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Disaster Prevention Literacy and Management: Basis for Sustainable Disaster Risk Reduction in Schools

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ABSTRACT

This study examines the disaster prevention literacy and disaster management skills of school administrators, exploring their relationship and identifying key challenges and intervention strategies across SOCCSKSARGEN (Region XII), focusing on provinces of Cotabato and Sultan Kudarat and cities of Kidapawan and Tacurong. This study aimed to determine if disaster prevention literacy has influence on disaster management among school administrators; disaster prevention literacy preparedness among school administrators; the challenges faced by the school administrators in implementing and maintaining effective disaster management plans; the resource limitations and constraints impact the preparedness and response capabilities of school administrators; school administrators responses to the challenges and resource limitations and constraints; the sustainable risk reduction policy developed based on the findings of the study; the research policy to be formulated; and the intervention plan that can be proposed based on the result of the study.

Utilizing a sequential explanatory research design, the study integrates quantitative and qualitative methods, with school administrators serving as respondents. The quantitative phase employed regression analysis to determine the significant relationship between disaster prevention literacy (knowledge, attitude, and skills) and disaster management skills (assessment and planning, physical and environmental protection, response capacity development, and ongoing monitoring. Findings indicate in Study 1 that skills exert the strongest influence on disaster management, followed by knowledge and attitude with varying degrees of impact.

The qualitative phase, which are the study 2 and 3, analyzed using thematic analysis, explores the challenges faced by school administrators, including resource constraints, lack of coordination, and inadequate infrastructure. Their responses highlight strategies such as prioritizing resource allocation, leveraging community partnerships, and adopting cost-effective measures to strengthen preparedness. The study underscores the importance of continuous engagement with trusted sources, professional development, and collaboration to enhance disaster literacy. Findings inform the development of a sustainable risk reduction policy focusing on infrastructure resilience, emergency response coordination, and staff training. This study provides a framework for improving disaster preparedness in schools, ensuring resilience against potential hazards.

INTRODUCTION

The Philippines is one of the countries that is prone to different natural disaster. Super typhoons and earthquakes usually hit the country and have brought detrimental havoc into humans' lives and property. Classes and learning have been disrupted. Students and teachers have to sacrifice the days where learning would have been hampered.

In line with this, the findings of Chun and Yen (2016) indicated that participants showed a highest level of disaster prevention literacy (Ecolin-Campilla, 2016) and lowest on disaster prevention knowledge. Their experiences of different disasters mattered regardless of their ages, and years of service.

At one hand, inadequacy of communication channels among teachers, parents, and students was one of the challenges during disasters (Lee et al., 2008). For Ogunleye and Ogunleye (2019), school administrators lacked the necessary training and education on disaster preparedness. In fact, Rico (2019) shared that collaboration between schools and communities can be the source of resilience during and after disasters.

Furthermore, an international report by the International Bank for Reconstruction and Development placed the Philippines, the third most vulnerable to disaster risks out of 173 countries in the world (Mamon, Suba,

& Son, 2018).

In 2017, the Philippines placed third in the "World Risk Index," which measures a country's exposure and vulnerability to natural hazards based on some factors, such as lack of DRRM capacities, susceptibility, and lack of preparedness and readiness during disasters occurrence (Baizas, 2018). Certain disaster preparedness tools work well in urban areas, such as early warning systems that rely on accessible communication methods like radio and television.

Other preparedness tools that are more technical and process-based, such as risk maps and evacuation plans, require a higher degree of community-level information and involvement and LDRRMO leadership. These tools can fail when the responsible actors do not have sufficient capacity to develop and apply them, do not prioritize them or fail to include densely-populated at-risk informal settlements. LDRRMOs do not consistently maintain accurate and comprehensive disaster risk and population vulnerability maps. In addition, they do not consistently maintain locally customised disaster management plans, share them with residents or conduct simulations. This has direct implications for the extent to which populations know how they should behave and where they should go if they become displaced during disasters. They also use installations such as schools, sports facilities and community meeting halls as evacuation centres. These facilities are not consistently prepared to ensure the protection of IDPs. Population density in urban areas and limited space in each facility requires that many be used in each disaster (Llanto, 2017).

On the other hand, there is dire need to conduct this study in the context of the Province of Cotabato. Series of earthquakes, floods, and other natural calamities hit the province these past years. There were similar studies found however, each discussed differently. For example, Vu et al. (2023) provided the findings among the high school students on disaster prevention literacy (Tsu et al., 2018; Wang & Tsai, 2022). Though a similar study was conducted in the Philippine but on preparedness of households in Negross Occidental (Lopez Jr. et al., 2022). It is within this context that the gap of the study is presented.

Furthermore, with the rising frequency and severity of natural disasters in the Province of Cotabato, there is an urgent need to explore and understand how prevention literacy and effective disaster management strategies can mitigate risks and reduce the impact of such events. Enhancing these dimensions can contribute to building resilient communities. Schools serve as critical hub within communities, and their preparedness and response strategies significantly impact overall community resilience.

Research Questions

This study was conducted to determine the disaster prevention literacy and disaster management skills among school administrators.

Specifically, it answered the following research questions:

1. What is the level of disaster prevention literacy of the school administrators in terms of knowledge, attitude, and skills;
2. What is the level of disaster management skills of the school administrators in terms of assessment and planning, physical and environmental protection, response capacity development, and practicing, monitoring, and improving;
3. Is there a significant relationship between disaster prevention literacy and disaster management among school administrators;
4. Which of the dimensions of disaster prevention literacy significantly influenced disaster management among school administrators;

METHODOLOGY

The methodology section of this paper explains the comprehensive process of the design as well as the procedures, the analyses of the data, and the ethical considerations.

Research Design

This phase used descriptive-correlational (Haynes-Brown, 2023). (Doyle et al., 2016). Descriptive correlational design is used in research studies that aim to provide static pictures of situations as well as establish the relationship between different variables. In correlational research, two variables, such as the height and weight of individuals, are studied to establish their relationship.

A survey or quantitative data collection method could be utilized to gather a broad understanding of disaster prevention literacy levels, management practices, and perceptions among a larger sample of school administrators. Statistical analysis techniques are applied to analyze the quantitative data collected (Boualem et al., 2022). This phase generates quantitative findings that provide an overview of trends, prevalence rates, and correlations related to disaster prevention literacy and management (Zhang et al., 2021).

Research Participants

For the quantitative phase, the respondents will be the school administrators in Region XII.

Table 1. Respondents and participants of the Study.

SDO	Total Number of Administrators	Number of Respondents (Quantitative)	Number of Participants (Qualitative)
Cotabato	200	132	5
Sultan Kudarat	140	103	5
Kidapawan City	58	51	5

Tacurong City	20	19	5
Total	418	305	20

Research Instrument

The adapted questionnaire was the instrument of this study. There are two main parts where the Part I deals with the level of disaster prevention literacy by Chung and Yen (2016) and Part II on disaster management skills by Peerbolle and Collins (2014) among the school administrators. Moreover, for qualitative, the researcher used the interview guide questions. The research instrument of the study is a research questionnaire and the interview guide questions.

Data Analysis

In this study, both quantitative and qualitative data analyses approaches were applied:

Weighted Mean. This was used to determine the level of the responses of the respondents especially on the determined variables (Zeleny, 2018).

Cronbach Alpha. This was used to identify the reliability of the quantitative questionnaire (Bujang et al., 2018).

Pearson Product Moment Correlation. This was used to determine the degree of the relationship between the independent and dependent variables (Puth et al., 2014).

Multiple Regression. This was used to determine which of the dimensions of the independent variable significantly influenced the dependent variables (Kelley & Bolin, 2018).

RESULTS AND DISCUSSIONS

To provide answers to research problem number one (1) in study 1, it determined and described the collected data. It considered the level of disaster prevention literacy of the school administrators in terms of knowledge, attitude, and skills. The first research question answers the level of disaster prevention literacy of the school administrators.

Table 2 Level of disaster prevention literacy of school administrators'

School Administrators' Disaster Prevention Literacy	Mean	Description
Knowledge	4.50	Very High
Attitude	4.48	Very High
Skills	4.40	Very High

Knowledge

It can be shown on the table the level of disaster prevention literacy of school administrators in terms of knowledge. This describes that they possess a high level of disaster prevention literacy with a mean of 4.50. It means that school administrators are well-informed about various natural disasters, potential hazards within the school environment, local risk factors, and relevant laws and regulations.

The results suggest that school administrators are well-informed about disaster risks and safety measures in their schools, which is crucial in ensuring the safety of students and staff. However, the slightly lower rating on laws and regulations implies a need for continuous training and reinforcement of disaster management policies. Strengthening risk assessment practices and legal awareness can further enhance their ability to respond effectively to emergencies.

Attitude

The table obtains a mean of 4.48 on the dimension of attitude. This means that school administrators have a highly positive attitude toward disaster prevention and preparedness. It suggests that school administrators strongly agree on the importance of proactive disaster management measures, commitment to safety, and continuous learning of best practices.

The findings imply that school administrators acknowledge their vital role in disaster risk reduction and preparedness. Their commitment to proactive measures, such as risk assessments and emergency drills, suggests a readiness to enhance school safety. This highlights the need for continuous training and policy reinforcement to ensure effective disaster management in educational institutions.

Skills

It is reflected on the table that school administrators possess a high level of disaster prevention skills, enabling them to effectively manage and respond to emergency situations. This gains a mean score of 4.40 which means that their proficiency in risk assessment, emergency planning, and crisis leadership

highlights their ability to identify vulnerabilities, develop strategic response measures, and communicate emergency protocols effectively. Their capability to make quick and informed decisions under pressure further reinforces their preparedness to handle disaster situations efficiently.

The result explains that school administrators are well-prepared in disaster prevention, which is crucial in ensuring the safety of students and staff. Their strong planning, decision-making, and crisis management skills contribute to a more resilient educational environment. However, continuous training and policy reinforcement are necessary to maintain and enhance their preparedness, particularly in adapting to evolving risks and emergency scenarios.

Table 3 Level of disaster management skills of school administrators'

School Administrators' Disaster Management Skills	Mean	Description
Assessment and Planning	4.42	Very High
Physical and Environmental Protection	4.36	Very High
Response Capacity	4.42	Very High
Practicing, Monitoring and Improving	4.59	Very High

Assessment and Planning

It can be gleaned on the table that school administrators have a strong competency in assessment and planning for disaster prevention. A weighted mean of 4.42 describes that their ability to prioritize risks and develop mitigation strategies highlights their preparedness in handling emergencies effectively. These competencies contribute to the overall safety and resilience of the school environment.

The implications of these findings suggest that continuous training and policy reinforcement are essential in sustaining and improving disaster management skills among school administrators. Regular updates to emergency response plans ensure that schools remain adaptable to emerging threats, thereby enhancing their overall disaster resilience.

Physical and Environmental Protection

The table presents the level of school administrators' disaster management skills in terms of physical and environmental protection. It has a grand mean of 4.36 and categorized as strongly agree. This means that school administrators exhibit a high level of competence in ensuring school safety.

The result implies that school administrators play a crucial role in minimizing disaster-related risks through proactive measures in physical and environmental protection. Their expertise in hazard identification, safety protocols, and environmental risk assessment contributes to a more resilient educational environment. However, continuous professional development and updated safety training are essential to enhance their capacity further.

Response Capacity

The table shows the level of school administrators' disaster management skills in terms of response capacity. It has a grand mean of 4.42 and described as strongly agree which reflects a strong commitment to preparedness and response efforts.

This implies that school administrators play a crucial role in ensuring an effective and well-coordinated emergency response system. Their engagement in simulations, collaboration with stakeholders, and pursuit of professional development enhance the resilience of educational institutions against disasters. Continuous training and updated protocols are essential to maintaining and improving these competencies.

Practicing, Monitoring and Improving

It can be gleaned on the table that school administrators exhibit a high level of competence in practicing, monitoring, and improving disaster management, as reflected in the weighted mean of 4.59, categorized as strongly agree, reinforcing the administrators' commitment to evaluating and refining their disaster management approaches.

This means that school administrators recognize the value of continuous improvement in disaster management. By consistently assessing their response strategies, engaging in professional development, and implementing best practices, schools can enhance their preparedness for emergencies. This proactive approach can lead to better decision-making, reduced risks, and improved coordination among stakeholders.

Table 4 Relationship between the level of disaster prevention literacy:and the level of disaster management among school administrators.

			Assessment and Planning	**Physical and Environmental Protection**	**Response Capacity**	**Practicing, Monitoring and Improving**
Spearman's rho	**Knowledge**	Correlation Coefficient	**.345****	**.348****	**.315****	**.320****
		Sig. (2-tailed)	.000	.000	.000	.000

Attitude	Correlation Coefficient	**.211****	**.336****	**.259****	**.165****
	Sig. (2-tailed)	.000	.000	.000	.004
Skills	Correlation Coefficient	**.485****	**.390****	**.344****	**.365****
	Sig. (2-tailed)	.000	.000	.000	.000

** Highly Significant

Knowledge in Terms of Assessment and Planning

The data in table 4 discloses the correlation matrix that the disaster prevention literacy and disaster management had a significant relationship in terms of assessment and planning with a correlation coefficient of 0.345 which clearly shows that it is statistically significant at the 0.01 level, which means that informed administrators can develop structured disaster preparedness frameworks.

In line with this, school administrators need strong knowledge, attitude, and skills to manage disasters effectively. Training programs should focus on helping them create clear disaster plans. Schools must also provide regular drills to improve preparedness. A well-prepared school can respond quickly and reduce risks during emergencies.

Knowledge in Terms of Physical and Environmental Protection

The data in table 4 discloses the correlation matrix that the disaster prevention literacy and disaster management had a significant relationship in terms of physical and environmental protection with a correlation coefficient of 0.348 which clearly shows that it is statistically significant at the 0.01 level. It emphasizes that a well-informed administrator is more likely to implement infrastructure improvements that enhance school safety.

This implies that they can identify risks and make better decisions about buildings and emergency exits. Schools should invest in training to help administrators understand safety measures. A safer school environment protects students and staff during disasters.

Knowledge in Terms of Response Capacity

The data in table 4 discloses the correlation matrix that the disaster prevention literacy and disaster management had a significant relationship in terms of response capacity with a correlation coefficient of 0.315 which clearly shows that it is statistically significant at the 0.01 level, indicating that administrators with a strong knowledge base can lead timely and effective crisis responses.

The relationship between knowledge and response capacity indicates that administrators with strong knowledge can respond quickly during emergencies. They can make informed decisions and guide staff and students effectively. Proper training helps them stay prepared for different crisis situations. A well-prepared response can reduce harm and save lives.

Knowledge in Terms of Practicing, Monitoring and Improving

The data in table 4 discloses the correlation matrix that the disaster prevention literacy and disaster management had a significant relationship in terms of practicing, monitoring and improving with a correlation coefficient of 0.320 which clearly shows that it is statistically significant at the 0.01 level. It underscores the importance of continuous learning and refinement of disaster management strategies.

There is a significant relationship between knowledge and practicing, monitoring and improving. It implies that school administrators monitor existing plans and make necessary changes. Regular practice helps them identify weaknesses and enhance response effort. School administrators with greater knowledge in disaster prevention are more likely to engage in ongoing disaster management efforts, such as monitoring risks, evaluating current preparedness strategies, and continuously improving disaster response plans. Knowledgeable administrators understand the importance of assessing past responses, identifying areas for improvement, and implementing best practices to enhance school safety.

Furthermore, this implies that continuous education and training programs are essential in ensuring that administrators not only develop initial disaster response plans but also refine and enhance them over time. Schools should encourage administrators to participate in professional development, risk assessments, and disaster simulations to strengthen their ability to monitor and improve disaster preparedness efforts effectively.

Attitude in Terms of Assessment and Planning

The data in table 4 discloses the correlation matrix that the disaster prevention literacy and disaster management had a significant relationship in terms of assessment and planning with a correlation coefficient of 0.211 which clearly shows that it is statistically significant at the 0.01 level, suggesting that administrators with proactive mindsets are more engaged in disaster preparedness initiatives.

The relationship between attitude and assessment and planning implies that school administrators take proactive steps to assess risks and create effective plans. Their engagement helps ensure that schools are prepared for emergencies. A strong mindset leads to better disaster management strategies. School administrators who recognize the importance of disaster preparedness and have a positive mindset are more likely to initiate planning efforts. They may be more willing to participate in disaster risk assessments, collaborate with stakeholders, and develop preparedness strategies.

Attitude in Terms of Physical and Environmental Protection

The data in table 4 discloses the correlation matrix that the disaster prevention literacy and disaster management had a significant relationship in terms of physical and environmental protection with a correlation coefficient of 0.336 which clearly shows that it is statistically significant at the 0.01 level.

There is a significant relationship between attitude and physical and environmental protection. It implies that a strong commitment to safety encourages the implementation of protective measures.

A strong commitment to safety leads to better protective measures in schools. It ensures that necessary infrastructure improvements are made to reduce risks. Schools become safer when there is a focus on maintaining secure environments. A positive attitude toward safety strengthens overall disaster preparedness.

Attitude in Terms of Response Capacity

The data in table 4 discloses the correlation matrix that the disaster prevention literacy and disaster management had a significant relationship in terms of response capacity with a correlation coefficient of 0.259 which clearly shows that it is statistically significant at the 0.01 level.

This highlights those administrators with a positive outlook on preparedness can lead better emergency responses.

This implies that a positive outlook on preparedness leads to better emergency response. It helps in making quick and effective decisions during crises. Schools can manage disasters more efficiently when there is confidence in response strategies. A strong attitude towards preparedness improves overall school safety. School administrator with high disaster prevention literacy is more likely to take immediate and appropriate actions in times of crisis, ensuring the safety of students, teachers, and school property. Their preparedness and decision-making skills can enhance response efficiency, such as timely evacuations, proper communication with emergency responders, and quick mobilization of first-aid and relief efforts. This underscores the necessity of regular disaster preparedness training, simulation exercises, and collaborations with local disaster management agencies.

Attitude in Terms of Practicing, Monitoring and Improving

The data in table 4 discloses the correlation matrix that the disaster prevention literacy and disaster management had a significant relationship in terms of practicing, monitoring and improving with a correlation coefficient of 0.165 which clearly shows that it is statistically significant at the 0.01 level.

There is a significant relationship between attitude and practicing, monitoring and improving which signifies that a culture of continuous disaster management enhancement is linked to administrators' perspectives and commitment. It explains that a strong commitment to disaster management leads to continuous improvements in safety measures. Positive perspectives encourage regular training and evaluation of emergency plans. Schools become more resilient when disaster strategies are consistently reviewed and updated. A proactive attitude ensures long-term preparedness and risk reduction.

It implies that school administrators who possess a proactive and informed attitude toward disaster management are more likely to implement, assess, and refine their preparedness measures regularly. A positive attitude toward practicing preparedness measures ensures that school disaster management plans are not only developed but also consistently rehearsed through drills, simulations, and emergency response training. Administrators with strong disaster prevention literacy are likely to encourage faculty, staff, and students to participate in these activities, reinforcing a culture of safety and preparedness.

Skills in Terms of Assessment and Planning

The data in table 4 discloses the correlation matrix that the disaster prevention literacy and disaster management had a significant relationship in terms of assessment and planning with a correlation coefficient of 0.485 which clearly shows that it is statistically significant at the 0.01 level, showing that administrators with well-developed competencies can effectively create and execute disaster plans.

There is a significant relationship between skills and assessment and planning implies that strong skills enable them to identify potential hazards, allocate resources efficiently, and establish clear protocols for emergency situations. Competent administrators can also engage stakeholders, conduct thorough assessments, and ensure that preparedness measures align with best practices. Their ability to plan strategically enhances the school's overall disaster resilience and response efficiency. The ability of school leaders to assess risks, formulate contingency plans, and allocate resources efficiently plays a crucial role in enhancing school disaster resilience. A high correlation coefficient indicates that school heads who possess well-developed skills in disaster management are more capable of conducting comprehensive risk assessments to identify vulnerabilities within their institutions. These leaders are more likely to proactively address potential hazards by creating detailed emergency response plans, ensuring that all stakeholders, including teachers, students, and staff, are well-prepared for possible disasters.

Skills in Terms of Physical and Environmental Protection

The data in table 4 discloses the correlation matrix that the disaster prevention literacy and disaster management had a significant relationship in terms of physical and environmental protection with a correlation coefficient of 0.390 which clearly shows that it is statistically significant at the 0.01 level, suggests that practical expertise is essential in implementing safety measures.

There is a significant relationship between skills and physical and environmental protection implies that practical expertise helps in identifying risks and applying protective measures to ensure school safety. Strong skills enable effective decision-making in upgrading infrastructure and enforcing safety

protocols. Proper training allows for the implementation of hazard-resistant designs and emergency preparedness drills. A well-developed skill set ensures that disaster management strategies are both practical and sustainable.

Skills in Terms of Response Capacity

The data in table 4 discloses the correlation matrix that the disaster prevention literacy and disaster management had a significant relationship in terms of response capacity with a correlation coefficient of 0.344 which clearly shows that it is statistically significant at the 0.01 level, indicates that administrators with higher skill levels are better equipped to manage emergency situations.

There is a significant relationship between skills and response capacity. This can be surmised that strong skills enable quick decision-making and efficient coordination during emergencies. Proper training ensures effective communication and resource management in crisis situations. Hands-on experience allows for the swift implementation of response protocols. A well-developed skill set improves the overall effectiveness of disaster response efforts. Their ability to assess risks, create emergency protocols, and conduct training exercises enhances their capacity to respond swiftly and appropriately during disasters. This includes ensuring timely evacuations, effective communication with emergency responders, and the implementation of first-aid and relief efforts.

Skills in Terms of Practicing, Monitoring and Improving

The data in table 4 discloses the correlation matrix that the disaster prevention literacy and disaster management had a significant relationship in terms of practicing, monitoring and improving with a correlation coefficient of 0.365 which clearly shows that it is statistically significant at the 0.01 level, reinforces the importance of continuous skill enhancement in sustaining effective disaster preparedness.

There is a significant relationship between skills and practicing, monitoring and improving which implies that ongoing skill development helps maintain and improve disaster preparedness efforts. Regular training ensures that emergency plans stay updated and effective. Practical experience allows for better monitoring and adjustments to safety protocols. A strong skill set supports continuous improvement in disaster management strategies. School administrators with well-developed disaster management skills are more likely to actively engage in the continuous process of refining disaster preparedness measures within their schools. A strong relationship between these variables shows that school administrators who possess the necessary skills are more capable of implementing regular disaster drills, evaluating the effectiveness of existing protocols, and making data-driven improvements to their disaster risk reduction (DRR) strategies. Their ability to assess past responses, analyze gaps, and introduce necessary adjustments ens e school's disaster management plan remains effective and up to date.

V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

In this chapter, we culminate our exploration by presenting the key findings, drawing conclusions, and offering recommendations that resulted from the data analysis of the three-study research.

Summary of Findings

This study explored the disaster prevention literacy and management: basis for sustainable disaster risk reduction in schools in two provinces and two cities of the SOCCSKSARGEN (Region XII). These involve the Province of Cotabato, which includes the Cotabato School Division and the Kidapawan City School Division, the Sultan Kudarat Province, which includes the Sultan Kudarat School Division, and the Tacurong City School Division. The study focused to determine the level of the level of disaster prevention literacy of the school administrators in terms of knowledge, attitude, and skills; and the level of disaster management skills of the school administrators in terms of assessment and planning, physical and environmental protection, response capacity development, and practicing, monitoring, and improving.

The findings of the study 1 show that:

1. The school administrators strongly agree on their level of disaster prevention literacy in terms of knowledge, attitude, and skills;
2. The school administrators strongly agree on their disaster management skills in terms of assessment and planning, physical and environmental protection, response capacity development, and practicing, monitoring, and improving;
3. There is a significant relationship between the between disaster prevention literacy and disaster management among school administrators. Hence, the hypothesis is rejected; and
4. skills exhibit the strongest influence across all areas, with the highest effect on assessment and planning, followed by physical and environmental protection, response capacity, and practicing, monitoring, and improving, knowledge significantly influences physical and environmental protection and practicing, monitoring, and improving, with a weaker but still notable effect on assessment and planning, however, knowledge does not significantly impact response capacity. attitude shows a significant relationship only with physical and environmental protection while its effects on other disaster management areas are not statistically significant.

Conclusions

Based on the foregoing findings, the study 1 concludes that:

1. School administrators demonstrate a high level of disaster prevention literacy, indicating strong knowledge, attitude, and skills in disaster preparedness;
2. Their disaster management skills are well-developed, particularly in assessment and planning, physical and environmental protection, response capacity development, and ongoing monitoring and improvement;
3. A significant relationship exists between disaster prevention literacy and disaster management skills, emphasizing the importance of disaster literacy in effective school disaster management; and
4. the findings highlight among the literacy components, skills have the strongest influence on disaster management, followed by knowledge and attitude, with varying degrees of impact across different management areas.

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