



# Factors Influencing Volunteering among Community Sanitation Volunteers: Implications for Sustainability of Community Approaches to Sanitation in Rural Zambia

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**How to cite this paper:** Mbewe, S. and Phiri, J. (2023) Factors Influencing Volunteering among Community Sanitation Volunteers: Implications for Sustainability of Community Approaches to Sanitation in Rural Zambia. *Open Access Library Journal*, 10: e10932.

<https://doi.org/10.4236/oalib.1110932>

**Received:** October 26, 2023

**Accepted:** November 27, 2023

**Published:** November 30, 2023

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## Abstract

Sanitation and hygiene behavior change programs have benefitted from the contribution of volunteers who give their time to improve access to sanitation, particularly in rural communities in Africa. The study aimed to assess factors influencing volunteering among community sanitation volunteers from rural communities in Zambia. Community volunteers who spread awareness on sanitation in their communities as well as reported progress on latrine construction and coverage participated in the study. The main constructs of the theory of planned behavior were applied to predict volunteering intention to participate in reporting progress on latrine construction by rural households in communities with low access to sanitation. The study further analyzed volunteers' opinions on the importance of receiving financial incentives to participate in volunteering. Results from ordinal logistic regression analysis show that attitude and subjective norms significantly predicted volunteering intention. This finding suggests a favorable view of the program by sanitation volunteers. It also suggests that approval from significant others could influence volunteering intention and strengthen participation in community-based sanitation programs. However, the majority of participants indicated a need to receive financial incentives for volunteering. More insight is needed into external factors that may present as barriers to volunteering and how they affect the sustainability of behavior change sanitation interventions.

## Subject Areas

Sociology

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## Keywords

Attitude, Perceived Behavioral Control, Sanitation, Subjective Norms, Volunteer, Zambia

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## 1. Introduction

Volunteerism has been a part of African social life for many years [1]. Volunteering describes an activity where people lend their time freely to benefit another person, group, or organization [2]. Individuals contribute their time and effort to ensure the achievement of community goals [1]. The water and sanitation sector has equally benefited from the involvement of volunteers who work to ensure communities participate in rural sanitation and hygiene projects [3]. It is recognized that sanitation is a public good, providing social and economic benefits. Poor sanitation leads to diseases that can impact an entire community [4]. Globally, Sub-Saharan Africa has among the lowest levels of water and sanitation coverage [5]. To reduce the number of people without access to a sanitation facility, practitioners have developed strategies that endeavor to engage individuals, households and communities in behavior change development programs that have the potential to create a demand for services [6]. Volunteers participate in community-based sanitation programs in several African countries. Such programs emphasize behavior change and sustainable use of sanitation facilities. Communities lead the change process and are key in planning and implementing the programs [7].

Apart from spreading sanitation and hygiene messages, community volunteers are also involved in monitoring the progress of latrine construction [8]. Engaging volunteers in monitoring can increase community awareness and decision-making [9]. Volunteers are generally regarded as a low-cost and sustainable solution for spreading sanitation and hygiene messages and monitoring and reporting sanitation coverage in their communities. They play an important role in collectively changing behavior and social norms in their communities [8].

Zambia has benefitted from the participation of community volunteers who are involved in spreading awareness on sanitation and hygiene in rural communities as well as monitoring and reporting of progress of toilet construction by community members. This contributes to increasing sanitation coverage. The feedback from the monitoring conducted by volunteers is aimed at empowering government actors at national, provincial, and district levels with information to make informed decisions to improve access to sanitation for all [10]. With the Sustainable Development Goal (SDG) 6 placing emphasis on improving access to water, sanitation, and hygiene (WASH) services, and the need to focus on the vulnerable and those left behind, adequate monitoring is required to provide data that tracks progress toward achievement of SDG 6 and national targets [11]. Optimizing the potential benefits of volunteers, whilst retaining elements that

may be crucial to their impact, such as the spirit of volunteerism and community social mobilization is essential in sustaining community-based health programs [12].

Health programs' dependence on volunteers is embedded in the assumption that they are less costly and therefore more sustainable than maintaining a professional cadre of community health workers. Understanding individuals' motivations to volunteer and participate in a program is therefore critical for planners and policymakers [13]. Engagement of volunteers requires consideration of a number of factors as they may not be accountable in the same way as paid staff and sometimes their stay is short-lived [14]. It is important to understand local motivations and ensure citizen participation [15].

This study was conducted to assess factors that influence volunteer intention to participate in reporting progress on latrine construction and sanitation coverage in rural communities of Zambia. The study further analyzed participants' opinions on the importance of receiving financial incentives to participate in volunteering. It has been argued that some level of compensation could work as a motivator for volunteers who have inadequate financial incentives. Breaking the web of barriers affecting volunteers requires addressing issues that affect their effectiveness [16].

The study used constructs from the Theory of Planned Behavior (TPB) which analyzes individual motivational factors that determine a person's performance of a behavior [17]. Researchers have successfully used the Theory of Planned Behavior to predict and explain a wide range of behaviors and intentions [18]. The Theory of Planned Behavior postulates that intentions are determined by three factors: attitude toward the behavior, subjective norms and perceived behavioral control. Attitude refers to the degree to which the person has a favorable or unfavorable view of the behavior. Subjective norms refer to the perceived social pressure to perform or not perform the behavior, while perceived behavioral control is the perceived ease or difficulty of performing the behavior [17]. The three factors allow for the estimation of their relative importance and examination of the theory's predictive validity, among other things [18]. It is believed that a person's intention is a function of personal and social factors. Generally, people are expected to act in accordance with their intentions, with the exception of unforeseen events bringing about changes. People intend to perform a behavior when they evaluate it positively and when they believe that others think they should perform it [19].

## 2. Methods

### 2.1. Research Design

A quantitative cross-sectional study was adopted to assess the influence of attitude, subjective norms and perceived behavioral control on volunteer intentions. The study also analyzed participants' opinions on the importance of receiving financial incentives to participate in volunteering.

## 2.2. Participants

The study targeted communities in Zambia where community-based projects are implemented with the participation of volunteers. The volunteers spread awareness on sanitation in their communities with a focus on each household constructing and using a toilet to improve sanitation in rural communities. They monitor and report progress on sanitation coverage to ensure planned targets are achieved [10]. A total of 124 community volunteers participated in the study. The sample size was determined from a known population at a confidence level of 95% and a 5% margin of error, using the Yamane sampling method [20]. Multistage sampling was employed to select communities by defining smaller units and selecting at each stage [21]. Participants were randomly selected at the community level.

## 2.3. Instruments

A 5-point Likert scale (1. strongly disagree to 5. strongly agree) was used to collect data on direct measures of attitude, subjective norms, perceived behavioral control and volunteering intention. The questionnaire was adapted from Ajzen (2006) [22] allowing for measurement of key constructs of the Theory of Planned Behavior and to improve validity and reliability. The adaptation was done to align TPB items to the research needs, to fit the local context, and to ensure participants understood questionnaire items. Demographic variables and items measuring volunteers' opinions on the importance of receiving financial incentives to participate in volunteering were included. A pilot test with 30 participants was conducted after which the questionnaire was revised.

Attitude items assessed the degree to which participants had a favorable view towards volunteering. Participants rated their level of agreement with 3 items (volunteering task is easy; enjoyable; and satisfying). Subjective norms had 3 items that measured perceived social pressure to volunteer (importance of opinions of significant others; expectations of people regarded as important; approval of those whose opinions are valued). Perceived behavioral control was assessed using 3 items (whether or not volunteering was completely up to the individual; confidence to perform the task; feeling in complete control to perform the task). Intention assessed the level of agreement to perform the behavior.

Community volunteers' opinions on receiving financial incentives for volunteering were assessed by 3 items (the need to receive financial incentives to volunteer; the belief that financial incentives improve performance; importance of receiving a financial incentive for volunteering). A reference to motivation, reward and intention is arguable when referring to volunteering. Whilst some believe that volunteering means acting for the public good, such a description of volunteering does not prevent volunteers from benefiting from their work [2].

## 2.4. Data Analysis

Information was entered into SPSS for analysis. Mean scores were obtained for

multi-item scales. Regression and correlation analysis were conducted. Regression was conducted to establish how independent variables predicted the dependent variable. Correlation examined how strongly variables were associated [23]. Descriptive statistics such as Standard Deviation (SD) were obtained.

### 3. Results Discussion

#### 3.1. Descriptive Statistics

**Table 1** shows results of descriptive analysis. The mean age of the participants was 46.3 with a Standard Deviation of 10.3. Males made up 69.4% of the sample.

**Table 2** shows results of the Cronbach's alpha test, mean and Standard Deviation. Cronbach's alpha was conducted to demonstrate consistency [24] of items. The items measured attitude, subjective norms, perceived behavioral control and importance of receiving financial incentives to participate in volunteering. The values for all constructs exceeded 0.60 indicating construct reliability.

The mean score for attitude was 4.02 (SD = 0.70) indicating most participants expressed a stronger agreement with a positive view towards volunteering. Results further suggest a stronger perceived social pressure to volunteer [M = 4.23, SD = 0.63]. The mean score for perceived behavioral control over volunteering was 2.89 (SD = 1.3), suggesting most participants did not have much control over volunteering tasks.

The majority of participants agreed that receiving financial incentives for volunteering was important [M = 4.15, SD = 0.94]. The provision of incentives, particularly financial rewards is an important aspect of volunteering in low-income communities. The sustainability of community projects could be impacted by volunteer beliefs on incentives.

There is a growing debate on whether volunteers serving in developing countries should be financially rewarded for their participation in community activities or not. Whilst volunteers in wealthier countries generally have other incomes and find volunteering a meaningful way to occupy their time or make a meaningful contribution to society, this may not be the case for lower socio-economic environments [25]. A study by [26] explored incentives and volunteering in Community health workers in rural areas of Uganda and found that although community health workers value volunteering and the opportunity to make a social contribution, the decision to volunteer is also influenced by anticipated future extrinsic rewards.

According to [27], in the context of poor communities with limited chances to generate income, and time lost by community health volunteers involved, the provision of incentives with a financial value enhances a sense of recognition and fair treatment resulting in a high level of accountability to perform. In Zambia, [13] found that volunteers with lower and mid-level standard-of-living scores were significantly more likely to agree with economic motivation statements. Although volunteers had complex motivations for participating in health programs, some had expectations of and need for material support proving the

**Table 1.** Descriptive statistics.

Variable	Description	Number (Frequency)	Mean (SD)
Gender	Male	86 (69.4)	
	Female	38 (30.6)	
Age	Years		46.3 (10.3)

**Table 2.** Reliability, mean and standard deviation.

Construct	No. Items	Mean	SD	Cronbach's Alpha
Attitude	3	4.02	0.70	0.768
Subjective Norms	3	4.23	0.63	0.718
Perceived Behavioral Control	3	2.89	1.3	0.962
Financial Incentives	3	4.15	0.94	0.941

need for reforms to strengthen the effectiveness and sustainability of volunteer-dependent programs.

### 3.2. Association between TPB Constructs and Volunteering Intention

Spearman's rho correlation was conducted to determine how attitude, subjective norms, perceived behavioral control and volunteer intention were associated. Results are presented in **Table 3**.

It was observed that attitude, subjective norms and perceived behavioral control were significantly correlated with volunteering intention. Attitude ( $r_s = 0.38$ ,  $p < 0.001$ ) and subjective norms ( $r_s = 0.42$ ,  $p < 0.001$ ) were positively correlated with volunteering intention. There was a significant negative correlation between perceived behavioral control and volunteering intention ( $r_s = -0.21$ ,  $p = 0.02$ ), suggesting that the degree to which people believed they could perform the behavior was low, possibly due to barriers faced in volunteering. A high level of perceived behavioral control is expected to strengthen the performance of a task. However, there are circumstances where people do not have control over the performance of tasks [28].

### 3.3. Regression Analysis

The influence of attitude, subjective norms and perceived behavioral control in explaining volunteering intentions was examined using ordinal logistic regression.

**Table 4** shows the results of the ordinal logistic regression analysis of attitude, subjective norms, and perceived behavioral control, as independent variables and intention as the dependent variable. Results of the present study show that attitudes and subjective norms significantly explained volunteering intention. The odds of a person falling into a higher category on intention changed by a factor of 2.691

**Table 3.** Results of correlation analysis of TPB constructs.

Item	Construct	1	2	3
1.	Attitude	-		
2.	Subjective Norms	0.24**	-	
3.	Perceived Behavioral Control	-0.08	-0.17	-
4.	Intention	0.38**	0.42**	-0.21*

\*\* . Correlation is significant at the 0.01 level (2-tailed). \* . Correlation is significant at the 0.05 level (2-tailed).

**Table 4.** Results of ordinal regression analysis.

Parameter	Estimate	Std. Error	Wald Chi-Square	P-value	Odd-ratio	
Threshold	[Intention = 3]	3.376	2.3085	2.138	0.144	29.244
	[Intention = 4]	9.292	2.3947	15.057	<0.001	10853.230
Attitude	0.990	0.3441	8.273	0.004	2.691	
Subjective Norms	1.007	0.3798	7.034	0.008	2.738	
Perceived Behavioral Control	-0.299	0.1563	3.660	0.056	0.742	
Age	0.031	0.0205	2.306	0.129	1.032	
Male	0.502	0.4466	1.261	0.261	1.651	

Dependent Variable: Volunteering Intention. Model: (Threshold), Attitude, Subjective Norms, Perceived Behavioral Control, Age, Gender.

for each one-unit increase in attitude. For each one-unit increase in subjective norms, the odds of being on a higher level of intention increased by a factor of 2.738.

Perceived behavioral control, age, and gender were non-significant. It has been observed from previous studies that the relative importance of the three constructs may differ from one behavior to another. It is possible to find that one or another of the three factors has no significant effect on intention. The lack of predictive validity could indicate that for the particular behavior and population under study, the factor in question was not an important consideration in the formation of intention, assuming reliability was met [18].

**Table 5** shows the model fitting information. The full model containing the predictors represents a significant improvement in fit relative to the null model.

Results of the ordinal regression analysis suggest a favorable view of the program by volunteers. This could be attributed to a belief that improving sanitation is a public good, a need by volunteers to contribute to improving their communities, or a desire for reward and recognition.

**Table 5.** Ordinal regression model fitting information.

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	177.998			
Final	147.285	30.713	5	<0.001

A positive attitude by volunteers could contribute to strengthening participation in community interventions and engagement with fellow community members. The results of the study complement other work done on volunteer motivations such as, [29] who used the Theory of Planned Behavior to study the willingness of volunteers to participate in floating population health volunteer services in China, and found that attitude and subjective norm, but not perceived behavioral control, significantly predicted willingness to participate in volunteer services.

The role of community and civic leaders in the implementation of sanitation projects in rural communities is important. Community volunteers could be positively influenced by their leaders to participate in volunteer services. [30], indicate that more positive attitudes and perceptions of approval from significant others could encourage volunteering intentions. A study by [31] investigated the impact of motivation, attitude and subjective norms on the stage of readiness to be involved in volunteer tourism. They found that attitude, subjective norm, taking/receiving motivation, and giving motivation can predict the stage of readiness to volunteer.

Retention of volunteers to support rural sanitation and hygiene programs oftentimes faces challenges relating to sustainability. This could be partly due to low consideration of motivational factors that contribute to participation and sustainability of interventions. [26], indicate that the engagement of volunteers in Sub-Saharan Africa to improve access to healthcare often raises questions about the sustainability of programs due to reliance on unpaid workforce. A review of publications by [27], explained circumstances under which interventions to improve the performance of volunteers are more likely to be successful. It was established that the provision of adequate support to community health volunteers based on fairness and equity generated a sense of being appreciated and valued for the work done, thereby contributing to positive outcomes.

In order to maintain benefits from different approaches, governments and planners can endeavor to understand programs that can best be supported in their communities, thereby maximizing motivation and effectiveness [25]. It is recommended that program implementers put into place strategies that motivate people to have a positive attitude, as it has an effect on behavioral intention [32] [33] [34]. Leaders need to implement effective strategies to engage their volunteer workforce to achieve organizational sustainability and to improve economic growth in the communities [35]. An analysis of community governance in the Guangming Community of Nanchang City found that increased volunteer participation can play a key role in urban community governance. To promote vo-



luntary work, community governance needs to be carried out efficiently, while expanding governance channels and solving problems existing in urban communities. It is important to improve and innovate the volunteer service platform, learn lessons and upgrade the volunteer service mechanism [36].

Non-monetary incentives are also important as they generate a sense of belonging thereby contributing to better retention. These include appreciation, recognition and skills development [27]. It is believed that nurturing local leaders through recognition and positive incentivization is key to their motivation as well as maintaining their interests. A lasting impact on household and community hygiene and sanitation behavior and practices can be achieved when the community takes the lead in implementation [37].

#### 4. Conclusion

The participation of volunteers in implementing community-based sanitation interventions in rural communities is key to reaching many people and improving the uptake of sanitation interventions. Understanding motivations for participation is an important aspect of program implementation. Results suggest that a favorable attitude by community volunteers and perceived expectations from significant others can influence volunteering. An expectation of financial rewards has to be well managed. A high expectation of financial rewards could affect the sustainability of programs if not met. The limited control over volunteering tasks by most participants suggests the presence of barriers that may need further exploration. The presence of barriers could negatively affect people's attitudes to participate. Volunteers need to feel that their contribution is valued and that an enabling environment has been created to effect positive change in the community.

#### Acknowledgements

The researchers acknowledge the support of all research participants.

#### Conflicts of Interest

The authors declare no conflicts of interest.

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