



The Influence of the Head of Household's Education and Income on Household Sanitation in Kembar Maminasa Village

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ARTICLE INFO

ABSTRACT

Article history

Received : 27 April 2026

Revised : 04 Mei 2026

Accepted : 31 June 2026

Keywords

Availability

Education

Household Sanitation

Sanitation is a key determinant of public health, promoting clean and healthy living while preventing disease transmission. Household sanitation availability is influenced by various socioeconomic factors, particularly education and family income. This study aimed to examine the influence of the education level and income of household heads on the availability of household sanitation in Kembar Maminasa Village, West Muna Regency. A quantitative descriptive study with an observational approach was conducted involving 166 respondents selected through simple random sampling. Data were analyzed using descriptive statistics and the chi-square test. The results showed a significant relationship between education level and household sanitation availability ($p = 0.001$), indicating that respondents with lower educational attainment were more likely to have sanitation facilities that did not meet the required standards, with 53% falling into this category. A significant relationship was also found between household income and sanitation availability ($p = 0.001$). Household heads with lower income accounted for 52.4% of respondents with inadequate sanitation facilities. Education level was classified into low, middle, and high categories, while income was grouped into low, middle, and high levels. The findings demonstrate that both education and household income significantly influence the availability of adequate household sanitation. Improving educational attainment and economic conditions may enhance household sanitation and contribute to better community health outcomes. Therefore, integrated interventions involving health education, sanitation promotion, and socioeconomic empowerment are recommended to improve sanitation access in rural communities, particularly in Kembar Maminasa Village, West Muna Regency.

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INTRODUCTION

Population growth and urbanization have consequences for increasing urban population density along with all the complexities of its needs, especially housing and settlements. According to the Decree of the Minister of Health of the Republic of Indonesia Number 829/Menkes/SK/VII/1999 concerning housing health requirements, it is stated that a house is one of the basic human needs that functions as a residence or dwelling used to

protect from climate disturbances and other living creatures, as well as a place for family development, therefore the existence of a healthy, safe, harmonious and orderly house is very necessary so that the function and use of the house can be fulfilled properly. One of the requirements for achieving a healthy, safe, harmonious and orderly home condition is the availability of adequate basic sanitation facilities (BKPM, 2019).

In 2024, data from the Central Statistics Agency (BPS) showed that 16.4 % of households in Indonesia lacked access to proper sanitation. This figure represents the number of households still facing sanitation challenges. Based on 2024 BPS data on the percentage of households by province with access to proper sanitation, Southeast Sulawesi has 90.62 % of households with proper sanitation. Meanwhile, according to BPS data, West Muna Regency has 71.66% of households with access to proper sanitation . Regarding Proper Sanitation by Regency/City in 2023 (BPS SULTRA, 2024)

urban sewage. Maminasa is an administrative village in Maginti sub-district , West Muna Regency , Southeast Sulawesi . Data from the Central Statistics Agency (BPS) of Southeast Sulawesi Province shows that in 2020, the percentage of households in West Muna Regency with access to proper sanitation was around 68.35%. The lowest among districts/cities in the province. This means that most households in West Muna already have their own/shared defecation facilities or communal toilets with septic tanks — but there are around ~31–32% of households that do not have or have not yet been covered by proper sanitation. Because the Maminasa Twin Villages are included in Muna Regency. West, this district data indicates that there may be households in the village that have not received proper sanitation (BPS kabupaten Muna Barat, 2024).

Sanitation is a deliberate behavior aimed at cultivating a clean and healthy lifestyle to prevent the threat of disease and improve public health. Therefore , it can be concluded that sanitation is an effort undertaken to ensure and realize conditions that meet health requirements (Rocket., 2017) The impact of human behavior on health can affect the quality of the community environment. Many people still engage in unhealthy lifestyle habits (Dyah et al., 2022) Education level influences a person's ability to receive information. Individuals with higher education will be more open to information than those with lower education . (Sulistiani et al., 2024) Education level has a positive impact on health status. (Pradono, 2013) Education plays a vital role in shaping a person's personality, potential, and skills, which in turn impact their quality of life. Through the educational process, individuals not only develop discipline, behavior, and morals, but also acquire the knowledge and skills necessary to actively participate in society. Law Number 20 of 2003 concerning the National Education System in Indonesia emphasizes the importance of education in developing the character and skills of students, demonstrating the importance of the education sector in improving the standard of living of the community. In addition to education, family income level also influences a person's participation and attitude towards various aspects of life, including the quality of home sanitation. As Suprpto stated in 2010, a family's income level determines their attitude toward sanitation conditions. Household sanitation, which includes the provision of clean water and effective wastewater disposal, is an important aspect of a healthy (Hutasoid et al., 2023). The level of income will determine the welfare of each individual, where the income owned by the family can influence health status, behavior and contribute to fulfilling the availability of infrastructure needed by the family, one of which is the availability of family toilets (Jasmine et al., 2025).

Based on the description above, it encourages the author to conduct research on the Influence of Education Level and Income of Head of Family on the Availability of Household Sanitation in Kembar Maminasa Village , West Muna.



METHOD

This research is a quantitative descriptive research with an observational approach. The data sources in this study are primary data, namely data sources obtained directly from respondents, and secondary data, namely data sources obtained from the village of Kembar Maminasa. This study was conducted in September in Kembar Maminasa Village, West Muna Regency. The population in this study was 289 heads of families consisting of 4 hamlets and 8 RTs. The number of samples was 166 samples taken by simple random probability sampling. Data analysis techniques using descriptive statistics, chi-square test. The variables in this study are the education level and income of the head of the family, which influence the availability of household sanitation. In this study, data collection was conducted using questionnaire responses and a checklist.

RESULT

The characteristics of the respondents analyzed in this study conducted by the author obtained data on the influence of the level of education and income of the head of the family on the availability of household sanitation in the village of Kembar Maminasa, West Muna. Table 1. Description of respondent characteristics in the twin villages of Maminasa, West Muna

Table 1 Respondent characteristics

Characteristics	Amount (n)	Percentage (%)
Gender		
Man	89	53.6
Woman	77	46.4
Total	166	100.0
Age		
17-25	14	8.4
26-35	33	19.9
36-45	41	24.7
46-55	42	25.3
56-75	31	18.7
76-100	5	3.0
Total	166	100.0
Level of education		
Elementary School	8	4.8
JUNIOR HIGH SCHOOL	96	57.8
SENIOR HIGH SCHOOL	30	18.1
D3	23	13.9
S1	9	5.4

Total	166	100.0
Income		
100,000-500,000	60	36.1
510,000-1,500,000	72	43.4
1,500,000-5,000,000	24	14.5
4,000,000-10,000,000	10	6.0
Total	166	100.0
Work		
Private	3	1.8
Self-employed	15	9.0
Farmer	127	76.5
TNI/PNS/POLRI	4	2.4
others / housewives	17	10.2
Total	166	100.0

In table 1 it is known that overall respondents were male 89 respondents (53.6%), female 77 respondents (46.4%) with some having an age of 46-55 years with a total of 42 respondents (25.3%). Based on the level of education of respondents with elementary school education as many as 8 (4.8 %), junior high school as many as 96 (57.8%), high school as many as 30 (18.1%), D3 as many as 23 (13.9%), S1 as many as 9 (5.4%). Based on occupation most of the respondents were farmers with a total of 127 (76.5 %). Based on income most of the respondents were 100,000-500,000 as many as 60 (36.1 %).

Univariate Analysis

Table 2. Distribution of Respondents Based on Education Level, Head of Family Income, and Availability of Household Sanitation

Variables	Frequency	Percentage %
Level of education		
Low	105	63.3
Tall	61	36.7
Total	166	100.0
Head of family income		
Low	97	58.4
Intermediate	40	24.1
Tall	29	17.5
Total	166	100.0
Availability of household sanitation		
Not eligible	89	53.6
Qualify	77	46.4
Total	166	100.0



Bivariate analysis

Relationship Between Education Level and Head of Family Income with Household Sanitation Availability

Table 3. Relationship Between Education Level and Head of Family Income with Household Sanitation Availability

Variables		Availability of household sanitation				Total	P-value	
		not eligible	eligible					
			N	%	n			%
education category	Low	88	53.1	17	10.2	105	63.3	<0.001
	Tall	1	0.6	60	36.1	61	36.7	
Total		89	53.7	77	46.3	166	100	
income category	Low	87	52.4	10	6.1	97	58.5	<0.001
	Medium	2	1.2	38	22.9	40	24.1	
	Tall	0	0	29	17.4	29	17.4	
Total		89	53.6	77	46.4	166	100	

Based on table 3 the results of the chi-square statistical test showed that respondents who did not have the availability of household sanitation that did not meet the requirements with a low level of education were 88 respondents (53%) and respondents who had the availability of household sanitation that did not meet the requirements with a high level of education were 1 respondent (0.6%), as well as respondents who had the availability of household sanitation that met the requirements with a low level of education were 17 respondents (10.2%) and respondents who had the availability of household sanitation that met the requirements with a high level of education were 60 respondents (36.1%). The bivariate results between education levels and the availability of household sanitation obtained p-value = 0.001 while the chi-square statistical test of the availability of household sanitation with low family head income was 87 respondents (52.4%), while respondents with middle family head income who had the availability of household sanitation that did not meet the requirements were 2 respondents (1.2%). And for

respondents who have the availability of household sanitation that meets the requirements with low family head income as many as 10 respondents (6.1%), while respondents who have the availability of household sanitation that meets the requirements with middle family head income as many as 38 respondents (22.9%) and respondents who have the availability of household sanitation that meets the requirements with high family head income as many as 29 (17.4%). The results of the bivariate analysis between family income and the availability of household sanitation obtained a $p\text{-value} = 0.001$

DISCUSSION

Univariate analysis

Based on Table 2, it is known that some respondents have a low level of education, as many as 107 respondents. Then, the majority of respondents have a low income, as many as 100 respondents (60.2 %), and some respondents have the availability of household sanitation, as many as 73 respondents (44%). The household sanitation owned by respondents consists of a wastewater reservoir, a trash can inside the house, a trash can outside the house, and house ventilation.

Bivariate analysis

The influence of education level on the availability of household sanitation in the twin villages of Maminasa, West Muna

Education level is categorized into low level, middle level and high level of education. Based on the results of *the chi-square statistical test* , it was found that respondents who did not have the availability of household sanitation that did not meet the requirements with a low level of education were 88 respondents (53%) and respondents who had the availability of household sanitation that did not meet the requirements with a high level of education were 1 respondent (0.6%), and respondents who had the availability of household sanitation that met the requirements with a low level of education were 17 respondents (10.2%) and respondents who had the availability of household sanitation that met the requirements with a high level of education were 60 respondents (36.1). The bivariate results between education level and household sanitation availability obtained $p\text{-value} = 0.001$ ($p < 0.005$) which means H_1 is accepted and H_0 is rejected so it is concluded that there is a significant influence between education level and household sanitation availability in the twin villages of Maminasa, West Muna.

This study aligns with research conducted by (Pambudi & Lolo, 2021), which found that education significantly influences the quality of basic sanitation facilities in the homes of respondents ($p < 0.05$). This may be because respondents' level of formal education can influence their insight, knowledge, and mindset. The higher the level of education of respondents can influence their ability to analyze and make decisions based on logical, scientific considerations that can be accounted for, and vice versa.

This research aligns with research conducted by (Balabuana & Dugardi, 2020) which states that there is a positive and significant influence between education level and healthy lifestyle behavior in rural communities, where the level of education in these villages is very low. Based on the research results, many residents have formal education, namely secondary education, with high school graduates. The respondents in this study had an average secondary education level of 51, meeting the requirements for household sanitation availability. This demonstrates that respondents recognize the importance of household sanitation availability, which impacts the health of their families and the surrounding environment. Previous research has shown that household sanitation



is a factor, as education level does not influence household sanitation availability, as reflected in the checklist responses. Many respondents in this study answered 25 questions correctly and more than 64% of the answers were answered correctly.

The research conducted by (Hutasoid et al., 2023) is in line with this research which states Based on the results of the analysis listed in the table of determination coefficient test results, the R Square value obtained of 0.839 has significant implications for research conducted in Tosari District, Pasuruan Regency. The R Square value of 0.839 indicates that approximately 83.9% of the variation in the quality of home sanitation (dependent variable y) can be explained by the independent variable x, namely the level of education. In other words, this high R Square value indicates a strong relationship between the level of education and family income with the quality of home sanitation in Tosari District. The significant influence of education level and family income on the quality of home sanitation illustrates that these two variables are important factors that influence sanitation conditions in residents' homes in Tosari District. This means that the higher the level of education in Tosari District, the better the quality of sanitation in their homes.

The influence of income levels on the availability of household sanitation in the twin villages of Maminasa, West Muna

The income of the head of the family is categorized into low income, middle income, and high income. Based on the results of the *chi-square statistical test*, it was found that respondents who have household sanitation availability that does not meet the requirements have household sanitation availability with low income of the head of the family as many as 87 respondents (52.4%), while respondents with middle income of the head of the family who have household sanitation availability that does not meet the requirements are 2 respondents (1.2%). As well as for respondents who have household sanitation availability that meets the requirements with low income of the head of the family as many as 10 respondents (6.1%), while respondents who have household sanitation availability that meets the requirements with middle income of the head of the family as many as 38 respondents (22.9%) and respondents who have household sanitation availability that meets the requirements with high income of the head of the family as many as 29 (17.4%). The results of the bivariate analysis between family income and the availability of household sanitation obtained a *p-value* = 0.001 ($p < 0.05$) which means H_0 is rejected and H_1 is accepted so it is concluded that there is a significant influence between the income of the head of the household on the availability of household sanitation in the twin villages of Maminasa, West Muna.

This study is in line with research (Putri & Heri Tjahjono, 2017) which states that the Adjusted R Square value is 0.284. This means that the income level is related to the environmental management variable by 28.40% while the remaining 71.60% is explained by other factors outside the variables included in the study, in environmental management. Low income influences behavior in environmental management because to buy environmental support equipment or maintain the environment requires a lot of money, while the money they have can only cover daily needs.

The research is in line with research (Fahmi et al., 2023) which states that the hypothesis testing on the income level variable obtained a significance value of 0.373. This shows that the value of $0.373 > 0.05$, so that H_0 is accepted and H_1 is rejected. If interpreted, it means that the income level partially does not have a significant influence on the sanitation of household waste disposal in Tosari District. The absence of this significant influence can be caused by several factors, such as many heads of families who have high income levels but in managing their livestock still dispose of waste into rivers or gutters. The research that is in line with this research was conducted by (Pambudi & Lolo, 2021) which stated that the occupation and income of respondents have a significant influence on the quality of basic sanitation facilities in their homes ($p < 0.05$). This can occur because with better jobs, respondents get higher incomes, with higher incomes enabling respondents to build or provide better and quality basic sanitation facilities in their homes.

This research is in line with the research conducted (Dyah et al., 2022) which states that the results of the bivariate analysis between the income of the head of the family and the availability of household sanitation obtained a p -value = 0.000 ($p < 0.05$) which means that H_0 is rejected and H_a is accepted so that it is concluded that there is a significant influence between the income of the head of the family and the availability of household sanitation in North Sangatta Village, East Kutai.

There is another study conducted (Ika Rawiyah, 2019) which states that this study proves that there is a relationship between income and environmental sanitation conditions in Muara Purba Nauli Village, Angkola Muaratai District, South Tapanuli Regency in 2019 with a p value = 0.007 (< 0.05) meaning that there is a relationship between attitudes and environmental sanitation conditions in the community.

Lack of access to sanitation not only negatively impacts the environment but also results in increased disease prevalence and adversely impacts health outcomes. Poor sanitation worldwide is leading to increased disease prevalence and increased environmental pollution. Unsanitary toilets worldwide pose a threat to water, land, and public health (Huang & Qiu, 2021)

CONCLUSION

Based on the results of this study, it was revealed that the level of education and income level of the head of the family have a significant relationship, which states that:

1. The bivariate results between the level of education and the availability of household sanitation obtained a p -value = 0.001 ($p < 0.005$) which means that H_1 is accepted and H_0 is rejected so it is concluded that there is a significant influence between the level of education and the availability of household sanitation in the twin villages of Maminasa, West Muna.
2. The results of the bivariate analysis between family income and the availability of household sanitation obtained a p -value = 0.001 ($p < 0.05$) which means H_0 is rejected and H_1 is accepted so it is concluded that there is a significant influence between the income of the head of the household on the availability of household sanitation in the twin villages of Maminasa, West Muna.



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