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# Overview of the Implementation of the Disaster Preparedness School Program at the Sukma Bangsa Lhokseumawe School

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**Abstract**

The increasing incidence of natural disasters caused by global warming and climate change has given rise to a greater need for disaster preparedness. One important aspect of this preparedness is the protection of children and their education, especially in the school environment. Education has an important role in equipping students with the knowledge and skills to face emergency disaster situations. Schools, as educational and community centers, have a central role in preparing children to face the threat of disaster. Therefore, the Disaster Preparedness School Program (SSB) is a relevant solution to mitigate disaster risks and protect children and their education. A disaster safe school/madrasah is a school/madrasah that implements standard facilities and infrastructure as well as a culture that is able to protect the school community and the surrounding environment from the dangers of disasters. The SSB program has spread widely in Indonesia, but its implementation still raises several problems that require further research. This research problem includes factors that influence its implementation, challenges in implementation and the impact of implementing this program on school residents. The aim of this research is to describe the implementation of the SSB Program at the Sukma Bangsa Lhokseumawe School which focuses on problems that require analysis of the factors that influence them. The population of this research is all Sukma Bangsa Lhokseumawe school officials, namely students, school principals, teacher councils, education staff and school committees with a total population of 800 people, a sample of 270 respondents. The data collection technique uses a questionnaire with 15 statements measured using a Likert scale. Based on the univariate test, the results show that the implementation of the Disaster Preparedness School Program is still very low 96 respondents were less exposed to the implementation of the SSB program in schools, only 90 were in the good category. Analysis using Multiple regression shows that there is a significant relationship between the respondent categories and their perceptions of the implementation of the SSB program, the R obtained in data processing is 0.620. And according to statistical calculations based on these figures, the influence of the independent variable on the dependent variable is 62%. The conclusion of this research shows that further outreach regarding the SSB program in the school environment is still needed. improve the implementation of this program and assist the government and related organizations in developing more effective strategies in implementing disaster preparedness school programs.

**Keywords:** Disaster Preparedness School Program

## Introduction

Indonesia is a country that is prone to various natural disasters such as earthquakes, tsunamis, floods and volcanic eruptions. As an archipelagic country located in the Pacific Ring of Fire, Indonesia often faces natural disasters which can have a major impact on people's lives. Therefore, it is important to improve disaster preparedness in all sectors, including in the educational environment (1). Education has an important role in equipping students with knowledge and skills to deal with disaster emergency situations (2).

The Disaster Preparedness School Program (SSB) is one of the initiatives implemented in Indonesia with the aim of preparing schools to face and manage disaster situations. This program aims to increase students', teachers' and school staff's understanding of disasters, as well as prepare them to be able to act quickly and appropriately in emergency situations (3). Sukma Bangsa Lhokseumawe School, as one of the schools in a disaster-prone area, has implemented this program as part of disaster risk mitigation efforts. Evaluation of the implementation of the SSB program in schools is important to determine the effectiveness of the program in shaping school community preparedness (4).

Previous research shows that the successful implementation of the SSB program is influenced by several factors, such as school management support, active participation from teachers and students, and the availability of adequate facilities and infrastructure (5). Apart from that, collaboration between schools and related institutions, such as the Regional Disaster Management Agency (BPBD), is also an important factor in supporting the success of this program (6). Sukma Bangsa School is a private school in Lhokseumawe where all levels of education are concentrated in one area starting from Elementary School (SD), Middle School (SMP) and High School (SMA), so that the effective implementation of the Disaster Preparedness School Program has a positive impact on school community preparedness for disaster management (7). Therefore, this research aims to describe the implementation of the Disaster Preparedness School program at the Sukma Bangsa Lhokseumawe School, as well as analyze the factors that influence its success.

## Material and Methods

This research uses a quantitative descriptive research approach which aims to describe the implementation of the Disaster Preparedness School Program (SSB) at the Sukma Bangsa Lhokseumawe School (8) and analyze how closely the factors that influence it are related between the independent variables (Knowledge & Skills (Factor 1), Facilities provision policy schools and infrastructure (Factor 2), Emergency Response Plan (Factor 3) and Resource Mobilization (Factor 4) with the dependent variable namely the implementation of the disaster preparedness school program at Sukma Bangsa Lhokseumawe School based on

the parameters and indicators for the implementation of the Disaster Preparedness School program.

The population of this research is all Sukma Bangsa Lhokseumawe school officials, namely students, teacher council, education staff and school management (head and school committee) with a total population of 800 people. The sample in this study was taken using the minimum sample formula or Taro Yamane formula of 267 people. , then rounded to 270 samples (9).

n= N/(1+Ne^2)

Information:

n = Required sample size.

N = Total population.

e = Allowable margin of error (in decimal form, for example, if you want a 5% margin of error, e would be 0.05).

Sampling techniques combined with engineering total sampling for school management respondents, teacher councils and education staff use it whereas for groups of students to use quota sampling representing each class. The questionnaire was distributed via social media whatsapp in form google form to the cellphone number in question. The collected data is then processed using univariate analysis to determine the mean, median, mode and standard deviation. Followed by bivariate analysis to see the relationship between the independent variable and the dependent variable and which independent variable most influences the implementation of the SSB Program at the Sukma Bangsa Lhokseumawe School.

## Results

### Description of research variables

Variable description is to determine the extent to which each variable item has the strongest and weakest answers. In this research there are 5 (five) variables tested. The independent variables are Knowledge & Skills (Variable 1), Policy for providing school facilities and infrastructure (Variable 2), Emergency Response Plan (Variable 3) and Resource Mobilization (Variable 4), while the dependent variable is the implementation of the school disaster preparedness program. After distributing the questionnaire and processing the data, the following results were obtained:

**Table 1 : Description Statistical Results of Variable X1 (Knowledge & Skills)**

| Item Variabel | Very Not Enought | | Not Enought | | Enought | | Good | | Very Good | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | 2 | | 3 | | 4 | | 5 | |
| | F | % | F | % | F | % | F | % | F | % |
| X1.1 | - | - | 2 | 2% | 13 | 13,3% | 71 | 72,4% | 12 | 12,2% |
| X1.2 | - | - | 7 | 7,1% | 19 | 19,4% | 63 | 64,3% | 9 | 9,2% |
| X1.3 | - | - | 2 | 2% | 33 | 33,7% | 48 | 49% | 15 | 15,3% |
| X1.4 | - | - | 7 | 7,1% | 21 | 21,4% | 58 | 59,2% | 12 | 12,2% |
| X1.5 | 2 | 2% | 14 | 14,3% | 16 | 16,3% | 50 | 51% | 16 | 16,3% |
| X1.6 | 1 | 1% | 9 | 9,2% | 15 | 15,3% | 60 | 61,2% | 13 | 13,3% |
| X1.7 | 1 | 1% | 13 | 13,3% | 23 | 23,5% | 55 | 56,1% | 6 | 6,1% |
| X1.8 | - | - | 7 | 7,1% | 32 | 32,7% | 53 | 54,1% | 6 | 6,1% |
| X1.9 | - | - | 3 | 3,1% | 18 | 18,4% | 64 | 65% | 13 | 13,3% |
| X1.10 | 1 | 1% | 2 | 2% | 19 | 19,4% | 63 | 64,3% | 13 | 13,3% |
| X1.11 | 1 | 1% | 4 | 4,1% | 9 | 9,2% | 72 | 73,5% | 12 | 12,2% |
| X1.12 | - | - | 3 | 3,1% | 19 | 19,4% | 62 | 63% | 14 | 14,3% |
| X1.13 | - | - | 1 | 1% | 16 | 16,3% | 71 | 72,4% | 10 | 10,2% |
| X1.14 | - | - | 3 | 3,1% | 21 | 21,45% | 66 | 67,3% | 8 | 8,2% |
| X1.15 | 1 | 1% | 2 | 2% | 19 | 19,4% | 65 | 66,3% | 11 | 11,2% |

Resource: Research Data Processing 2024

From the previous table, the results show that the percentage of respondents answering questions with Good answers has a high ratio, namely above 50% for each question item. Meanwhile, those who answered questions with Very Poor answers had a fairly small ratio with an average of 2% for each question item.

**Table 2 : Description Statistical Results of Variable X2 (School Facilities and Infrastructure Provision Policy)**

| Item Variabel | Very Not Enought | | Not Enought | | Enought | | Good | | Very Good | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | 2 | | 3 | | 4 | | 5 | |
| | F | % | F | % | F | % | F | % | F | % |
| X2.1 | - | - | 9 | 9,2% | 16 | 16,3% | 60 | 61,2% | 13 | 13,3% |
| X2.2 | 1 | 1% | 14 | 14,3% | 17 | 17,3% | 56 | 57,1% | 10 | 10,2% |
| X2.3 | 1 | 1% | 10 | 10,2% | 22 | 22,4% | 54 | 55,1% | 11 | 11,2% |
| X2.4 | - | - | 8 | 8,2% | 15 | 15,3% | 60 | 61,2% | 15 | 15,3% |
| X2.5 | - | - | 4 | 4,1% | 30 | 30,6% | 53 | 54,1% | 11 | 11,2% |
| X2.6 | 1 | 1% | 4 | 4,1% | 24 | 24,5% | 57 | 58,2% | 12 | 12,3% |
| X2.7 | 2 | 2% | 1 | 1% | 19 | 19,4% | 59 | 60,2% | 17 | 17,3% |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X2.8 | - | - | 8 | 8,2% | 19 | 19,4% | 60 | 61,2% | 11 | 11,2% |
| X2.9 | 2 | 2% | 4 | 4,1% | 23 | 23,5% | 59 | 60,2% | 10 | 10,2% |
| X2.10 | - | - | 8 | 8,2% | 15 | 15,3% | 60 | 61,2% | 15 | 15,3% |
| X2.11 | - | - | 4 | 4,1% | 30 | 30,6% | 53 | 54,1% | 11 | 11,2% |
| X2.12 | 1 | 1% | 4 | 4,1% | 24 | 24,5% | 57 | 58,2% | 12 | 12,3% |
| X2.13 | - | - | 8 | 8,2% | 15 | 15,3% | 60 | 61,2% | 15 | 15,3% |
| X2.14 | 2 | 2% | 1 | 1% | 19 | 19,4% | 59 | 60,2% | 17 | 17,3% |
| X2.15 | - | - | 8 | 8,2% | 19 | 19,4% | 60 | 61,2% | 11 | 11,2% |

Resource: Research Data Processing 2024

From the previous table, the results show that the percentage of respondents answering questions with Good answers has a high ratio, namely above 50% for each question item. Meanwhile, those who answered questions with Very Poor answers had a fairly small ratio with an average of 2% for each question item. According to the results of calculating the descriptive statistical table,

**Table 3 : Description Statistical Results of Variable X3 (Emergency Response Plan)**

| Item Variabel | Very Not Enought | | Not Enought | | Enought | | Good | | Very Good | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | 2 | | 3 | | 4 | | 5 | |
| | F | % | F | % | F | % | F | % | F | % |
| X3.1 | - | - | 2 | 2% | 13 | 13,3% | 71 | 72,4% | 12 | 12,2% |
| X3.2 | - | - | 7 | 7,1% | 19 | 19,4% | 63 | 64,3% | 9 | 9,2% |
| X3.3 | - | - | 2 | 2% | 33 | 33,7% | 48 | 49% | 15 | 15,3% |
| X3.4 | - | - | 7 | 7,1% | 21 | 21,4% | 58 | 59,2% | 12 | 12,2% |
| X3.5 | 2 | 2% | 14 | 14,3% | 16 | 16,3% | 50 | 51% | 16 | 16,3% |
| X3.6 | 1 | 1% | 9 | 9,2% | 15 | 15,3% | 60 | 61,2% | 13 | 13,3% |
| X3.7 | 1 | 1% | 13 | 13,3% | 23 | 23,5% | 55 | 56,1% | 6 | 6,1% |
| X3.8 | - | - | 7 | 7,1% | 32 | 32,7% | 53 | 54,1% | 6 | 6,1% |
| X3.9 | - | - | 3 | 3,1% | 18 | 18,4% | 64 | 65% | 13 | 13,3% |
| X3.10 | 1 | 1% | 2 | 2% | 19 | 19,4% | 63 | 64,3% | 13 | 13,3% |
| X3.11 | 1 | 1% | 4 | 4,1% | 9 | 9,2% | 72 | 73,5% | 12 | 12,2% |
| X3.12 | - | - | 3 | 3,1% | 19 | 19,4% | 62 | 63% | 14 | 14,3% |
| X3.13 | - | - | 1 | 1% | 16 | 16,3% | 71 | 72,4% | 10 | 10,2% |
| X3.14 | - | - | 3 | 3,1% | 21 | 21,45% | 66 | 67,3% | 8 | 8,2% |
| X3.15 | 1 | 1% | 2 | 2% | 19 | 19,4% | 65 | 66,3% | 11 | 11,2% |

Resource: Research Data Processing 2024

From the previous table, the results show that the percentage of respondents answering questions with Good answers has a high ratio, namely above 50% for each question item. Meanwhile, those who answered questions with Very Poor answers had a fairly small ratio with an average of 2% for each question item.

**Table 4 : Description Statistical Results of Variable X4 (Resource Mobilization)**

| Item Variabel | Very Not Enought | | Not Enought | | Enought | | Good | | Very Good | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | 2 | | 3 | | 4 | | 5 | |
| | F | % | F | % | F | % | F | % | F | % |
| X4.1 | - | - | 9 | 9,2% | 16 | 16,3% | 60 | 61,2% | 13 | 13,3% |
| X4.2 | 1 | 1% | 14 | 14,3% | 17 | 17,3% | 56 | 57,1% | 10 | 10,2% |
| X4.3 | 1 | 1% | 10 | 10,2% | 22 | 22,4% | 54 | 55,1% | 11 | 11,2% |
| X3.4 | - | - | 3 | 3,1% | 18 | 18,4% | 64 | 65% | 13 | 13,3% |
| X3.5 | 1 | 1% | 2 | 2% | 19 | 19,4% | 63 | 64,3% | 13 | 13,3% |
| X3.6 | 1 | 1% | 4 | 4,1% | 9 | 9,2% | 72 | 73,5% | 12 | 12,2% |
| X3.7 | - | - | 3 | 3,1% | 19 | 19,4% | 62 | 63% | 14 | 14,3% |
| X3.8 | - | - | 1 | 1% | 16 | 16,3% | 71 | 72,4% | 10 | 10,2% |
| X3.9 | - | - | 3 | 3,1% | 18 | 18,4% | 64 | 65% | 13 | 13,3% |
| X3.10 | - | - | 3 | 3,1% | 18 | 18,4% | 64 | 65% | 13 | 13,3% |
| X3.11 | 1 | 1% | 2 | 2% | 19 | 19,4% | 63 | 64,3% | 13 | 13,3% |
| X3.12 | 1 | 1% | 2 | 2% | 19 | 19,4% | 63 | 64,3% | 13 | 13,3% |
| X3.13 | - | - | 3 | 3,1% | 19 | 19,4% | 62 | 63% | 14 | 14,3% |
| X3.14 | - | - | 1 | 1% | 16 | 16,3% | 71 | 72,4% | 10 | 10,2% |
| X3.15 | 1 | 1% | 2 | 2% | 19 | 19,4% | 63 | 64,3% | 13 | 13,3% |

Resource: Research Data Processing 2024

Based on the previous table, the results show that the percentage of respondents answering questions with Good answers has a high average ratio, namely above 50%. Meanwhile, those who answered questions with Very Poor answers had a fairly small ratio with an average of 1%.

**Table 5 : Description Statistical Results of Variable Y (Implementation of The Disaster Preparedness School Program)**

| Item Variabel | Very Not Enought | | Not Enought | | Enought | | Good | | Very Good | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | 2 | | 3 | | 4 | | 5 | |
| | F | % | F | % | F | % | F | % | F | % |
| Y.1 | - | - | 2 | 2% | 23 | 23,5% | 62 | 63,3% | 11 | 11,2% |
| Y.2 | - | - | 4 | 4,1% | 17 | 17,3% | 67 | 68,4% | 10 | 10,2% |
| Y.3 | - | - | 5 | 5,1% | 19 | 19,4% | 65 | 66,3% | 9 | 9,2,2% |
| Y.4 | - | - | 6 | 6,2% | 16 | 16,3% | 70 | 71,4% | 6 | 6,1% |
| Y.5 | - | - | 6 | 6,2% | 16 | 16,3% | 70 | 71,4% | 6 | 6,1% |
| Y.6 | 1 | 1% | 2 | 2% | 19 | 19,4% | 62 | 63,3% | 13 | 13,3% |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Y.7 | - | - | 6 | 6,2% | 16 | 16,3% | 70 | 71,4% | 6 | 6,1% |
| Y.8 | 1 | 1% | 2 | 2% | 19 | 19,4% | 62 | 63,3% | 13 | 13,3% |
| Y.9 | 1 | 1% | 3 | 3,1% | 16 | 16,3% | 65 | 66,3% | 13 | 13,3% |
| Y.10 | 1 | 1% | 7 | 7,1% | 18 | 18,4% | 61 | 62,2% | 11 | 11,2% |
| Y.11 | - | - | 6 | 6,2% | 16 | 16,3% | 70 | 71,4% | 6 | 6,1% |
| Y.12 | 1 | 1% | 2 | 2% | 19 | 19,4% | 62 | 63,3% | 13 | 13,3% |
| Y.13 | 1 | 1% | 3 | 3,1% | 16 | 16,3% | 65 | 66,3% | 13 | 13,3% |
| Y.14 | 1 | 1% | 7 | 7,1% | 18 | 18,4% | 61 | 62,2% | 11 | 11,2% |
| Y.15 | - | - | 6 | 6,2% | 16 | 16,3% | 70 | 71,4% | 6 | 6,1% |

Resource: Research Data Processing 2024

Based on the previous table, the results show that the percentage of respondents answering questions with Good answers has a high average ratio, namely above 60%. Meanwhile, those who answered questions with Very Poor answers had a fairly small ratio with an average of 1%.

**Simultaneous Test (F-test)**

The simultaneous test is a test to determine the simultaneous influence between variable X1 and variable X2 on variable Y. In this case H0.3 is accepted if the probability value (F-statistic) is less than 0.05, and H0.3 is rejected if the probability value (F-statistic) is more than 0.05. After processing the data, the results of the Simultaneous Test calculation are as follows:

**Table 6 : Simultaneous Test Results (F-test)**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1431.880 | 2 | 715.940 | 80.021 | .000[b] |
| | Residual | 849.957 | 95 | 8.947 | | |
| | Total | 2281.837 | 97 | | | |

Rource: Research Data Processing 2024

Based on the table above, it is known that the probability value (F-statistic) is 80.021. So based on the conditions explained previously, if the F value <0.05 then H0.3 accepted and vice versa if the F value is > 0.05, then H0.3 rejected, the result was 80.021 > 0.05, which means H0.3 rejected.

**Test Coefficient of Determination (R2 Test)**

The coefficient of determination is to determine the percentage change in the dependent variable caused by the independent variable. The coefficient of determination can be determined by looking at the Adjust R Squere value. The results of data processing to see

the Adjust R Squere value are as follows:

**Table 7 : Coefficient of Determination Results**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .792[a] | .628 | .620 | 2.991 |

Rource: Research Data Processing 2024

Based on the table above, it can be seen that the R value obtained in data processing is 0.620. And according to statistical calculations based on these numbers, the influence between the independent variable and the dependent variable is 62%.

## Discussion

Good research is research that can describe results in accordance with the objectives that have been decided. Therefore, the findings obtained by researchers at the research location using observation methods, distributing questionnaires and documentation, should be explained in their entirety. Based on the data obtained, the data is then processed and analyzed to obtain research results. Research findings obtained during research are of course analyzed well to produce good answers.

Therefore, based on the research process that has been carried out, several things have been discovered which are certainly one of the things that can explain the research results that have been described previously. Analysis using Multiple regression shows that there is a significant relationship between the respondent categories and their perceptions of the implementation of the SSB program, the R obtained in data processing is 0.620. And according to statistical calculations based on these figures, the influence of the independent variable on the dependent variable is 62%. The conclusion of this research shows that further outreach regarding the SSB program in the school environment is still needed. improve the implementation of this program and assist the government and related organizations in developing more effective strategies in implementing disaster preparedness school programs.

## Conclusion

Based on the results of the research that has been carried out, as well as processing and analysis, researchers can conclude that:

a. According to the results of the Assumption Test carried out, the entire research data was normally distributed, and the data did not occur multicollinearity, heteroscedasticity and there was no autocorrelation.

b. All research data was declared valid and reliable according to tests carried out using 30 initial samples.

c. Based on multiple linear regression testing, the Knowledge & Skills variable has a significance value of 0.000 <0.05, which indicates that the Knowledge & Skills variable has a significant effect. According to the t-count and t-table tests, the results obtained for the t-count value of the Emergency Response Plan variable were 4.739, which indicates that this variable has a positive effect on the dependent variable. So the conclusion is H0.1 rejected and H1.1 accepted with the results that Knowledge & Skills have a positive and significant effect on the implementation of the disaster preparedness school program.

d. Based on multiple linear regression testing, the variable Policy for providing school facilities and infrastructure has a significance value of 0.000 <0.05, which indicates that the variable Policy for providing school facilities and infrastructure has a significant effect. According to the t-count and t-table tests, the results obtained for the t-count value of the Emergency Response Plan variable were 5.419, which indicates that this variable has a positive effect on the dependent variable. So the conclusion is H0.2 rejected and H1.2 accepted with the results of the provision Policy School facilities and infrastructure have a positive and significant effect on the implementation of the school disaster preparedness program.

e. Based on multiple linear regression testing, the variables Knowledge & Skills and Policies for the provision of school facilities and infrastructure have an Adjust R Squere value of 0.620, which means there is a significant relationship between the independent variable and the dependent variable because the R value is close to 1. Added to this is the R value obtained2 amounting to 0.628, which means that 62.8% of the variables for implementing the disaster preparedness school program are influenced by Knowledge & Skills and service quality. So the conclusion is H0.3 rejected and H1.3 accepted with the results that Knowledge & Skills and Policies for the provision of school facilities and infrastructure have a positive and significant effect on the implementation of the school disaster preparedness program.

**Suggestions**

Based on the analysis and discussion carried out, there are several suggestions that researchers received. According to the results that have been explained, all hypothesis one is accepted. However, in each research variable that has been analyzed, there are several that have received low accumulative scores, so there are still things that need to be improved so that Knowledge & Skills and Policies for the provision of school facilities and infrastructure can fulfill the implementation of the disaster preparedness school program.

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