qualitative phase

Participant group	n	Experience (years)	Organizational level	Main characteristic
Headquarters managers in education and risk management	8	10–25	Central headquarters	Policy-making and program-development experience
Provincial managers and Red Crescent Houses	6	8–20	Provincial/local	Operational and field experience
Academic experts and consultants	6	12–30	Academic/consulting	Expertise in crisis management and education

Data were analyzed manually using the constant comparative method and the three coding stages of Strauss and Corbin (11): open, axial, and selective coding. The resulting paradigmatic model comprised causal conditions, contextual conditions, intervening conditions, strategies, and consequences. To enhance credibility, preliminary interpretations and categories were reviewed by selected participants. Participation was voluntary, informed consent was obtained, and confidentiality was maintained.

Quantitative phase

The target population comprised approximately 3,600 active IRCS trainers nationwide. The required sample size was estimated using Cochran's formula, with a 95% confidence level, a 5% margin of error, and maximum variability (p=0.50 and q=0.50). After applying the finite population correction, the estimated sample size was approximately 347 participants.

Stratified random sampling was conducted according to province and level of activity. A total of 400 questionnaires were distributed to account for nonresponse and incomplete responses. Of these, 362 were returned, representing a questionnaire return rate of 90.5%. After incomplete questionnaires were excluded, 347 questionnaires were retained for analysis. The final analytical sample therefore represented 86.75% of all distributed questionnaires.

The quantitative instrument was a researcher-developed questionnaire based on the categories and components identified in the qualitative phase. It comprised 40 items measuring five constructs: causal conditions (9 items), contextual conditions (8 items), intervening conditions (8 items), strategies (8 items), and consequences (7 items). Responses were recorded on a five-point Likert scale. Content validity was assessed through expert review of item relevance, clarity, and comprehensiveness. The questionnaire was revised based on the feedback received.

The measurement model was assessed using indicator loadings, Cronbach's alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). Convergent validity was examined using indicator loadings and AVE, while discriminant validity was assessed using the heterotrait–monotrait ratio (HTMT).

Partial least squares structural equation modeling (PLS-SEM) was conducted using SmartPLS3 to examine the structural relationships among the constructs of the proposed model (12). The analysis was used to assess the hypothesized relationships between the constructs identified in the qualitative phase. The statistical significance of

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the structural path coefficients was assessed using bootstrapping.

Findings

The qualitative analysis, based on open, axial, and selective coding, yielded a paradigmatic model comprising six interrelated components: causal conditions, the central phenomenon, contextual conditions, intervening conditions, strategies, and consequences. The central phenomenon was identified as *public education based on social governance*. The model integrates the conditions associated with the development of public education, the contextual and intervening factors that shape its implementation, the strategies adopted, and the anticipated outcomes within the IRCS.

The model was interpreted in relation to the organizational and social context of the IRCS, particularly its volunteer-oriented structure, network of Red Crescent Houses, and experience in public and community-based education. The interpretation also considered local capacities, including those associated with mosques and community elders, as well as the perspectives of participating experts and the institutional context of disaster management. Accordingly, the proposed model reflects the application of social governance principles to the organizational and community context of the IRCS rather than the direct adoption of an external model.

Conceptual distinctions were maintained between enabling conditions and implementation strategies. Social participation and networking were classified as a causal condition because they represent an existing basis for developing public education, whereas participatory educational planning was classified as a strategy because it describes an approach to organizing educational activities. Similarly, volunteer and community-based capacities were treated as existing resources, while volunteer empowerment was classified as a strategy for strengthening the use of those resources.

The quantitative phase examined the measurement properties of the constructs derived from the qualitative findings and evaluated the reported structural relationships. The measurement and structural models were assessed separately. Given the cross-sectional design, the findings were interpreted as statistical associations and evidence concerning the proposed model, rather than as proof of causal effects.

The measurement model demonstrated acceptable internal consistency and convergent validity across the five constructs reported in the measurement analysis: causal conditions, contextual conditions, intervening conditions, strategies, and consequences.

Indicator loadings ranged from 0.68 to 0.89. Cronbach's alpha values ranged from 0.84 to 0.88, CR values ranged from 0.88 to 0.91, and AVE values ranged from 0.61 to 0.67.

Table 2. Paradigmatic model of public education based on social governance

Component	Categories	Description
Causal conditions	Social participation and networking; social capital and local capacities; volunteer and community-based capacities	Conditions associated with the formation and development of public risk-management education
Central phenomenon	Public education based on social governance	Public risk-management education organized through the participation of communities, social institutions, and organizations within a social governance framework
Contextual conditions	Policy-making and macro-level support; network structure of Red Crescent Houses; social and cultural contexts; organizational cooperation	Contextual factors shaping the implementation of public education
Intervening conditions	Inter-organizational coordination; resilience-building culture; public information dissemination; development of communication technologies	Factors that may facilitate or constrain implementation
Strategies	Participatory educational planning; educational equity; community-based and blended education; volunteer empowerment	Actions and approaches for organizing and developing public risk-management education
Consequences	Increased community preparedness; strengthened social resilience; reduced hazard-related impacts; enhanced IRCS role in social governance; improved effectiveness of IRCS educational programs	Anticipated outcomes associated with implementing the identified strategies

The reported HTMT values were below 0.85, supporting discriminant validity according to the criterion applied in the study. The available results also indicate that the reported indicator test statistics exceeded 1.96.

Coefficients reported below are presented as extracted from the SmartPLS3 output. Five relationships involving the central phenomenon were reported with test statistics (Table 4): causal conditions (0.664; T=10.450), contextual

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conditions (0.555; T=7.778), intervening conditions (0.504; T=5.590), strategies (0.500; T=4.761), and consequences (0.562; T=8.081). All five T-statistics exceeded 1.96.

At the component level, reported coefficients for causal-condition components were 0.597 (volunteer and community-based capacities), 0.538 (social participation and networking), and 0.516 (social capital and local capacities). Within intervening conditions, inter-organizational coordination had a reported coefficient of 0.785 (T=19.401) and resilience-building culture 0.487. Participatory educational planning had a reported coefficient of 0.503 among strategies, and improved effectiveness of IRCS educational programs had a reported coefficient of 0.672 among consequences. Test statistics were not available for these component-level coefficients except where stated; their statistical significance therefore cannot be established from the information reported.

Table 3. Measurement model results

Construct	No. of items	Indicator loading range	Cronbach's alpha	CR	AVE
Causal conditions	9	0.68–0.87	0.86	0.90	0.64
Contextual conditions	8	0.71–0.85	0.84	0.88	0.61
Intervening conditions	8	0.70–0.89	0.87	0.91	0.66
Strategies	8	0.69–0.86	0.85	0.89	0.63
Consequences	7	0.72–0.88	0.88	0.91	0.67

Table 4. Structural model evaluation indices

Endogenous construct	(R^2)	(Q^2)	Reported (f^2) range	Maximum VIF
Strategies	0.52	0.31	0.18–0.35	Below 3.2
Consequences	0.48	0.28	0.15–0.42	Below 2.8

Structural model

The structural model explained 52% of the variance in strategies (R^2 = 0.52) and 48% of the variance in consequences (R^2 = 0.48). The corresponding (Q^2) values were 0.31 and 0.28, respectively, indicating predictive relevance under the assessment procedure used. Reported (f^2) values ranged from 0.18 to 0.35 for relationships associated with strategies and from 0.15 to 0.42 for relationships associated with consequences. The maximum Variance Inflation Factor (VIF) values were below 3.2 for strategies and below 2.8 for consequences, indicating no serious multicollinearity according to the criteria applied.

The reported analysis identified five statistically significant relationships involving the central phenomenon and other model components. The reported coefficient for the relationship between causal conditions and the central phenomenon was 0.664 (T = 10.450); for contextual conditions and the central phenomenon, 0.555 (T = 7.778); for intervening conditions and the central phenomenon, 0.504 (T = 5.590); for strategies and the central phenomenon, 0.500 (T = 4.761); and for consequences and the central phenomenon, 0.562 (T = 8.081). All five reported T statistics exceeded 1.96.

At the level of the reported model components, volunteer and community-based capacities had a coefficient of 0.597, followed by social participation and networking (0.538) and social capital and local capacities (0.516). Within the intervening conditions, inter-organizational coordination had a reported coefficient of 0.785 (T = 19.401), while resilience-building culture had a coefficient of 0.487. Participatory educational planning had a reported coefficient of 0.503 among the strategies. Among the consequences, improved effectiveness of IRCS educational programs had the highest reported coefficient, at 0.672.

These component-level estimates identify volunteer and community-based capacities, social participation, local social capital, and inter-organizational coordination as prominent elements of the reported model. However, the statistical significance of the component-level estimates for which no test statistics were supplied cannot be established from the available information.

Integration of the Qualitative and Quantitative Findings

The qualitative phase established the conceptual structure of the model, while the quantitative phase assessed the measurement properties of the five reported constructs and examined the available structural results. Together, the findings provide a context-specific framework for public education based on social governance within the IRCS. The framework brings together community participation, local and volunteer capacities, institutional coordination, and participatory educational planning. The reported results also highlight inter-organizational coordination and the effectiveness of IRCS educational programs as prominent elements of the proposed framework.

The findings should be interpreted in light of the study's cross-sectional design and the limits of

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the available statistical results. They support the proposed model as a structured framework for understanding and organizing public education within the IRCS, but they do not establish that implementation of the model will necessarily produce the anticipated outcomes.

Discussion and Conclusion

The present study developed and quantitatively assessed a context-specific model of public education based on social governance within IRCS. The findings suggest that public education can be understood not simply as the delivery of information, but as an organizational and community-based process shaped by social participation, networking, social capital, local capacities, volunteer resources, and interorganizational coordination. By integrating these dimensions within a paradigmatic framework, the study provides a basis for understanding and organizing public education within the institutional and social context of the IRCS. The proposed model offers a structured framework for this purpose; however, its interpretation and application should take into account the study's limitations, as discussed below.

The qualitative findings identified social participation and networking, social capital and local capacities, and volunteer and community-based capacities as causal conditions associated with the development of public education. These findings are consistent with previous research emphasizing the contribution of community participation, social capital, local resources, and social networks to disaster risk reduction and community resilience (4,6,10). Within the IRCS, these resources provide a basis for linking educational activities to local needs and community capacities. This perspective extends beyond an information-centered approach by emphasizing the involvement of community members and local actors in the organization and delivery of public education.

Inter-organizational coordination was a prominent component of the intervening conditions, with a reported coefficient of 0.785 and a T statistic of 19.401. This finding highlights the importance of coordination among the organizational and community actors involved in public risk-management education. Such education may require interaction among different IRCS units, disaster-management agencies, municipalities, local institutions, and community groups. Inadequate coordination may contribute to fragmented activities, duplicated efforts, or inconsistent educational priorities. This interpretation is consistent with governance approaches that emphasize interaction and coordination among multiple actors when addressing complex public problems (9,10). Within the proposed model, inter-organizational coordination represents an important condition for organizing educational activities and connecting available resources with implementation strategies.

Another contribution of the model is the conceptual distinction between conditions and strategies. Social participation, networking, social capital, local capacities, and volunteer resources were classified as conditions associated with the formation and development of public education. Participatory educational planning, educational equity, community-based and blended education, and volunteer empowerment were classified as strategies through which available resources may be mobilized and educational activities organized. For example, volunteer capacity represents an existing resource, whereas volunteer empowerment refers to actions intended to strengthen the use of that resource. Similarly, social participation represents an enabling social condition, while participatory planning describes an approach to involving stakeholders in educational decisions. This distinction improves the conceptual coherence of the model and reduces overlap between related categories.

The model also reflects the organizational context of the IRCS. Its volunteer-oriented structure, network of Red Crescent Houses (13), and experience in community-based education provide existing channels for interaction with local populations. The qualitative findings further highlighted the relevance of local social and cultural conditions and the involvement of community actors. The proposed framework therefore places public education within the wider organizational relationships and community capacities through which educational priorities are identified and programs are implemented. Its contribution lies in adapting the principles of social governance to the IRCS context rather than treating public education as a separate set of activities or assuming that a model developed elsewhere can be transferred without modification.

The quantitative findings provided evidence of acceptable measurement properties for the five reported constructs. Indicator loadings, internal consistency coefficients, CR, AVE, and the

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reported HTMT results were within the stated acceptable ranges. The structural model explained 52% of the variance in strategies and 48% of the variance in consequences, with positive (Q^2) values of 0.31 and 0.28, respectively. These results support the empirical examination of the measured constructs and indicate explanatory and predictive relevance under the assessment procedures used.

The available component-level estimates further identify several prominent dimensions within the proposed model. Volunteer and community-based capacities had a reported coefficient of 0.597, followed by social participation and networking (0.538) and social capital and local capacities (0.516). Participatory educational planning had a reported coefficient of 0.503, while improved effectiveness of IRCS educational programs had a reported coefficient of 0.672 among the consequences. These estimates highlight the relevance of community resources, participatory approaches, and educational effectiveness within the reported results. Their precise statistical meaning depends on the type of coefficient represented, and comparisons among them should therefore be made cautiously.

A further contribution of the study is the integration of qualitative model development with quantitative assessment. The qualitative phase identified the principal categories and their relationships from the perspectives of experienced experts and managers. The quantitative phase then operationalized five principal construct groups and examined their measurement properties and selected structural relationships in a sample of IRCS trainers. This sequence connects the development of a context-specific conceptual framework with its empirical assessment. The resulting model provides a structured basis for examining public education through a social governance perspective, although its applicability and practical effectiveness require further investigation in different settings and populations.

Practical Implications and Recommendations

The findings have several implications for the planning, implementation, and evaluation of public education within the IRCS:

Establish provincial coordination mechanisms. The IRCS can establish joint working groups involving relevant IRCS units, disaster-management agencies, municipalities, and nongovernmental organizations. These groups can define organizational responsibilities, coordinate educational priorities, exchange information, and reduce unnecessary duplication. Written annual plans can clarify the responsibilities of participating organizations and provide a basis for reviewing coordination activities.

Strengthen Red Crescent Houses as local education and networking centers. Red Crescent Houses can serve as local platforms for educational needs assessment, participatory planning, volunteer mobilization, and communication with community representatives. Educational priorities and content can be reviewed periodically in consultation with volunteers and local stakeholders to improve their relevance to local needs and conditions.

Develop structured volunteer empowerment programs. The IRCS can provide volunteer educators with targeted training, opportunities to develop communication and facilitation skills, performance feedback, and appropriate motivational support. These measures can help the organization use existing volunteer capacities more systematically. Their contribution to educational outcomes should be monitored rather than assumed.

Expand community-based and blended education. Face-to-face educational activities can be combined with online platforms, local media, and official IRCS communication channels. The choice of delivery method should reflect local infrastructure, accessibility, and the needs of different population groups. Particular attention should be given to remote and underserved communities, where access to some educational services may be limited.

Incorporate equity and community participation into educational planning. Needs assessment and educational planning should consider differences in geographical access, local hazard exposure, available resources, and the needs of different population groups. Involving community representatives in identifying priorities and reviewing educational content may help align programs with local conditions.

Establish a monitoring and evaluation system. Public education programs should be assessed using predefined indicators. These may include population coverage, participation rates, changes in knowledge, self-reported preparedness-related behavior, stakeholder satisfaction, and the accessibility of educational activities. Baseline and follow-up assessments, where feasible, can help distinguish program implementation from changes

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in educational outcomes and support periodic revision of the programs.

These recommendations represent practical applications of the proposed model rather than interventions whose effectiveness has already been demonstrated by the present study. Their implementation should therefore be accompanied by systematic monitoring and evaluation.

Several limitations should be considered when interpreting the findings: First, the qualitative phase involved experts and managers with relevant professional experience, while the quantitative phase involved IRCS trainers. The model therefore primarily reflects professional and organizational perspectives. It does not directly establish whether community members share these perspectives or whether the proposed educational priorities correspond to their needs, preferences, and experiences. Future studies should incorporate community members, volunteers, local leaders, and external stakeholders to assess the relevance and acceptability of the model from a wider range of perspectives.

Second, the quantitative phase used a cross-sectional, non-interventional design. The estimated relationships represent statistical associations within the data collected and do not establish temporal order or definitive causal effects. The findings also do not demonstrate that implementing the proposed model will necessarily improve preparedness, resilience, behavior, or educational effectiveness. Longitudinal and intervention-based studies are needed to examine these relationships over time and to assess changes following implementation.

Third, the model was developed within the organizational context of the IRCS. Its applicability may vary across provinces, population groups, organizational settings, and hazard contexts. Differences in local social structures, institutional resources, communication infrastructure, and exposure to hazards may influence how the model can be implemented. Replication in different geographical and organizational settings is therefore needed before broader generalization.

Finally, the quantitative results must be interpreted in relation to the reported measurement and structural estimates. Although the available reliability and validity indices support the reported measurement properties, additional research should examine the stability of the constructs and structural relationships in independent samples. Future analyses should also assess whether the proposed framework performs consistently across different regions and population groups.

These limitations do not negate the value of the proposed framework. Rather, they define the scope of the conclusions that can be drawn and identify the additional evidence required to assess its transferability and practical effectiveness.

This study developed a context-specific model of public education based on social governance within the Iranian Red Crescent Society using an exploratory sequential mixed-methods design. The qualitative phase identified six interrelated components: causal conditions, the central phenomenon, contextual conditions, intervening conditions, strategies, and consequences. The central phenomenon was defined as public education based on social governance, with community participation, social capital, local capacities, volunteer resources, and organizational relationships forming important elements of the framework.

The quantitative findings supported the reported measurement properties of five constructs and provided evidence concerning their explanatory, predictive, and structural characteristics. Among the available component-level estimates, volunteer and community-based capacities, social participation and networking, and social capital and local capacities were prominent within the causal conditions. Inter-organizational coordination was a prominent intervening-condition component, while participatory educational planning and the effectiveness of IRCS educational programs were notable within the reported strategies and consequences, respectively.

The principal contribution of the study is a context-specific framework that brings social participation, volunteer and community resources, inter-organizational coordination, and participatory planning together within an organizational model of public education. The framework provides a basis for reviewing educational policies and designing programs within the IRCS. However, its practical effectiveness and the causal relationships among its components have not been established by the present cross-sectional study. Further research involving community members, multiple geographical settings, and longitudinal or intervention-based designs is required to assess its implementation and determine whether it is associated with measurable improvements in

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public preparedness, educational outcomes, and community resilience.

Compliance with Ethical Guidelines

The study was conducted in accordance with applicable ethical principles and research guidelines. All participants were informed of the study's purpose, and participation was voluntary. The confidentiality of the collected information was maintained throughout the study.

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The study received no financial support.

Authors' Contributions

In this article, Sarem Rezaei contributed to the study design, data collection, data analysis, and drafting of the manuscript. Soghra Afkaneh contributed to the study design, scientific supervision, and critical revision of the manuscript. Mohammad Naghi Imani Gelepordasari contributed to the methodology, data analysis, and revision of the manuscript. All authors reviewed and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

Conflict of Interests

The authors declare no conflict of interest.

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