



Analysis of the Level of Community Participation in the Construction of Family Latrines in Petarukan Sub-District, Pemalang District

Arnies Mega Preztiana[✉], Bambang Budi Raharjo, Yuni Wijayanti

Pascasarjana, Universitas Negeri Semarang, Indonesia

Article Info

Article History:

Accepted

5 August 2021

Approved

1 October 2021

Published

23 April 2022

Keywords:

participation, latrine,
family

Abstract

Efforts to improve public health are based on community participation in overcoming the environment because the environment is one of the factors that play a role in the emergence of a disease. In 2015, the Central Java government determined the most located area in Pemalang Regency which was later determined by a Regent's Decree. There are four sub-districts in the Pemalang Regency area which are included in the category that does not have latrines, namely Pemalang, Taman, Petarukan, and Comal sub-districts. The purpose of the study was to analyze the factors that influence community participation in the construction of family latrines in Petarukan District, Pemalang Regency. This study used a cross sectional design. The sampling technique is proportional stratified simple random sampling. The population is 3,882 households in 3 urban village/village, while the sample is 100. The instrument uses a questionnaire sheet. Data were analyzed by univariate, bivariate with Chi Square and multivariate with logistic regression. The results of the Chi square test show that knowledge factors that influence participation in latrine construction are age ($p = 0.02$), education ($p = 0.01$), income ($p = 0.00$), and ($p = 0.00$). The results of the logistic regression showed that the factors that had the most influence on community participation in latrine construction were the level of knowledge.

[✉] Correspondence Address:

Kampus Unnes Jl Kelud Utara III, Semarang, 50237, Indonesia
E-mail: arniemegapreztiana@gmail.com

INTRODUCTION

Health development has a goal to provide awareness, ability, and willingness of the community to improve a healthy standard of living. The degree of health is one of the factors that have an influence on the quality of human resources who will be more productive with the aim of increasing competitiveness (Ministry of Health, 1999).

17% or 1.1 billion people in the world still open defecation (BABS) in 10 countries and Indonesia ranks second around people found defecating in open areas. The prevalence is India (58%), Indonesia (12.9%), China (4.5%), Ethiopia (4.4%), Pakistan (4.3%), Nigeria (3%), Sudan (1, 5%), Nepal (1.3%), Brazil (1.2%) (WHO, 2014). In Indonesia, the province with the highest percentage of households having access to proper sanitation facilities is DKI Jakarta (71.45%) and the lowest is East Nusa Tenggara (17.45%). Meanwhile, according to regional qualifications, access to adequate urban sanitation facilities is almost double (71.45%) compared to rural areas (38.55%). Meanwhile, access to sanitation facilities is inadequate in urban areas (28.55%) and in rural areas (61.45%) (Ministry of Health, Republic of Indonesia, 2016). This is in line with research conducted in India which states that that latrine ownership rates in rural rural areas Low (Jain et al., 2019).

Low access to sanitation worth is influenced by several factors. The results of the research conducted in Pemalang showed that the factors related to defecation were the respondent's occupation, knowledge, attitude, availability of facilities, family support and support from community leaders. (Wijayanti, Widagdo, & Shaluhiyah, 2016). Research conducted in Palembang shows that education, family income, attitudes, and knowledge have a significant relationship with latrine ownership (Novitry & Agustin, 2017). Similarly, research conducted in Tanzania showed that one of the factors that caused the low ownership of family latrines was the low income of the family (Kema et al., 2012).

Research in Bangladesh shows that the limited availability of funds means that people in parts of Bangladesh are unable to build latrines for

their families (Delea et al., 2017). Research in Ethiopia shows that the group of people who participate more in building latrines are men because they tend to have jobs. However, it is recommended that the local government continue to carry out equitable health promotion so that female family heads also know the importance of having a family latrine (Ross et al., 2011). Similarly, research in Nigeria shows that the promotion of latrines can increase people's knowledge.

Research that has been conducted in India reports that there are still many children who defecate not in the latrine. There are still many households that do not have latrines. This is due to the low level of education and parental income (Majorin et al., 2019). The results of this study, such as research conducted in Bahorok District, Langkat Regency, showed that as many as 62.3% of families with low levels of education did not have latrines (Azwinsyah et al, 2014). Research in Wonogiri also shows that there is a relationship between income level and family defecation.

Research in Serang shows that apart from habitual problems, the cause of the large number of open defecation communities is the unavailability of healthy latrine facilities at home and the ineffectiveness of the communal latrine program. The difficulty of getting clean water in Serang City makes people more reluctant to build and use healthy latrines (Yuningsih, 2019).

Data from the Central Statistics Agency, the percentage of Central Java Province with households that have proper sanitation, which is 74.04, is still high from what was set by the Governor so that by 2019 Central Java would be 100% ODF and in 2015, the Central Java government set the most Pemalang Regency which was later determined by a Regent's Decree. There are four sub-districts in the Pemalang Regency area which are included in the category that does not have latrines, namely Pemalang, Taman, Petarukan, and Comal sub-districts. Based on the background, one of the sub-districts that are included in the category that does not have a latrine in Pemalang Regency which until now has not implemented the Open Defecation Free (ODF) declaration is Petarukan District.

The purpose of the study was to analyze the factors that influence community participation in the construction of family latrines in Petarukan District, Pemalang Regency.

METHOD

This study used a cross sectional design. The sampling technique is proportional stratified

Petarukan District is a sub-district in Pemalang Regency, Central Java, Indonesia. Petarukan District is located on the north coast of the Java Sea with a height of 8 meters above sea level. Consists of 66.84 percent of agricultural areas and the remaining 33.16 percent of non-agricultural areas in the form of coastal plains. The distance from west to east is approximately

simple random sampling. The population is 3,882 families in 3 urban village/village, while the sample is 100. The instrument uses a questionnaire sheet. Data were analyzed by univariate, bivariate with Chi Square and multivariate with logistic regression.

RESULTS AND DISCUSSION

3.5 km while from north to south it is approximately 8 km. Petarukan sub-district consists of 20 villages/urban village. The study was conducted in 3 villages/urban village, namely Nyamplungsari, Loning and Petarukan because these three villages had the lowest percentage of family latrine ownership according to STBM Smart data in 2018.

Table 1. Frequency Distribution of Research Variables by Category (n=100)

Variable	category	n	%
Participation	Medium	20	20%
	low	80	80%
Gender	Man	54	54%
	girl	46	46%
age	20-40 years	55	55%
	41-60 years old	45	45%
Level of education	Medium	39	39%
	low	61	61%
Income Level	enough	46	46%
	Less	54	54%
Knowledge level	enough	37	37%
	Less	63	63%

Table 1 shows that the highest distribution of community participation is in the low participation group, while the highest distribution in the sex group is in the male group. All research

respondents were aged 21-49 years. The highest distribution of education levels is in the low categories and the income levels are in the poor income categories with knowledge level

Table 2. Analysis of the Effect of Age on Community Participation in Family Latrine Construction (n=100)

Category		Participation		p
		Medium	low	
Man	Gender	8 (10.8%)	46 (43.2%)	0.261
Girl		12 (9.2%)	34 (36.8%)	
20-40 years	Age	10 (9.2%)	45 (43.2%)	0.02
41-60 years old		35 (36.8%)	9 (10.8%)	
Medium	Education	13 (7.8%)	26 (31.2%)	0.011
Low		7 (12.2%)	54 (48.8%)	
Medium	Income	11 (9.2%)	35 (36.8%)	0.004
Low		9 (10.8%)	45 (43.2%)	
Medium	Knowledge	13 (7.4%)	24 (29.6%)	0.008
Low		7 (12.6%)	56 (50.4%)	

Table 2 shows that based on the results of the chi square test, gender has no effect on community participation in the construction of family latrines. Table 2 shows that based on the results of the chi square test, age, education level, income level, and level of knowledge affect community participation in the construction of family latrines. Table 2 shows that based on the results of the chi square test, gender has no effect on community participation in the construction of family latrines because the value of $p = 0.21 > 0.05$. This is not in line with research that has been conducted in India which proves that the participation of men in making a decision in this case makes latrines for their families still dominant compared to women (Routray et al., 2017).

The participation provided by a man and a woman in development is different. This is due to the existence of a system of social stratification that is formed in society, which distinguishes this position and degree, will lead to differences in rights and obligations between men and women. According to (Soetomo, 2006) that in this layering system on the basis of sexuality, the male group has special rights compared to the female group. Thus, the tendency is that the male group will participate more.

Table 2 shows that based on the results of the chi square test, age has an effect on community participation in the construction of family latrines because the value of $p = 0.02 >$

0.05 . Age differences also affect community participation. In society there is a distinction of position and degree on the basis of seniority, giving rise to the old and the young, who differ in certain matters, such as expressing opinions and making decisions. Age affects a person's activeness to participate. Age affects a person's activeness to participate. In this case, the older group who are considered more experienced or senior will provide more opinions in terms of making decisions (Slamet, 2003).

Table 2 shows that based on the results of the chi square test, the level of education has an effect on community participation in the construction of family latrines with a value of $p = 0.011 < 0.05$. This is in line with research conducted by (Pebriani, 2012), in his research entitled factors related to the use of family latrines and the incidence of diarrhea in Tualang Sembilar Village, Babel District, Southeast Aceh Regency in 2012. Research conducted in Brebes stated that one of the the factor that affects the unavailability of family latrines is the level of knowledge of the respondents (Apriyanti et al, 2019). Similarly, research conducted in Ambon City stated that the respondent's education level was one of the factors that influenced the availability of family latrines (Horhoruw et al., 2014)

The results of the study in Sidoarjo Regency showed that the level of family income was one of the causes of the low use of family latrines (Paramita & Sulistyorin, 2015). Another

study conducted in Ethiopia showed that the level of education greatly influences households to have a family latrine (Alemu et al., 2018). In contrast to the research that has been done in Padang, it shows that there is a significant relationship between community knowledge and the use of communal toilets and there is no relationship between education level, income and community attitudes with the behavior of using communal toilets (Wirawan et al, 2017).

The level of education is closely related to the use of family latrines, for those with higher education have insight and knowledge on the management and use of latrines, both in maintaining latrines, repairing damage and avoiding the environment. The higher a person's education, the higher the awareness of participating in disease prevention efforts. The education category based on the decision of the minister of national education is the basic level, namely elementary school and junior high school education, and the higher education level, namely high school, college and university (Depdiknas RI, 2004).

Table 2 shows that based on the results of the chi square test, the level of income has no effect on community participation in the construction of family latrines because the value of $p = 0.454 > 0.05$. This is in line with research conducted (Simajuntak, 2009) increasing the economic status of a family, the easier it is for someone to change their behavior. The results of the study stated that a low family size was 4 times influential in the construction of family latrines. The results of research conducted in Makassar City state that there is a relationship between income and family latrine ownership with a p value = $0.025 < 0.005$ (Syahrir et al., 2019). Similarly, research that has been carried out in Lima Puluh Kota Regency shows that lack of economic capacity is one of the causes of low family latrine ownership (Novela et al, 2018). Research in one area in Nganjuk stated that financial resources and time resources for the construction of healthy/sanitary latrines were the inhibiting factors for the lack of community participation in the construction of family latrines (Zahrina et al, 2015).

Research in India shows that the use of communal latrines still occurs in some areas in India because there are still many households that do not have latrines. This is due to the low level of education about health and their poor household income (Heijnen et al., 2015). Research in Mexico shows that effective participation and commitment on the part of the community is critical to the future of development. It is necessary to ensure adequate financial conditions and human resources early in the process for its success (Gomez & Graham, 2004).

Table 2 shows that based on the results of the chi square test, knowledge has an effect on community participation in the construction of family latrines because the value of $p = 0.008 < 0.05$. Knowledge is a very important domain in shaping one's actions. The results of research conducted in Ghana show that the level of knowledge of a household is one of the factors that causes the low ownership of family latrines in the region (Nunbogu et al, 2019). Similarly, research in Ethiopia also states that low family knowledge has a significant effect on latrine ownership (Zelege et al, 2019). Research in Gambia shows that the form of community participation in building latrines has been shown to be in a high category. This is based on the fact that the government provides some assistance for the construction of household latrines. most of them stated that they would build another latrine when the aid latrine was full (Simms et al., 2005).

Research conducted in Tiliatang Kamang District, one of the areas in West Sumatra, stated that one's knowledge of sanitary latrines is closely related to one's actions in terms of knowledge of using sanitary latrines at home. If they know the consequences of defecating, they will try to make sanitary latrines. However, this does not always happen, even though they already know the importance of using sanitary latrines, but due to bad behavior, some people still pass air (Fatma & Putra, 2018). Similarly, research that has been conducted in an urban area in Bandung shows that people are aware of the importance of latrines with evidence that all residents have latrines and septic tanks. No residents defecate in the fields or rivers.

Table 3. Multivariate Analysis of Factors Influencing Community Participation in Family Latrine Construction

		B	SE	Wald	df	Sig.	Exp (B)	95.0% CI For EXP(B) Lower	Upper
Step 1a	age(1)	.837	.543	2.375	1	.123	2.310	.796	6.702
	Education(1)	18.705	2.839E4	.000	1	.999	1.329E8	.000	.
	Revenue(1)	-.227	.540	.177	1	0.674	0.797	.276	2.297
	Knowledge(1)	-20.187	2.839E4	.000	1	.999	.000	.000	.
	Constant	1.779	.499	12.697	1	.000	5,922		
Step 2a	age(1)	.824	.541	2.320	1	.128	2.279	.790	6.577
	Education(1)	18.690	2.842E4	.000	1	.999	1.309E8	.000	.
	Knowledge(1)	-20.210	2.842E4	.000	1	.999	.000	.000	.
	Constant	1.689	.448	14.241	1	.000	5.415		
Step 3a	age(1)	.851	.540	2.488	1	.115	2,343	.813	6746
	Knowledge(1)	-1.548	.542	8168	1	.004	.213	.074	.615
	Constant	1.703	.449	14.406	1	.000	5.493		
Step 4a	Knowledge(1)	-1.466	.528	7.698	1	.006	.231	.082	.650
	Constant	2.079	.401	26.905	1	.000	8.000		

Table 3 shows the multivariate results that were tested on 4 variables, namely age, education level, income level, and knowledge level. The most dominant influence strength is the knowledge variable with an OR value of 0.231 CI 95%: 0.082-0.650.

Table 3 shows the multivariate results that were tested on 4 variables, namely age, education level, income level, and knowledge level. The most dominant influence strength is the knowledge variable with an OR value of 0.231 CI 95%: 0.082-0.650. The results of the study are in line with knowledge (Elisabeth, 2008) about the factors that influence family participation in latrine construction in Kabanjahe City in 2007 which shows that factors related to family participation in latrine construction are ($p=0.000 < =0.05$) and attitude ($p=0.002 < =0.05$). From the chi-square test, the most dominant factor is knowledge.

Knowledge is human reasoning, explanation and understanding of things, also includes practice or technical ability to solve various life problems that have not been systematically proven. The better a person's

knowledge about the use of latrines that meet the requirements, the greater the awareness of that person in using latrines that meet health requirements. However, even though they have good knowledge, they have not used latrines to meet the requirements due to lack of facilities and unsupportive economic factors.

Knowledge is an important factor in efforts to improve the management of family latrines, because with increased knowledge, the more understanding and able to carry out good family latrine management efforts, both in maintenance, maintenance of latrines if damaged or clogged and maintaining cleanliness of latrines, clean and healthy living environment. and prevent environmental pollution. A person's knowledge is obtained from and obtained, either through training, guidance, or through observation, so that they can provide responses or responses to what is observed (Haryoto, 1998).

This is in line with research (Hamzah Bachtiar, 2014) that knowledge is an explanation and human understanding of everything, also includes practice or technical ability in solving various life problems that have not been

systematically proven. The better a person's knowledge about the use of latrines that meet the requirements, the greater the awareness of that person in using latrines that meet health requirements.

CONCLUSION

Gender has no effect on community participation in the construction of family latrines in Petarukan District, Pemalang Regency. Community participation in the construction of family latrines in Petarukan District, Pemalang Regency is influenced by the age and education level of the people in the research area.

Likewise, education and its influence on participation, income level and knowledge also have an influence on community participation in the construction of family latrines in Petarukan District, Pemalang Regency.

The most dominant influence strength is the knowledge variable with an OR value of 0.231 CI 95%: 0.082-0.650.

REFERENCES

- Alemu, F., Kumie, A., Medhin, G., & Gasana, J. (2018). The role of psychological factors in predicting latrine ownership and consistent latrine use in rural Ethiopia: A cross-sectional study. *BMC Public Health*, 18(229), 1–12.
- Azwinsyah, F., Dharma, S., & Santi, DN (2014). Factors Associated with Low Ownership of Family Toilets and Personal Hygiene with the Incidence of Diarrhea in Sei Musam Kendit Village, Bahorok District, Langkat Regency, 2014. *Journal of Environmental Health*, 3(3), 1–9.
- Delea, MG, Nagel, CL, Thomas, EA, Halder, AK, Amin, N., Shoab, AK, ... Clasen, TF (2017). Comparison of respondent-reported and censorship-recorded latrine use measures in rural Bangladesh: A cross-sectional study. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 111(7), 308–315.
- MOH, R. (1999). Health Development Plan towards Healthy Indonesia 2010. Jakarta
- Fatma, F., & Putra, VJA (2018). Use of Sanitary Latrine in Jorong Uba Kenagarian Koto. *Journal of Human Care*, 3(3), 169-174.
- Gomez, JD, & Graham, JP (2004). Community participation in dry sanitation projects. *Water Policy*, 6(3), 249–262.
- Hamzah, B (2014). An overview of the use of clean water facilities and family latrines carried out through the PAB-PLP Project. University of Northern Sumatra. (Accessed on December 21, 2020).
- Heijnen, M., Routray, P., Torondel, B., & Clasen, T. (2015). Neighbor-shared versus communal latrines in urban slums: A cross-sectional study in Orissa, India exploring household demographics, accessibility, privacy, use and cleanliness. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 109(11), 690–699.
- Horhoruw, A., Widagdo, L., Maluku, PK, Nursing, J., Promotion, M., University, K., & Semarang, D. (2014). Behavior of the Head of the Family in Using Toilets in Tawiri Village, Teluk Ambon District, Ambon City. *Indonesian Journal of Health Promotion*, 9(2), 226–237.
- Jain, A., Fernald, LCH, Smith, KR, & Subramanian, SV (2019). Sanitation in rural India: Exploring the relationship between living space and household latrine ownership. *International Journal of Environmental Research and Public Health*, 16(5), 1–14.
- Kema, K., Semali, I., Mkuwa, S., Kagonji, I., Temu, F., Ilako, F., & Mkuye, M. (2012). Factors influencing utilization of better ventilated latrines among communities in Mtwara Rural District, Tanzania. *Pan African Medical Journal*, 1(4), 1-5.
- Majorin, F., Nagel, CL, Torondel, B., Routray, P., Rout, M., & Clasen, TF (2019). Determinants of disposal of child faeces in latrines in urban slums of Odisha, India: A cross-sectional study. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 113(5), 263–272.
- Mardotillah, M., Gunawan, B., Soemarwoto, RS, & Raksanagara, AS (2018). The Role of Enabling and Reinforcing Factors in

- Access to Healthy Urban Toilets. *Journal of Anthropology*, 20(2), 165–178.
- Novela, V., Dewata, I., & Azka, N. (2018). Analysis of the Utilization of the Thousand Latrine Movement Program for the 2013/2014 Fiscal Year in Fifty Cities District. *Andalas Health Journal*, 7(1), 6–13.
- Novitry, F., & Agustin, R. (2017). Determinants of Healthy Latrine Ownership in Sukomulyo Martapura Village, Palembang. *Aisha: Journal of Public Health Sciences*, 2(2), 107–116.
- Nunbogu, AM, Harter, M., & Mosler, HJ (2019). Factors associated with levels of latrine completion and consequent latrine use in northern Ghana. *International Journal of Environmental Research and Public Health*, 16(6), 1–18.
- Paramita, RD, & Sulistyorin, L. (2015). The attitude of the head of the family affects the low use of latrines in RW 02 Gempoklutuk Village, Tarik District, Sidoarjo Regency. *Journal of Environmental Health*, 8(2), 184–194.
- Pebriani, R. (2012). Factors related to the use of family latrine facilities and the incidence of diarrhea in Tulang Sembilar Village. University of North Sumatra, Medan.
- Ross, RK, King, JD, Damte, M., Ayalew, F., Gebre, T., Cromwell, EA, ... Emerson, PM (2011). Evaluation of household latrine coverage in Kewot woreda, Ethiopia, 3 years after implementing interventions to control blinding trachoma. *International Health*, 3(4), 251–258.
- Routray, P., Torondel, B., Clasen, T., & Schmidt, WP (2017). Women's role in sanitation decision making in rural coastal Odisha, India. *PLoS ONE*, 12(5), 1–17.
- Rotondo, LA, Ngondi, J., Rodgers, AF, King, JD, Kamissoko, Y., Amadou, A., ... Emerson, PM (2009). Evaluation of community intervention with pit latrines for trachoma control in Ghana, Mali, Niger and Nigeria. *International Health*, 1(2), 154–162.
- Sari, AN (2016). Relationship of Knowledge Level, Attitude and Income Level with Family Defecation Behavior in Kerjokidul Village, Ngadirojo District, Wonogiri Regency. Muhammadiyah University of Surakarta.
- Simms, VM, Makalo, P., Bailey, RL, & Emerson, PM (2005). Sustainability and acceptability of latrine provision in The Gambia. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 99(8), 631–637.
- Slamet. (2003). *Community Development Insights of Participation*. Surakarta: Eleven Maret University Press.
- Soetomo. (2006). *Community Development Strategies*. Yogyakarta: Student Library.
- Syahrir, S., Syamsul, M., Aswadi, Surahmati, & Aeni, S. (2019). Factors Associated with Family Latrine Ownership in the Work Area of Pertiwi Health Center Makassar City. *Higine*, 5(1), 52–59.
- Wijayanti, AK, Widagdo, L., & Shaluhiyah, Z. (2016). Factors related to defecation in latrines in Gunungsari Village, Pulosari District, Pemalang Regency. *Journal of Public Health (E-Journal)*, 4(1), 450–460.
- Wirawan, P., Razak, A., & Dewata, I. (2017). Relationship of Education, Income, Knowledge and Community Attitudes with Utilization of Communal MCK. *Promotive: Journal of Public Health*, 7(2), 136–145.
- Yuningsih, R. (2019). Health Promotion Strategy in Improving the Quality of Environmental Sanitation. *Journal of Social Problems*, 10(2), 107–118.
- Zahrina, AF, Suryadi, & Suwondo. (2015). Implementation of the Community-Based Sanitation Movement Program in Environmental Control (Case Study in Perning Village, Jatikalen District, Nganjuk Regency). *Journal of Public Administration (JAP)*, 3(11), 1832–1836.
- Zeleke, DA, Gelaye, KA, & Mekonnen, FA (2019). Community-Led Total Sanitation and the rate of latrine ownership. *BMC Research Notes*, 12(14), 1–5.