

Developing An Adaptive School Safety Risk Governance Framework for Ajman: Integrating Leadership, Risk Assessment, Monitoring, and Organisational Learning

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ABSTRACT

School safety policies may remain fragmented when leadership, risk assessment, monitoring, and organisational learning are not integrated within a single adaptive governance process. This study developed a systems-based risk governance framework for schools in Ajman by integrating quantitative, qualitative, and documentary evidence. A mixed methods design combined a survey of 110 teachers, administrators, counsellors, safety officers, and information technology staff with 15 semi-structured interviews and an analysis of three national policy documents. Survey data were analysed in IBM SPSS; interview data were examined thematically; and documentary evidence was analysed for recurring governance requirements. Mean scores were high for school safety governance ($M = 3.870$, $SD = .781$) and integrated risk management ($M = 3.753$, $SD = .650$), and the two measures were strongly associated ($r = .892$, $p < .01$). Six interview themes and five documentary themes converged around leadership, coordinated risk management, preparedness, student protection, digital safety, monitoring, and continuous improvement. The evidence supported a four-capability framework comprising leadership and policy coordination, integrated risk identification and assessment, monitoring and evaluation, and organisational learning and continuous improvement. The framework contributes a cyclical process model for coordinating multidomain safety practices. Because the data were cross-sectional and purposively sampled, the findings are associative and context-specific rather than causal or universally generalisable.

Keywords: School safety governance; Risk assessment; Policy coordination; Monitoring and evaluation; Organisational learning; Ajman.

INTRODUCTION

Schools increasingly confront risks that cut across physical facilities, student well-being, digital systems, environmental conditions, and institutional boundaries. Treating these hazards as separate compliance tasks can obscure how a failure in one area affects other school functions. The Comprehensive School Safety Framework therefore integrates safer facilities, continuity management, risk education, and enabling policies within an all-hazards approach (Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector [GADRRRES], 2022). Ajman provides an appropriate setting for examining this challenge because public and private schools operate under common national requirements while differing in resources, infrastructure, specialist capacity, and implementation routines. The central issue is not simply whether safety practices exist, but whether schools organise them as a coordinated, reviewable, and adaptive governance process. Research on school safety often examines individual risk domains or isolated interventions, whereas governance requires the integration of authority, information, implementation, and feedback. School-based management has been associated with dimensions of school climate, including perceived physical and emotional safety, suggesting that organisational arrangements shape protective conditions (Khanal & Guha, 2023). Policy review and active coordinating structures have also been associated with stronger school wellness climates (Hoke et al., 2024). However, these findings do not fully explain how schools can assess, implement, monitor, and improve multiple safety domains as a coherent cycle. This gap is particularly relevant in Ajman, where national policy objectives must be translated into consistent school-level responsibilities, records, escalation pathways, and learning

mechanisms. A governance perspective therefore directs attention to information flows, accountability for unresolved risks, and the retention of lessons from exercises, incidents, and policy changes. This study is grounded in systems theory and risk society theory. Systems theory conceptualises the school as an open organisation in which people, infrastructure, technologies, routines, and external authorities interact to produce safety outcomes (von Bertalanffy, 1968). Risk society theory explains why contemporary institutions must anticipate diffuse and emerging hazards rather than rely only on responses to visible incidents (Beck, 1992). Together, the theories suggest that effective safety governance requires coordinating structures, systematic risk processing, feedback, and adaptation. They also distinguish operational risk domains from the governance capabilities that connect those domains over time.

Accordingly, this study aimed to develop and evaluate an adaptive school safety risk governance framework for Ajman. The proposed framework comprises four capabilities: leadership and policy coordination, integrated risk identification and assessment, monitoring and evaluation, and organisational learning and continuous improvement. Quantitative evidence describes the relationship between integrated risk management and perceived governance, while interview and documentary evidence clarifies the mechanisms through which schools organise these practices. The study therefore contributes a locally grounded process model that can guide coordination across physical, psychological, digital, and environmental safety without treating these domains as interchangeable.

LITERATURE REVIEW

Theoretical Foundations

Systems theory provides the principal logic for the framework because school safety depends on coordinated interactions among leadership, policies, staff roles, information flows, facilities, technologies, and external authorities (von Bertalanffy, 1968). Feedback enables the system to detect gaps, correct implementation, and adapt to changing conditions. Risk society theory complements this perspective by explaining why emerging hazards require anticipatory governance, reflexive review, and institutional learning rather than static compliance (Beck, 1992). Integrating the two theories positions leadership as a coordinating mechanism, risk identification and assessment as an information-processing function, monitoring as a feedback function, and organisational learning as an adaptive function. This logic is consistent with comprehensive school safety guidance that connects policy, risk reduction, preparedness, continuity, and improvement within an all-hazards approach (GADRRRES, 2022). Governance is therefore conceptualised as a recurring control and learning cycle rather than a linear policy sequence.

Adaptive School Safety Governance

Adaptive school safety governance refers to an institution's capacity to identify changing risks, assign responsibilities, coordinate implementation, verify performance, and revise practices through evidence and feedback. It extends beyond the existence of policies because governance also requires decisions, resources, documentation, escalation, and accountability across routine operations and emergencies. The UAE Child Protection Policy illustrates this orientation by assigning prevention, reporting, confidentiality, training, coordination, monitoring, and evaluation responsibilities to educational institutions (United Arab Emirates Ministry of Education, 2020). Similarly, safe learning environments depend on integrating multidimensional conditions within risk management rather than treating safety as a single technical function (Savolainen, 2023). In the proposed model, adaptive governance results from four mutually reinforcing capabilities and is expected to support safer learning conditions, student protection, digital security, operational continuity, organisational resilience, and sustained improvement.

Leadership and Policy Coordination

Leadership and policy coordination refer to the processes through which school leaders establish safety priorities, assign responsibilities, allocate resources, communicate expectations, and align institutional procedures with regulatory requirements (United Arab Emirates Ministry of Education, 2020). Adaptive school safety governance concerns a school's capacity to coordinate responsibilities, respond to changing risks, and revise

practices through accountability and feedback (GADRRRES, 2022). Systems Theory supports this relationship because specialised actors and safety domains must function as interconnected components rather than through isolated decisions (von Bertalanffy, 1968). Khanal and Guha (2023) found that school-based management was associated with safety-related dimensions of school climate. Hoke et al. (2024) reported that policy review and active wellness councils were associated with stronger school wellness climates. Mtimkulu and Kwatubana (2023) showed that school leaders supported policy implementation by articulating vision, defining roles, facilitating dialogue, and promoting training and reflection. Sasaki et al. (2024) also identified coordination, capacity-building, resource mobilisation, and shared responsibility as important leadership practices. Conversely, Masekela et al. (2024) found that incomplete implementation and weak stakeholder communication undermined school safety policy. Leadership and policy coordination should therefore strengthen accountability, integration, communication, and implementation capacity. Based on the preceding theoretical and empirical evidence, the first proposition is formulated as follows:

P1. Leadership and policy coordination provide the enabling architecture for adaptive school safety governance in Ajman.

Integrated Risk Identification and Assessment

Integrated risk identification and assessment refer to processes through which schools recognise hazards, analyse likelihood and consequences, evaluate controls, and establish priorities for action (GADRRRES, 2022). They encompass physical, psychological, digital, and environmental threats and support adaptive school safety governance by converting dispersed information into coordinated decisions. Risk Society Theory explains the need to anticipate emerging and difficult-to-observe hazards before harm becomes visible (Beck, 1992). Systems Theory further indicates that risks should be assessed as interacting components because disruption in one domain can affect safeguarding, health, evacuation, and educational continuity (von Bertalanffy, 1968). Recent studies support this integrated approach. Luo et al. (2023) analysed school-staff interviews and 231 accident cases, identifying 19 interconnected risk factors and their hierarchical relationships. Wang and Hu (2023) developed a campus risk model combining risk identification, interaction analysis, and Bayesian estimation, showing that isolated categories can overlook influential causal relationships. Cvetković et al. (2024) surveyed 850 students and teachers and emphasised risk awareness, stakeholder participation, preparedness training, and cooperation with disaster-management authorities. In Ajman schools, integrated assessment should therefore combine records, observations, stakeholder concerns, policy requirements, and specialist judgement within a shared risk register. Based on the preceding theoretical and empirical evidence, the second proposition is formulated as follows:

P2. Integrated risk identification and assessment organise multidomain hazards into coordinated governance priorities in Ajman schools.

Monitoring and Evaluation

Monitoring and evaluation refer to processes through which schools collect evidence, compare implementation with standards, and determine whether safety policies and controls operate effectively (GADRRRES, 2022). Monitoring may examine inspections, incidents, training, drills, environmental conditions, digital access, well-being indicators, and corrective-action closure, while evaluation interprets these data against objectives and changing risks. Systems Theory supports this relationship because feedback enables organisations to detect deviations and correct weak implementation (von Bertalanffy, 1968). Risk Society Theory further emphasises reflexive review as technologies, infrastructure, populations, and external hazards evolve (Beck, 1992). Recent evidence supports continuous monitoring. Hoke et al. (2024) found that wellness-policy review, active councils, and attention to student health objectives were associated with stronger school wellness climates. Parlak et al. (2023) used observations and focus groups during two earthquake drills and found that identifying problems after the first drill and repeating the exercise improved students' compliance with the emergency plan. Ryberg et al. (2024) reported that a school-capacity model incorporating leadership, data collection, analysis, and programme implementation produced positive changes in students' school-climate perceptions. Monitoring should therefore assess effectiveness, not merely activity completion, by combining leading indicators with

outcomes and corrective follow-up. Based on the preceding theoretical and empirical evidence, the third proposition is formulated as follows:

P3. Monitoring and evaluation strengthen accountability and implementation consistency within adaptive school safety governance.

Organisational Learning and Continuous Improvement

Organisational learning and continuous improvement refer to processes through which schools convert monitoring evidence and operational experience into revised procedures, shared knowledge, and safer practice (Walsh et al., 2022). Learning becomes organisational when lessons from incidents, drills, inspections, and near misses are embedded in records, training, routines, and decision rules. Systems Theory supports this relationship because feedback and adaptation enable organisations to correct weaknesses and remain viable (von Bertalanffy, 1968). Risk Society Theory likewise emphasises reflexive learning in institutions facing changing hazards (Beck, 1992). Recent evidence supports these processes. Viano et al. (2024) found that improvement science encouraged school teams to use collaborative, short-cycle inquiry, although organisational conditions influenced implementation quality. Pinheiro and Alves (2024) reported that educational teams promoted organisational learning when structural change was combined with shared leadership, collaboration, and school culture. Zadok et al. (2024) found that transformational leadership strengthened collective teacher efficacy, which enhanced organisational resilience. In Ajman, continuous improvement should combine after-action reviews, trend analysis, professional development, stakeholder feedback, policy revision, and verification of corrective actions. This capability returns knowledge to risk assessment, preserves institutional memory, and prevents safety arrangements from becoming static. Based on the preceding theoretical and empirical evidence, the fourth proposition is formulated as follows:

P4. Organisational learning and continuous improvement strengthen the adaptability and sustainability of school safety governance in Ajman.

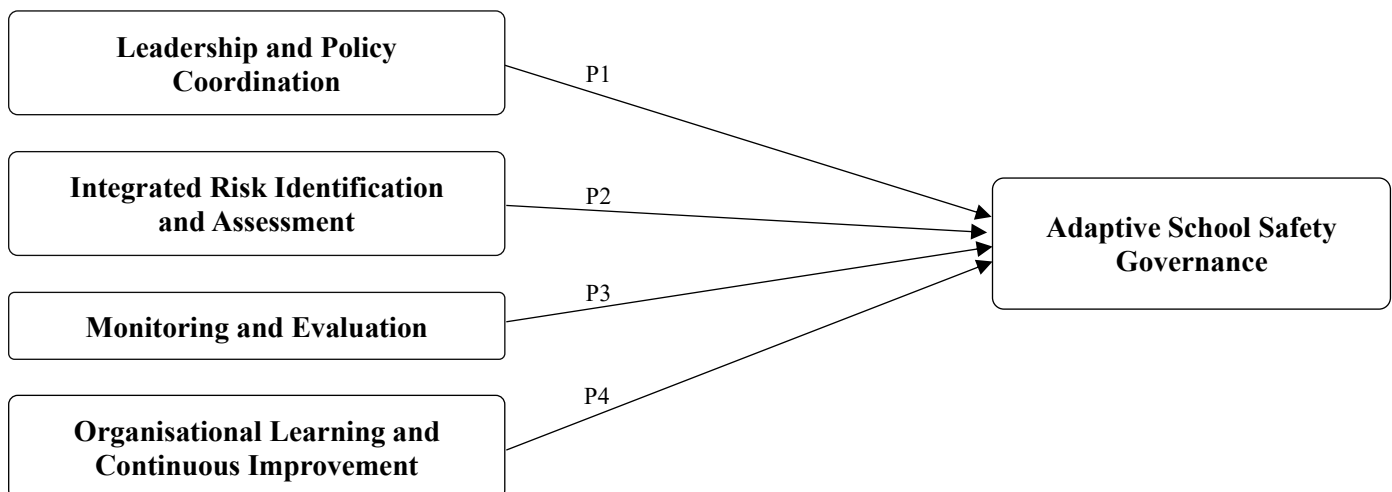


Figure 1. Conceptual framework

METHODS

Research Design

The study used a mixed methods design to develop an adaptive school safety risk governance framework for Ajman. A cross-sectional survey measured safety practices, integrated risk management, and school safety governance. Semi-structured interviews examined implementation mechanisms, while document analysis assessed national policy expectations. Quantitative, qualitative, and documentary evidence were integrated through triangulation to identify convergence, complementarity, and framework components. This design was appropriate because framework development required both measurable organisational patterns and explanations of how leadership, assessment, monitoring, and learning operate in practice (Creswell & Plano Clark, 2018).

The unit of analysis for the survey was the individual school staff member with direct knowledge of safety responsibilities.

Measures and Instrument Development

Data were collected using a structured 28-item questionnaire, a semi-structured interview guide, and a document review protocol. Survey items used a five-point Likert-type scale and covered physical, psychological, digital, environmental, and governance practices. An integrated risk management composite summarised the four operational domains. Interviews addressed safety culture, policy implementation, emergency preparedness, infrastructure, well-being, digital protection, leadership, barriers, and improvement. The documentary review examined the Student Protection Framework, Smart School Safety Guidelines, and National Wellbeing Strategy 2031. The use of three instruments enabled comparison among perceived implementation, professional experience, and formal policy expectations. The interview guide ensured consistent coverage while allowing participants to explain responsibilities, coordination, evidence, and implementation gaps. The document protocol identified governance principles, required controls, monitoring expectations, and improvement mechanisms relevant to framework construction (Bowen, 2009).

Sampling and Data Collection

Stratified purposive sampling was used to recruit personnel from schools in Ajman who had direct operational knowledge of school safety. Rather than aiming for statistical representation of all schools in the Emirate, the sampling strategy was designed to ensure the inclusion of participants with relevant expertise in school safety governance. Consequently, school-level information such as the number of invited schools, the number of participating schools, and response rates by individual school was not systematically recorded because the unit of analysis was the individual participant rather than the school. The final sample consisted of 110 valid questionnaire responses obtained from 130 distributed questionnaires, representing an overall valid response rate of 84.6%. Participants included teachers, safety officers, administrators, counsellors, and information technology staff. In addition, 15 semi-structured interviews were conducted with principals, safety coordinators, counsellors, teachers, and an information technology officer to provide in-depth qualitative insights into school safety governance. Participation was voluntary, confidentiality and anonymity were maintained throughout the study, and institutional approval and informed consent were obtained from all participants. The documentary sample comprised three national policy documents selected because of their relevance to student protection, school safety, well-being, and governance. Although the participating schools represented different educational settings within Ajman, the absence of school-level demographic information limits the assessment of sample representativeness. Therefore, the findings should be interpreted with appropriate caution when generalising them to all schools in Ajman, and future studies are encouraged to report detailed school characteristics to strengthen external validity.

Measurement and Data Quality

The questionnaire used a five-point response scale ranging from 1 (strongly disagree) to 5 (strongly agree). Internal consistency was assessed using Cronbach's alpha, and factorability was examined using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity. The present analysis retained school safety governance and the integrated risk management composite as its principal quantitative indicators. The four safety domains contributed to the composite and were treated as supporting evidence rather than as separate predictors. Interview themes and documentary categories were used as qualitative evidence rather than as measurement scales.

Data Analysis

Survey data were screened and analysed in IBM SPSS. Descriptive statistics summarised the sample and the principal framework indicators. Cronbach's alpha assessed internal consistency; the KMO measure and Bartlett's test assessed factorability. Pearson's correlation examined the association between integrated risk management and school safety governance. No additional regression, mediation, moderation, or group-comparison analyses were conducted for this paper. Interview transcripts were analysed thematically through familiarisation, coding,

theme development, review, definition, and reporting (Braun & Clarke, 2006). Policy documents were examined systematically for recurring governance requirements. A convergence matrix linked quantitative indicators, interview themes, and documentary findings to the four proposed governance capabilities. A component was retained when it was supported by the original study and by at least two evidence streams. Interpretations remained associative and context-specific, and disagreement among sources was retained rather than forced into artificial consensus.

RESULTS

The final survey dataset contained 110 valid cases, supplemented by 15 interviews and three policy documents. The questionnaire data were suitable for the reported analyses: the KMO value was .952, Bartlett's test was significant, $\chi^2(378) = 3379.779$, $p < .001$, and internal-consistency coefficients ranged from .884 to .951. The mean score for school safety governance was 3.870 (SD = .781), and the mean for integrated risk management was 3.753 (SD = .650); both fell within the study's high category. The two measures were strongly and positively associated, $r = .892$, $p < .01$. These findings indicate that multidomain safety practices and perceived governance covary, but they do not identify causal direction or the mechanisms through which coordination occurs. Interview and documentary evidence was therefore used to interpret the leadership, assessment, monitoring, and learning functions that underpin the proposed framework.

Table 1 presents the profile of survey respondents. Men represented 51.8% and women 48.2% of the sample. Teachers formed the largest professional group (56.4%), followed by safety officers (15.5%), administrators (10.0%), counsellors (9.1%), and information technology staff (9.1%). Most respondents had substantial professional experience: 32.7% reported 11-15 years, and 28.2% reported more than 15 years. Public-school personnel represented 61.8% of the sample and private-school personnel 38.2%. The distribution provided perspectives from operational, leadership, well-being, technical, and compliance roles across both school sectors. Because the sample was purposive, it supports informed framework development but not prevalence estimates for all schools in Ajman.

Table 1. Respondent profile

Characteristic	Category	n (%)	Characteristic	Category	n (%)
Gender	Male	57 (51.8)	Position	Teacher	62 (56.4)
	Female	53 (48.2)		Safety officer	17 (15.5)
	Total	110 (100.0)		Administrator	11 (10.0)
Experience	<5 years	14 (12.7)		Counsellor	10 (9.1)
	5-10 years	29 (26.4)		Information technology staff	10 (9.1)
	11-15 years	36 (32.7)	School type	Public	68 (61.8)
	>15 years	31 (28.2)		Private	42 (38.2)
	Total	110 (100.0)		Total	110 (100.0)

N = 110. Percentages may not total 100 because of rounding.

Table 2 presents the quantitative indicators retained for framework development. School safety governance and integrated risk management were both rated within the study's high category. Their strong correlation indicates that more integrated multidomain practices are associated with stronger perceived governance. The excellent KMO value and significant Bartlett's test support the factorability of the questionnaire data, while the alpha coefficients indicate good to excellent internal consistency. These statistics justify using the survey as one evidence stream in framework construction; however, they do not establish temporal order or causality. The integrated risk management composite should also be interpreted as a summary of the four measured safety domains rather than as a newly validated latent variable.

Table 2. Quantitative indicators for framework development

Indicator	N	Statistic	Value	Interpretation
School safety governance	110	Mean (SD)	3.870 (.781)	High
Integrated risk management	110	Mean (SD)	3.753 (.650)	High
IRM-SG association	110	Pearson's r	.892**	Strong positive
Factorability	110	KMO / Bartlett's test	.952 / $\chi^2(378) = 3379.779$, p < .001	Suitable
Internal consistency	110	Cronbach's alpha	.884–.951	Good to excellent

**p < .01. IRM = integrated risk management; SG = school safety governance.

Table 3 aligns six interview themes with five documentary themes that informed the framework. Interview participants described safety culture as a shared responsibility, policies as coordinating mechanisms, preparedness as an ongoing risk management process, and physical, environmental, psychological, and digital protection as interconnected responsibilities. They also emphasised leadership, evidence-based decision-making, staff development, and continuous improvement. The policy documents converged on leadership and governance, comprehensive risk management and preparedness, holistic student protection, secure digital learning, and organisational resilience. Across sources, leadership and policy coordination enabled the system; risk identification and assessment organised hazards; monitoring verified implementation; and learning returned evidence to revised priorities. This convergence supports an integrated process model while remaining aligned with national expectations. The qualitative themes were not converted into statistical effects.

Table 3. Cross-source framework evidence

Evidence area	Quantitative indicator	Interview evidence	Documentary evidence	Governance function
Leadership and policy coordination	Governance M = 3.870	Safety culture; policy compliance; shared responsibility	Leadership and governance	Coordination and accountability (enabling architecture)
Integrated risk and identification assessment	IRM M = 3.753; r = .892**	Emergency preparedness; physical, environmental, psychological, and digital protection	Comprehensive risk management; holistic student protection	Multidomain assessment and prioritisation (information-processing function)
Monitoring and evaluation	High governance and IRM perceptions	Inspections, drills, reporting, review, and follow-up	Compliance, monitoring, and performance oversight	Feedback and verification (control function)
Organisational learning and continuous improvement	Strong IRM–SG association	Training, reflection, feedback, and improvement	Continuous improvement and organisational resilience	Adaptation and organisational learning (adaptive function)
Adaptive school safety governance	Convergent quantitative pattern	Six integrated themes	Five integrated policy themes	Coordinated governance cycle (framework outcome)

Table 4 evaluates the four propositions using a transparent convergence rule. Each proposition was retained because it was supported by multiple evidence streams. Leadership and policy coordination were supported by high governance perceptions, interview accounts of shared accountability, and policy assignment of institutional responsibilities. Integrated risk identification and assessment were supported by the high integrated risk management score, its strong association with governance, preparedness themes, and comprehensive policy requirements. Monitoring and evaluation were supported by interview evidence concerning inspections, drills, reporting, and review, together with documentary expectations for compliance and performance oversight. Organisational learning and continuous improvement were supported by evidence concerning training, after-action review, policy revision, feedback, and resilience. The findings therefore support the propositions through mixed methods triangulation, not through separate quantitative path estimates or causal tests. Future research should operationalise the four capabilities as distinct constructs and test their relationships prospectively.

Table 4. Framework proposition evaluation

Proposition and relationship	Survey evidence	Cross-source evidence	Status	Boundary
P1. Leadership and coordination	M = 3.870	Roles and policy; leadership and governance	Retained	No path estimate
P2. Integrated assessment	M = 3.753; r = .892**	Readiness; risk management and protection	Retained	Associative
P3. Monitoring and evaluation	High ratings	Inspections, drills, and reports; monitoring and oversight	Retained	No path estimate
P4. Learning and improvement	Integrated pattern	Training and feedback; learning and resilience	Retained	Requires future testing
Overall adaptive cycle	Survey context	Six interview themes and five documentary themes	Supported	Not causal

The qualitative analysis of the 15 semi-structured interviews generated four main themes related to the proposed adaptive school safety risk governance framework: (1) safety culture as shared responsibility, (2) leadership commitment and policy coordination, (3) integrated risk assessment and monitoring, and (4) organisational learning and continuous improvement. Participants consistently described school safety as a collective responsibility involving school leaders, teachers, administrative staff, students, and parents. Safety was viewed as an organisational culture that should be embedded into daily practices rather than being limited to the responsibilities of safety officers. These perspectives indicate that a strong safety culture depends on shared ownership and active participation across the school community.

Participants identified leadership engagement as a critical factor influencing the effectiveness of school safety governance. Principals and safety coordinators were viewed as responsible for translating policies into operational practices, allocating resources, and ensuring communication among stakeholders. The findings demonstrate that leadership commitment serves as a key mechanism connecting governance policies with practical safety implementation. Participants emphasised the importance of continuous risk identification, assessment, and monitoring across different safety domains, including physical hazards, emergency preparedness, digital risks, and student wellbeing. These findings suggest that effective risk governance requires proactive approaches that identify potential risks before they develop into serious incidents. Participants indicated that schools improve safety performance by learning from incidents, emergency drills, inspections, and feedback processes. Reflection and knowledge sharing were considered important for strengthening future preparedness.

DISCUSSION

The development of an Adaptive School Safety Risk Governance Framework for Ajman highlights the importance of shifting from traditional compliance-based safety practices toward a proactive and adaptive

approach focused on prevention, continuous improvement, and resilience. The framework demonstrates that effective school safety depends not only on technical measures but also on leadership commitment, systematic risk assessment, monitoring, and organisational learning. School leadership is a critical factor in establishing effective safety governance. School leaders influence safety priorities, resource allocation, staff engagement, and the development of a positive safety culture. In line with High Reliability Organisation (HRO) theory, effective safety performance requires leadership attention, operational awareness, and resilience in managing uncertainty (Weick & Sutcliffe, 2015). Moreover, Reason (1997) emphasised that organisational failures often result from weaknesses in management systems rather than individual errors. Therefore, Ajman school leaders should integrate safety considerations into strategic planning and daily operations.

The framework also highlights the importance of structured risk management processes. Rather than responding only after incidents occur, adaptive safety governance focuses on early identification, assessment, and mitigation of risks. This supports the principles of ISO 31000, which promotes integrated risk management, stakeholder involvement, and continuous review (International Organization for Standardization, 2018). For schools in Ajman, risk assessments should address diverse areas, including physical safety, emergency preparedness, health, cybersecurity, environmental risks, and student wellbeing. Effective safety governance also requires reliable monitoring systems that combine both leading and lagging indicators. While incident records and accident statistics provide information about past failures, preventive indicators such as safety inspections, training completion, emergency drills, and hazard reporting help identify potential risks before they escalate. This approach reflects Reason's (1997) emphasis on strengthening safety barriers and HRO principles that encourage attention to early warning signals (Weick & Sutcliffe, 2015). Furthermore, organisational learning is essential for maintaining adaptive safety performance. Schools should view incidents, near misses, and emergency exercises as opportunities for improvement rather than merely compliance requirements. Through mechanisms such as incident reviews, knowledge sharing, safety committees, and continuous training, schools can develop stronger safety practices. This aligns with organisational learning theory, which emphasises reflection and adaptation as key drivers of organisational improvement (Argyris & Schön, 1996).

Finally, effective school safety governance requires collaboration among school leaders, teachers, students, parents, government authorities, and emergency services. Complex risks cannot be managed by schools alone; therefore, stakeholder engagement and coordinated communication are essential components of effective risk governance (IRGC, 2017). In Ajman, stronger cooperation between schools and educational authorities can enhance consistency, preparedness, and resilience. Overall, the proposed framework supports a transition from reactive safety management toward an adaptive governance model that enables schools to anticipate risks, make evidence-based decisions, and continuously improve safety outcomes.

Implications of the Research

This study provides important theoretical, practical, and policy implications for improving school safety governance in Ajman.

Theoretical Implications

The findings apply systems theory by specifying four governance capabilities that connect school safety subsystems over time. Leadership and policy coordination align actors and resources; risk identification and assessment convert diverse signals into priorities; monitoring supplies feedback; and organisational learning supports adaptation. This process interpretation moves beyond listing physical, psychological, digital, and environmental domains by explaining how their interdependence can be governed. The findings also illustrate risk society theory in an educational setting: anticipation is operationalised through multidomain risk identification, reflexivity through monitoring and review, and adaptation through organisational learning. The strong association between integrated risk management and governance supports the relevance of coordination, while qualitative and documentary convergence identifies mechanisms that correlation alone cannot reveal. The framework should therefore be understood as an empirically informed, context-specific middle-range model rather than as a universal causal structure.

Practical Implications

School leaders can apply the framework as a recurring governance cycle. First, they can assign responsibility for policy coordination and establish a cross-functional safety group that includes leadership, facilities, counselling, teaching, information technology, and safety personnel. Second, the group can maintain a multidomain risk register with fields for likelihood, impact, controls, priority, ownership, deadlines, and escalation. Third, schools can connect evidence from drills, inspections, incidents, environmental checks, well-being concerns, and digital events within a common monitoring dashboard. Fourth, scheduled reviews can verify whether corrective actions were both completed and effective. After incidents or exercises, brief after-action reviews can capture lessons, inform procedural changes, and identify training needs. Education authorities can support consistency through shared indicators, minimum evidence requirements, professional development, and escalation routes for risks that exceed school-level resources. This approach preserves specialist expertise while making accountability and organisational learning visible across the school.

Policy Implications

The development of an Adaptive School Safety Risk Governance Framework for Ajman has significant policy implications for educational authorities, school leaders, and stakeholders responsible for ensuring safe and resilient learning environments. The framework suggests that school safety policies should move beyond traditional compliance-based approaches and adopt a proactive, integrated, and adaptive governance model that supports continuous risk identification, prevention, and improvement.

Limitations and Future Research

Several limitations constrain interpretation of the framework. The survey was cross-sectional and based on staff perceptions; therefore, the strong association between integrated risk management and governance does not establish causal direction. Purposive sampling secured knowledgeable respondents but limits statistical generalisation beyond the participating schools. Public- and private-school personnel were combined because inferential sector comparisons were not available. The integrated risk management composite summarised four measured domains, but its separate internal consistency and confirmatory measurement properties were not reported. Interviews were limited to 15 participants, and the available qualitative evidence consisted of thematic summaries rather than a fully auditable set of quotations. Documentary analysis covered three national policy sources and may not capture every emirate-level procedure or school-specific document. Students and parents were not interviewed, and the study included no direct observation of drills, facility audits, cybersecurity testing, or longitudinal safety records. Finally, the propositions were supported through triangulation rather than separate quantitative path estimates.

Research designs should also move beyond cross-sectional validation. Pre-post studies could examine changes in governance capability and safety outcomes following framework implementation. Where randomised designs are impractical, quasi-experimental approaches, such as matched comparison groups or difference-in-differences analyses, could assess whether schools adopting the framework achieve greater improvements than comparable schools without implementation. Implementation science approaches would further clarify how schools translate the framework into practice by examining implementation fidelity, leadership commitment, resource requirements, organisational readiness, and unintended administrative burdens. Future research should also broaden stakeholder involvement by incorporating perspectives from education authorities, civil defence organisations, families, and students. Qualitative studies involving these groups could explore how governance capabilities are experienced across different levels of the education system and identify contextual factors affecting implementation. Replication across other emirates and comparable education systems would help determine which elements of the framework are context-specific and which represent transferable principles of school safety governance.

A structured validation programme combining measurement development, longitudinal evaluation, multilevel analysis, and implementation research would strengthen confidence in the framework's explanatory and practical value. Such research would allow refinement of the framework from a theoretically informed model into an empirically validated approach for improving integrated risk governance and school safety resilience.

Future research should operationalise leadership coordination, integrated assessment, monitoring quality, and organisational learning as distinct constructs with validated items. Larger probability-based samples could test the measurement structure through confirmatory factor analysis and compare public and private schools, facility types, and professional roles. Longitudinal designs should examine whether changes in governance capabilities precede improvements in incident rates, response performance, well-being, continuity, digital protection, or environmental conditions. Multilevel models could distinguish individual staff perceptions from school-level practices and account for clustering. Implementation studies should document how schools use risk registers, dashboards, after-action reviews, and escalation pathways, including resource requirements and unintended burdens. Researchers should also assess the framework with education authorities, civil defence, families, and students. Replication across other emirates and comparable education systems would clarify which components are context-specific and which may be transferable.

Implementation Barriers and Strategies for Effective Adoption

Although the proposed framework provides a structured approach for strengthening school safety governance, its implementation may face several operational challenges within Ajman schools. Resource constraints, including limited financial capacity, competing institutional priorities, and variations in staffing and technical expertise, may affect schools' ability to establish comprehensive risk management practices. Staff turnover may also create challenges in maintaining institutional knowledge, sustaining training efforts, and ensuring continuity of safety processes. In addition, resistance to change may emerge when new governance structures, reporting requirements, monitoring systems, or accountability mechanisms are perceived as increasing administrative burdens rather than enhancing organisational resilience.

Addressing these barriers requires a phased and context-sensitive implementation strategy. Rather than expecting immediate full-scale adoption, schools could begin with priority areas such as strengthening risk assessment processes, establishing clear coordination mechanisms, and developing routine monitoring and review practices before expanding to more comprehensive framework components. Education authorities have an important role in facilitating implementation by providing guidance, training resources, technical support, and opportunities for knowledge sharing among schools. Dedicated capacity-building programmes for school leaders and staff can help develop the competencies required to operationalise governance practices effectively.

Building stakeholder commitment is also essential for successful implementation. Clear communication of the framework's benefits—including improved preparedness, more effective emergency response, enhanced continuity of learning, and stronger institutional resilience—can help generate support among school leaders, teachers, students, families, and external partners. Regular feedback mechanisms, recognition of successful implementation practices, and opportunities for collaborative learning can further strengthen ownership and reduce resistance. By acknowledging these practical barriers and incorporating strategies to address them, future implementation efforts can improve the feasibility, sustainability, and long-term effectiveness of the framework within Ajman schools.

CONCLUSION

This study developed an adaptive school safety risk governance framework for Ajman by integrating survey, interview, documentary, and theoretical evidence. Quantitative findings demonstrated high levels of perceived school safety governance and integrated risk management, with a strong association between the two constructs. Qualitative and documentary findings further explained how safety culture, policy implementation, preparedness, multidomain protection, leadership coordination, monitoring practices, and continuous improvement processes operate within schools and align with national policy expectations. The resulting framework comprises four interconnected capabilities: leadership and policy coordination, integrated risk identification and assessment, monitoring and evaluation, and organisational learning and continuous improvement. Together, these capabilities form a cyclical governance architecture in which leaders align responsibilities, teams identify and prioritise interconnected risks, monitoring mechanisms evaluate implementation and effectiveness, and organisational learning informs subsequent assessment and improvement cycles.

The framework provides a contextually grounded and theoretically informed approach to strengthening school safety governance by recognising the interdependence of risks, the importance of feedback processes, and the need for continuous adaptation. However, the findings should be interpreted as an evidence-informed framework rather than confirmation of universal causal relationships. Future research should undertake systematic validation through larger and more diverse samples, longitudinal designs, multilevel analyses, and implementation-focused studies to determine whether improvements in the four governance capabilities lead to measurable changes in safety outcomes, emergency preparedness, organisational resilience, and continuity of education over time.

Successful application of the framework will also depend on addressing practical implementation challenges, including resource limitations, competing institutional priorities, staff turnover, and potential resistance to organisational change. A phased adoption approach, supported by education authorities through training, technical guidance, resource allocation, and knowledge-sharing mechanisms, may enhance feasibility and sustainability. Engaging school leaders, staff, students, families, and external safety stakeholders in the implementation process will be essential for building ownership and ensuring that the framework functions as a practical governance tool rather than an additional administrative requirement. Through continued refinement and empirical testing, the framework has the potential to contribute to more adaptive, coordinated, and resilient approaches to school safety governance in Ajman and comparable education systems..

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