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Analysis of Community Behavioral Factors Regarding CLTS Pillar Household Waste Management

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ABSTRACT

Background: Community-Led Total Sanitation (CLTS) is an approach that aims to change hygienic and sanitary behavior by empowering communities through triggering. The fourth pillar of CLTS is Household Waste Management, which is implemented through the 3R principles: Reduce, Reuse, and Recycle. Simokerto Village has achieved 75% of its CLTS Fourth Pillar target. However, despite this achievement of 79.12%. **Object:** This research aims to analyze the behavioral factors of the community regarding the CLTS Fourth Pillar of household waste management, using Snehandu B. Karr's theory approach in Simokerto Village, within the working area of the Tambakrejo Community Health Center in Surabaya. **Methods:** Total of 92 respondents participated in this study, which employed a case-control approach with a 1:1 ratio: 46 respondents served as the case group, and 46 respondents as the control group. Data was collected using a simple random sampling technique from pre-existing tabular data (by name by address). Data analysis was performed using the Chi-Square test. **Results:** The study's findings indicated a significant influence of Behavior Intention (P = 0.003), Social Support (P = 0.000), Accessibility of Information (P = 0.001), Personal Autonomy (P = 0.011), and Action Situation (P = 0.001) on community behavior regarding the CLTS Fourth Pillar of Household Waste Management. **Conclusion:** This research concluded that Snehandu B. Karr's study approach could have enabled better changes in public health behavior. Consequently, it could have altered community behavior regarding hygienic and sanitary practices related to household waste management, thereby ensuring a conducive public and environmental health.

Keywords: Community Led Total Sanitation, Household Waste Management, Environmental Health

BACKGROUND

Sanitation remains a source of problems that will pose challenges for many parties, especially government agencies, particularly the role of health workers at the global, national and local levels for some time to come (Sumantri & Sumarlin, 2022). Waste is one of the sanitation issues that is not only the responsibility of the government, but also a shared responsibility and obligation to maintain and preserve the environment from waste generated by daily activities(Rusmana, 2021) Household waste is one of the contributors to environmental pollution and can cause health problems if not studied and handled seriously (Hidayah, 2021).

Through Minister of Health Regulation No. 3 of 2014, the government issued a policy on Community-Based Total Sanitation as a

national effort to address sanitation issues faced by communities in Indonesia. This policy is a process of changing hygiene and sanitation behaviour through community empowerment by providing triggers aimed at motivating and raising awareness among the community so that they can behave in a clean and healthy manner with full confidence, feelings, thinking patterns, and actions.

The Household Waste Management pillar is a component where communities actively participate in waste management activities at the household level, based on the principles of reduce, reuse, and recycle(Kementerian Kesehatan, 2014).The consequences of improper household waste management can have an impact on health and the environment. Therefore, every household is expected to actively participate in reducing waste production by preventing, reducing, reusing, and recycling as a form of concern for achieving public health and creating an environment that is conducive to household waste management.

A major problem faced by the company is the incomplete recycling of liquid waste, which Based on the CLTS pillar household waste management achievement data for 2024 in the Tambakrejo Public Health Centre working area in Surabaya City, Simokerto Village is the village with the lowest CLTS pillar household waste management achievement in compared to Kapasan Village and Tambakrejo Village. However, in its implementation, Simokerto Village has achieved the CLTS pillar IV target for Household Waste Management at 75%. A total of 5,935 households (79.12%) have implemented Household Waste Management, while 1,566 households (20.88%) have not implemented Household Waste Management(E-monev, 2024).

Efforts to implement community behaviour in household waste management in Simokerto Village still need to be studied further to identify potential barriers using the theory developed by Snehandu B. Karr in 1980, which analysed that community health behaviour is based on the functions of behavioural intention (an individual's intention), social support, accessibility of information, personal autonomy, and action situation (enabling circumstances) (Martina Pakpahan, 2021a).

RESEARCH METHODS

This type of research is analytical research using a case control approach to determine the influence between independent and dependent variables by comparing case groups and control groups to identify an event based on history and exposure. The population consists of all research subjects. In this study, the population comprises all housewives based on family cards who do not implement CLTS Pillar Household Waste Management and reside in Simokerto Village, totaling 1,566 household.

The sampling technique used is simple random sampling with randomisation of pre-existing data (by name and address) selected at random using Microsoft Excel software. The sample in this study was divided into two groups: the community group that did not implement household waste management (case group) and the community group that implemented household waste management (control group) with a ratio of 1:1, requiring a total of 92 respondents, 46 from the case group and 46 from the control group. The research data was analysed using the Chi-Square test.

The study employed a direct data collection approach, combining instrumental measurements and structured interviews. A total of 92

household heads were selected as respondents using a simple random sampling technique. This sampling frame was derived from a pre-compiled list of names and addresses from the Simokerto sub-district, which was processed and randomized using Microsoft Excel software. Upon visiting the selected households, the researchers introduced themselves, clarified the research objectives, and proceeded with the interview by administering a standardized questionnaire.

A univariate analysis was conducted to describe the characteristics of the variables investigated in this study. The analysis specifically examined the variables of behavior intention, social support, accessibility of information, personal autonomy, and action situation, in the context of their relationship with CLTS Pillar household Waste Management.

Bivariate analysis was performed to explore the statistical relationship between the independent and dependent variables. This analysis aimed to determine the association between community behavior and household waste management practices. The data were analyzed using the Chi-Square test at a significance level of 0.05, and all statistical computations were performed using the Statistical Package for the Social Sciences (SPSS).

RESULTS AND DISCUSSION

Characteristics of Respondent

Household waste management behaviour was dominated by respondents in the 40-49 age group, with 15 people (33%), while respondents in the control group were mostly in the 50-59 age group, with 15 people (33%).

Table 1.

Frequency of Respondents' Age in Urban Villages in 2025

Age Range	Household Waste Management Behaviour			
	Case		Control	
	n	%	n	%
20-29 years	8	17%	5	11%
30-39 years	8	17%	9	20%
40-49 years	15	33%	13	28%
50-59 years	7	15%	15	33%
60-69 years	8	17%	4	9%
Total	**46**	**100%**	**46**	**100%**

Household Waste Management Indicators

The assessment of the fourth pillar of CLTS is divided into four indicators that must be met by every household in order to achieve 100% compliance and be labelled as having household waste management . The following is the frequency distribution for each indicator of Pillar Household Waste Management in the case category in Simokerto Village:

Table 2.

Frequency Distribution of Household Waste Management Indicators by Case Category in Simokerto Village in 2025

No	Household Waste Management Indicators	Yes	%	No	%
1	There is no litter scattered around the house.	46	100%	0	0%
2	There are closed, sturdy, and easy-to-clean trash bins.	18	39,1%	28	60,9%
3	There is a safe treatment (not burned/not disposed of in rivers/gardens/drains/open areas).	46	100%	0	0%
4	Has Conducted Waste Sorting	0	0%	46	100%
	Average		**60,4%**		**39,6%**

Source : Primary Data

Table 2 shows that 46 respondents in the case category have met indicators 1 and 3 by 100%, meaning that 46 respondents have implemented the Household Waste Management indicator. However, there are still two indicators that have not been implemented, namely indicator 2, with 28 respondents (60.9%) have not implemented it, and indicator number 4, which involves waste sorting, has not been implemented by 46 respondents (100%). This is due to the lack of public awareness regarding the household waste they generate.

Univariate Analysis

The following is the frequency distribution of behavioural intention, social support, accessibility of information, personal autonomy, and action situation variables, as shown in Table 3 below:

Table 3.

Community Behaviour Factors According to Snehandu B. Karr's Theory in Simokerto Village in 2025

Variabel	Frequency	Presentase
Behavior intention		
Not Intended	37	40.2%
Niat	55	59,8%
Social support		
Not Support	28	30,4%
There is support	64	69,6%
Accessibility of information		
Not available	34	37%
Available	58	63%
Personal autonomy		
Not good	37	40,2%

Variabel	Frequency	Presentase
Good	55	59,8%
Action situation		
Not possible	36	39,1%
Enabling	56	60,9%

Source: Primary Data

The majority of respondents in the behaviour intention variable were in the intention category, with 55 respondents (59.8%). Good intentions believe that intentions are the basis that influence a person's behaviour. Respondents also believe that good intentions in household waste management can improve personal and environmental health.

The majority of respondents in the social support variable were in the category of having support, with 64 respondents (69.6%). Respondents with support considered household waste management to be easier to implement because the social support they received made them feel more assisted. Respondents also believed that the more social support a person receives, the more confident they will be in behaving and implementing household waste management.

The majority of respondents in the accessibility of information variable were in the available category, with 58 respondents (63%). Respondents who had access to information believed that household waste management would be easier to implement because the information they received would facilitate the steps involved in proper household waste management.

The majority of respondents in the personal autonomy variable were in the good category, with 55 respondents (59.8%), indicating good personal autonomy because many respondents were willing to follow recommendations to implement household waste management.

The majority of respondents in the action situation variable were in the possible category, with 56 respondents (60.9%). The situation and conditions were conducive to implementing household waste management, supported by the availability of facilities and infrastructure such as closed, waterproof waste bins, separation of organic and non-organic waste, and the availability of Reduce, Reuse, Recycle Temporary Storage Facilities.

Bivariate Analysis

Bivariate analysis with the chi-square test was used to determine the influence of dependent and independent variables. Dependent and independent variables can be said to have an influence if the p-value is 0.05. The following are the results of the chi-square test:

Table 4.

Analysis of Behavioural Factors According to Snehandu B. Karr's Theory with Household Waste Management Behaviour in Simokerto Subdistrict in 2025

Variabel	Household Waste Management Behaviour				Total	P-value
	Case		Control			
	n	%	n	%		
Behavior intention						
Not Intention	26	56,5%	11	23,9%	37 (40.2%)	0,003
Intention	20	43,5%	35	76,1%	55 (59,8%)	
Social support						
No Support	24	52,2%	4	8,7%	28 (30,4%)	0,000
There is support	22	47,6%	42	91,3%	64 (69,6%)	
Accessibility of information						
Not available	25	54,3%	9	19,6%	34 (37,0%)	0,001
Available	21	45,7%	37	80,4%	58 (63,0%)	
Personal autonomy						
Not good	25	54,3%	12	26,1%	37 (40.2%)	0,011
Good	21	45,7%	34	73,9%	55 (59,8%)	
Action situation						
Not possible	26	56,5%	10	21,7%	36 (39,1%)	0,001
Enabling	20	43,5%	36	78,3%	56 (60,9%)	

Source: Primary Data

The results of the chi-square test between behavioural intention and household waste management showed (p-value = 0.003). This study indicates that there is an influence of behavioural intention on respondents with household waste management in Simokerto Village. This study is in line with Snehandu B. Karr's theory, which states that a person's intention to act in relation to their health or care(Martina Pakpahan, 2021)This is also supported by Icek Ajzen (1985) in his theory of planned behaviour, which states that a person's intentions are influenced by attitudes, subjective norms, and behavioural control.

An individual's or group's motivation to realise their behaviour can be realised when they have control over the interests they wish to pursue. Control that can be felt by an individual depends on available resources and opportunities. Intention is the most important factor in changing an individual's behaviour, supported by experience, which creates motivation to act and realise that intention to behave. A strong intention can have a positive influence on an individual in changing their behaviour.

This is also consistent with research conducted by Jampala, who stated that intentions can be influenced by attitudes,

subjective norms, and behavioural control, which have a significant positive effect on the process of household waste sorting. Thus, an individual's intentions are a major factor that can influence their behaviour (Jampala, 2024).Behavioural intentions can have an impact on the implementation of household waste management because intentions can influence a person to take concrete action(Ariani, 2020a).

The results of the chi-square test between social support and household waste management showed a p-value of 0.000. This indicates that social support has an influence on respondents' household waste management in Simokerto Village. This is also relevant to Snehandu B. Karr's theory, which states that in social life, a person's behaviour tends to require support from the surrounding community. If a behaviour does not receive support from the surrounding community, the individual will feel uncomfortable with their behaviour.

This theory is also supported by Sarafino & Smith, who explain that social support is a form of emotional support, instrumental support, informational support, and assistance received by individuals from other individuals or groups, in the sense that social support can be realised due to the perception that the group or people around them will help if an event or situation arises that causes problems (Ariani, 2020). This study is relevant to research conducted by Ayuningsih, which revealed that social support greatly influences the behaviour of fishing communities in Karampung Village, Mamuju City (Mukti, 2023). Another study conducted by Pareira Vicente explains that everyone needs affectionate support from others, which can take the form of sympathy or emotional support, trust and appreciation. The stronger this support is towards a person, the more likely that person is to behave well (Ayuningsih et al., 2022).

The results of the chi-square test between accessibility of information and household waste management showed (p-value=0.001). This indicates that accessibility of information has an influence on respondents' household waste management in Simokerto Village. According to Snehandu B. Karr's behavioural theory, the presence or absence of information accessibility influences an individual's decision to adopt a behaviour. If clear and relevant information is available, an individual is more likely to adopt the behaviour. This means that accessible information supports an individual's knowledge and helps them choose the appropriate action to take (Martina Pakpahan, 2021).

According to Amalia's research, access to health information is a person's ability to know and act to obtain the best possible health services(Nofrizal et al., 2022) This is also relevant to Fatma's research, which states that access to and affordability of information has a significant relationship with changes in community behaviour in the utilisation of waste banks in Batu Gadang Padang Village (Fatma, 2023) Accessibility of information is realised through the availability of information related to actions that will be taken by an individual. The availability of good information will greatly support the community in changing their behaviour, in this case implementing household waste management (Fajriah, 2021a) According to Karmila, her research explains that exposure to information greatly influences a person in determining their behaviour. Interesting information can trigger a person to continue seeking knowledge and increase their participation in a programme (Karmila, 2020).

The results of the chi-square test between personal autonomy and household waste management showed (p-value = 0.011). This shows that there is an influence of personal autonomy on respondents with household waste

management in Simokerto Village. This is supported by the theory of Snehandu B. Karr, which states that personal autonomy is personal freedom in taking actions or decisions(Martina Pakpahan, 2021) This study was supported by Fajriah's research, which stated that personal autonomy has a relationship and correlation with community behaviour(Fajriah, 2021) A person's personal autonomy can be measured by the extent to which they are influenced by the opinions of others to do something, but they decide to believe in their own right to do something(Monica, 2020). According to Filak & Sheldon, supporting a person's autonomy means taking an individual perspective in providing choices and reasons if no other choices are possible(Ariani, 2020).

The results of the chi-square test between action situation and household waste management showed (p-value=0.001) that this study indicates the influence of action situation on respondents with household waste management in Simokerto Village. According to the theory expressed by Snehandu B. Karr, an action requires appropriate conditions and situations(Martina Pakpahan, 2021). This is relevant to the research conducted by Ariani, who stated that there is a significant relationship between action situations and community behaviour in participating in a health programme.

A person's behaviour will not automatically manifest itself in an action; in order for behaviour to manifest, supporting factors and enabling situations are needed, one of which is infrastructure facilities. According to Nurhana in her research, facilities can be considered as places that facilitate the implementation of household waste management activities, such as the availability of waste bins, waste carts, temporary storage areas, and cleaning tools(Nurhana, 2022) Research conducted by Sembiring revealed that the availability of supporting facilities can result in good behaviour among the community. The availability of facilities and infrastructure can be influenced by good planning, the availability of funds, and their implementation to achieve good waste management (Sembiring, 2020).

There is a relationship between behavioural intention, social support, accessibility of information, personal autonomy, and action situation with the possibility of behavioural change in household waste management in Simokerto Village, Tambakrejo Health Centre working area, Surabaya City.

CONCLUSION

Based on the research results and discussion regarding community behavioral factors regarding CLTS Pillar IV Household Waste Management in Simokerto Village, Surabaya City, the following conclusions can be drawn: Respondents in the Unsecured Household Waste Management category were predominantly aged 40-49, indicating that this age group best reflects the characteristics of the behavior of unsecured household waste in this study.

Respondents in the Unsecured Household Waste Management category mostly had no behavioral intention, no social support, no accessibility of information, poor personal autonomy, and an impossible action situation. Therefore, respondents' behavior toward household waste management can be influenced by many factors.

Based on the results of the analysis, the theory according to Snehandu B. Karr which includes behavioral intention, social support, accessibility of information, personal autonomy, and action situation has a significant influence on the possibility of changing better health behavior, so that it can change people's behavior in behaving hygienically and sanitary to improve the level of public health.

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