



Analysis of Risk Management Model Innovation in Elementary Schools: Perspectives on Resilience and Sustainability

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Abstrak

Penelitian ini bertujuan untuk mengetahui 1) konsep kualisasi *resilience* dan *sustainability* yang diterapkan dalam sistem manajemen resiko, 2) inovasi model manajemen resiko dalam sekolah: perspektif *resilience* dan *sustainability*, 3) tantangan dalam inovasi model manajemen resiko dalam sekolah: perspektif *resilience* dan *sustainability*, serta 4) implikasi dari inovasi model manajemen resiko dalam sekolah: perspektif *resilience* dan *sustainability*. Metode penelitian yang digunakan adalah pendekatan kualitatif dengan desain studi multi kasus. Data dikumpulkan melalui wawancara mendalam dengan kepala sekolah, guru, dan tenaga kependidikan, serta melalui dokumentasi dan observasi lapangan. Analisis data dilakukan dengan tahapan pengumpulan data, penyederhanaan, penyajian, dan verifikasi kesimpulan untuk memastikan keakuratan dan validitas temuan. Hasil penelitian menunjukkan bahwa inovasi model manajemen resiko di kedua sekolah mampu memperkuat *resilience* dan *sustainability* sekolah melalui perencanaan yang adaptif, penguatan SOP, pengelolaan sumber daya secara efisien, serta keterlibatan seluruh warga sekolah. MIS Liqa'ul Amal mengembangkan model manajemen resiko berbasis partisipasi komunitas dan internalisasi nilai religius sebagai penguat ketahanan sekolah dalam menghadapi keterbatasan sumber daya. Sementara itu, SDN 4 Senyuir menerapkan model manajemen resiko yang lebih formal dan sistematis melalui regulasi dan dukungan kebijakan pemerintah. Meskipun menghadapi tantangan seperti keterbatasan fasilitas, perubahan kebijakan, dan kesiapan sumber daya manusia, inovasi manajemen resiko di kedua sekolah berimplikasi positif terhadap peningkatan kesiapsiagaan, stabilitas operasional, serta keberlanjutan mutu pendidikan.

Kata Kunci *Inovasi, Manajemen Resiko, Resilience, Sustainability, Sekolah Dasar*

Abstract

This study aims to find out 1) the concept of resilience and sustainability qualitative which are applied in the risk management system, 2) innovation of risk management models in schools: perspectives of resilience and sustainability, 3) challenges in innovation of risk management models in schools: perspectives of resilience and sustainability, and 4) implications of Innovation of risk management models in schools: resilience and sustainability perspectives. The research method used is a qualitative approach with a multi-case study design. Data was collected through in-depth interviews with principals, teachers, and education staff, as well as through documentation and field observations. Data analysis is carried out with the stages of data collection, simplification, presentation, and conclusion verification to ensure the accuracy and validity of the findings. The results of the study show that the innovation of the risk management model in both schools can strengthen the resilience and sustainability of the school through adaptive planning, strengthening SOPs, efficient resource management, and the involvement of all school residents. MIS Liqa'ul Amal develops a risk management model based on community participation and internalization of religious values as a reinforcement of school resilience in the face of limited resources. Meanwhile, SDN 4 Senyuir implements a more formal and systematic risk management model through regulations and government policy support. Despite challenges such as limited facilities, policy changes, and human resource readiness, risk management innovations in both schools have positive implications for improving preparedness, operational stability, and sustainability of education quality.

Keywords *Innovation, Risk Management, Resilience, Sustainability, Elementary School*

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Introduction

Education has become a basic need for all of humanity, because through education every individual can develop and optimize his potential. As stated in the Law of the Republic of Indonesia Number 20 of 2003 Chapter 1 Article 1 Paragraph 1 concerning the National Education System, education is defined as a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential, which includes religious spiritual strength, self-control, personality, intelligence, noble morals, and skills needed for themselves, Society, Nation, and State (Pohan, 2021).

Schools as educational institutions have an important role in producing the next generation who are qualified and highly competitive. However, in carrying out its functions, schools are inseparable from various challenges and risks, such as natural disasters, fires, pandemics, social conflicts, and sudden policy changes. Without an effective and structured risk management system, schools can experience difficulties in dealing with unexpected conditions that have an impact on the disruption of teaching and learning activities, as well as a decrease in the quality of education. Therefore, the implementation of good risk management is a key factor in ensuring that schools continue to run optimally despite being faced with various challenges.

Risk management in the world of education is increasingly becoming a major concern as the complexity of the challenges faced by schools increases, not only in academic aspects, but also in administrative, social, economic, and external environments that have a significant impact on the continuity of the educational process (Helandri & Supriadi, 2024). If in the past challenges focused more on limited infrastructure or access to learning resources, now risks are more complex, including natural disasters, global pandemics, cybersecurity threats, bullying, uncertain policy changes, and economic crises that affect the sustainability of school operations. Therefore, it is important to analyze the up-to-date risk management model implemented in schools to ensure its relevance and effectiveness in addressing these challenges.

This is strengthened by the results of research conducted by Pratama and Wibowo, that the implementation of a risk management system, namely the success of implementation, is highly dependent on the commitment of the top leadership, clarity of the decision-making structure, organizational risk culture, and effective monitoring and evaluation system (Junyanti & Septiana, 2024). This fact is also strengthened by the results of research conducted by Fikri and Hanif, which stated that the identification of Risk management is routinely carried out through internal meetings involving the leaders of the boarding school and educators, with a focus on discussing the challenges of curriculum implementation, financial sustainability, and community involvement. The strategies implemented include the development of productive agricultural businesses, the standardization of the recruitment process and teacher training, and the implementation of systematic financial governance. These efforts strengthen institutional resilience, improve the quality of education, and build public trust. This study emphasizes the importance of formalizing risk management in the context of pesantren and the need to adapt to local cultural, religious, and economic settings (Fikri et al., 2025).

Along with the development of the times and increasingly complex social dynamics, the innovation of risk management models in schools has become a necessity that cannot be ignored. In this context, Perspective *Resilience* (durability) and *Sustainability* (sustainability) are two main aspects that must be considered (Akrima, 2023). Concept *Resilience* refers to the

school's ability to rise, adapt, and continue to function optimally when facing various crises or threats. While *Sustainability* emphasizing the importance of sustainability in financial, social, and environmental aspects so that schools are able to continue to operate and develop in the long term (Sanisah et al., 2024). These two concepts are interrelated because the school *Resilience* will be better able to keep *Sustainability* long-term, and sustainability cannot be achieved without good resilience in the face of various risks and changes.

The initial observation was carried out in July 2025 at MIS Liqa'ul Amal and SDN 4 Senyur in East Lombok district, showing that risk management practices at the school level are still simple and not fully structured and have not been documented in a comprehensive model. Despite the awareness of the importance of preparedness, the steps taken still tend to be spontaneous and based on individual experience. This condition shows the need to conduct a more in-depth analysis of the innovation of the risk management model applied by considering *the perspective of resilience and sustainability*.

Based on this background, this study aims to analyze the innovation of risk management models in schools through the perspective of *resilience* and *sustainability* in order to evaluate its effectiveness and relevance in facing increasingly complex educational challenges. This research is important because schools as educational institutions are not only required to be able to survive in crisis situations, but also must maintain the sustainability of the quality of education in the long term through innovative, adaptive, and structured risk management systems.

Methods

This study uses a qualitative approach with a multi-case study design to examine more than one research object simultaneously. In qualitative research, researchers play a key role as key instruments that are directly involved in the process of data collection and interpretation. The research location was chosen purposively, namely at MIS Liqa'ul Amal and SDN 4 Senyur, East Lombok Regency. MIS Liqa'ul Amal was chosen because it is a private Islamic educational institution that integrates religious values in risk management practices, while SDN 4 Senyur represents a public school with different characteristics but faces similar managerial challenges. The data source consists of primary data and secondary data. Primary data was obtained through interviews and observations of school principals, vice principals, heads of administration/operators, and teachers in both schools. Meanwhile, secondary data was obtained from books, journals, school archives, educational administration documents, and various other supporting documents. Data collection techniques include interviews, observations, and documentation. Data analysis uses the interactive model Miles, Huberman, and Saldana which includes the stages of data collection, data condensation, data presentation, and conclusion drawing (Miles Huberman, 2017). Data condensation is carried out through the process of selecting, focusing, simplifying, and abstracting data from field notes, interview transcripts, and research documents.

Results

The Concept of *Resilience* and *Sustainability Qualification* is applied in the Risk Management System

Application of the Qualification Concept

Qualification in the context of schools is understood as a quality assurance process that directs all school activities to run according to the standards that have been set. This concept emphasizes not only the final results, but also the quality of the process in planning, implementing, and evaluating school activities. In addition, qualification functions to identify and analyze risks through evaluation, supervision, and supervision that refer to quality standards. MIS Principal Liqa'ul Amal explained that: *"Qualification is a quality assurance process that is the basis for school management as a whole. Each activity must run according to the standards that have been set, not only looking at the final results but also the quality of the process. Through qualifications, schools have a clear direction in improving the quality of educational services and maintaining policy consistency."* These findings show that qualification serves as a guideline in maintaining process quality while identifying risks in learning, administration, and school governance.

The application of the qualification concept is also seen at SDN 4 Senyur which views it as a quality assurance effort to ensure that school activities run according to standards. The principal of SDN 4 Senyur explained that: *"Qualification is used as a tool to identify risks from an early age. Quality standards are a reference in assessing every school activity. If a deviation occurs, the risk can be immediately identified and mitigation measures can be prepared."* Based on the results of the interview, qualification is understood as an effort to ensure quality through continuous planning, implementation, and evaluation so that the quality of learning and school operations can be maintained consistently.

Implementation of Resilience

The concept of resilience in the context of schools at MIS Liqa'ul Amal is understood as the school's ability to survive, adapt, and rise when facing various challenges and risks. This resilience is realized through flexible learning planning, regular monitoring, and evaluation as the basis for continuous improvement. A culture of discipline and collaboration also supports the readiness of the school system in maintaining the sustainability of educational services. MIS Principal Liqa'ul Amal explained that: *"I understand resilience as the ability of schools to survive and function optimally despite facing various changes and challenges. Schools are not only required to respond to problems, but also to adapt quickly to unexpected situations."*

The application of the concept of resilience is also seen in SDN 4 Senyur which views school resilience as the ability to survive and adapt to changes and risks in the educational process. This is implemented through flexible learning, regular monitoring, and continuous evaluation. The principal said that: *"I understand resilience as the ability of a school to continue to function optimally despite unexpected changes or challenges."* Based on these findings, resilience is the basis for schools in maintaining the sustainability of educational services through adaptability, flexible management, and the readiness of all school residents to face various obstacles.

Implementation of Sustainability

The concept of *sustainability* at MIS Liqa'ul Amal is understood as the ability of schools to maintain the quality of education and operations in a sustainable manner through resource management, capacity building of teachers and staff, and policies that are adaptive to change.

In risk management, this approach is applied through systematic identification, analysis, and risk management, and supported by flexible learning planning, regular monitoring, and continuous evaluation. The principal explained that: *"I understand sustainability as the school's ability to maintain the quality and sustainability of education consistently. Schools must be able to maintain the quality of learning while adapting to changes in the external environment and managing resources efficiently."* Based on these findings, *sustainability* is understood as an effort to maintain the quality of education through sustainable resource management, teacher capacity development, and continuous evaluation and improvement.

The application of the sustainability concept at SDN 4 Senyur is understood as the school's ability to maintain the quality of education and operations in a sustainable manner. This is realized through efficient resource management, capacity building of teachers and staff, and policies that are adaptive to change. In practice, *sustainability* is implemented through risk identification and evaluation as well as regular monitoring of learning so that the quality of education is maintained. The principal said that: *"I understand sustainability as the school's ability to maintain the quality of education and operations in a sustainable manner. Schools must be able to maintain the quality of education while adapting to changes in the environment and education policies."* Thus, *sustainability* is the basis for schools in maintaining the stability and sustainability of educational services.

Innovation of Risk Management Models in Schools Perspective of Resilience and Sustainability

Innovation of Risk Management Models in a Resilience Perspective

The innovation of the risk management model in the perspective of resilience at MIS Liqa'ul Amal shows the school's efforts to build a resilient and adaptive system against various disruptions. Risk management focuses not only on prevention, but also on the school's ability to maintain the continuity of the educational process through risk management procedures, internal coordination, and clear division of roles. MIS principal Liqa'ul Amal explained that: *"The school has developed clear risk management procedures, including academic risks, discipline, and emergency conditions. In addition, the school builds a fast internal coordination pattern so that every problem can be handled immediately. Innovation is also seen in strengthening the role of teachers and staff in detecting potential risks from an early age."* These findings show that risk management innovation is directed at strengthening work systems, human resource readiness, and administrative resilience so that schools are able to adapt and survive in various situations.

The application of similar innovations is also seen at SDN 4 Senyur which emphasizes the school's ability to survive and adapt when facing disturbances. The principal of SDN 4 Senyur explained that: *"The school has developed risk management procedures that include academic, discipline, and emergency aspects. In addition, the school develops internal coordination mechanisms that allow decision-making to be done quickly and precisely."* The results of the interviews show that resilience-based risk management innovations are directed at strengthening system preparedness, the adaptability of teachers and staff, and administrative resilience so that education services continue to run in various conditions.

Innovation of Risk Management Models in a Sustainability Perspective

The innovation of the risk management model in the perspective of *sustainability* at MIS Liqa'ul Amal shows the school's efforts to build sustainable governance through a structured system. Risk management is implemented systematically through strengthening SOPs, clear documentation, routine evaluations, and orderly administration so that school governance remains stable despite personnel changes. Based on the interview, the principal explained: "*SOP is the main reference in learning, administration, and daily operations. Each procedure is structured to be easy to understand and consistently implemented so that risk management does not rely on temporary policies and schools continue to run despite personnel changes.*" These findings show that sustainability-based risk management innovations are directed at the consistency of the implementation of SOPs, strengthening documentation, and continuous evaluation to maintain the stability of school governance in the long term.

The application of risk management model innovations from a *sustainability perspective* at SDN 4 Seniur emphasizes the sustainability of the system through the preparation of SOPs, risk recording, and periodic evaluations that are integrated with school management. The principal explained that: "*The school develops and implements standard operating procedures as guidelines in learning and administrative activities. In addition, various risks that arise are recorded as evaluation materials so that the system remains relevant to school conditions.*" The results of interviews with school principals, teachers, and administrative staff show that risk management innovation is directed at strengthening the system, consistency in implementing SOPs, and administrative order to maintain the stability and sustainability of education governance.

The Challenges of Risk Management Model Innovation in Schools Resilience and Sustainability Perspectives

The Challenges of Risk Management Model Innovation in a Resilience Perspective

The application of risk management innovations in the perspective of *resilience* in schools faces challenges in adaptability, preparedness, and coordination in responding to disturbances. At MIS Liqa'ul Amal, the challenge is not only in the availability of procedures, but also in the consistency of implementation by all school actors. The principal explained: "*Not all teachers and staff have the same level of adaptation to emergency conditions. In addition, time constraints and workload often affect the implementation of procedures that have been arranged, so cross-role coordination is very important.*" The results of the interviews show that the main challenges relate to the readiness of human resources, consistency in the implementation of procedures, and coordination in dynamic situations

At SDN 4 Seniur, *the resilience challenge* is also related to the readiness of the school system in responding to disturbances and the collective preparedness of all school residents. The principal said: "*The resilience of the school lies in the readiness and uniformity of the response of all school residents. Not all teachers and staff have the same level of preparedness in dealing with emergency situations. In addition, time constraints and workload are obstacles in conducting simulations or routine evaluations, and coordination between teachers also needs to be strengthened.*" The results of the interviews showed that the main challenges included differences in teacher and staff preparedness, time constraints, and suboptimal coordination across roles. Overall, *the resilience challenges* in both schools are centered

on the readiness of human resources, consistency of coordination, and the adaptability of the school system in dealing with various disturbances.

The Challenges of Risk Management Model Innovation in a Sustainability Perspective

The application of risk management innovations in the perspective of *sustainability* in schools faces challenges in system consistency, human resource readiness, and administrative sustainability. At MIS Liqa'ul Amal, the main challenges include consistency in the implementation of SOPs, the change of human resources, differences in literacy on policy documents, and the limitations of technology use. The principal said: *"The main challenge in maintaining the sustainability of the system lies in the consistency of the implementation of SOPs in the midst of the dynamics of changing human resources. The turnover of teachers and staff often leads to differences in understanding of established procedures, while technological limitations are also an obstacle."* The results of interviews with teachers and administrative staff showed that the sustainability of the system was also influenced by the knowledge transfer mechanism and the continuity of administrative archiving.

Meanwhile at SDN 4 Senyur, *sustainability* challenges are related to the consistency of the implementation of SOPs, the process of transferring knowledge to new teachers or staff, and the limitations of the use of administrative technology. The principal explained: *"The main challenge in maintaining the sustainability of the system lies in the consistency of the implementation of the SOP by all school residents. In addition, the process of transferring knowledge to new teachers or staff requires time and assistance, and there are differences in abilities in the use of technology."* These findings show that the sustainability of risk management depends on collective discipline in implementing SOPs, strengthening internal regulations, and consistent school administration and coordination systems.

Implications of Risk Management Model Innovation in Schools Resilience and Sustainability Perspective

Implications of Risk Management Model Innovation in Resilience Perspective

The application of risk management model innovations in the *perspective of resilience* at MIS Liqa'ul Amal increases the resilience of schools in the face of various disruptions and changes. Schools have become more proactive in identifying risks, responding faster to crises, and conducting evaluations as the basis for continuous improvement. Teachers become more adaptive in adjusting learning strategies, while school management is more structured in decision-making and resource coordination so that learning continues to take place effectively. In his interview, the principal explained: *"Innovative risk management models help schools maintain continuity of learning because schools have alternative strategies when conditions are not ideal."*

Similar findings were also seen at SDN 4 Senyur. Innovation-based risk management models improve schools' ability to anticipate, respond, and recover from various disruptions through risk identification, clear work procedures, and solid coordination. Schools become faster and more adaptive in making decisions, while post-crisis evaluations are carried out to improve systems and planning ahead. The principal explained: *"The innovation of the risk management model helps schools anticipate potential disruptions through systematic planning so that when disruptions occur the school can respond faster and conduct evaluations to improve the system."* Overall, this

innovation improves the readiness of teachers, management, and administration so that learning continues to run effectively.

Implications of Risk Management Model Innovation in a Sustainability Perspective

The implications of the innovation of the risk management model at MIS Liqa'ul Amal can be seen in the improvement of the sustainability of the quality of education and school operations through planned, adaptive, and sustainable risk management. Schools are able to identify and mitigate potential problems early on, maintain consistency in the quality of learning, and ensure operations run more efficiently through clear work procedures and continuous evaluation. This innovation also strengthens policy sustainability, fosters a quality culture, and encourages capacity building of teachers and staff. MIS principal Liqa'ul Amal explained: *"The innovation of the risk management model supports the sustainability of the school because the school not only addresses the issues that arise, but also prevents risks from the planning stage."* Overall, these innovations form a more systematic and continuous improvement-oriented work culture so that the quality of education services is maintained.

Similar conditions were also found at SDN 4 Senyur. The impact of risk management model innovation can be seen in increasing the sustainability of the quality of education and the stability of school operations through planned and sustainable risk management. Schools are able to identify potential risks early on in the aspects of learning, administration, and resource management so that prevention and mitigation measures can be carried out appropriately. The implementation of clear work procedures, regular evaluations, and a culture of reflection and continuous improvement help maintain consistency in the quality of educational services and the operational efficiency of schools. The principal of SDN 4 Senyur explained: *"The innovation of the risk management model supports the sustainability of the school by ensuring that any potential problems are handled systematically so that the quality of education and operations remains stable."* Overall, this innovation forms a more adaptive and quality-oriented work culture in a sustainable manner.

Discussion

Based on previous data exposure, qualification at MIS Liqa'ul Amal is understood as a quality assurance process that directs all school activities to run according to standards and emphasizes the quality of planning, implementation, and evaluation of learning. Teachers use it to plan and evaluate learning and adjust teaching methods, while administrative staff apply it in administrative management to minimize errors and increase efficiency. These findings are in line with research that states that quality assurance is not only related to academic achievement, but also the quality of processes and reflective culture in educational organizations (Dewi & Fauzan, 2025). In addition, qualification functions as a means of identifying and analyzing risks through routine evaluation and academic supervision so that potential deviations can be detected early and corrected gradually. The process also encourages the formation of a culture of discipline, responsibility, and collective reflection that strengthens the resilience of school organizations.

Resilience In MIS, Liqa'ul Amal is understood as the ability of the school to adapt to risks while maintaining the continuity of the learning process, both from internal and external factors. This understanding is in line with the concept *Resilience* in education that emphasizes the capacity

of institutions to maintain the quality of learning through adaptation, commitment, and learning from experience (Fahmi et al., 2025). In practice, teachers proactively manage risks through learning planning, routine monitoring, collaborative culture, and early risk identification followed by reflection and corrective actions. Thus, the risk management system in schools is adaptive and responsive in maintaining the stability and quality of education. Meanwhile, *Sustainability* At MIS Liqa'ul Amal is interpreted as the ability of schools to maintain the quality of education and operations in a sustainable manner through resource management, capacity building of teachers and staff, and policies that are adaptive to change. This approach emphasizes a balance between academic, administrative, and cultural aspects of a school that is disciplined, collaborative, and innovative so that the quality of learning is maintained. These findings are in line with research showing that *Sustainability* affect the quality of educational services and strengthen organizational capacity (Hamdalah & Aditya, 2025). In the context of risk management, this approach is reflected in the systematic identification, analysis, and mitigation of risks through routine evaluations and anticipatory measures. In the learning aspect, sustainability is realized through flexible planning, periodic monitoring, continuous evaluation, and teacher capacity development so that operational stability and the sustainability of education services are maintained.

At SDN 4 Senyur, qualification is also understood as a quality assurance mechanism that ensures all school activities run according to standards through continuous planning, implementation, evaluation, and reflection. The principal emphasized the importance of supervision and evaluation, teachers carry out learning systematically and reflectively, while administrative staff maintain orderly and documented administration. This practice is in line with the concept *Quality Assurance* in education that plays a role in maintaining quality standards and learning success (Adzhar & Yasin, 2025). The implementation of standard procedures and periodic evaluations also allows for rapid identification and handling of risks so that the integration of quality assurance and risk management can improve the stability and quality of education. *Resilience* at SDN 4 Senyur is understood as the ability of institutions to survive and adapt when facing risks and changes. This approach is not only responsive but also preventive through routine monitoring, risk identification, and continuous teacher coaching. The concept is in line with the view that *Resilience* educational organizations are concerned with the ability to adapt positively to pressures or challenges (Age, 2025). Teachers adjust learning methods when facing obstacles, conduct evaluations as reflections, and participate in training to maintain knowledge continuity despite human resource rotation. This shows that school resilience is influenced by teachers' adaptive capacity and internal collaboration. *Sustainability* at SDN 4 Senyur is related to the school's ability to maintain the quality of education and operations in a sustainable manner through efficient resource management, capacity building of teachers and staff, and policies that are adaptive to change. This principle emphasizes continuity and consistency in learning management and administration. In risk management, *Sustainability* It is realized through continuous risk identification, analysis, and mitigation so that operational stability and learning quality are maintained. This practice is supported by flexible learning planning, student development monitoring, and continuous evaluation that encourages improvement in the quality of learning (Rohmah & Lestari, 2024).

Innovation-based risk management *Resilience* at MIS Liqa'ul Amal focuses on strengthening school preparedness so that they are still able to carry out their educational functions when facing disruptions. This effort is carried out through the preparation of risk management procedures, rapid internal coordination, and a clear division of roles. This approach is in line with the concept *Resilience* educational organizations that emphasize readiness, adaptation, and recovery (Bou Zeid et al., 2025). The implementation can be seen in the flexibility of teachers in adjusting learning methods, coordination after facing obstacles, and classroom administration management as the basis for decision-making. The support of administrative staff through an organized administrative system also strengthens the school's ability to survive and adapt. Instead, risk management innovation in perspective *Sustainability* at MIS Liqa'ul Amal is directed at the development of a consistent and documented governance system through strengthening SOPs in all aspects of the school. This approach allows the system to continue to run despite personnel changes, in line with the concept *Sustainability* in education management. This is reflected in the consistency of learning, documentation of activities, routine evaluations, and integrated administrative management as part of the *Continuous Quality Assurance*. Consistency of SOPs, systematic documentation, and periodic evaluations form stable risk management so that operational continuity and quality of education can be maintained.

At SDN 4 Senyur, risk management innovation is based on *Resilience* oriented towards strengthening the preparedness of the school system so that it continues to function when disturbances occur. The school develops risk management procedures that include academic, discipline, and emergency aspects along with intensive role sharing and internal coordination. This approach is in line with research showing that school resilience is influenced by procedural readiness, role clarity, and effective coordination (Ichinose & Oda, 2022). This practice is strengthened through adaptive learning, planning flexibility, and organized administrative management as the basis for decision-making when facing disruptions. As for risk management innovations, *Sustainability* at SDN 4 Senyur focuses on system sustainability through the implementation of documented SOPs, risk recording, and periodic evaluations. This approach is in line with research that emphasizes the importance of system strength, policy documentation, and continuous evaluation in maintaining the stability of educational organizations (Rivadeneira Moreira, 2025). Its implementation can be seen in systematic learning planning, documentation of student development, consistency in the implementation of SOPs, and orderly administrative management and archiving so that the sustainability of educational services is maintained.

The challenges of risk-based risk management innovation *Resilience* In MIS Liqa'ul Amal is related to the adaptive readiness of human resources, differences in the level of adaptation of teachers and staff, and time constraints due to workload. This condition suggests that the resilience of schools is determined not only by the existence of procedures, but also by the ability of actors to run the system flexibly with the support of adaptive leadership (Saputra & Hidayati, 2024). Teachers face challenges in adjusting learning methods, managing classes in abnormal situations, and maintaining learning stability in the midst of diverse student conditions. Meanwhile, the challenge *Sustainability* at MIS Liqa'ul Amal is related to the consistency of the implementation of the long-term system, the change of human resources, differences in understanding of SOPs, and the limitations of technological facilities. This shows

that the sustainability of the system depends not only on the existence of procedures, but also on the strength of internal regulations and consistent oversight. Other challenges include informal knowledge transfer mechanisms and suboptimal digital documentation.

At SDN 4 Senyur, the challenge *Resilience* related to the readiness of the school system in responding to unexpected situations, especially in the aspects of human resource readiness, coordination between roles, and adaptation mechanisms when facing disturbances. The difference in the level of preparedness of teachers and staff as well as the daily workload affects the speed of response, so it is necessary to strengthen coordination and systematic habituation. As for the challenges *Sustainability* at SDN 4 Senyur is related to the consistency of the implementation of SOPs, the knowledge transfer process, and the use of technology in supporting long-term governance. These obstacles arise due to old work habits, different levels of adaptation, and an understanding of procedures that are not yet uniform (Kurniawati & Fitriani, 2025)). Therefore, the sustainability of the system requires the strengthening of collective discipline, routine evaluation, and orderly and well-documented administration (Salsabila et al., 2025).

The innovation of the risk management model at MIS Liqa'ul Amal has implications for the improvement of the *Resilience* school in the face of various disturbances and crisis situations. Based on the results of interviews with principals and teachers, schools have become more proactive in identifying risks, more targeted in responding to problems, and more systematic in recovering through reflection and continuous improvement. Teachers also adjust learning strategies when disruptions occur so that the learning process continues. From a sustainability perspective, this innovation has implications for strengthening school management that is more consistent and sustainable. This can be seen from the increase in more systematic documentation and administration, more intense communication between teachers and parents regarding student learning development, and increased teacher capacity in learning management and administration. In addition, administrative staff are also required to update data more regularly and accurately so that the administrative system remains stable. This condition is in line with research that confirms that sustainable education management requires coordination, organized documentation, and strengthening the capacity of human resources in schools (Elmanisar et al., 2024).

Risk management model innovation at SDN 4 Senyur improves *Resilience* school in anticipating, responding, and recovering from disturbances. This can be seen from the proactive identification of risks and the ability of teachers to adjust learning strategies when there are changes so that the learning process continues. In addition, school management has become more systematic and responsive in decision-making and post-crisis reflection as a basis for improvement. These findings are in line with the concept *Resilience Organization* which emphasizes crisis readiness, the ability to act quickly, and organizational learning after a crisis occurs (Wawan, 2024). In perspective *Sustainability*, Risk management innovation supports the sustainability of education quality and the stability of school operations. This can be seen from strengthening more systematic administration, regular evaluations, and more efficient management of resources based on identified risk priorities. These conditions help schools maintain consistency in the quality of learning and operations in a sustainable manner. These findings are in line with research that states that school sustainability is influenced by

management's ability to allocate resources adaptively and conduct continuous evaluations (Shoofiya et al., 2025).

Conclusion

Based on the results of the study, the innovation of risk management models at MIS Liqa'ul Amal and SDN 4 Senyur showed significant differences in accordance with the institutional characteristics of each school. MIS Liqa'ul Amal implements innovative risk management models that are participatory and adaptive by emphasizing the internalization of religious values, school community solidarity, and community involvement as the main source *of resilience*. This approach allows madrassas to survive and adapt to various resource limitations and changing situations, although it is not yet fully supported by a fully documented formal system.

SDN 4 Senyur develops an innovative risk management model that is more formal, systematic, and regulation-based through the implementation of SOPs, bureaucratic mechanisms, and structured administrative supervision. This model provides relatively more guaranteed operational stability and sustainability, but tends to have limitations in flexibility and speed of response to field dynamics. Thus, the results of this study confirm that the effectiveness of risk management model innovation is not only determined by the completeness of the formal system, but also by the school's ability to adapt the risk management approach to the institutional context, organizational culture, and support of the resources they have.

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