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ISUKU IWACU

BARRIER ANALYSIS ON HOUSEHOLDS LATRINES' CLEANLINESS FOR ISUKU IWACU-RWANDA RURAL SANITATION ACTIVITY (RRSA)

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I. Abbreviations and Acronyms

BA	: Barrier Analysis
CHC	: Community Health Centre
CHC	: Community Health Club
CHW	: Community Health Worker
CRS	: Catholic Relief Service
HH	: Household
JMP	: Joint Monitoring Program
NISR	: National Institute of Statistics of Rwanda
RRSA	: Rwanda Rural Sanitation
RwF	: Rwandese Francs
UNICEF	: United Nations Children's Fund
USAID	: United States Agency for International Development
WASH	: Water, Sanitation and Hygiene
WHO	: World Health Organization

2. Acknowledgements

3. Executive Summary

Background. The Rwanda Water and Sanitation Policy (2010) estimate the sanitation coverage to 45%. Through Vision 2020 and EDPRS II, Rwanda aspires to have 100% water supply and sanitation coverage by 2018. Nationwide, 62 percent of the population has access to an improved, non-shared toilet facility, according to the 2015 WHO/UNICEF Joint Monitoring Program (JMP) that monitored progress towards the Millennium Development Goals. Recent Isuku iwacu baseline survey and formative research conducted in fiscal year 18, revealed that some sanitation indicators are still low in households of 8 districts of implementation.

Isuku Iwacu interventions in 8 Districts of implementation have increased the coverage of improved latrines in nearly all villages through the construction of improved latrines for vulnerable families, mobilization activities toward Open Defecation Free and Community Hygiene Clubs efforts. Some constructed latrines are often unclean and poorly maintained which can lead to underutilisation or abandon, with a corresponding rise in recidivism of open defecation. Poor access to cleaned latrines will result in poor sanitation and hygiene and this can lead to diarrheal disease, resulting in inefficient absorption and under nutrition. In order to address challenges mentioned, Isuku Iwacu is conducting the barrier analysis to explore real causes of unclean and poorly maintained latrines and to better understand the specific challenges of maintaining clean latrines[1] in communities of Isuku Iwacu implementation.

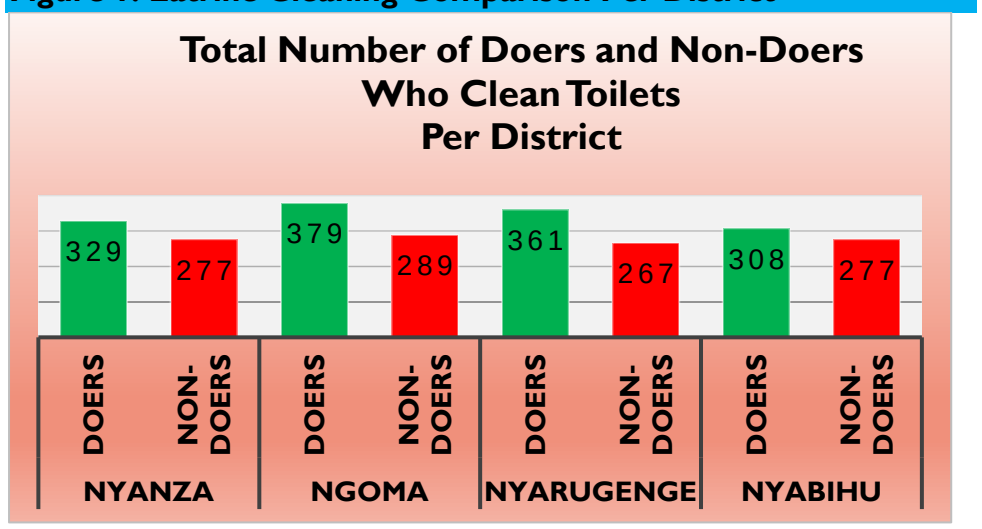
Methodology: One questionnaire was priory developed for the analyzed behavior. Questions are associated to determinants for the desired behaviour being promoted by Isuku Iwacu activities. First section of the questionnaire will help to determine if a respondent is a Doer or a Non-Doer and then 1 to 2 questions are developed for each of the determinants being studied for the behavior, the questionnaire will be pre-tested on a few members of the target group to assure that questionnaires is understandable and effective.

Analysis. Field staff collected and manually tabulated the data for this project and analysed it using a standard BA tabulation Excel sheet. A 10% percent difference was used to determine significant differences in responses among doers and non-doers. The Barrier Analysis, tabulation Excel sheet conducts a statistical analysis to determine if the difference between doers and no-doers is statistically significant.

Results A total of six determinant questions were asked, but only self-efficacy and social norms were strongest determinants that can best answer why non-doers are not cleaning their latrines. For self-efficacy, non-doers were asked two questions: What makes it easier or difficult to clean your latrines at home? Non-doers responded:1) water and ashes make it easier for them to clean their latrines and: 2) disability, old age, culture and lack of time makes it difficult to clean their latrines. For social norms, non-doers were asked two questions: Who are the people with the most favorable or unfavorable opinion of you cleaning your latrines at home? Non-doers responded:1) teachers are the people with the most favorable opinion of them cleaning toilets and: 2) neighbours were a perceived source of negative influence. When non-doers and doers are compared, non-doers were likely to mention ashes more than soap whereas doers were likely to mention soap. Results show that non-doers perceive teachers more than community health workers to be the people who positively encourage them to clean their latrines. On other hand. doers perceived community health workers and community health centres as a source of positive influence in cleaning latrines.

In terms of latrine cleaning, the following graph shows the comparison results per district.

Figure 1: Latrine Cleaning Comparison Per District



Across all four provinces, Ngoma district has the highest number of both doers and non-doers who clean and don't clean their latrines.
Nyarugenge province has the second highest number of doers who clean toilets and has the least number of non-doers who do not clean toilets.
Nyanza province has the third highest number of doers who clean their toilets and second highest with non-doers who do not clean their toilets.
Nyabihu province has the least number of doers who clean toilets and is also second highest with non-doers who do not clean toilets.

Latrine Cleaning Results Discussion: Across all four provinces, Ngoma district has the highest number of both doers and non-doers who clean and don't clean their latrines. Ngoma has the highest number of non-doers likely because it has relatively a high number of non-doers with disability (14%) as shown by this BA, which makes it difficult to clean latrines. The issue of disability was also confirmed by the data from National Institute of Statistics Rwanda, which determined that Ngoma is among the districts with a high percent of people with disability at 3.3%. Ngoma district also has the highest number of doers, though data from NSR indicated that 86.1% of people are unemployed, only 32.5% have access to water, and many walk about an hour to access health and basic resources. Nevertheless, something vital to note about Ngoma district is its access to 12 health centres and 13 health posts per population of 323,000. From this information, we can conclude that people in Ngoma are convinced that cleaning their latrines is beneficial for their community, hence they clean their latrines despite the challenges they face in terms of access to resources. In addition, BA results revealed that Ngoma has the highest number of non-doers (60%) who mention teachers as a source of positive

Executive Summary Continued

[1] Cleaned latrines including covers
A cleaned latrine needs to meet all criteria for a basic sanitation, which is defined according to the JMP, as a sanitation facility that hygienically separates human excreta from human contact, and that is not shared with other HHs. The latrine is therefore considered clean: neither liquids, flies, dirt, paper nor mud is visible within the squatting area of the toilet. Minor liquids and/or paper is acceptable if found in the corners. Septic system or pit latrine with slabs needs to have a cover to be considered fully clean.

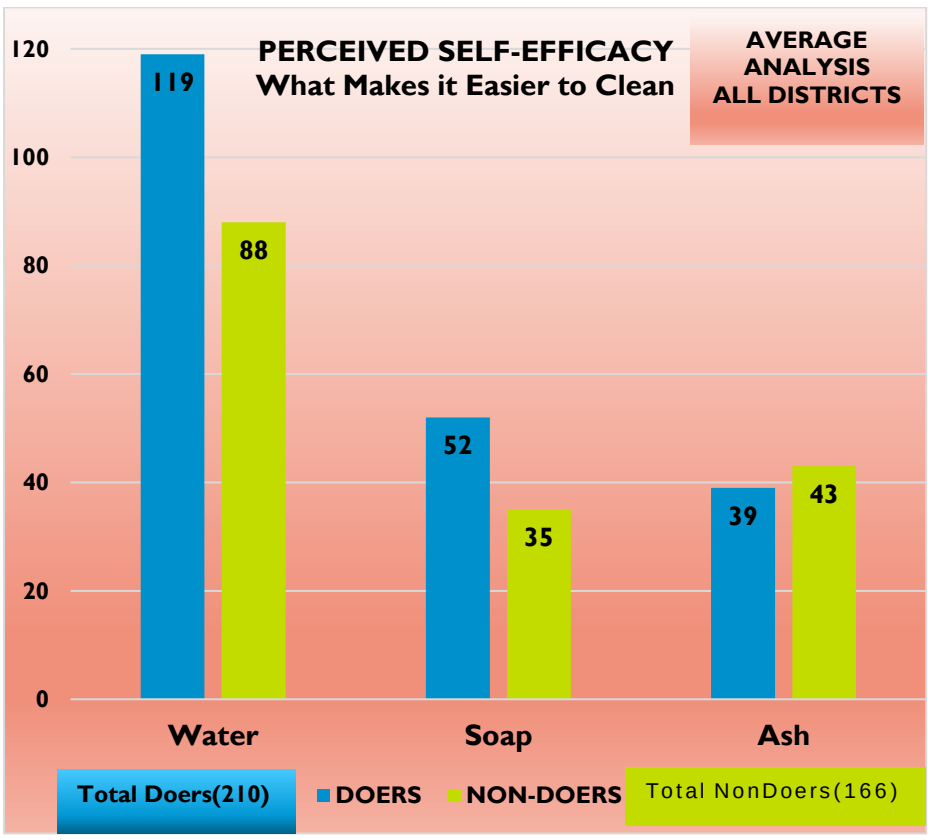
influence compared to Nyanza, Nyarugenge and Nyabihu. This could mean that the children of non-doers are receiving some form of health education from school and are sharing it with their parents, who many not be necessarily motivated to clean latrines.

Nyadenge province has the second highest number of doers who clean toilets and has the least number of non-doers who do not clean toilets. According to the National Institute of Statistics Rwanda, 90% of the population in Nyarugenge district are employed and 94% have access to water and only 9% of people are unemployed. Nyarugenge also has the highest number of health centres (10) and health posts (62) among the four districts. In general, Nyarugenge has better access to resources compared to Nyabihu, Nyanza and Ngoma districts. This data confirms the BA results that indicated Nyarugenge to have the least number of non-doers. We should also note that Nyarugenge has 2.7% of people with disability, which is second high from Ngoma (3.3%) and perhaps, some of these non-doers are part of this 2.7%.

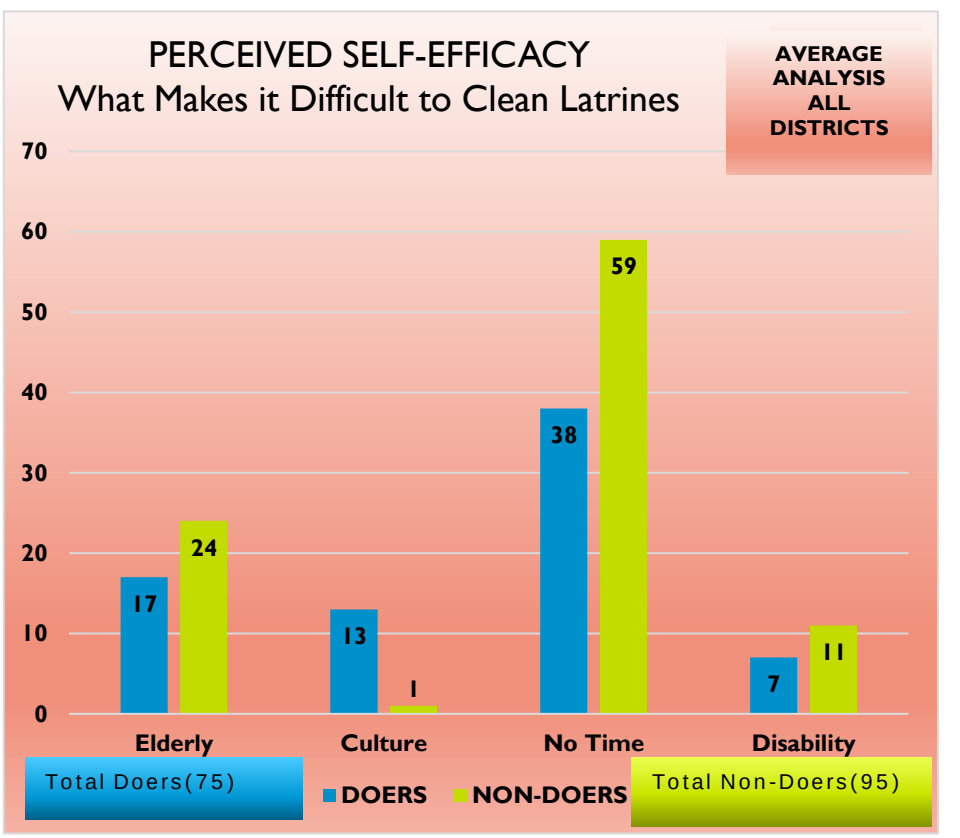
Nyanza province has the third highest number of doers who clean their toilets and second highest with non-doers who do not clean their toilets. According to the BA results, Nyanza district has the highest district number of non-doers who mention disability (24%) and doers (4%) compared to other three districts. This BA result is confirmed by the NSR, which indicated that Nyanza has 6.7% of people with major disability and is the second highest district in the country. The NSR also indicates that Nyanza 's access is below the national expectation; 28% people live in extreme poverty and half of the population lives in poverty and is first place with highest percent of orphans in the country. However, 82% of population is employed in agricultural jobs, but most working groups are youth aged 16. In addition, school attendance is low, despite that in this BA, non-doers mentioned teachers (58%) to be a source of positive influence in latrine cleaning. Despite Nyanza's poor access to resources, it does have good access to health centres (17) and health posts (30) compared to Nyabihu and Ngoma. Nyanza is second highest from Nyarugenge with more health posts and health centres. In addition, our BA results showed that Nyanza is the only district with a higher percent of non-doers with old age (53%) compared to other three districts. As a district, Nyanza is doing well in terms of latrine cleaning compared to Nyabihu district, which has 70-80% access to water and other resources that advantages that Nyanza doesn't have.

Nyabihu province has the least number of doers who clean toilets and is also second highest with non-doers who do not clean toilets. Surprisingly, Nyabihu has about 70-80% access to water and are within 15minute walking distance from the next source of water. Under this revelation, we expect Nyabihu to have the highest number of doers, but it is not the case. According to the National Institute for Statistics Rwanda, Nyabihu has 1.6% of disability, which is lowest among the four districts. This is confirmed by our BA as this district has the lowest number of non-doers (2%) who mention disability as a barrier to cleaning their latrines. For this district, it should be noted that it has the highest number of non-doers who mention lack of time (40%) as reason for not cleaning their latrines.

The graphs below show and summaries the average analysis for the chosen two determinants (social-norms and self-efficacy) that best show why non-doers aren't cleaning their latrines.



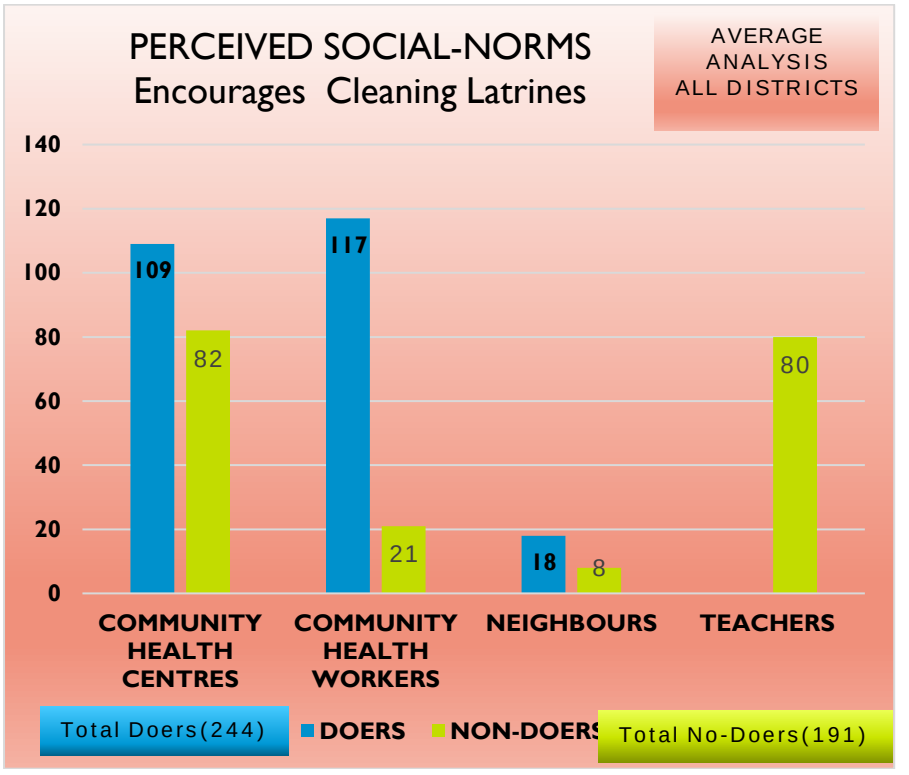
This graph shows that non-doers are more concerned with water and ash.



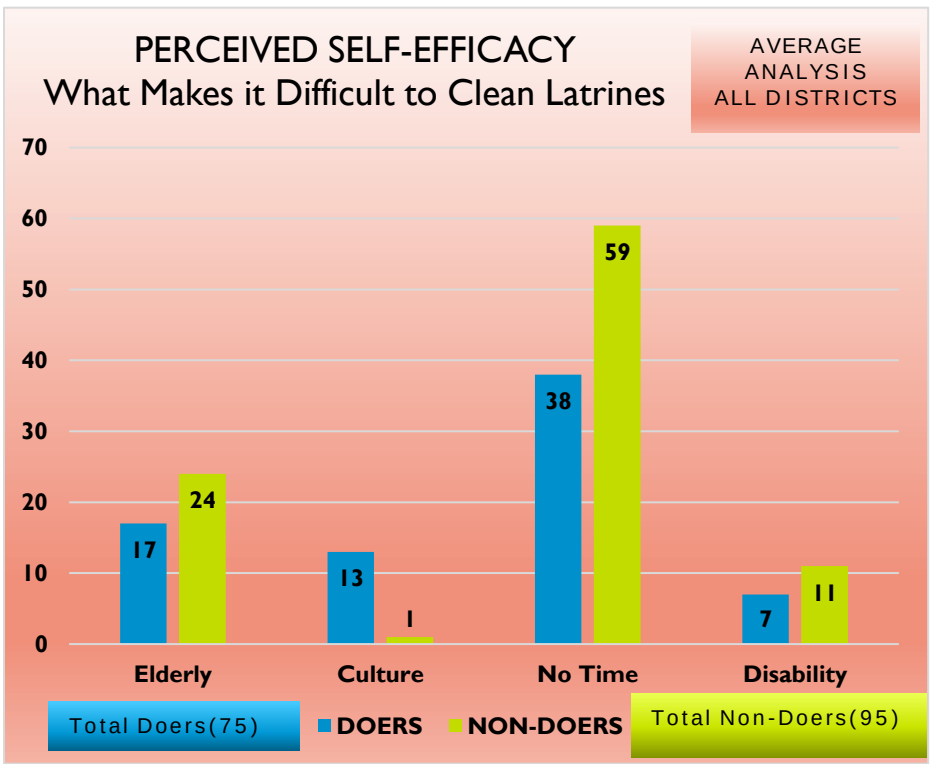
Non-doers are more concerned with lack of time, disability and old age compared to doers.

Executive Summary Continued

Introduction: The graphs below summarise the average analysis for the chosen two determinants (social-norms and self-efficacy) that best answer why non-doers aren't cleaning their latrines.



Teachers and community health centres are a source of positive influence for non-doers.



Non-doers are concerned with disability, lack of time and old age.

Discussion: Beyond the issues that non-doers and doers perceived as challenges to cleaning latrines, two questions that must be answered: Why are doers motivated to continue cleaning their latrines despite these challenges? And why are non-doers not cleaning their toilets and what exactly do they lack? There are three possible reasons why doers are motivated to clean their latrines despite the challenges they face:1) they likely believe their susceptibility to disease is high, 2) latrine cleaning is customary and habitual for them, and:3) it could be that community leaders punish community members who do not clean their latrines. Secondly, there are three possible reasons why non-doers are not cleaning their latrines:1) they believe their susceptibility to disease is low (though in actuality it is high), 2) they prioritise self-sustenance over latrine cleaning, and 3) they simply lack motivation to clean latrines. These assumptions are an attempt to think beyond the challenges non-doers mentioned as barriers to cleaning their latrines. And there could be more factors beyond the ones mentioned.

Project Revelations: The first revelation is that non-doers lack good access to water and money to buy cleaning materials. Because of this, it is likely that non-doers are prioritising self-sustenance over latrine cleaning.

The second significant revelation is the issue of old age, disability, lack of time, and culture, which makes it difficult for non-doers to clean their latrines. Both non-doers and doers across all provinces perceived disability and old age as hindrances to cleaning their latrines. For these specific issues, people of old age and those with a disability must be prioritised in latrine cleaning activities. An opportunity for action is to form a committee of helpers who can help the elderly and disabled with latrine cleaning.

The third revelation is the positive influence teachers have on non-doers. Non-doers were likely to mention teachers and community health centres as a source of positively influence. Three conclusions can be made from thsi:1) the presence of community health workers is low in places where there is a high number of non-doers, 2) it is possible that the children of non-doers are receiving sanitation and hygiene education from school and share that knowledge with their parents and 3) it could be that teachers are acting as agents of positive change and advocates of latrine cleaning within the community. An opportunity for action is to make children/youths a priority and target population for latrine cleaning activities in the community. Attention can be also focused on engaging teachers in latrine cleaning activities and efforts.

The fourth revelation is that non-doers perceive lack of time as something that makes it difficult for them to clean their latrines. Lack of time can possibly mean that non-doers perceive cleaning latrines to be a waste of time and not a priority. The big question is, what is it that non-doers are devoting their time on? Is it that they are devoting their time in activities that bring them sustenance at home?

The fifth revelation is that both non-doers and doers perceive culture to make it difficult for them to clean their latrines. For culture, it could be about their perception on the value of latrines. Culturally, non-doers could be perceiving the toilet as a place where they simply "dump dirt" and needs no cleaning. If this is true, non-doers place less value on the latrine itself, which influences them to not clean it. The last significant revelation is neighbours being the source of negative influence for non-doers. Here, the issue could be about communal/sharing toilets. The likelihood of shared toilets being dirty is high. And people may commit to cleaning an owned latrine than a public latrine. Encouraging communities' members to build their own latrines might be the solution.

Executive Summary Continued

Opportunities of Action:

From the BA results, there are opportunities of action to be considered in ensuring that people have the resources needed to clean their latrines. The first opportunity of action is to increase water access to districts with water scarcity. If people have less access to water or fetch their water far from where they live, the likelihood of them using that water to clean latrines is low. Rather, they will use it for drinking and cooking. Secondly, consider income generating activities for community members to earn money to purchase cleaning materials and this would also help them with providing for their family. Do so while at the same time engaging them in latrine cleaning activities. Third, increase more sanitation education in communities, emphasizing how dirty toilets make communities highly susceptible to disease. Fourth, people of old age and with disability must be prioritized in latrine cleaning activities. And consider forming a committee of helpers who assist this population with latrine cleaning. Fifth, children and youths must be prioritized in latrine cleaning activities because they are likely to serve as positive influencers among their peers and likely to clean toilets compared to adults. Sixth, continue emphasizing the use of ashes to reduce toilet flies and the making of woven toilet covers/lids to reduce flies and toilet smell. Lastly, identify motivation factors and triggers that encourage community members to clean their latrines.

Project Gaps and Limitations

Beyond the determinants that were assessed to identify factors contributing to lack of latrine cleaning, this project has some limitations. The first limitation is lack of gender assessment data specifically showing the exact number of respondents who were non-doers and doers or children (boys or girls). With this data, results could have showed us the specific gender of non-doers and doers. It could have been that most non-doers are females, since it's most women and girls who perform domestic work at home compared to men or boys.

The second limitation is that not many determinants were tested. For example, we believe that the community's belief in their susceptibility to disease can reveal reasons behind non-doers not cleaning latrines.

The third limitation is that this BA project is not representative of all people within the identified districts. The sample size for the BA analysis was relatively small per each district.

These limitations are possible confounding factors to why non-doers aren't cleaning their latrines.

Conclusion:

There are several conclusions we can made from the BA results. The first conclusion is that the issue of latrine cleaning is about access to resources such as water and cleaning materials and other related needs. However, this issue is beyond access to resources. As the BA revealed, many non-doers have disability, old age and likely lack basic needs to sustain themselves. It could also be that people simply do not like cleaning latrines and are making that choice. For instance, Nyanza district had the second highest of doers, but half of its population lives in poverty, access to water is below average, orphan hood is high, and disability is high. But Nyabihu, which has more than 70% access to water and employment is high, disability is low, has the least number of doers. Could this mean cleaning latrines is perceived as a matter of choice? Is it necessarily all about lack resources?

The second conclusion is that community leaders within these communities likely do not clean their latrines or they don't have latrines. If leaders lead by example, the whole community has positive models to follow. Therefore, latrine cleaning activities must ensure that community leaders are in fact cleaning their latrines and have latrines themselves, before telling the mass to clean their latrines.

The fourth conclusion is that positive language matters. If community leaders and community health workers continue to use positive language around latrine cleaning, non-doers may be encouraged to clean their toilets. Also, community health workers at health centres or who live within these communities must also clean their latrines, this way community members will likely listen to their messages about latrine cleaning.

4. Background Information

The Rwanda Water and Sanitation Policy (2010) estimate the sanitation coverage to 45%. Through Vision 2020 and EDPRS II, Rwanda aspires to have 100% water supply and sanitation coverage by 2018.

Nationwide, 62 percent of the population has access to an improved, non-shared toilet facility, according to the 2015 WHO/UNICEF Joint Monitoring Program (JMP) that monitored progress towards the Millennium Development Goals.

Through analysing and interpreting information collected by USAID funded baseline survey conducted by CRS within the scope of Gikuriro activity, October 2016 in 6 Districts (Kayonza, Rwamagana, Ngoma, Nyarugenge, Kicukiro, and Nyabihu), potential sanitation risk practices were documented and for instance it reveals that 32 percent of respondents do not have improved sanitation facilities.

Recent Isuku iwacu baseline survey and formative research conducted in fiscal year 18, revealed that some sanitation indicators are still low in households of 8 districts of implementation.

Interviews were carried out in households, and the report reveals that 49.3 percent of respondents were **heads of households** and that 37.6 percent were their spouses, which means that survey results are proportionally reflecting the actual perceptions of heads of households or/and their spouses. 27.3 percent of heads of households did not achieve any schooling level, 26.4 percent did some primary and 25.9 percent finished primary.

Gender, about 68.9 percent of respondents were of male sex and 31.1 percent were of female sex.

Gender Equality and Norms in Rwanda

According to the Global Gender Gap Report 2014, which measures women's economic participation and opportunity, education, political empowerment, and health and survival, Rwanda is ranked seventh in the world for gender equality.[2] As a country, Rwanda has been making strides in promoting gender quality and deconstructing the various systems of oppression toward women that are often fuelled by patriarchal attitudes.[3] With 64% of women in parliamentary cabinet positions after 2013 elections, this is evidence to point to Rwanda's progress in ensuring that women are empowered and included in decision-making and political leadership positions[4]. Despite this progress that Rwanda has made, gender inequality persists in the country, especially for poor women who live in areas. "Women are expected to adopt a domestic and depend role within the family; girls are to help their mothers with household chores, bear male children and be reliant on the patriarchal figures in their lives.[5]" On the other hand, men are seen as the breadwinners for their families and their job rarely involves domestic work.[6] This is speaks volume to the fact that women continue to experience gender inequality in all aspects of their lives compared to men.

As far as **latrine's cleanliness status** is concerned, Of 2,101 HHs having latrines, only 1,009 HHs (48%) have clean latrines where floors or slabs are not contaminated with faeces or urine and latrines in 452 HHs (22%) have no covers available; flies were visible in 192 latrines (9%).

847 HHs out of 1,071 HHs (79%) safely dispose faeces of their youngest children under 3 years of age; with regard to children faeces disposal practices, this survey revealed that faeces are buried, dropped in public latrines or rinsed away; these practices are unsafe. Clean latrines are found mostly in categories 2 and 3.

When analysing the percentage of HHs members who use the latrine at home, it shows that in 99% of the HHs owning a sanitation facility, it is used by all members of the HHs (including men and women, boys and girls, elderly, people with disabilities).[7]

As long all members at the households' level are using latrines, and as the cleanliness status seems to be inappropriate; the HHs members (males and females, elderly, people with disabilities of age 18 to 60) should ensure regular cleanliness of their latrines as the way they all use them.

The above paragraph is clearly showing that HHs members (males and females, elderly, people with disabilities of age 18 to 60) should be defined as the priority group to be considered by this barrier analysis.

5. Objectives of the barrier analysis

[2] Nizeyimama, Jean. "Rwanda is Ranked Seventh by the Global Gender Gap Report for Gender Equality." UMUSEKE. 28, October, 2014. Web
[3] Gender Analysis for USAID/Rwanda Valuing Open and Inclusive Civic Engagement Project January 2015, p.9
[4] https://www.unwomen.org/en/news/stories/2018/8/feature-rwanda-women-in-parliament
[5] Uwineza, Peace and Elizabeth Pearson. "Sustaining Women's Gains in Rwanda." Institute for Inclusive Security, 2009. Web. 21
[6] ibid
[7] Isuku Iwacu baseline survey, September 2017

Isuku Iwacu interventions in 8 Districts of implementation have increased the coverage of improved latrines in nearly all villages through the construction of improved latrines for vulnerable families, mobilization activities toward Open Defecation Free and Community Hygiene Clubs efforts.

Some constructed latrines are often unclean and poorly maintained which can lead to underutilisation or abandon, with a corresponding rise in recidivism of open defecation. Poor access to cleaned latrines will result in poor sanitation and hygiene and this can lead to diarrheal disease, resulting in inefficient absorption and under nutrition.

In order to address challenges mentioned, Isuku Iwacu is conducting the barrier analysis to explore real causes of unclean and poorly maintained latrines and to better understand the specific challenges of maintaining clean latrines[8] in communities of Isuku Iwacu implementation.

The general objective of this barrier analysis is to complement the previous Isuku Iwacu baseline and formative research results by assessing the underlying reasons around maintaining clean latrines, understand which barriers / determinants are the most influential in motivating or preventing household's members from adopting the desired behaviour of maintaining clean latrines.

The analysis will establish detailed information about households' members, defined so far as the primary priority group, current behaviours as well as barriers to intended desired feasible behaviours to be prioritized by Isuku Iwacu activities toward our primary group;

6. Data collection and methodology

a. **"Adults (males and females of age18 to 60) ensure regular cleanliness of their households' latrines".** As Isuku Iwacu baseline results show that all members at the households' level are using latrines, and as the cleanliness status seems to be inappropriate; which justify that the HHs members (males and females, elderly, people with disabilities of age 18 to 60) should ensure regular cleanliness of their latrines as the way they all use them**.**

The current barrier analysis will help also to define thoroughly the secondary target audiences and third target audience.

Questionnaires

One questionnaire was priory developed for the analyzed behavior. Questions are associated to determinants for the desired behaviour being promoted by Isuku Iwacu activities.

First section of the questionnaire will help to determine if a respondent is a Doer or a Non-Doer and then 1 to 2 questions are developed for each of the determinants being studied for the behavior, the questionnaire will be pretested on a few members of the target group to assure that questionnaires is understandable and effective.

Sampling of villages for data collection

Our study will be conducted in households and for the representativeness of results, it will draw respondents from different villages whereby interviews will be done for 45 Doers and 45 Non-Doers for each behavior from each of 4 districts targeted (Ngoma, Nyarugenge, Nyanza and Nyabihu Districts).

9 villages are selected randomly and fairly from 3 cells of 3 sectors within each district (3 villages from 1 cell per 1 sector). In each cell, 30 households will be randomly selected to be interviewed for the behavior (45 doers and 45 non doers /cell per sector).

The table below show the list of villages in which Isuku iwacu formative research will be conducted, the villages are sampled from Isuku iwacu baseline survey areas ***(Table a)***.

District	Sector	Cell	Village	Households to be interviewed
NGOMA	ODF			30
	Voucher			30
	CHC			30
NYARUGENGE	ODF			30
	Voucher			30
	CHC			30
NYANZA	ODF			30
	Voucher			30
	CHC			30

[8] Cleaned latrines including covers
A cleaned latrine needs to meet all criteria for a basic sanitation, which is defined according to the JMP, as a sanitation facility that hygienically separates human excreta from human contact, and that is not shared with other HHs. The latrine is therefore considered clean: neither liquids, flies, dirt, paper nor mud is visible within the squatting area of the toilet. Minor liquids and/or paper is acceptable if found in the corners. Septic system or pit latrine with slabs needs to have a cover to be considered fully clean.

NYABIHU	ODF			30
	Voucher			30
	CHC			30

Field data collection in villages

Each of three teams *(three data collectors per each)* is assigned to carry data collection by interviewing 10 households members per day for the analyzed behavior (5 questionnaires for Non Doers and 5 for Doers), 90 households' members will be interviewed for each behavior and for each of 4districts using tablets.

Training of enumerators and pretest of questionnaires will be done in one day and the data collection will be conducted in 4 days.

5. Data entry and analysis of results

Two (2) days for data entry and Three (3) days for analysis are planned; results will be tabulated using a coding guide and the percentage will be calculated using excel sheet.

The responses between Doers and Non Doers for each determinant assessed, with a 15% point difference or higher will indicate most significant determinants to be based on while defining and planning focused Isuku Iwacu behavior change communication activities to improve the cleanliness of latrines.

7. Schedule of activities

The work will be completed over a period of 10 working days with the following break up, ***the proposed dates are subjected to change***

No	Sub activities	Duration	Period
1	Preparations for data collection	2 days	April 09-12, 2019
2	Training and pretest	1 day	April 16, 2019
3	Field data collection	4 days	April 22-26, 2019
4	Tabulation + Analyzing results	4 days	April 29-May 3rd , 2019
5	Report writing (draft of analysis and narrative report)	3 days	May 6-10, 2019

Proposed budget for the activity

Item	# of person	# of days	unity Price	Total
Cost for data collection				
Translate the questionnaire	1	2	100,000	200,000
Programming tablets	9	2	250,000	500,000
Airtime for data collectors	6	4	2,000	48,000
Airtime for team leaders	3	4	2,500	30,000
Refreshment for SEDO	3	4	5,000	60,000
Sub/Total				838,000
Transportation cost				
car renting for pretesting questionnaire	3	1	80,000	240,000
car renting for data collection	3	4	80,000	960,000
Sub/Total				1,200,000
M& I allowances				
Accommodation	10	3	30,000	900,000
Sub/Total				900,000
Cost for data analysis				
Small conference room	9	4	50,000	200,000
Lunch	9	4	6,500	234,000
Sub/Total				434,000
Total				**3,372,000**

8. Demographical Information for Four Districts Nyabihu and Ngoma

Nyabihu District: Demographical Data[9]

Ngoma District Demographical Data[10]

Nyabihu **Population** estimated=323, 719 Females=52.4% 83.6% is less than 40years **Health Centres=16** **Health Posts=20** **Hospitals=1**	**Nyabihu** **Water Source** 70%-80% of households have improved drinking water source within less than 15 minutes' walk of an improved water source.	**Ngoma** **Population** estimated 323,000 About 53% of the Ngoma population is female.; about 55% are 19 or younger while about 83% are still under 40 People aged 65 years and above make up only 4% of the population, making this district a particularly youthful one	**Ngoma** **Water Source** use an improved drinking water source (67.6%). 40.7% use a protected spring, followed by a public standpipe (21.8%); 5% use other improved water sources However, 32.5% of households in this district still use an unimproved drinking water source.	**Ngoma** **Health Centres=12** **Health Posts=13** **Hospitals=1**	
Poverty Levels 28.6% is poor **Disability** **1.6% of people have disability**	**Sanitation** has 70.4% of households with access to improved sanitation facilities	**Poverty Levels** About 52.4% of the population in Ngoma district is identified as non-poor 25.3% is poor (excluding extreme poor) and only 22.3% extreme-poor	**Sanitation** has 78.7% of households with access to improved sanitation facilities, which is above the national average (74.4%).	**Household leadership** district is headed by females and 4.9% are de facto female-headed households.	
Savings Account only 27.2% of households have at least one saving account	**Employment** Agriculture and Jobs with 73.9% of all main jobs falling into this category; having the highest percentage of land protected against soil erosion (94.1%).	**Savings Account** use of financial services show that 37.8% of households in Ngoma district have at least one savings account Unemployment overall employment rate is 86.1%	**Walk to the Health Centre** mean walking distance to a health centre in Ngoma district is 59 minutes; 51% of households walk for under an hour to reach a health centre	**Disability** Ngoma has 3.3% of people with a major disability	**Employment** independent farmers (73.5%) and agriculture is the main industry for 81.5% of the population aged 16 and above

[9] National Institute of Statistics for Rwanda http://www.statistics.gov.rw/publication/eicv-3-nyabihu-district-profile
[10] National Institute of Statistics for Rwanda http://www.statistics.gov.rw/publication/eicv-3-ngoma-district-profile

Demographical Information for Four Districts
Nyanza and Nyarugenge

Nyarugende District Demographical Data[11]

Nyanza District Demographic Data[12]

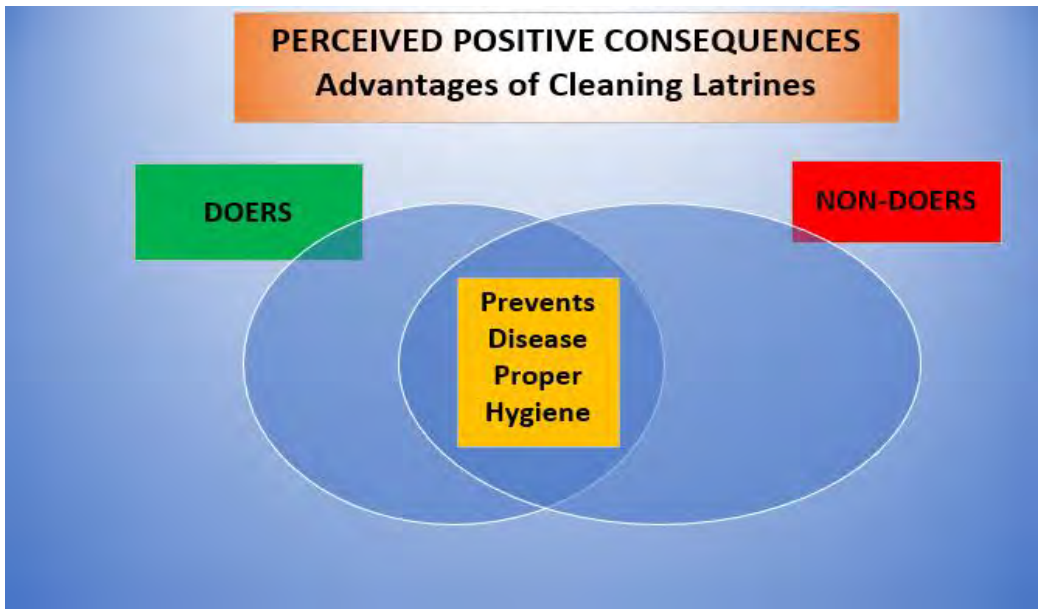
Nyarugenge: Urban Population is estimated at 282,000 about 49% of the population are aged 19 years or younger. About 52% of the population is constituted by female **Health Centres=10** **Health Posts=62** **Hospitals=1**	**Nyarugenge**: **Water Source-** 94% of Nyarugenge district households use an improved drinking water source 92% have access to improved sanitation facilities	**Nyarugenge:** Nyarugenge district has the lowest employment rate among all districts	**Nyanza: Rural** **Sanitation and Water** with 89% of households having access to improved toilet facilities. Below average in terms of water access. Water access is poor	**Chore Time** Females still have to spend double the number of hours on domestic duties compared to males (24 hours and 12 hours respectively
Poverty level About 90% of the population in Nyarugenge district is identified as non-poor.	**Sanitation** has 70.4% of households with access to improved sanitation facilities	**Disability** has 2.7% of people with a major disability higher than national average which is 4.5%	**Poverty level** half of the households in Nyanza are poor 28% that live in extreme poverty characterised by high poverty levels	**Orphan hood** First place of orphan hood in the whole country . has 4.6% of orphans with both parent decease
Distance to Clinic mean walking distance to a health centre in Nyarugenge district is 25 minutes and 89% of households walk less than an hour on average to a health centre	**Employment** employment rate is 71% of the resident population aged 16 years and above in Nyarugenge district; the unemployment rate is 9%		**Savings Account** only a third (30%) of households have at least one saving account	**Source of income** agriculture is the main economic activity and source of income, 80% of adults aged 16 years and above are underemployed
Savings Account Financial services, 65.3% of households in Nyarugenge district have at least one savings account	**Chore Time** median number of hours spent on all domestic duties by adults is 16 hours, where males spent six hours and females 24 hours		**Distance to Clinic** the mean walking distance for both schools and health centres is greater than the average at the national level long distances residents need to travel in order to access social services	**School attendance** Literacy rates and current school attendance is below national average likely due to distance to access resources
			Health Centres=17 **Health Posts=30** **Hospitals=1**	**Disability** 6.7% of people have major disability higher than national average

[11]National Institute of Statistics for Rwanda http://www.statistics.gov.rw/publication/eicv-3-nyarugenge-district-profile
[12] National Institute of Statistics for Rwanda http://statistics.gov.rw/publication/eicv-3-nyanza-district-profile

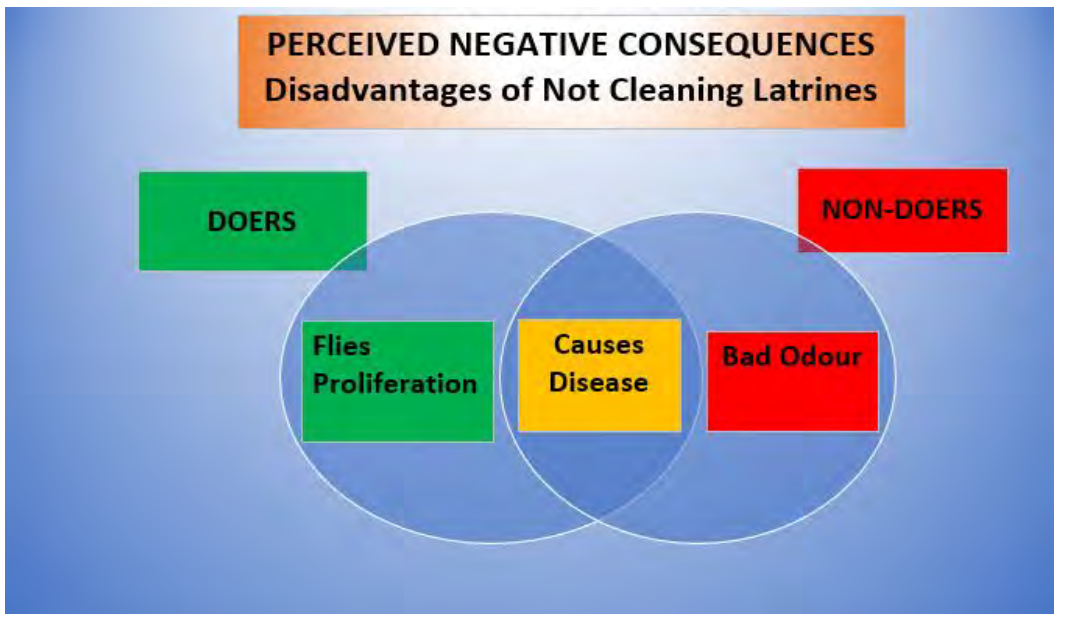
9. Comparison of Doers and Non-Doers Across Four Districts Nyanza, Ngoma, Nyarugenge, Nyabihu

Introduction:

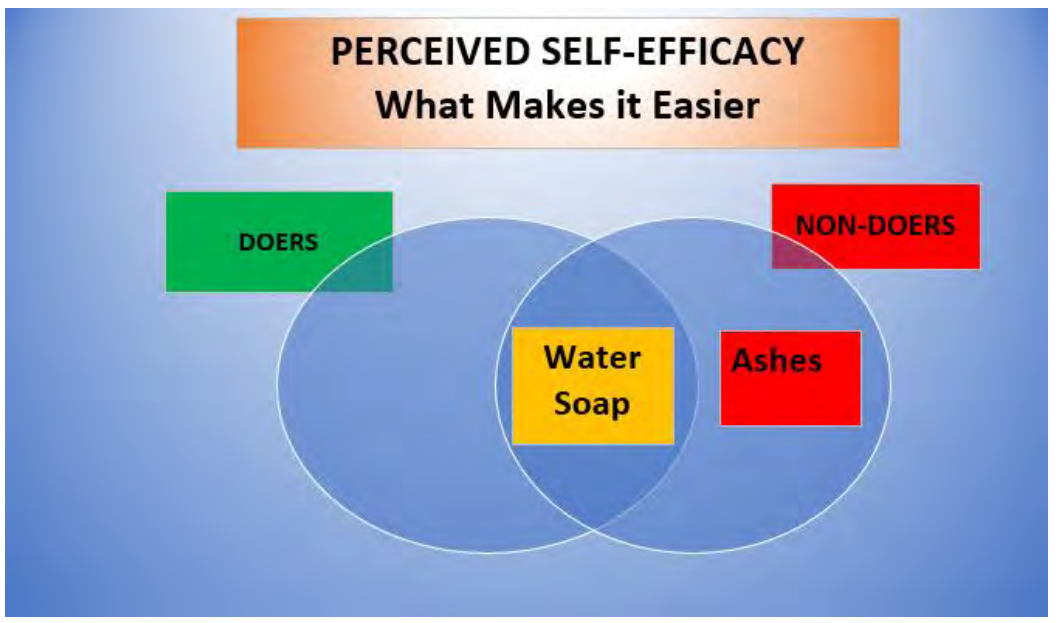
Below are venn diagrams showing high level of differences and similarities of doers and non-doers across the surveyed four districts.



Both non-doers and doers perceive prevention of disease and proper hygiene as the main advantage of cleaning toilets



Both doers and non-doers perceive the cause of disease to be the negative consequence of not cleaning toilets. The difference is that non-doers are concerned with bad odour whereas doers are concerned with the proliferation of flies

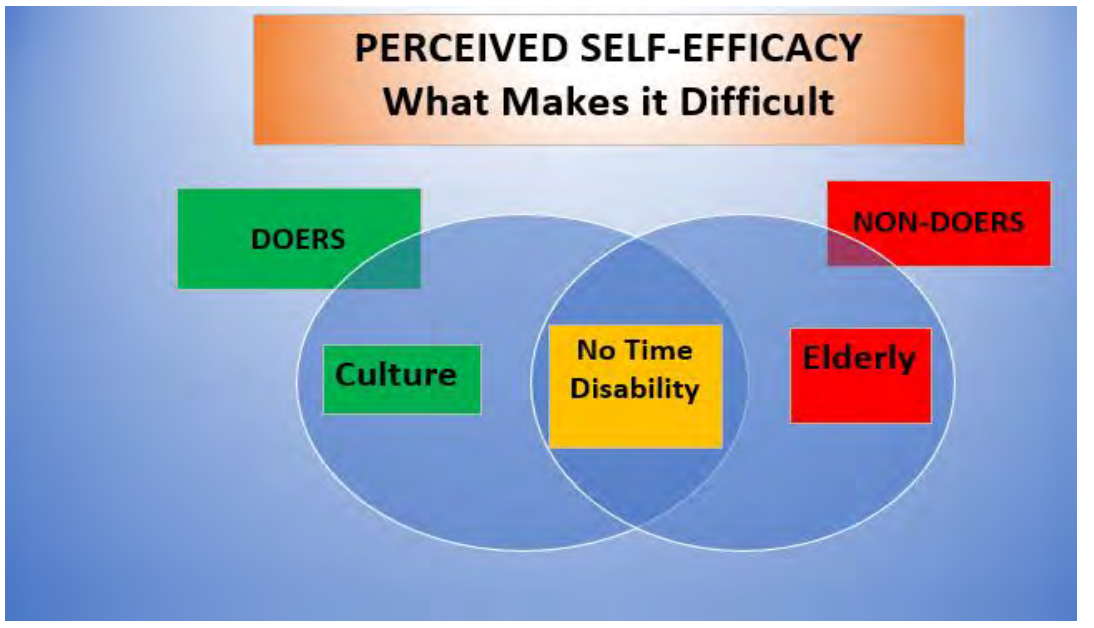


Both non-doers and doers perceive water and soap as needs that make it easier to clean latrines. However, non-doers emphasise ashes more than doers

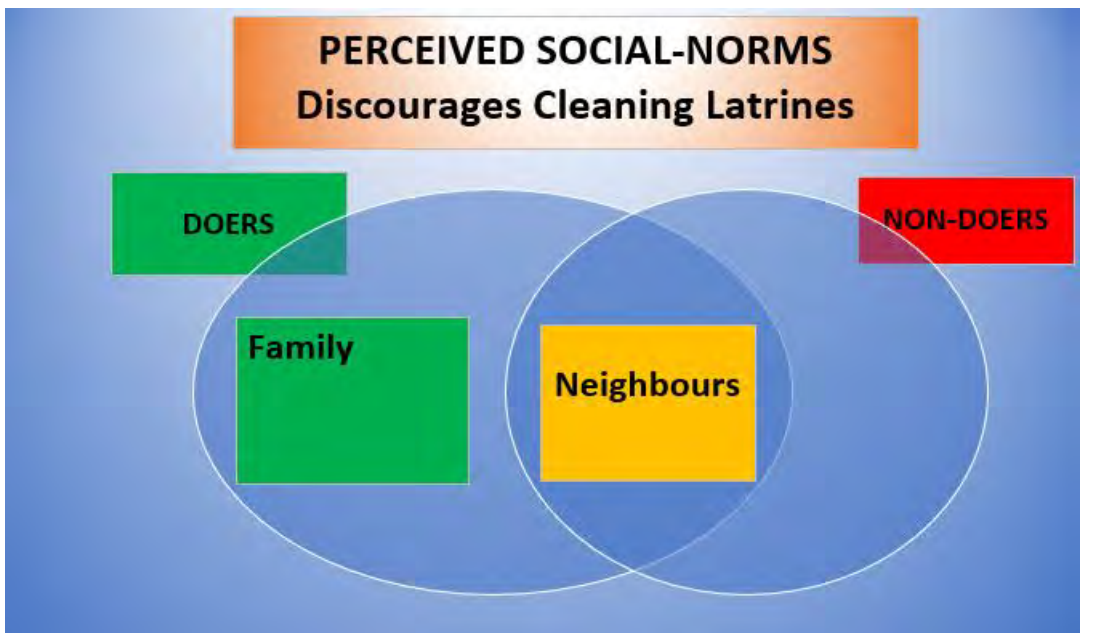
Comparison of Doers and Non-Doers Across Four Districts
Nyanza, Ngoma, Nyarugenge, Nyabihu

Introduction:

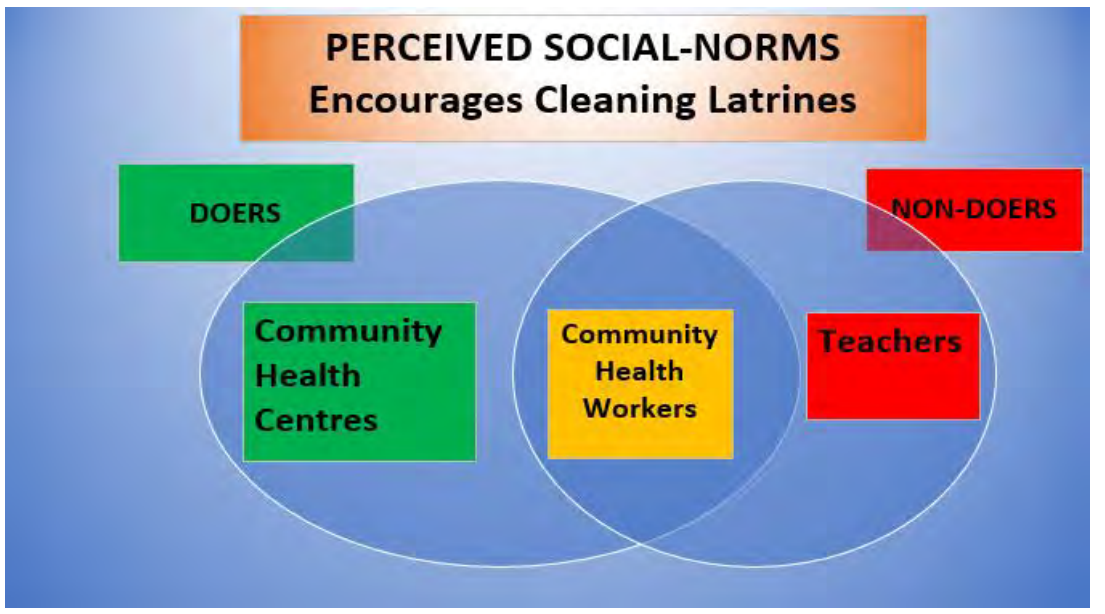
Below are venn diagrams showing high level of differences and similarities of doers and non-doers across the surveyed four districts



Both non-doers and doers responded lack of time and disability makes it difficult to clean latrines. The difference is that doers were also concerned with culture whereas non-doers were concerned with old age



Both non-doers and doers perceive neighbours as the group that discourages them to clean latrines. The only difference is that doers emphasise family as the source of negative influence and non-doers do not.



Both non-doers and doers perceive community health workers as the group that encourages them to clean latrines. The difference is that doers emphasise community health centres as the source of positive influence whereas non-doers emphasise teachers.

10. Latrine Cleaning: District Comparison Of Doers And Non-Doers
Nyanza, Ngoma, Nyarugenge, Nyabihu

Introduction:

In addition to the survey questions that people were asked, the following questions below were asked to determine whether a person is a doer or non-doer

Section A - Doer/Non-doer Screening Questions

1. Yesterday, did you clean the latrine at your home?
   - ❑ a. Yes
   - ❑ b. No ☐ *mark as Non-doer and pose question 1 in Section B*
   - ❑ c. Can't recall/ won't say ☐ *End interview and look for another adult*

2. Thinking about yesterday, please tell me: how many times did you clean the latrine at your home? (This is just a reminder question and should not be used to classify.)
   - ❑ a. 1 time
   - ❑ b. 2 times
   - ❑ c. 3 times
   - ❑ d. 4 times
   - ❑ e. 5 or more times.

3. Aside from water, did you use anything to clean the latrine yesterday?
   - ❑ a. Yes
   - ❑ b. No
   - ❑ c. Does not know / no response ☐ end the interview and find another mother

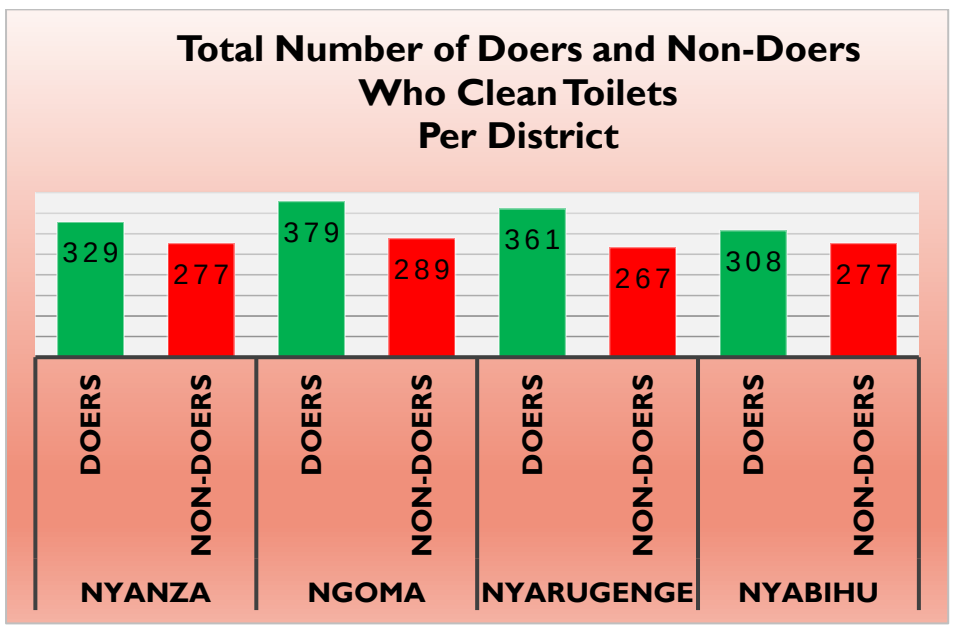
4. If yes, what did you use?
   - ❑ a. Soap
   - ❑ b. Ash
   - ❑ c. Toilet brush
   - ❑ d. Other (specify) ……..

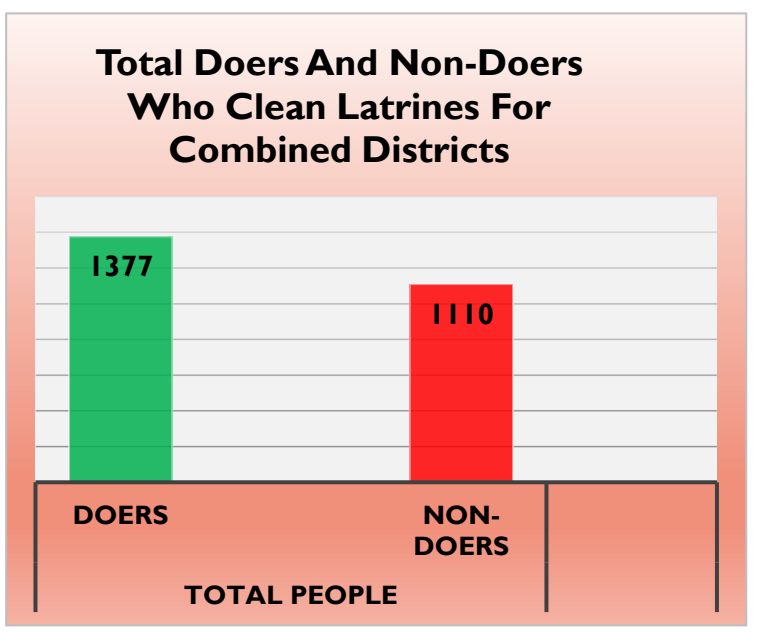
DOER /NON-DOER CLASSIFICATION TABLE

Doer (all the following)	**Non-doer** (any one of the following)
Question 1 = a	Question 1 = b, c
Question 2 = a,b,c,d,e	Question 2 = NA
Question 3 = a	Question 3 = b, c
Question 4 = a,b,c,d	Question 4 = NA

Results:

The following graph illustrates the total amount of people who clean toilets(doers) and those that do not clean toilets(non-doers) per each and combined surveyed district.



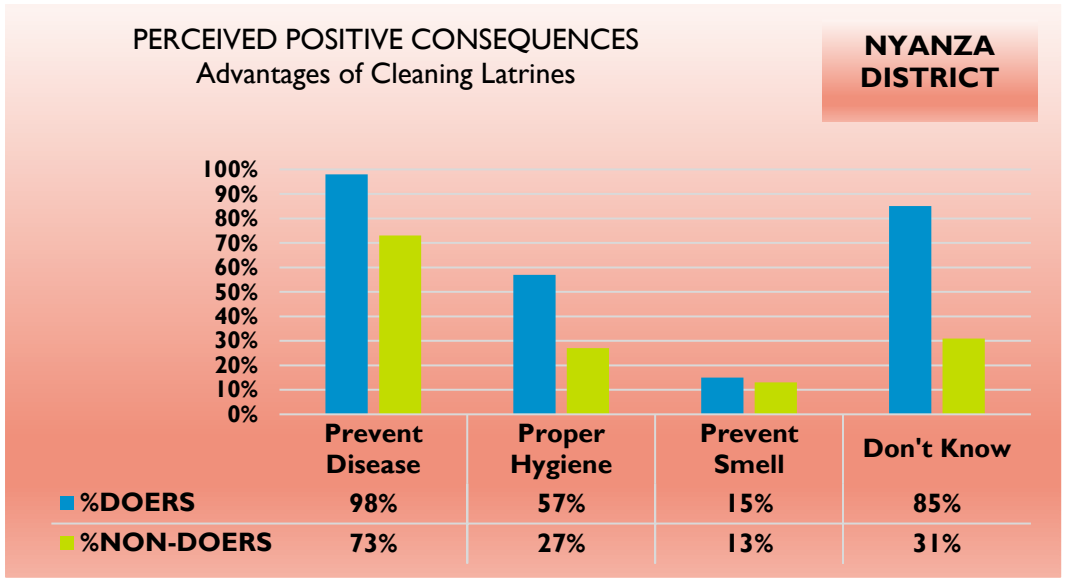


11. Barrier Analysis Per Each District
Nyanza

Nyanza

Introduction: The following bar graphs show the percentage of doers and non-doers' responses per each determinant.

Perceived Positive Consequences



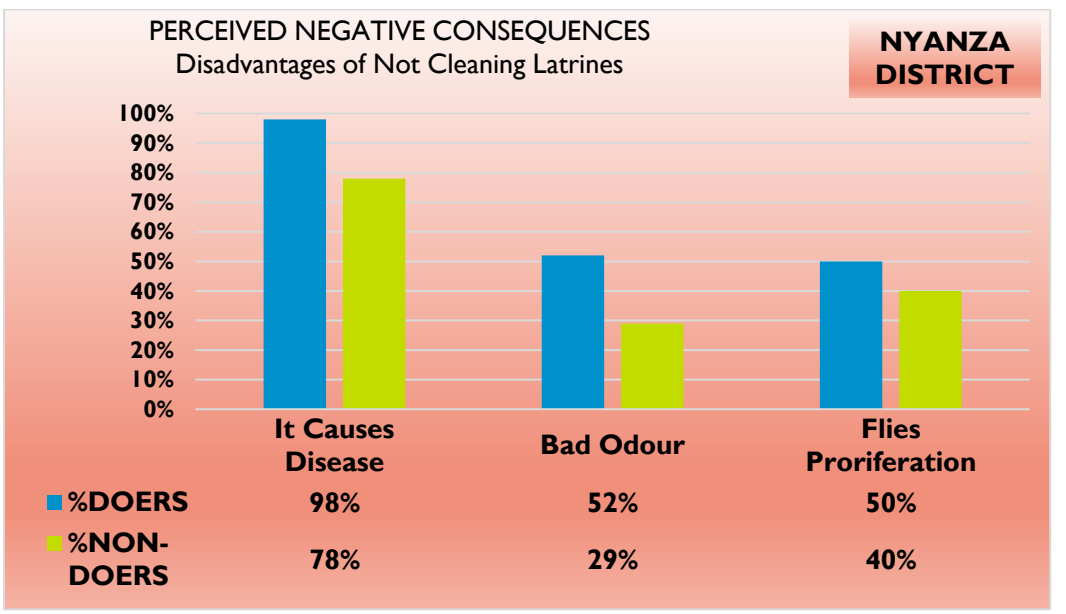
Statistically, non-doers are 3.1(0.004, p <0.05) times to respond proper hygiene compared to doers.

Doers are 14.4 (0.000, p<0.05) times more likely to respond prevention of disease compared to non-doers

Doers are 9.7(0.000, p <0.05) times more likely to respond they don't know compared to non-doers

The most significant determinants for perceived positive consequences are the prevention of disease, promotion of proper hygiene, and lack of knowledge

1. Perceived Negative Consequences

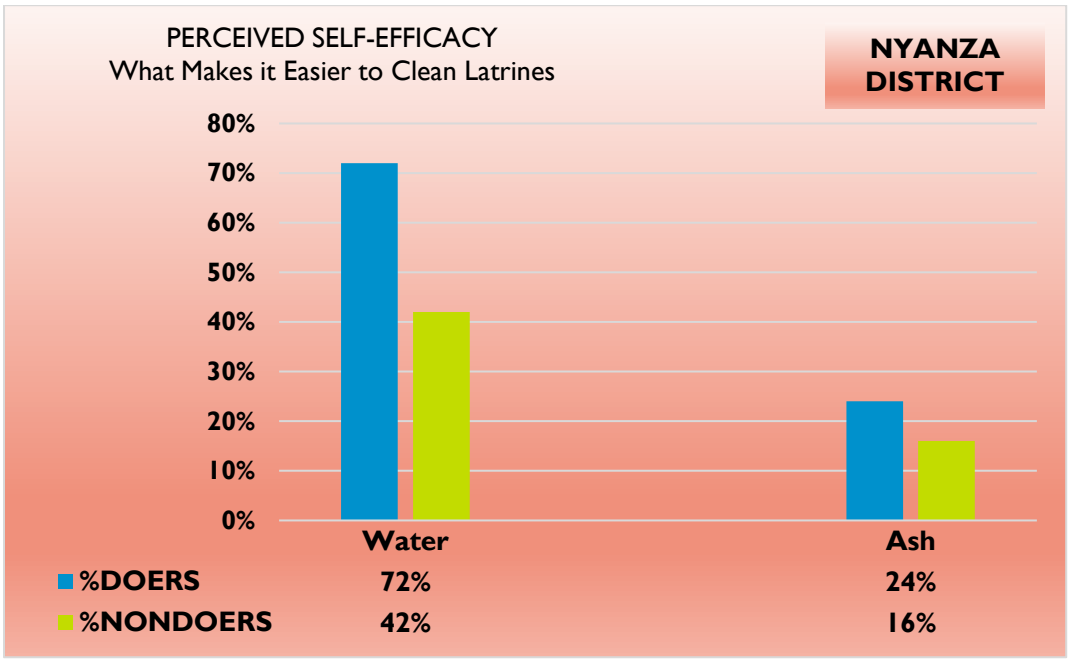


Statistically non-doers are 1.5(0.003,P< 0.05) times likely to respond bad odour as the disadvantage of not cleaning latrines compared to doers.

Whereas, doers are 2.4(0.020, p<0.05) times more likely than non-doers to respond the cause of disease as the disadvantage of not cleaning latrines.

Though proliferation of flies was statistically measured as insignificant (0.227, p>0.05), doers (50%) and non-doers (40%) are strongly concerned with the proliferation of flies and perceive it as a negative consequence of not cleaning their latrines.

2. Perceived Self-Efficacy-Easier



Statistically, doers were 3.1(0.004, p<0.05) times likely to respond water compared to non-doers

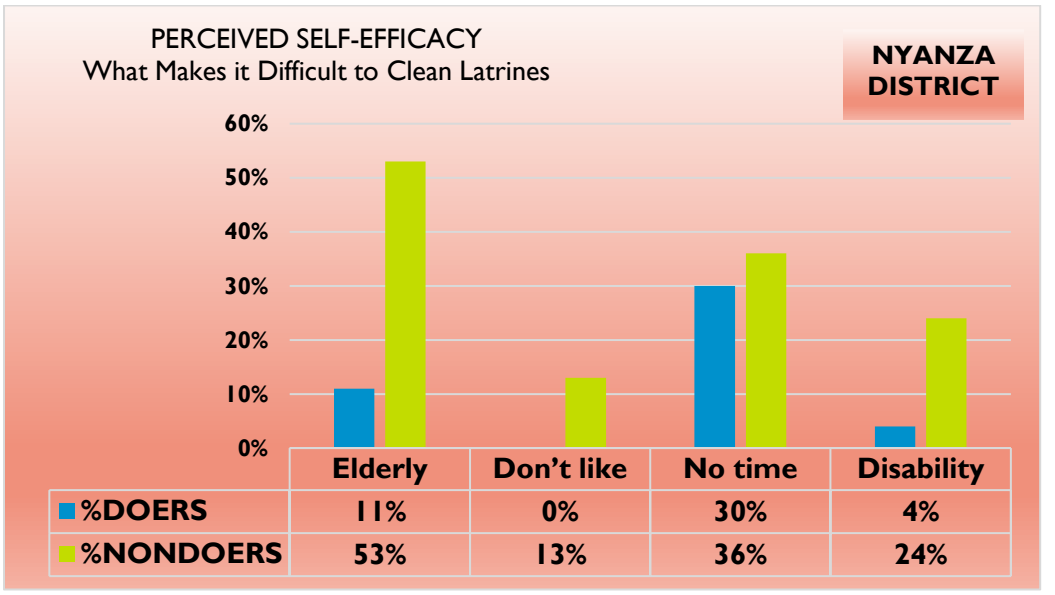
Though not statistically determined, non-doers also perceive water (42%) and ash (16%) as important in latrine cleaning

Therefore, the most significant determinant for both doers and non-doers is water.

Barrier Analysis Per Each District

Nyanza

3. Perceived Self-Efficacy-Difficult



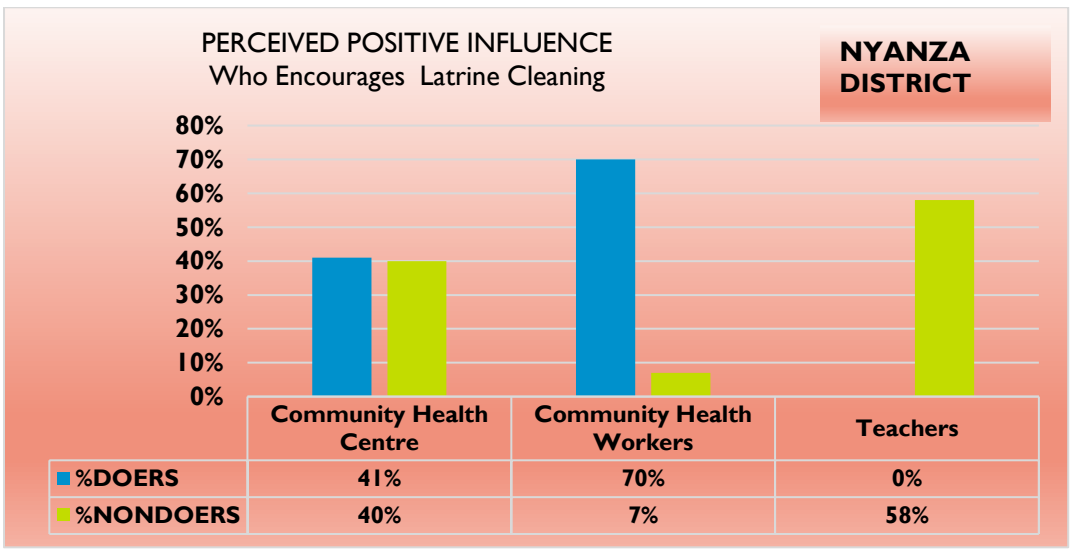
Statistically, non-doers are 7.0 times (0.000, p<0.05) more likely to respond elderly (old age) compared to doers

Non-doers are 1.0 (0.006, p<0.05)) times more likely to respond that they don't like to clean latrines compared to doers.

Non-doers are 13.1 times (0.000, p<0.05) more likely to respond they have no time to clean latrines compared to doers.

Non-doers are 4.4times (0.006, p<0.05) more likely to respond that disability makes it difficult to clean latrines than doers.

4. Perceived Positive Influence

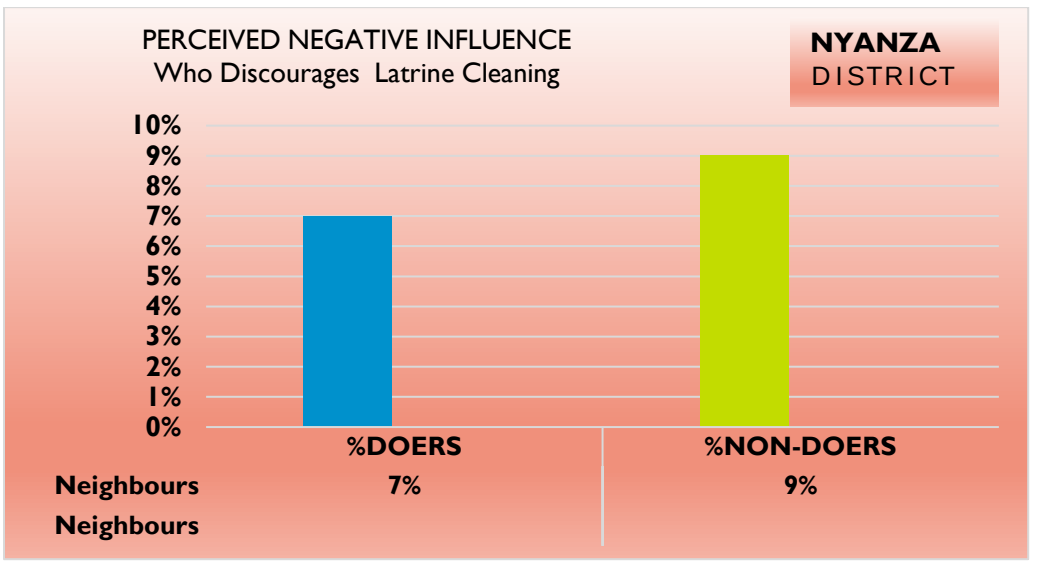


Doers are 15.4 (0.000, p<0.05) times more likely to respond that Community Health Workers encourage them to clean latrines.

Non-doers are 1.3(0.000, p<0.05) times more likely to respond that teachers encourage them to clean latrines

Though not statistically determined, both doers (41%) and non-doers (40%) also perceive the community health centre as a source of positive influence. One important thing to note in this graph is the mentioning of teachers as a source of positive influence for non-doers. The conclusion that can be made is that the children of non-doers are receiving some form of sanitation and hygiene education from school and share that knowledge with their parents.

5. Perceived Negative Consequences



Statistically, none of the variables were determined as significant likely due to low response rate and sample size. Nevertheless, the variable-neighbour-is still important as both non-doers and doers mention it as a source of negative influence in their communities.

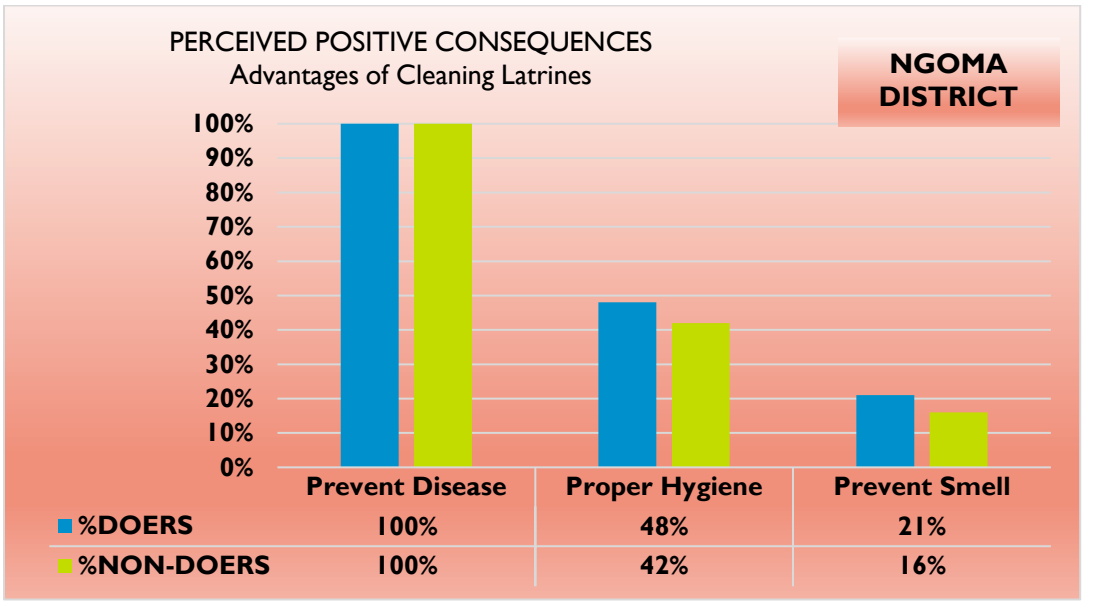
Perhaps, the issue of neighbour has to do with the sharing of latrines in the community. Neighbours could be using toilets of their neighbours and leaving them dirty. This discourages the owners of the toilets from cleaning them.

Barrier Analysis Per Each District

Ngoma

Ngoma

6. Perceived Positive Consequences

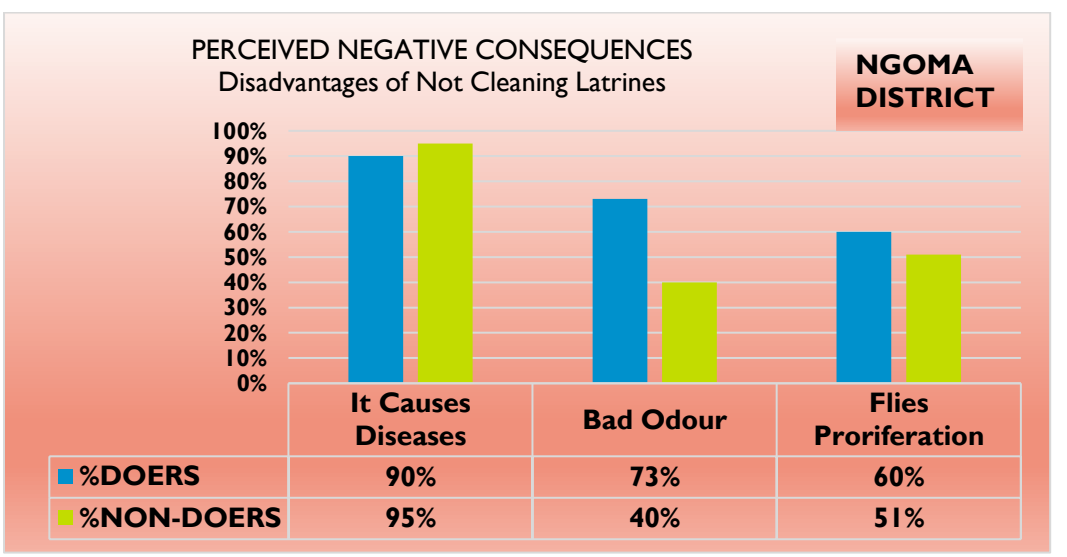


Statistically, doers are 2.4 times (0.031, $p<0.05$) more likely to respond prevention of disease as the advantage of cleaning latrines compared to non-doers

Though not statistically measured as significant, both doers (48%) and non-doers (42%) perceive the promotion of proper hygiene as an advantage for cleaning latrines

In this graph, both non-doers and doers have the same level of knowledge and understanding of the benefits of cleaning latrines

7. Perceived Negative Consequences

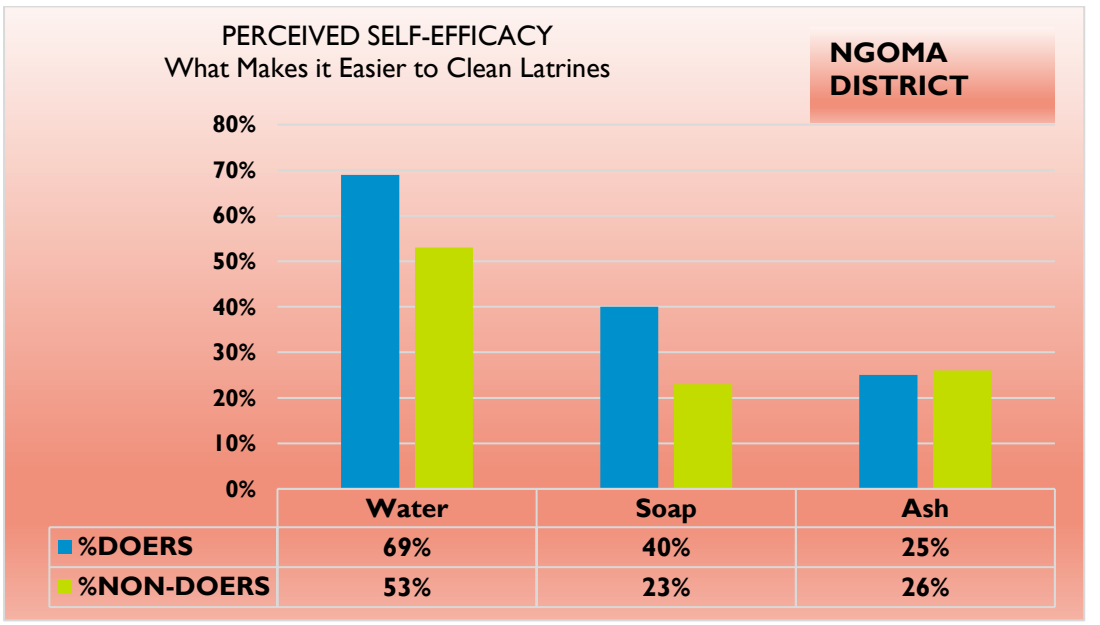


Statistically, doers are 3.6 times (0.001, $p<0.05$) more likely to respond that bad odour is the perceived negative consequence of not cleaning latrines compared to non-doers

The graph also shows a high percentage of both non-doers (95%) and doers (90%) who strongly believe the negative consequence of not cleaning latrines in the causation of disease

Doers (69%) are also concerned about the proliferation of flies compared to non-doers. This shows that doers have knowledge about latrine flies causing diseases. Therefore, more education on how toilet flies can cause illnesses should be emphasized during health talks to non-doers.

8. Perceived Self-Efficacy-Easier



Though these determinants (water and ash) were not calculated as significant since their p values were greater than 0.05, they are still important because both non-doers and doers mention them in high percentages.

69% of doers responded water makes it easier to clean latrines

53% of non-doers responded water makes it easier to clean latrines

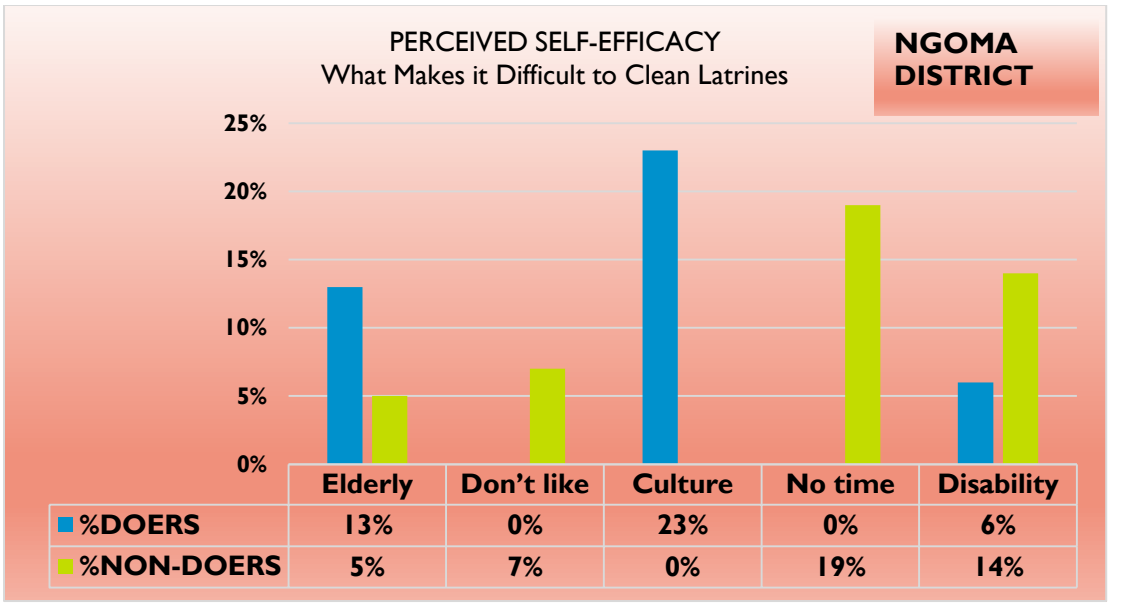
40% of doers responded soap makes it easier to clean latrines

23% of non-doers responded soap makes it easier to clean latrines

Barrier Analysis Per Each District

Ngoma

9. Perceived Self-Efficacy -Difficult



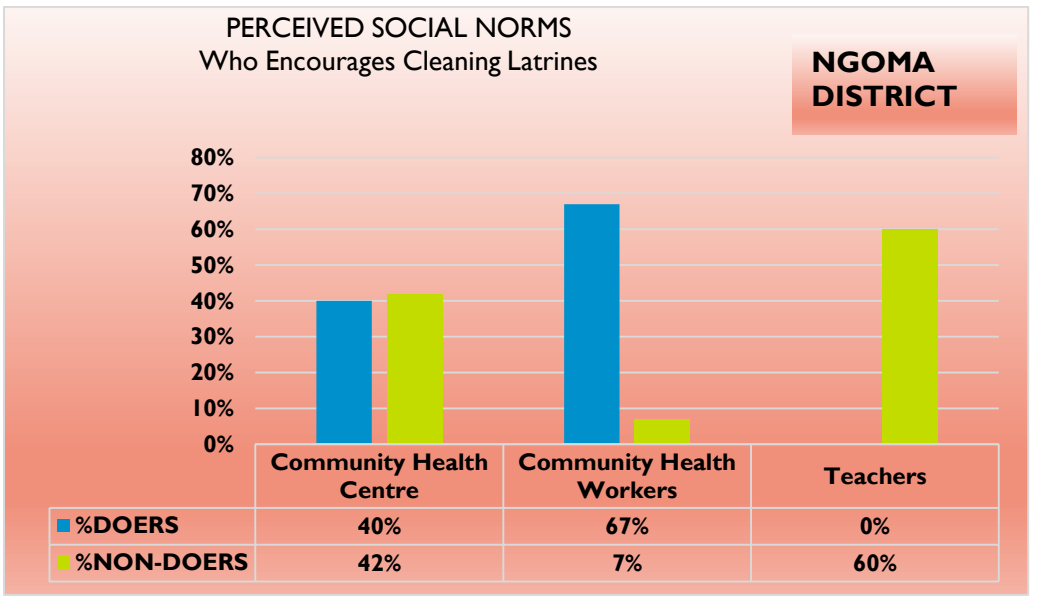
	Elderly	Don't like	Culture	No time	Disability
%DOERS	13%	0%	23%	0%	6%
%NON-DOERS	5%	7%	0%	19%	14%

Doers are 12.7(0.000, p<0.05) times more likely to respond culture makes it difficult to clean latrines compared to non-doers

Non-doers are1.5(0.002, p<0.05) times more likely to respond they lack time to clean latrines compared to doers

It is also important to consider disability (though the percentage is small) as a significant determinant since it's a hindrance to cleaning latrines.

10. Perceived Social-Norms-Positive Influence



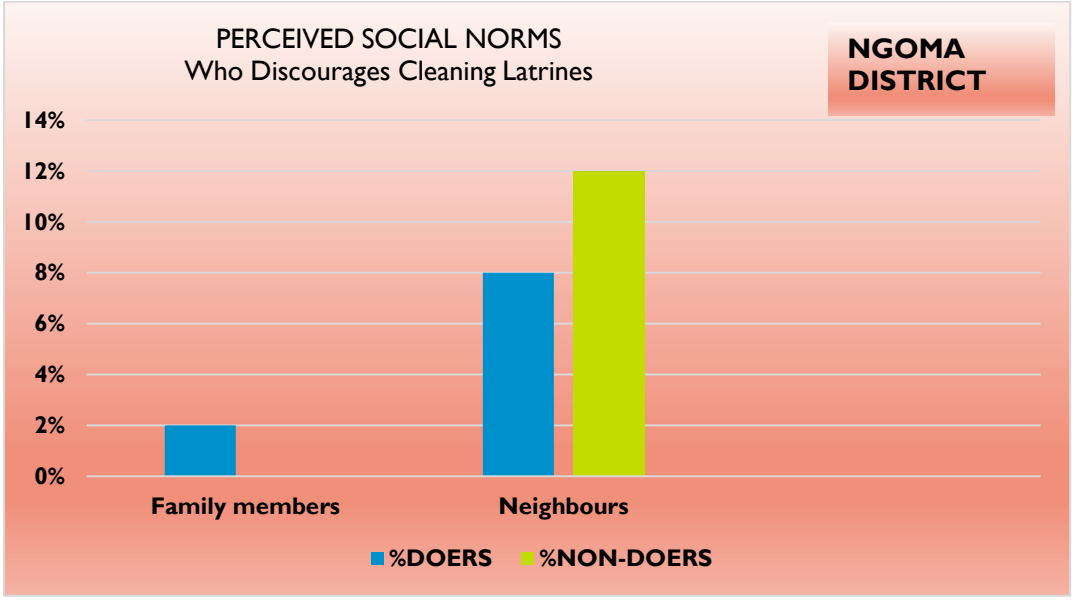
	Community Health Centre	Community Health Workers	Teachers
%DOERS	40%	67%	0%
%NON-DOERS	42%	7%	60%

Doers are 13.4 times (0.000, p<0.05) more likely to respond community health workers as their source of positive influence compared to non-doers

Non-doers are 3.3 times (0.001, p<0.05) likely to respond teachers as a source of positive influence compared to doers

Non-doers mention teachers as their source of positive influence whereas doers mention community health workers and health centres as their source of positive influence. The fact that non-doers mention teachers could mean that community health workers are rarely present in their community to conduct health education on hygiene and sanitation. Whereas, for doers, they may have better access to health centers and community health workers.

11. Perceived Social-Norms-Negative Influence



Statistically, none of the variables were determined as significant likely due to low response rate and sample size. Nevertheless, the variable-neighbour-is still important as both non-doers and doers mention it as a source of negative influence in their communities.

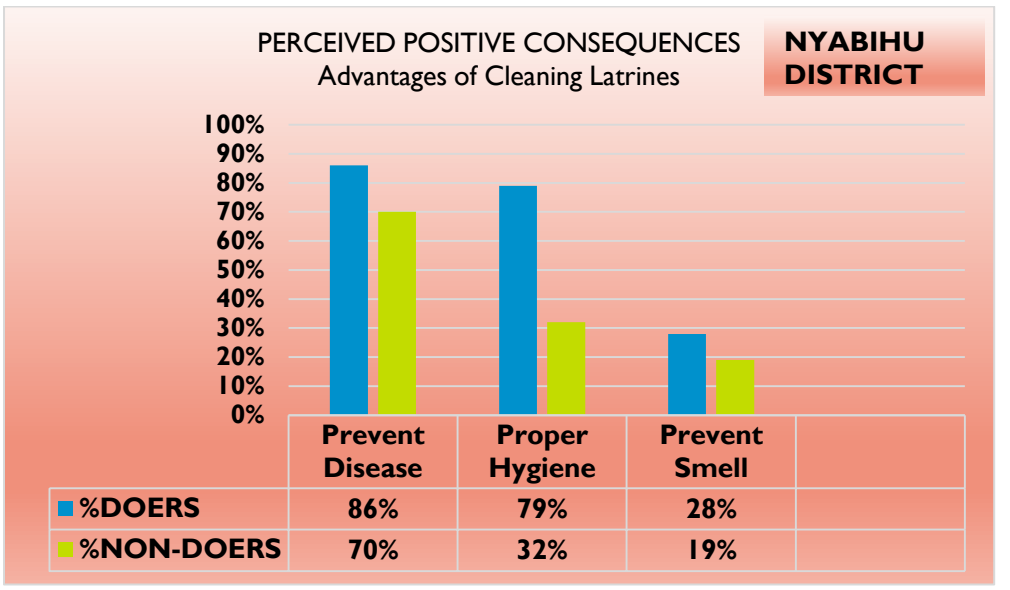
Perhaps, the issue of neighbour has to do with the sharing of latrines in the community. Neighbours could be using toilets of their neighbours and leaving them dirty. This discourages the owners of the toilets from cleaning them

Barrier Analysis Per Each District

Nyabihu

Nyabihu

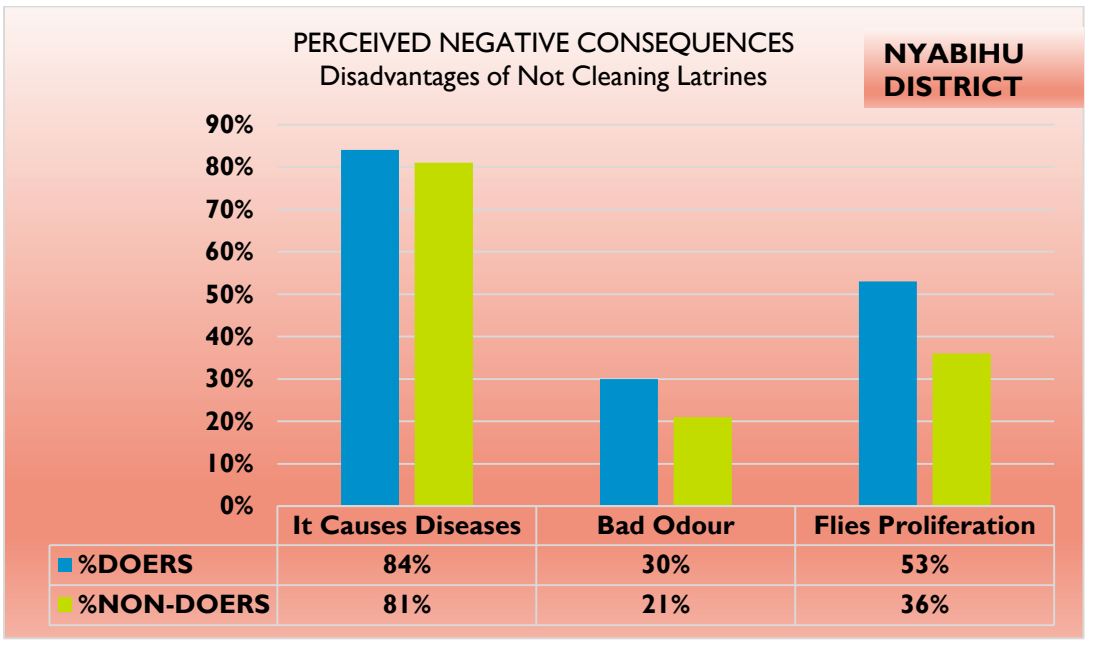
12. Perceived Positive Consequences



Doers are 6.5 times (0.000, p<0.05) more likely to respond proper hygiene as the advantage of cleaning latrines compared to non-doers

The rest of the determinants were not statistically determined as significant but must be considered. Both non-doers (70%) and doers (86%) strongly believe that cleaning their latrines will prevent disease.

13. Perceived Negative Consequences



No statistical significance was determined for the determinant variables.

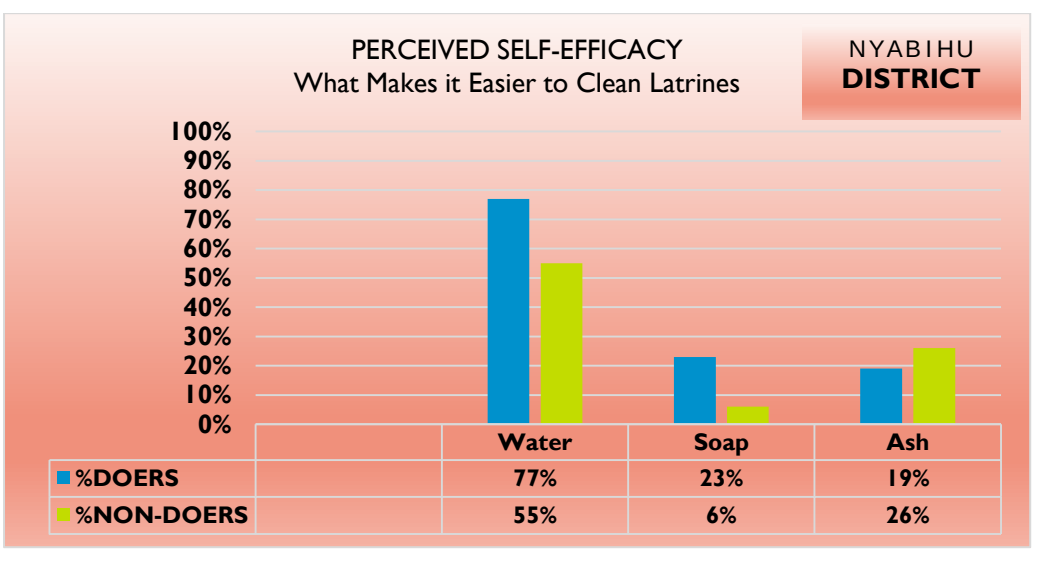
However, 30% doers and 21%non-doers answered bad odour

84% of doers and 81% of non-doers responded cause of disease

53% doers and 36% non-doers answered flies proliferation

These variables, though not statistically determined, are important because they show in a high percentage that both doers and non-doers perceive these determinants as negative consequences of not cleaning latrines

14. Perceived Self-Efficacy-Easier



Doers are 2.4 times (0.027, p<0.05) more likely to respond water makes it easier for them to clean latrines compared to non-doers.

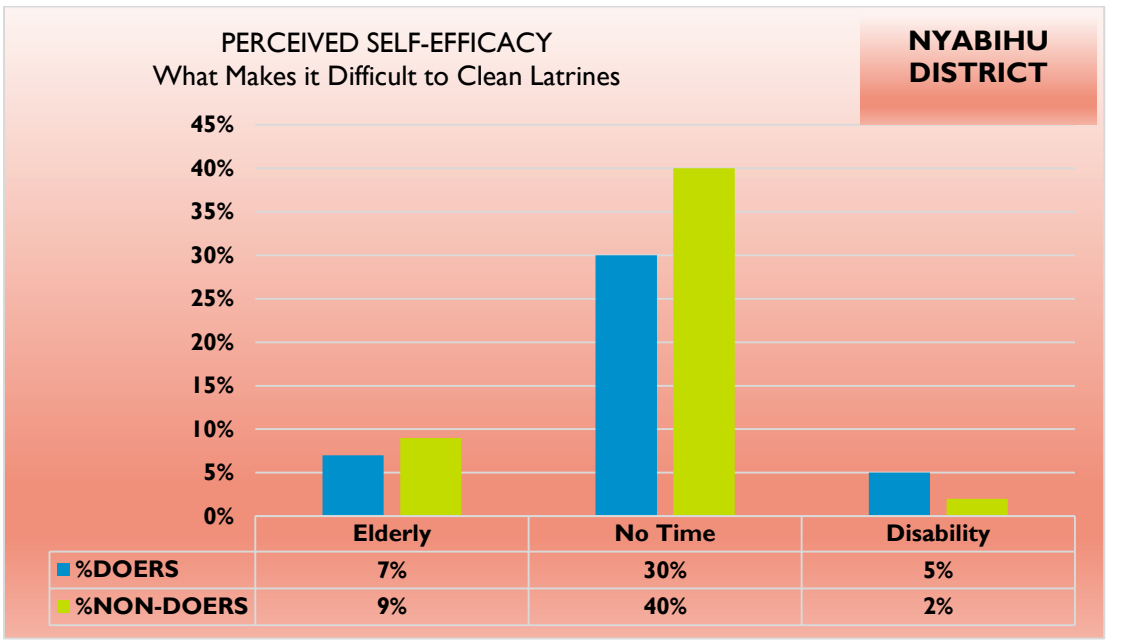
Doers are 3.5 times (0.023, p<0.05) likely to respond soap makes it easier for them to clean their latrines compared to non-doers

Non- doers are 1.2 (0.017, p<0.05) times likely to respond they don't know what makes it easier to clean their latrines

Barrier Analysis Per Each District

Nyabihu

15. Perceived Self-Efficacy-Difficult



	Elderly	No Time	Disability
%DOERS	7%	30%	5%
%NON-DOERS	9%	40%	2%

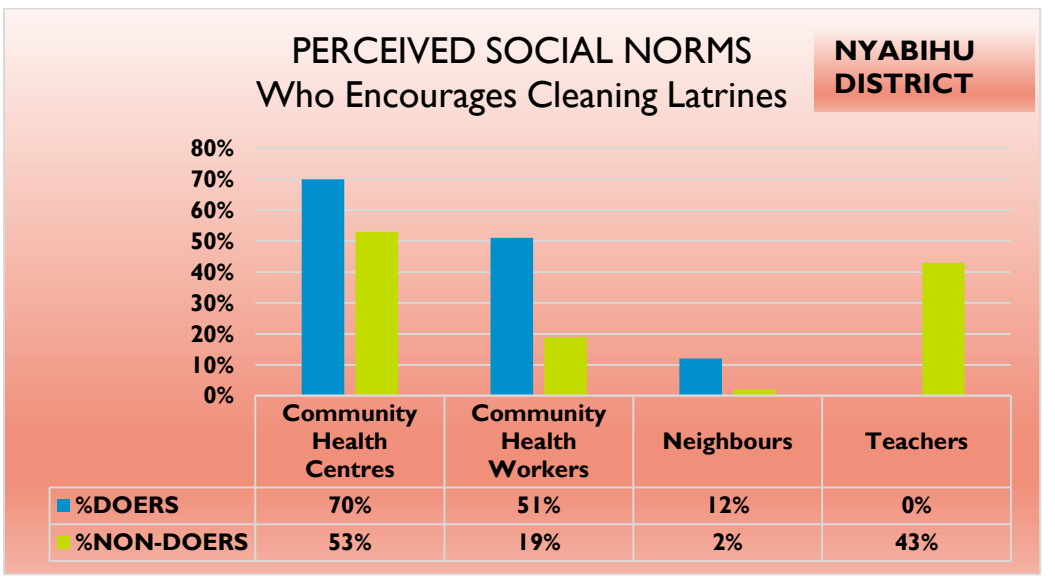
No statistical significance was determined for the following determinant variables.

40% of non-doers responded no time.

9% of non-doers responded old age

From the graph, lack of time, old age and disability are significant determinants, which makes it difficult for people to clean their latrines

16. Perceived Social-Norms-Positive Influence



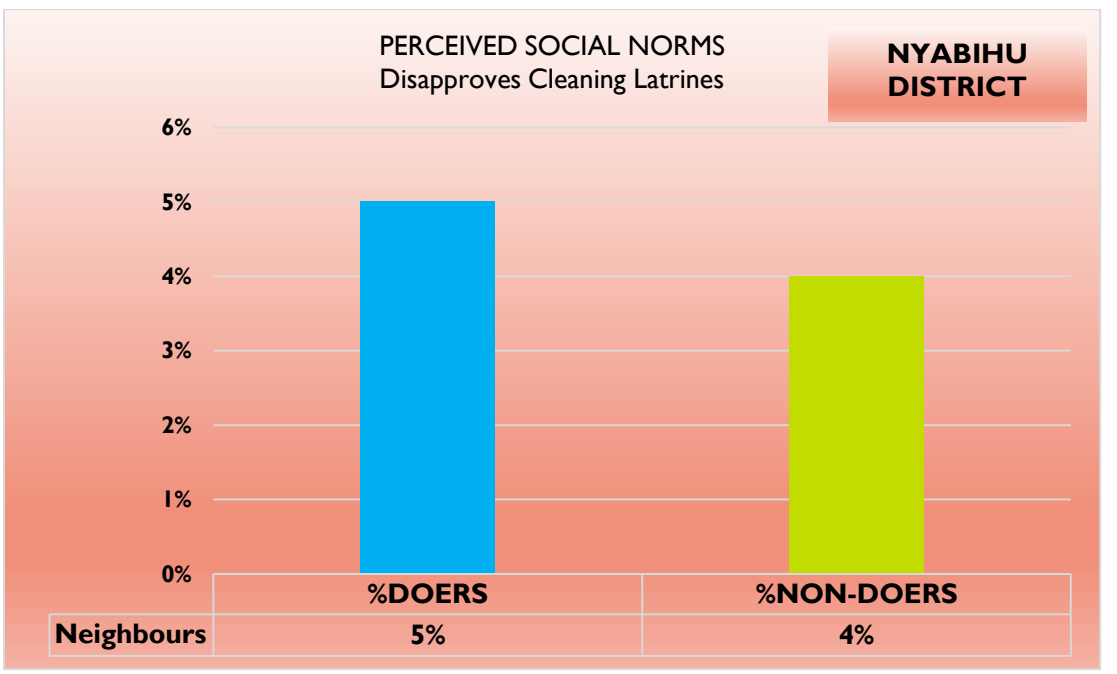
	Community Health Centres	Community Health Workers	Neighbours	Teachers
%DOERS	70%	51%	12%	0%
%NON-DOERS	53%	19%	2%	43%

Doers are 3.6 times (0.001, $p<0.05$) more likely to respond community health workers as their source of positive influence compared to non-doers

Non-doers are 1.2(0.000, $p<0.05$) times likely to respond teachers as a source of positive influence

One important thing to note is the low percentage of non-doers who mention community health workers as a source of positive influence. This could mean that community health workers are not always available in these communities whereas doers have better and easy access to both community health centres and community health workers compared to non-doers. It could also mean that health centres are far from where these non-doers live.

17. Perceived Social-Norms-Negative Influence



	%DOERS	%NON-DOERS
Neighbours	5%	4%

Doers are 3.1 times (0.02, $p<0.05$) likely to mention no source of negative influence compared to non-doers

Non-doers mention neighbours as a source of negative influence

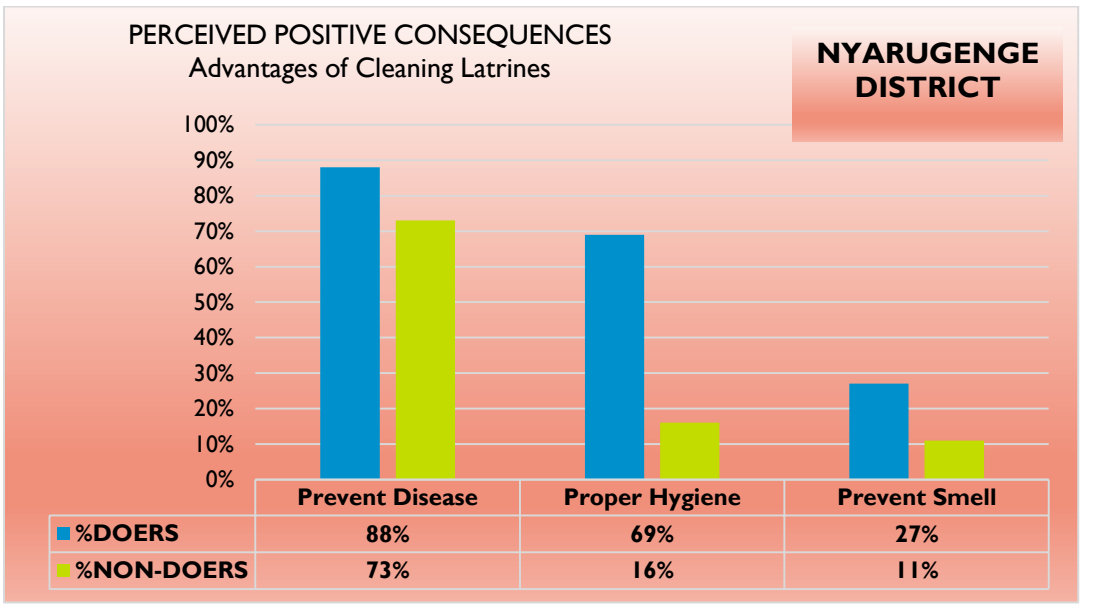
Perhaps, the issue of neighbour has to do with the sharing of latrines in the community. Neighbours could be using toilets of their neighbours and leaving them dirty. This discourages the owners of the toilets from cleaning them

Barrier Analysis Per Each District

Nyarugenge

Nyarugenge

18. Perceived Positive Consequences

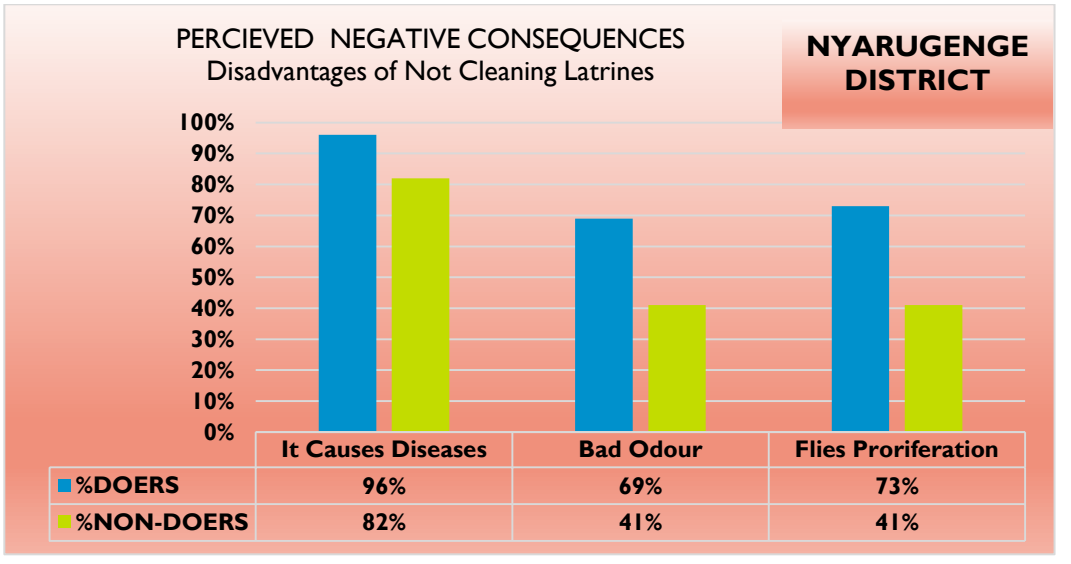


Doers are 2.5times (0.050, p<0.05) more likely to respond prevention of smell compared to non-doers

Doers are 8.2 times (0.000, p<0.05) more likely to respond proper hygiene compared to non-doers

Non-doers are 2.4 times (0.046, p<0.05) more likely to respond they don't know compared to doers

19. Perceived Negative Consequences

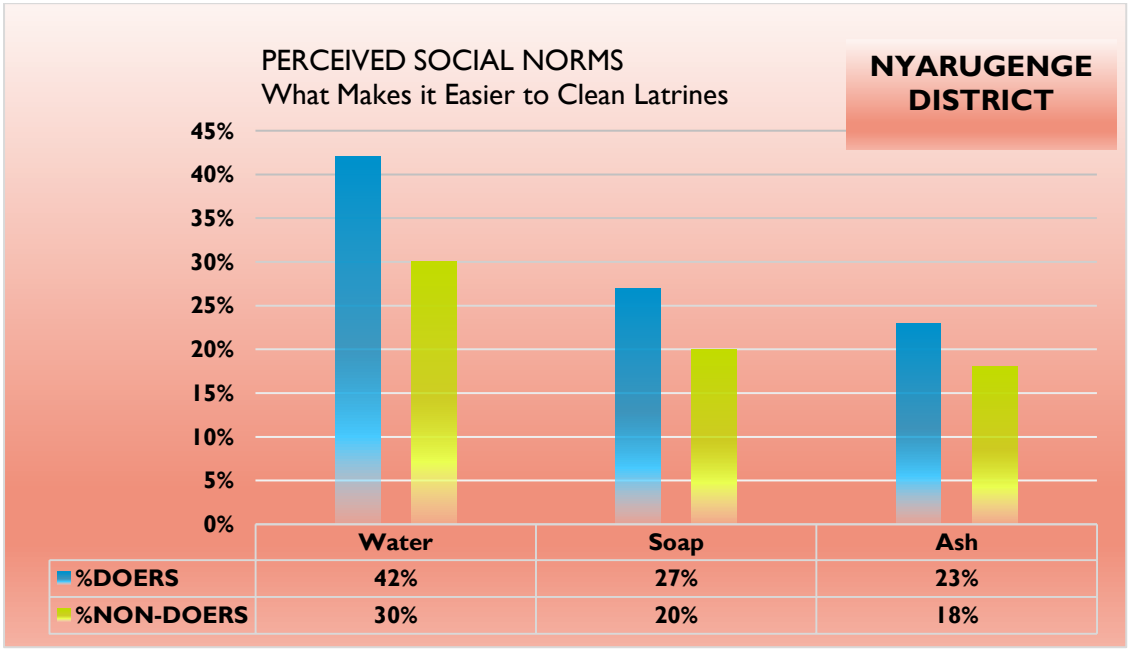


Doers are 2.8 times (0.000, p<0.05) more likely to answer bad odour compared to non-doers

Doers are 1.6times (0.030, p<0.05) more likely to answer cause of disease compared to non-doers

Doers are 3.4 times (0.050, p<0.05) more likely to answer flies proliferation compares to non-doers

20. Perceived Self-Efficacy-Easier



42% of doers responded that water makes it clean latrines

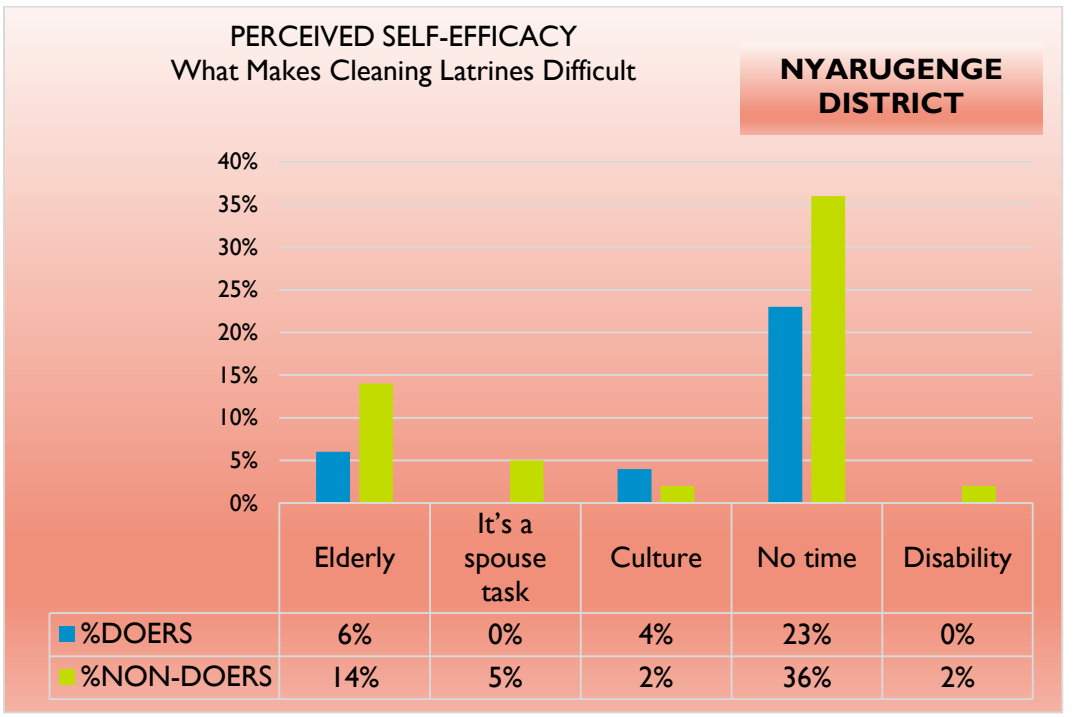
30% of non-doers responded water makes it easier to clean latrines

18% of non-doers responded ash makes it easier to clean latrines

Barrier Analysis Per Each District

Nyarugenge

21. Perceived Negative Consequences-Difficult

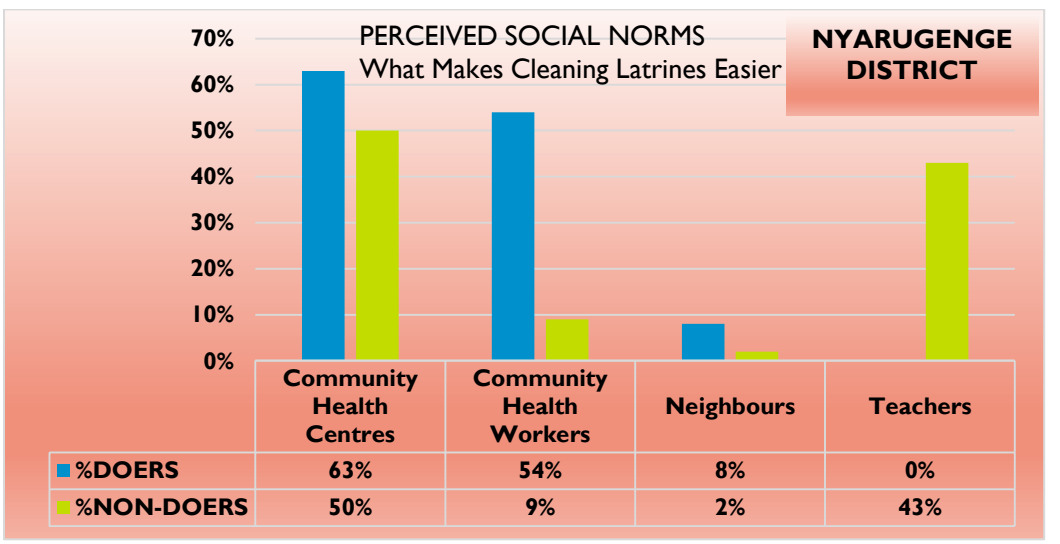


36% Non-doers and 23% doers responded they lack time to clean latrines

14% of non-doers perceive old age as a concern

Though the percentage is low, the issue of disability and culture should be further investigated for non-doers (2%).

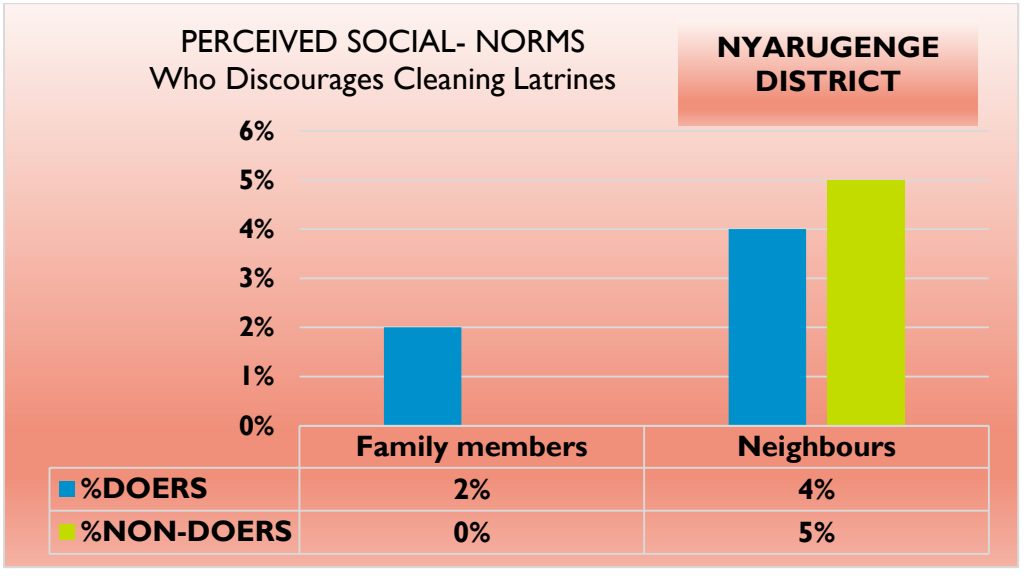
22. Perceived Social-Norms-Positive Influence



Doers are 7.5 times (0.000, $p<0.05$) more likely to respond community health workers as their source of positive influence compared to non-doers

Non-doers are 1.2 times (0.000, $p<0.05$) likely to respond teachers as a source of positive influence compared to doers

23. Perceived Social-Norms-Negative Influence



No statistical significance

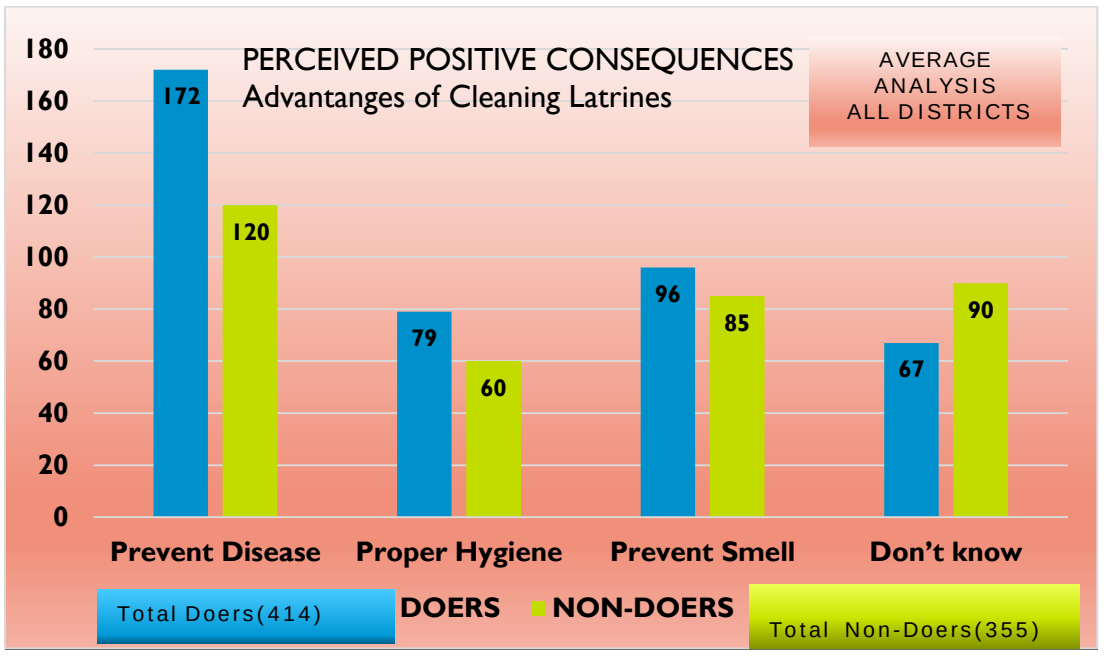
However, both non-doers and doers mentioned neighbours as a source negative influence

Perhaps, the issue of neighbour has to do with the sharing of latrines in the community. Neighbours could be using toilets of their neighbours and leaving them dirty. This discourages the owners of the toilets from cleaning them

12. Average Barrier Analysis for Four Districts
Nyanza, Ngoma, Nyarugenge, Nyabihu

Introduction: This is an average analysis of all four combined provinces.

24. Perceived Positive Consequences



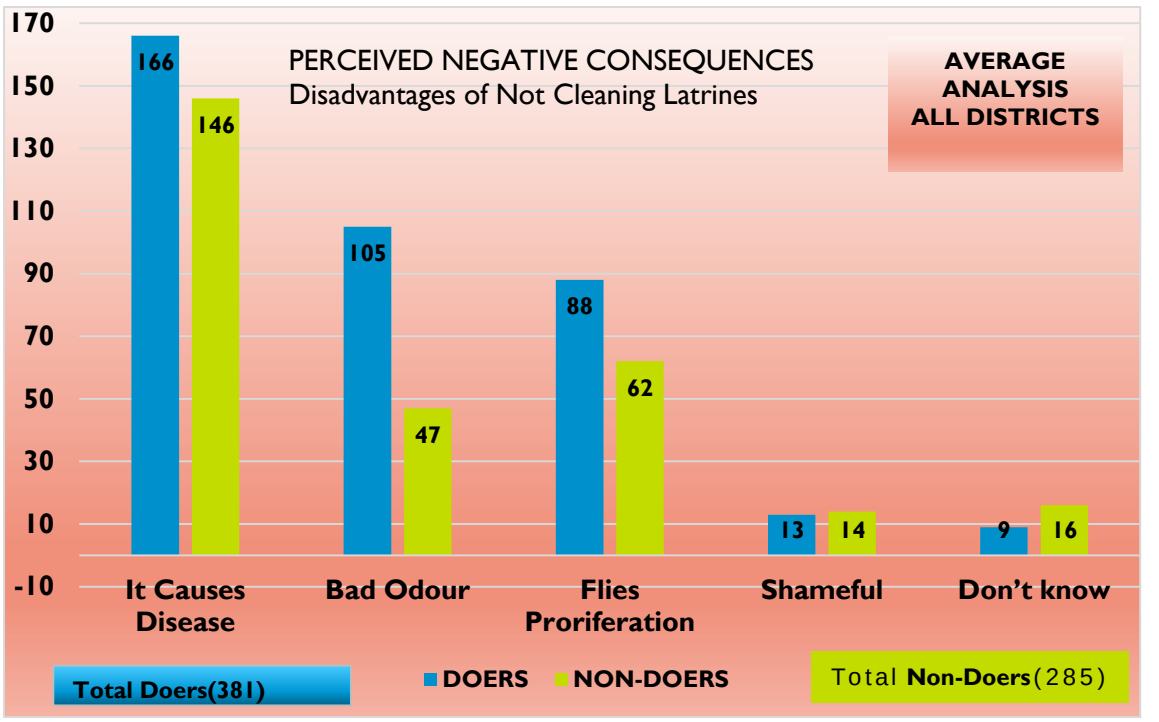
Statistically, doers were 1.3 times (0.016, $p<0.05$) more likely to respond prevention of disease as the advantage for cleaning latrines

Non-doers are 1.7 times (0.00, $p<0.05$) more likely to respond proper hygiene compared to doers

The graph shows that across all four provinces, doers have a better understanding of the benefits of cleaning latrines compared to non-doers.

The number of doers who mention prevention of disease as the advantage of cleaning latrines is higher compared to that of non-doers. This likely means that doers have strong knowledgeable in the sanitation and hygiene topic compared to non-doers.

25. Perceived Negative Consequences



Statistically, doers are 1.8times (0.000, $p<0.05$) more likely to respond bad odour as the negative consequence of not cleaning latrines compared to non-doers

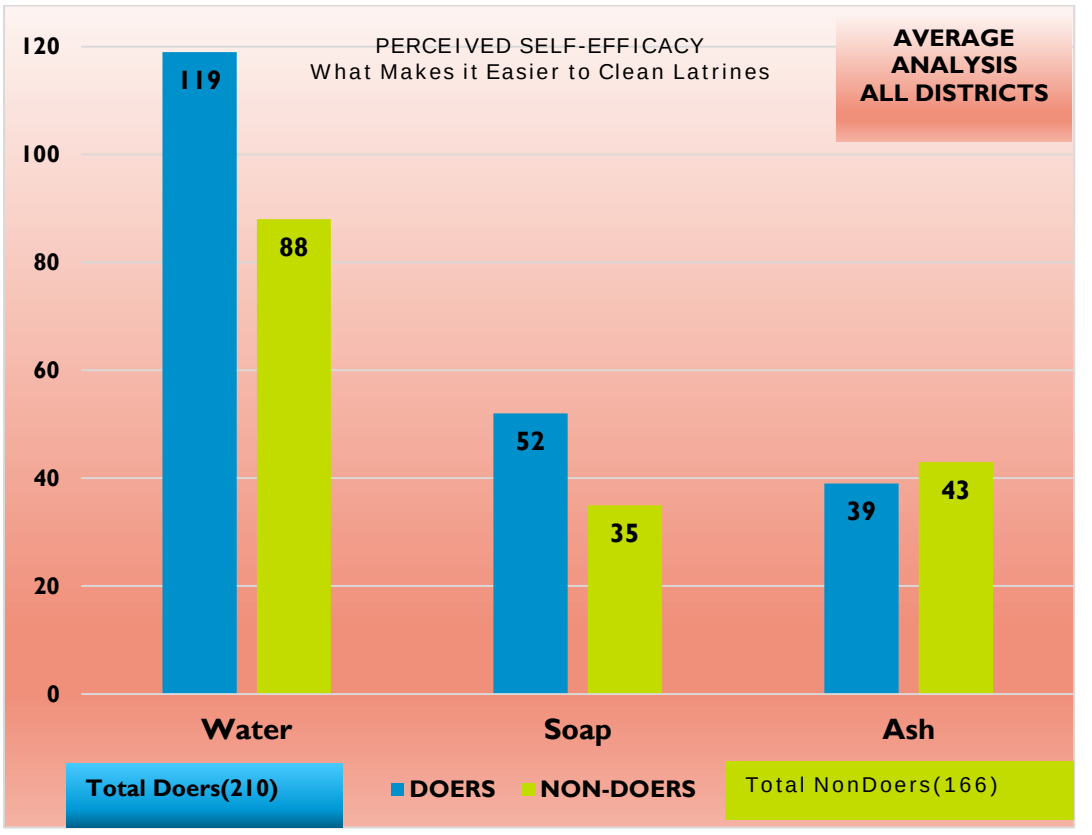
Non-doers are 1.3 times (0.03, $p<0.05$) times more likely to respond the cause of disease as the negative consequence of not cleaning latrines compared to doers

Across all four combined provinces, we can conclude that both non-doers and doers have a good understanding of the negative consequences of not cleaning latrines.

Average Barrier Analysis for Four Districts
Nyanza, Ngoma, Nyarugenge, Nyabihu

Introduction: This is an average analysis of all four combined provinces.

26. Perceived Self-Efficacy-Easier



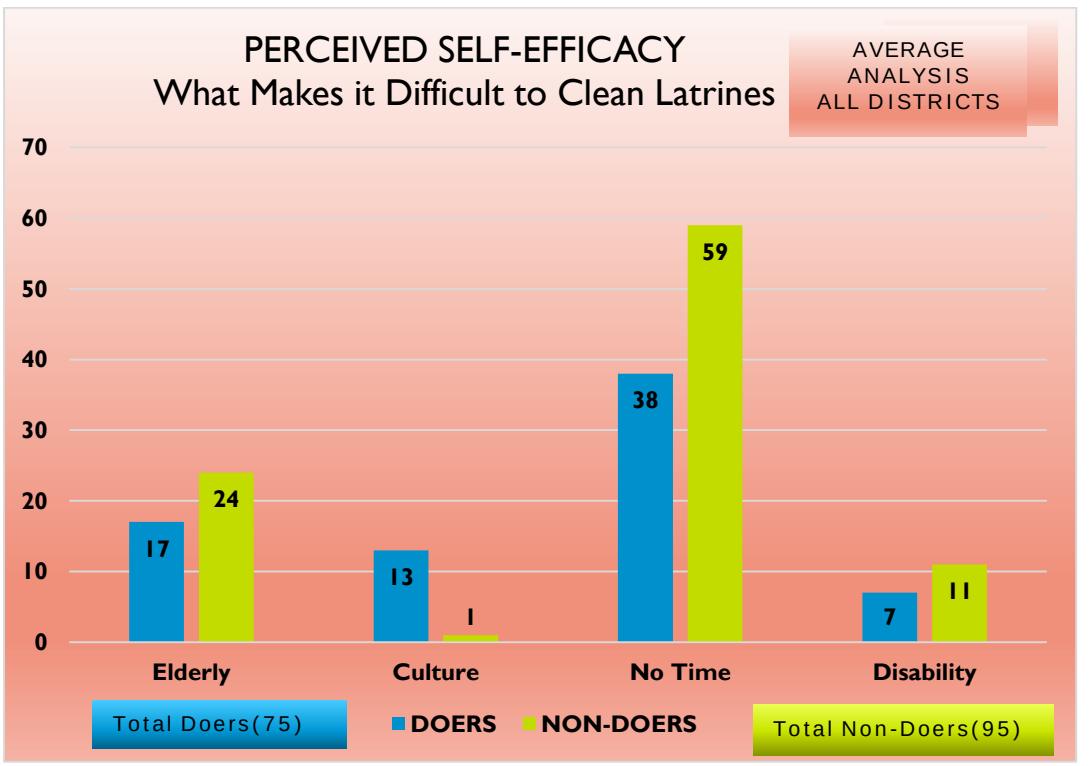
The statistical analysis showed insignificant p-values for water, soap and ash. However, the number of people who perceive these determinants to be important in latrine cleaning is relatively high and therefore must be considered

In this graph, it is important to note that non-doers (43 people) emphasise ash more than doers(39people). This may reflect access to resources as an issue. Using ash is the last resort for non-doers since they do not have the finances to buy cleaning materials, whereas doers emphasise soap more than non-doers. This could mean that doers have the means of buying cleaning materials or they simply prefer using soap over ash

The second important thing to note is that both non-doers(88people) and doers(119people) emphasised access to water, a necessity that makes it easier for them to clean their latrines.

Non-doers may not be cleaning their latrines because they lack a good source of water and the finances to buy cleaning materials. Whereas, doers are cleaning their latrines because they have access to resources or cleaning their latrines is customary for them even when they may not have cleaning materials

27. Perceived Self-Efficacy-Difficult



Doers are 7.6(0.000, p<0.05) times more likely to respond that culture makes it difficult for them to clean their latrines compared to non-doers
Though not statistically measured, disability, old age and lack of time made it difficult for both doers and non-doers are a concern

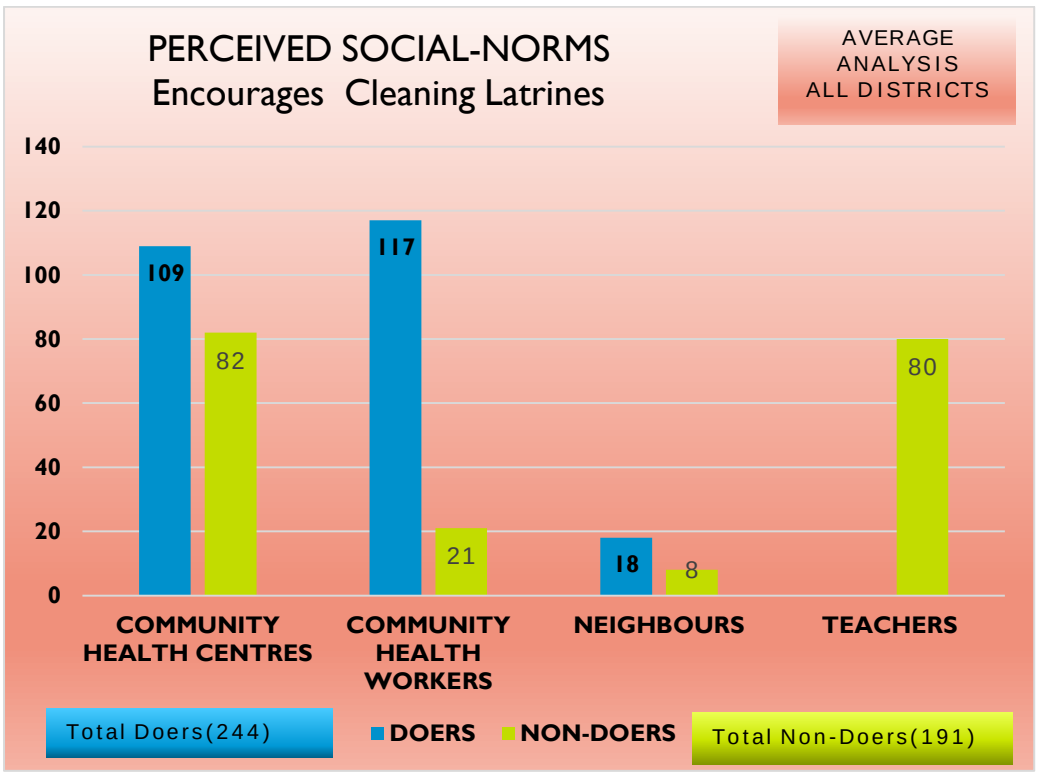
Though doers mention disability and old age as hindrances to cleaning their latrines, they continue to clean them likely because they have people who help them compared to non-doers

Doers also mention culture more than non-doers. By culture, they could mean the negative perceptions that people have toward latrines, whereby they strictly view the toilet as a place to "dump dirt" and not a place that also needs cleaning.
To conclude, issues such as disability, old age and lack of time are significant factors that make it difficult to clean latrines.

Average Barrier Analysis for Four Districts
Nyanza, Ngoma, Nyarugenge, Nyabihu

Introduction: This is an average analysis of all four combined provinces.

28. Perceived Social-Norms-Positive Influence



Doers are 5.3 times (0.000, p<0.05) more likely to respond community health workers as their source of positive influence compared to non-doers

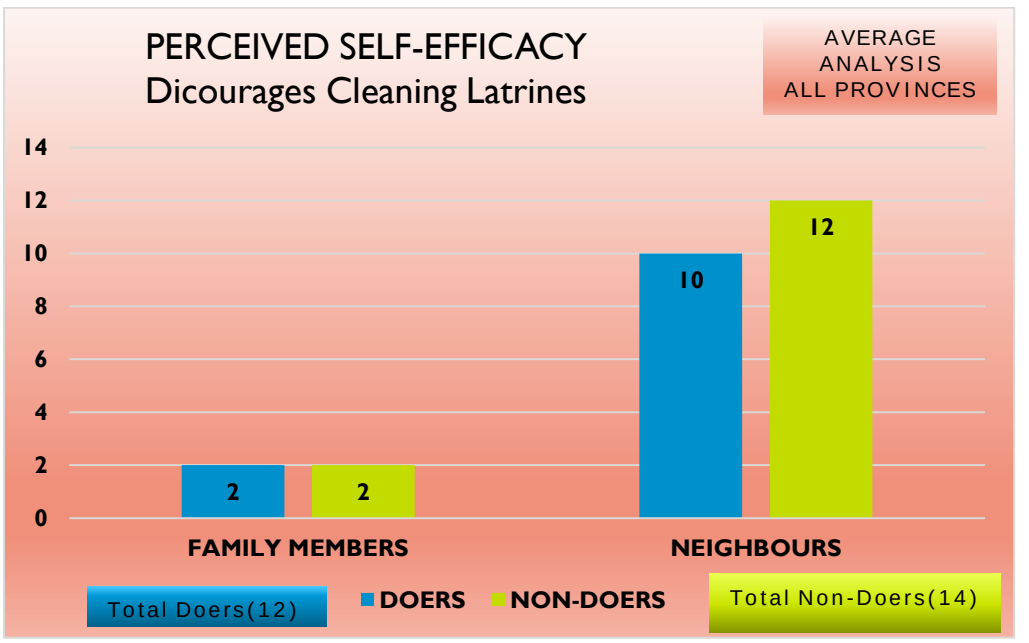
Non-doers are 4.1 times (0.000, p<0.05) likely to respond teachers as a source of positive influence compared to doers

The most important thing to note is that doers mention both health centres and health workers but not teachers.

Non-doers mention teachers as their source of positive influence compared doers. This could mean that the children of non-doers are receiving health education on latrine cleaning from school and share that knowledge with their parents.

To conclude, doers may have easy access to health centres and health workers readily available in their communities to provide them with sanitation education. But non-doers may not always the presence of community health workers to educate them on sanitation community health centres as a resource. Or the distance that non-doers have to walk to the health centres is far.

29. Perceived Self-Efficacy-Negative Influence



No statistical significance for the variables

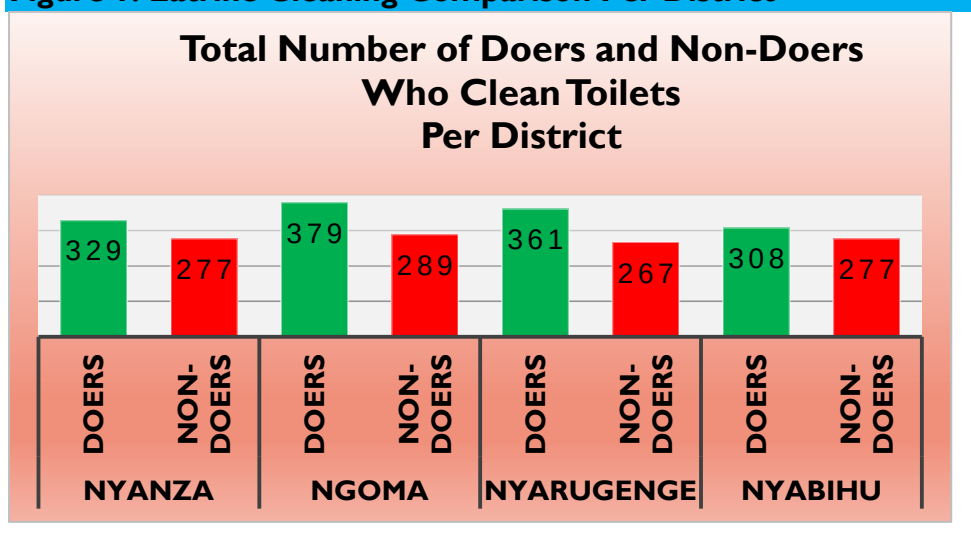
However, both non-doers (86%) and doers (83%) do mention neighbours as a source negative influence

13. Results and Conclusion
Nyanza, Ngoma, Nyarugenge, Nyabihu

Results: A total of six determinant questions were asked, but only self-efficacy and social norms were chosen as strongest determinants that can best answer why non-doers are not cleaning their latrines. For self-efficacy, non-doers were asked two questions: What makes it easier or difficult to clean your latrines at home? Non-doers responded:1) water and ashes make it easier for them to clean their latrines and: 2) disability, old age, culture and lack of time makes it difficult to clean their latrines. For social norms, non-doers were asked two questions: Who are the people with the most favorable or unfavorable opinion of you cleaning your latrines at home? Non-doers responded:1) teachers are the people with the most favorable opinion of them cleaning toilets and: 2) neighbours were a perceived source of negative influence. When non-doers and doers are compared, non-doers were likely to mention ashes more than soap whereas doers were likely to mention soap. Results show that non-doers perceive teachers more than community health workers to be the people who positively encourage them to clean their latrines. On other hand. doers perceived community health workers and community health centres as a source of positive influence in cleaning latrines.

In terms of latrine cleaning, the following graph shows the comparison of doers and non-doers per district.

Figure 1: Latrine Cleaning Comparison Per District



BA results show that Ngoma province has the highest number of both doers and non-doers who clean and don't clean their latrines.

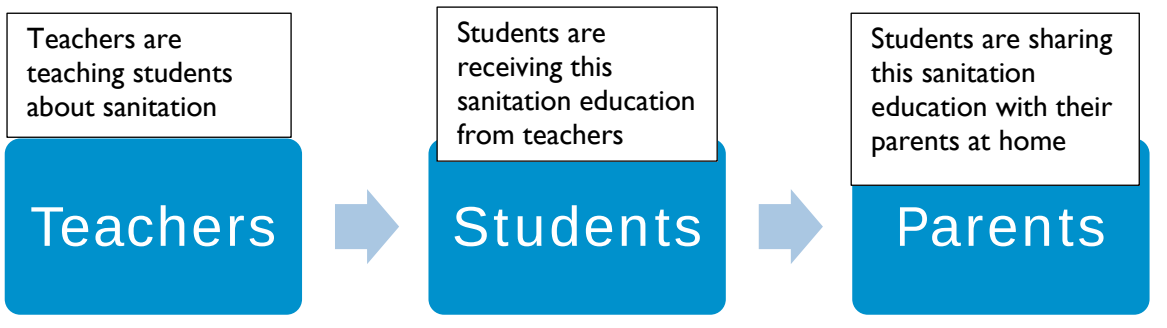
Nyarugenge province has the second highest number of doers who clean toilets and has the least number of non-doers who do not clean toilets.

Nyanza province has the third highest number of doers who clean their toilets and second highest with non-doers who do not clean their toilets.

Nyabiru province has the least number of doers who clean toilets and is also second highest with

Latrine Cleaning Results Discussion: Across all four provinces, Ngoma district has the highest number of both doers and non-doers who clean and don't clean their latrines. Ngoma has the highest number of non-doers likely because it has relatively a high number of non-doers with disability (14%) as shown by this BA, which makes it difficult to clean latrines. The issue of disability was also confirmed by the data from National Institute of Statistics Rwanda, which determined that Ngoma is among the districts with a high percent of people with disability at 3.3%. Ngoma district also has the highest number of doers, though data from NSR indicated that 86.1% of people are unemployed, only 32.5% have access to water, and many walk about an hour to access health and basic resources. Nevertheless, something vital to note about Ngoma district is its access to 12 health centres and 13 health posts per population of 323,000. From this information, we can conclude that people in Ngoma are convinced that cleaning their latrines is beneficial for their community, hence they clean their latrines despite the challenges they face in terms of access to resources. In addition, BA results revealed that Ngoma has the highest number of non-doers (60%) who mention teachers as a source of positive influence compared to Nyanza, Nyarugenge and Nyabihu. This could mean that the children of non-doers are receiving some form of health education from school and are sharing it with their parents, who many not be necessarily motivated to clean latrines.

The figure below attempts to explain why non-doers perceive teachers as a source of positive influence in latrine cleaning.



All provinces mentioned teachers as a source of positive influence:

Ngoma (60%), Nyanza (58%), Nyabihu (43%), Nyarugenge(43%)

This diagraph could be a possible explanation for why teachers are perceived as a source of positive influence by non-doers.

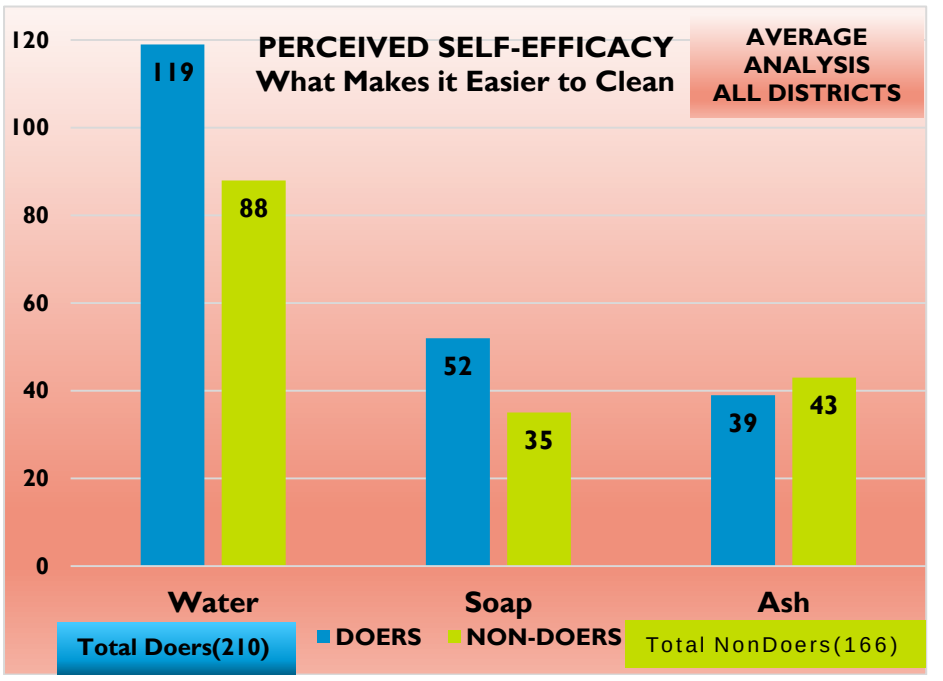
Nyadenge province has the second highest number of doers who clean toilets and has the least number of non-doers who do not clean toilets. According to the National Institute of Statistics Rwanda, 90% of the population in Nyarugenge district are employed and 94% have access to water and only 9% of people are unemployed. Nyarugenge also has the highest number of health centres (10) and health posts (62) among the four districts. In general, Nyarugenge has better access to resources compared to Nyabihu, Nyanza and Ngoma districts. This data confirms the BA results that indicated Nyarugenge to have the least number of non-doers. We should also note that Nyarugenge has 2.7% of people with disability, which is second high from Ngoma (3.3%) and perhaps, some of these non-doers are part of this 2.7%.

Nyanza province has the third highest number of doers who clean their toilets and second highest with non-doers who do not clean their toilets. According to the BA results, Nyanza district has the highest district number of non-doers who mention disability (24%) and doers (4%) compared to other three districts. This BA result is confirmed by the NSR, which indicated that Nyanza has 6.7% of people with major disability and is the

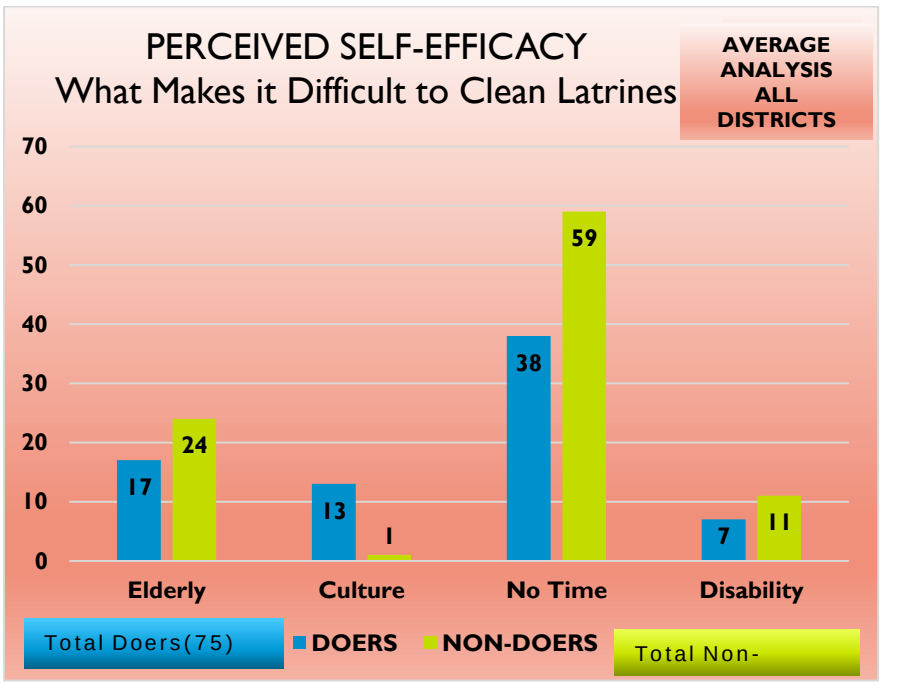
second highest district in the country. The NSR also indicates that Nyanza 's access is below the national expectation; 28% people live in extreme poverty and half of the population lives in poverty and is first place with highest percent of orphans in the country. However, 82% of population is employed in agricultural jobs, but most working groups are youth aged 16. In addition, school attendance is low, despite that in this BA, non-doers mentioned teachers (58%) to be a source of positive influence in latrine cleaning. Despite Nyanza's poor access to resources, it does have good access to health centres (17) and health posts (30) compared to Nyabihu and Ngoma. Nyanza is second highest from Nyarugenge with more health posts and health centres. In addition, our BA results showed that Nyanza is the only district with a higher percent of non-doers with old age (53%) compared to other three districts. As a district, Nyanza is doing well in terms of latrine cleaning compared to Nyabihu district, which has 70-80% access to water and other resources that advantages that Nyanza doesn't have.

Nyabihu province has the least number of doers who clean toilets and is also second highest with non-doers who do not clean toilets. Surprisingly, Nyabihu has about 70-80% access to water and are within 15minute walking distance from the next source of water. Under this revelation, we expect Nyabihu to have the highest number of doers, but it is not the case. According to the National Institute for Statistics Rwanda, Nyabihu has 1.6% of disability, which is lowest among the four districts. This is confirmed by our BA as this district has the lowest number of non-doers (2%) who mention disability as a barrier to cleaning their latrines. For this district, it should be noted that it has the highest number of non-doers who mention lack of time (40%) as reason for not cleaning their latrines.

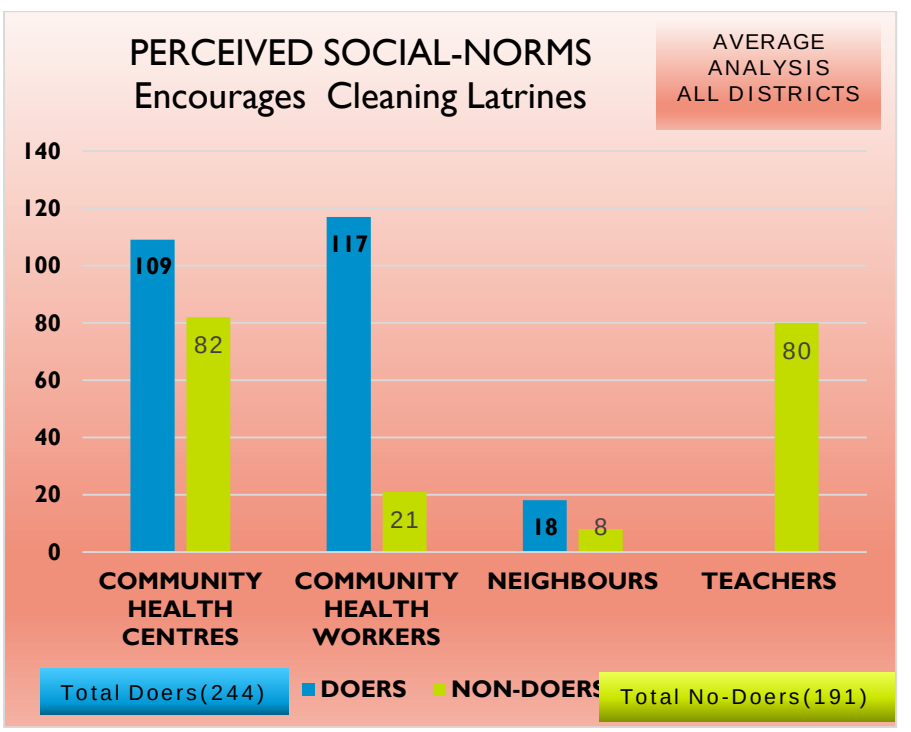
The graphs below show and summaries the average analysis for the chosen two determinants (social-norms and self-efficacy) that best show why non-doers aren't cleaning their latrines.



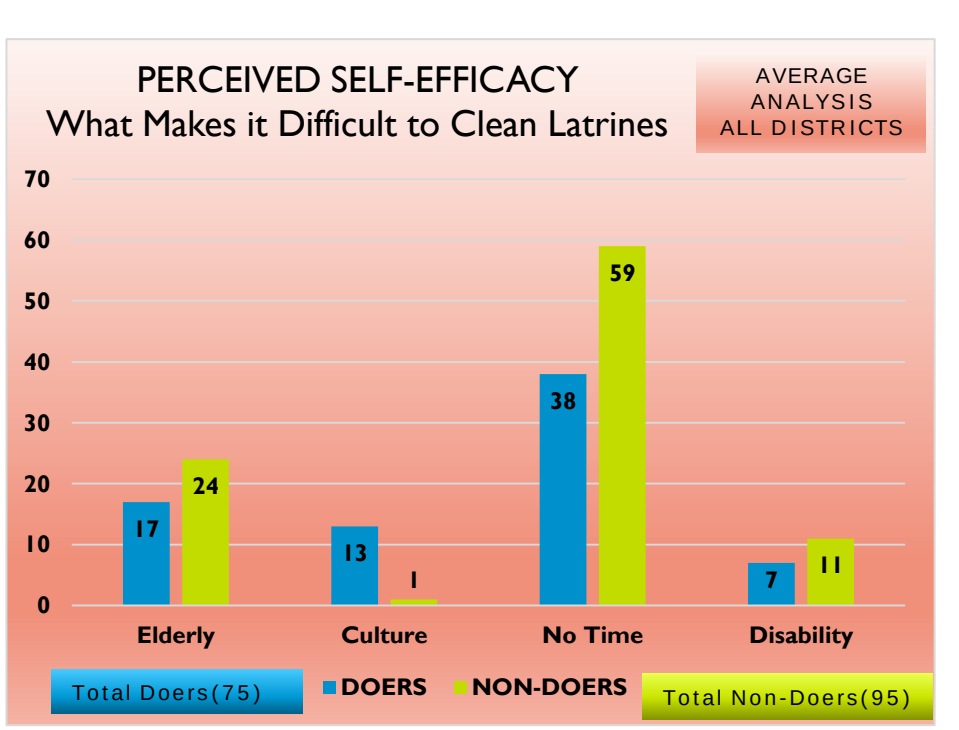
This graph shows that non-doers are more concerned with water and ash.



Non-doers are more concerned with lack of time, disability and old age compared to doers.



Teachers and community health centres are a source of positive influence for non-doers.



Non-doers are concerned with disability, lack of time and old age.

Results and Conclusion
Nyanza, Ngoma, Nyarugenge, Nyabihu

Discussion: Beyond the issues that non-doers and doers perceived as challenges to cleaning latrines, two questions that must be answered: Why are doers motivated to continue cleaning their latrines despite these challenges? And why are non-doers not cleaning their toilets and what exactly do they lack? There are three possible reasons why doers are motivated to clean their latrines despite the challenges they face:1) they likely believe their susceptibility to disease is high, 2) latrine cleaning is customary and habitual for them, and:3) it could be that community leaders punish community members who do not clean their latrines. Secondly, there are three possible reasons why non-doers are not cleaning their latrines:1) they believe their susceptibility to disease is low (though in actuality it is high), 2) they prioritise self-sustenance over latrine cleaning, and 3) they simply lack motivation to clean latrines. These assumptions are an attempt to think beyond the challenges non-doers mentioned as barriers to cleaning their latrines. And there could be more factors beyond the ones mentioned.

Project Revelations: The first revelation is that non-doers lack good access to water and money to buy cleaning materials. Because of this, it is likely that non-doers are prioritising self-sustenance over latrine cleaning.

The second significant revelation is the issue of old age, disability, lack of time, and culture, which makes it difficult for non-doers to clean their latrines. Both non-doers and doers across all provinces perceived disability and old age as hindrances to cleaning their latrines. For these specific issues, people of old age and those with a disability must be prioritised in latrine cleaning activities. An opportunity for action is to form a committee of helpers who can help the elderly and disabled with latrine cleaning.

The third revelation is the positive influence teachers have on non-doers. Non-doers were likely to mention teachers and community health centres as a source of positively influence. Three conclusions can be made from thsi:1) the presence of community health workers is low in places where there is a high number of non-doers, 2) it is possible that the children of non-doers are receiving sanitation and hygiene education from school and share that knowledge with their parents and 3) it could be that teachers are acting as agents of positive change and advocates of latrine cleaning within the community. An opportunity for action is to make children/youths a priority and target population for latrine cleaning activities in the community. Attention can be also focused on engaging teachers in latrine cleaning activities and efforts.

The fourth revelation is that non-doers perceive lack of time as something that makes it difficult for them to clean their latrines. Lack of time can possibly mean that non-doers perceive cleaning latrines to be a waste of time and not a priority. The big question is, what is it that non-doers are devoting their time on? Is it that they are devoting their time in activities that bring them sustenance at home?

The fifth revelation is that both non-doers and doers perceive culture to make it difficult for them to clean their latrines. For culture, it could be about their perception on the value of latrines. Culturally, non-doers could be perceiving the toilet as a place where they simply "dump dirt" and needs no cleaning. If this is true, non-doers place less value on the latrine itself, which influences them to not clean it. The last significant revelation is neighbours being the source of negative influence for non-doers. Here, the issue could be about communal/sharing toilets. The likelihood of shared toilets being dirty is high. And people may commit to cleaning an owned latrine than a public latrine. Encouraging communities' members to build their own latrines might be the solution.

Opportunities of Action:
From the BA results, there are opportunities of action to be considered in ensuring that people have the resources needed to clean their latrines. The first opportunity of action is to increase water access to districts with water scarcity. If people have less access to water or fetch their water far from where they live, the likelihood of them using that water to clean latrines is low. Rather, they will use it for drinking and cooking. Secondly, consider income generating activities for community members to earn money to purchase cleaning materials and this would also help them with providing for their family. Do so while at the same time engaging them in latrine cleaning activities. Third, increase more sanitation education in communities, emphasizing how dirty toilets make communities highly susceptible to disease. Fourth, people of old age and with disability must be prioritized in latrine cleaning activities. And consider forming a committee of helpers who assist this population with latrine cleaning. Fifth, children and youths must be prioritized in latrine cleaning activities because they are likely to serve as positive influencers among their peers and likely to clean toilets compared to adults. Sixth, continue emphasizing the use of ashes to reduce toilet flies and the making of woven toilet covers/lids to reduce flies and toilet smell. Lastly, identify motivation factors that encourage community members to clean their latrines.

Project Gaps and Limitations
Beyond the determinants that were assessed to identify factors contributing to lack of latrine cleaning, this project has some limitations. The first limitation is lack of gender assessment data specifically showing the exact number of respondents who were non-doers and doers or children (boys or girls). With this data, results could have showed us the specific gender of non-doers and doers. It could have been that most non-doers are females, since it's most women and girls who perform domestic work at home compared to men or boys.

The second limitation is that not many determinants were tested. For example, we believe that the community's belief in their susceptibility to disease can reveal reasons behind non-doers not cleaning latrines.

The third limitation is that this BA project is not representative of all people within the identified districts. The sample size for the BA analysis was relatively small per each district.

These limitations are possible confounding factors to why non-doers aren't cleaning their latrines.

Conclusion:

There are several conclusions we can made from the BA results. The first conclusion is that the issue of latrine cleaning has to do with lack of access to resources. But the issue is also beyond access to resources. It could be that people simply do not like cleaning latrines and are making that choice. For instance, Nyanza district had the third highest number of doers, but half of its population lives in poverty, access to water is below average, orphan hood is high, and disability is high. But Nyabihu, which has more than 70% access to water and employment is high, disability is low, has the least number of doers. Could this mean cleaning latrines is perceived as a matter of choice?

The second conclusion is that community leaders within these communities likely do not clean their latrines or don't have latrines. If leaders lead by example, the whole community has positive models to follow. Therefore, latrine cleaning activities must ensure that community leaders are in fact cleaning their latrines and have latrines themselves, before telling the mass to clean their latrines.

The fourth conclusion is that positive language matters. If community leaders and community health workers continue to use positive language around latrine cleaning, non-doers may be encouraged to clean their toilets. Also, community health workers at health centres or who live within these communities must also clean their latrines, this way community members will likely listen to their messages about latrine cleaning.

14. Bridge Activities for Combined Districts
Nyanza, Ngoma, Nyarugenge, Nyabihu

DETERMINANT	SIGNIFICANT RESPONSE/CODE	DOERS VS. NON-DOERS	BRIDGE TO ACTIVITY	ACTIVITY
LATRINE CLEANING				
Perceived Positive Consequences	Prevention of Disease	Doers are 1.3 times more likely to give this response than non-doers	Increase perception about sanitation and negative consequences of not cleaning latrines	Create community groups made of both non-doers and doers to teach the community about the importance of cleaning latrines
	Lack of Knowledge (Don't Know)	Non-doers are 1.7 times more likely to give this response than doers		
Perceived Negative Consequences	Causes Disease	Non-doers are 1.3 times more likely to give this response than doers	Increase perception that cleaning latrines reduce and prevent gastro enteric diseases	Teach community members how to make lids to cover their latrines to prevent bad odour and providing them with cleaning solution that reduces bad odour.
	Bad Odour	Doers are 1.8 times more likely to give this response than non-doers		
Perceived Self-Efficacy: What makes it easier?	Water Ash Soap	Both non-doers and doers perceived water to be important. But non-doers mentioned ash more than doers. Doers mentioned soap more than non-doers.	Increase perception that it is worth to use ash for cleaning latrines	Increase access to water Consider providing community members with resources to start income generating activities so they can earn money to purchase cleaning material for latrines.

Bridge Activities for Combined Districts

Nyanza, Ngoma, Nyarugenge, Nyabihu

DETERMINANT	SIGNIFICANT RESPONSE/CODE	DOERS VS. NON- DOERS	BRIDGE TO ACTIVITY	ACTIVITY
Perceived Self-Efficacy-What makes it difficult?	Culture Disability Elderly (old age) No time	Doers are 7.6 times more likely to state culture compared to non-doers Though not statistically measured, the issue of disability, old age and lack of time are contributing factors that should be considered	Increase perception that cultural aspects should not hinder or discourage people from cleaning their latrines Increase perception that people with disability and of old age should get help to clean their latrines	Organise community helpers who can assist those with disability or of old age with cleaning their latrines.
Social Norms-Who encourages latrine cleaning?	Teachers (Motivator) Community Health Workers (Motivator)	Doers are 5.3 times more likely to respond community health workers as their source of positive influence compared to non-doers Non-doers are 4.1 times likely to respond teachers as a source of positive influence compared to doers	Increase the perception of teachers to encourage community members in latrine cleaning activities Increase the perception of school students and community youths to get involved in latrine cleaning activities Increase the perception of community health educators that they should encourage community members to clean latrines	Invite teachers, school students, and community youths to latrine cleaning activities. Create Youth/Student Clubs to serve as educators on latrine cleaning in the community. Hold community wide competition events for youths latrine cleaning
Social Norms-Who discourages latrine cleaning?	Neighbours	No statistical significance However, both non-doers and doers mentioned neighbours as a source negative influence	Increase perception that community members should encourage their neighbours to clean their latrines Increase perception that cleaning latrines is being worthy of honour in their community Investigate exactly how and why neighbours are a negative influence to others (Mostly it is about mocking adults people, mostly men if they clean latrines)	Encourage community members to build toilets to reduce the sharing of latrines with their neighbours Encourage community members to build latrines specifically for the public to reduce sharing of latrines

15. Bridge Activities Per District
Nyanza

Nyanza District

DETERMINANT	SIGNIFICANT RESPONSE/CODE	DOERS VS. NON-DOERS	BRIDGE TO ACTIVITY	ACTIVITY
Perceived Positive Consequences	Prevention of Disease Lack of Knowledge Proper Hygiene	Non-doers are 3.1 times to respond proper hygiene compared to doers Doers are 14.4 times more likely to respond prevention of disease compared to non-doers Doers are 9.7 times more likely to respond they don't know compared to non-doers	Increase perception on sanitation ,hygiene and health benefits resulting from latrines cleanliness	Hold community wide health education activities to raise awareness about latrine cleaning and its benefits
Perceived Negative Consequences	Bad Odour Causes Disease Flies Proliferation	Non-doers are 1.5 times more likely to respond bad odour compared to doers Doers are 2.4 times more likely to respond cause of disease compared to non-doers Both non-doers and doers are conserved with the proliferation of flies.	Increase perception about how dangerous flies can cause various illnesses when latrines are not cleaned	Teach community members how to make lids to cover their latrines to prevent bad odour and providing them with cleaning solution that reduces bad odour
Perceived Self-Efficacy: What makes it easier?	Water Ash	Doers are 3.1 times more likely to respond water compared to non-doers 42% of non-doers responded water 16% of non-doers responded ash	Increase the perception that it is easier to get and use ash at home for cleaning the latrines Increase the perception that any quantity of water should be enough to clean latrines	Demonstrate to people how to use ash for cleaning latrines or other alternatives
Perceived Self-Efficacy: What makes it difficult?	No time Elderly Disability Don't like	Non-doers are 7.0 times more likely to respond old age compared to doers Non-doers are 1.0 times more likely to respond "don't like" compared to doers Non-doers are 13.1 times more likely to respond lack of time. Non-doers are 4.4 times more likely to respond disability	Increase the perception that is worth to avail time and clean the latrines as it help to fight against diarrhoeal diseases Increase perception that people with disability and of old age should get help to clean their latrines	Find factors that motivate non-doers to clean latrines Be inclusive of people with disability and of old age in latrine cleaning activities and mobilise community helpers to assist this priority group with latrine cleaning Create a community wide event dedicated to cleaning latrine

Bridge Activities Per District

Nyanza

DETERMINANT	SIGNIFICANT RESPONSE/CODE	DOERS VS. NON- DOERS	BRIDGE TO ACTIVITY	ACTIVITY
Social Norms-Who doesn't encourage latrine cleaning?	Neighbours	Both doers and non-doers mentioned neighbours as a source of negative influence	Increase perception that community members should encourage their neighbours to clean their latrines Increase perception that cleaning latrines is being worthy of honour in their community Investigate exactly how and why neighbours are a negative influence to others (Mostly it is about mocking adults people, mostly men if they clean latrines)	Encourage community members to build toilets to reduce the sharing of latrines with their neighbours Encourage community members to build latrines specifically for the public to reduce sharing of latrines
Social Norms-Who encourages latrine cleaning?	Teachers (Motivator) Community Health Workers (Motivator)	Doers are 15.4 times more likely to respond community health workers as their source of positive influence compared to non-doers Non-doers are 1.3 times likely to respond teachers as a source of positive influence compared to doers	Increase the perception of teachers to encourage community members in latrine cleaning activities Increase the perception of school students and community youths to get involved in latrine cleaning activities Increase the perception of community health educators that they should encourage community members to clean latrines	Invite teachers, school students, and community youths to latrine cleaning activities. Create Youth/Student Clubs to serve as educators on latrine cleaning in the community. Hold community wide competition events for youths latrine cleaning

Bridge Activities Per District

Ngoma

Ngoma District

DETERMINANT	SIGNIFICANT RESPONSE/CODE	DOERS VS. NON-DOERS	BRIDGE TO ACTIVITY	ACTIVITY
Perceived Positive Consequences	Prevention of Disease	Doers are 2.4times more likely to give this response than non-doers	Increase perception on sanitation ,hygiene and health benefits resulting from latrines cleanliness	Hold community wide health education activities to raise awareness about latrine cleaning and its benefits
	Bad Odour			
Perceived Negative Consequences	Bad Odour	Doers are 3.6 times more likely to give this response compare to doers	Increase perception about how dangerous flies can cause various illnesses when latrines are not cleaned	Teach community members how to make lids to cover their latrines to prevent bad odour and providing them with cleaning solution that reduces bad odour
Perceived Self-Efficacy: What makes it easier?	Water Soap	69% of doers responded water makes it easier to clean latrines 53% of non-doers responded water makes it easier to clean latrines 40% of doers responded soap makes it easier to clean latrines 23% of non-doers responded soap makes it easier to clean latrines	Increase the perception that it is easier to get and use ash at home for cleaning the latrines Increase the perception that any quantity of water should be enough to clean latrines	Demonstrate to community members how to use ash for cleaning latrines Increase access to water

Bridge Activities Per District

Ngoma

DETERMINANT	SIGNIFICANT RESPONSE/CODE	DOERS VS. NON- DOERS	BRIDGE TO ACTIVITY	ACTIVITY
Perceived Self-Efficacy-What makes it difficult?	Culture Lack of time	Doers are 12.7 times more likely to respond culture makes it difficult to clean latrines compared to non-doers Non-doers are1.5 times more likely to respond they have no time compared to doers Non-doers are 4.4 times more likely to respond they lack time to clean latrines compared to doers	Increase the perception that is worth to avail time and clean the latrines as it help to fight against diarrhoeal diseases Increase perception that people with disability and of old age should get help to clean their latrines	Address community members about cultural practices that hinder people from cleaning latrines Find factors that motivate non-doers to clean latrines
Social Norms-Who encourages latrine cleaning?	Teachers (Motivator) Community Health Workers (Motivator)	Doers are 13.4 times more likely to respond community health workers as their source of positive influence compared to non-doers Non-doers are 3.3 times likely to respond teachers as a source of positive influence compared to doers	Increase the perception of teachers to encourage community members in latrine cleaning activities Increase the perception of school students and community youths to get involved in latrine cleaning activities Increase the perception of community health educators that they should encourage community members to clean latrines	Invite teachers, school students, and community youths to latrine cleaning activities. Create Youth/Student Clubs to serve as educators on latrine cleaning in the community. Hold community wide competition events for youths latrine cleaning
Social Norms-Who discourages latrine cleaning?	Neighbours	No statistical significance However, both non-doers and doers mentioned neighbours as a source negative influence	Increase perception that community members should encourage their neighbours to clean their latrines Increase perception that cleaning latrines is being worthy of honour in their community (Mostly it is about mocking adults people, mostly men if they clean latrines)	Encourage community members to build toilets to reduce the sharing of latrines with their neighbours Encourage community members to build latrines specifically for the public to reduce sharing of latrines

Bridge Activities Per District

Nyarugenge

Nyarugenge District

DETERMINANT	SIGNIFICANT RESPONSE/CODE	DOERS VS. NON-DOERS	BRIDGE TO ACTIVITY	ACTIVITY
Perceived Positive Consequences	Prevention Smell	Doers are 2.5times more likely to respond prevention of smell compared to non-doers	Increase perception on sanitation ,hygiene and health benefits resulting from latrines cleanliness	Hold community wide health education activities to raise awareness about latrine cleaning and its benefits
	Proper Hygiene	Doers are 8.2 times more likely to respond proper hygiene compared to non-doers		
	Don't Know	Non-doers are 2.4 times more likely to respond they don't know compared to doers		
Perceived Negative Consequences	Bad Odour Causes Disease Flies Proliferation	Doers are 2.8 times more likely to answer bad odour compared to non-doers Doers are 1.6times more likely to answer cause of disease compared to non-doers Doers are 3.4 times more likely to answer flies proliferation compares to non-doers	Increase perception about how dangerous flies and bad adour can cause various illnesses when latrines are not cleaned	Teach community members how to make lids to cover their latrines to prevent bad odour and providing them with cleaning solution that reduces bad odour
Perceived Self-Efficacy: What makes it easier?	Water Ash	42% of doers responded water makes it easier to clean latrines 30% of non-doers responded water makes it easier to clean latrines 18% of non-doers responded ash makes it easier to clean latrines	Increase the perception that it is easier to get and use ash at home for cleaning the latrines Increase the perception that any quantity of water should be enough to clean latrines	Teach community members how to make lids to cover their latrines to prevent bad odour and providing them with cleaning solution that reduces bad odour

Bridge Activities Per District

Nyarugenge

DETERMINANT	SIGNIFICANT RESPONSE/CODE	DOERS VS. NON- DOERS	BRIDGE TO ACTIVITY	ACTIVITY
Perceived Self-Efficacy- What makes it difficult?	Lack of time	36% Non-doers responded they lack time to clean latrines compared to doers	Increase the perception that is worth to avail time and clean the latrines as it help to fight against diarrhoeal diseases	Find factors that motivate non-doers to clean latrines
Social Norms-Who encourages latrine cleaning?	Teachers (Motivator) Community Health Workers (Motivator)	Doers are 7.5 times more likely to respond community health workers as their source of positive influence compared to non-doers Non-doers are 1.2 times likely to respond teachers as a source of positive influence compared to doers	Increase the perception of teachers and local leaders to encourage community members in latrine cleaning activities Increase the perception of school students and community youths to get involved in latrine cleaning activities Increase the perception of community health educators that they should encourage community members to clean latrines	Invite teachers, school students, and community youths to latrine cleaning activities. Create Youth/Student Clubs to serve as educators on latrine cleaning in the community. Hold community wide competition events for youths latrine cleaning
Social Norms-Who doesn't encourage latrine cleaning?	Neighbours	No statistical significance However, both non-doers and doers mentioned neighbours as a source negative influence	Increase perception that community members should encourage their neighbours to clean their latrines Increase perception that cleaning latrines is being worthy of honour in their community (Mostly it is about mocking adults people, mostly men if they clean latrines)	Encourage community members to build toilets to reduce the sharing of latrines with their neighbours Encourage community members to build latrines specifically for the public to reduce sharing of latrines

Bridge Activities Per District

Nyabihu

Nyabihu District

DETERMINANT	SIGNIFICANT RESPONSE/CODE	DOERS VS. NON-DOERS	BRIDGE TO ACTIVITY	ACTIVITY
Perceived Positive Consequences	Prevention of Disease	86% Doers and 70% responded prevention of disease	Increase perception on sanitation ,hygiene and health benefits resulting from latrines cleanliness	Hold community wide health education activities to raise awareness about latrine cleaning and its benefits
	Proper Hygiene	Doers are 6.5 times more likely to respond proper hygiene compared to non-doers		
Perceived Negative Consequences	Bad Odour Causes Disease Flies Proliferation	30% Doers and 21%non-doers answered bad odour 84% of doers and 81% of non-doers responded cause of disease 53% Doers and 36% non-doers answered flies proliferation	Increase perception about how dangerous flies and bad adour can cause various illnesses when latrines are not cleaned	Teach community members how to make lids to cover their latrines to prevent bad odour and providing them with cleaning solution that reduces bad odour
Perceived Self-Efficacy: What makes it easier?	Water Ash Soap	Doers are 2.4 times more likely to respond water. Doers are 3.5 times likely to respond soap Non- doers are 1.2 times likely to respond they don't know.	Increase the perception that it is easier to get and use ash at home for cleaning the latrines Increase the perception that any quantity of water should be enough to clean latrines Reinforce the perception that the use of soap and clean water to wash the hands is the most effective way to fight against diarrhoeal diseases	Teach community members how to make lids to cover their latrines to prevent bad odour and providing them with cleaning solution that reduces bad odour
Perceived Self-Efficacy: What makes it difficult?	No time Elderly	40% of non-doers responded no time. 9% of non-doers responded old age	Increase the perception that is worth to avail time and clean the latrines as it help to fight against diarrhoeal diseases Increase perception that people with disability and of old age should get help to clean their latrines	Find factors that motivate non-doers to clean latrines

Bridge Activities Per District

Nyabihu

DETERMINANT	SIGNIFICANT RESPONSE/CODE	DOERS VS. NON-DOERS	BRIDGE TO ACTIVITY	ACTIVITY
Social Norms-Who encourages latrine cleaning?	Teachers (Motivator) Community Health Workers (Motivator)	Doers are 3.6 times more likely to respond community health workers as their source of positive influence compared to non-doers Non-doers are 1.2 times likely to respond teachers as a source of positive influence compared to doers	Increase the perception of teachers and local leaders to encourage community members in latrine cleaning activities Increase the perception of school students and community youths to get involved in latrine cleaning activities Increase the perception of community health educators that they should encourage community members to clean latrines. Increase community health educators in the areas of need to encourage community members to clean latrines	Invite teachers, school students, and community youths to latrine cleaning activities. Create Youth/Student Clubs to serve as educators on latrine cleaning in the community. Hold community wide competition events for youths latrine cleaning
Social Norms-Who doesn't encourage latrine cleaning?	Neighbours Don't Know	Doers are 3.1 times likely to mention no source of negative influence Non-doers mentioned neighbours as a source negative influence	Increase perception that community members should encourage their neighbours to	Encourage community members to build toilets to reduce the sharing of latrines with their neighbours Encourage community members to build latrines specifically for the public to reduce sharing of latrines

16. Full Tabulation Results: Nyanza District

*The p-values highlighted in red show the determinants that were measured as statistically significant (p<0.05).
* Some data values are missing, especially for variables determined insignificant likely to the small sample surveyed.
* Some values are missing in the odd ratio and confidence interview likely due to very few or no sample in at least one of the cells

Determinant	#Doers (total:46)	#NonDoers (total;45)	%Doers	%Nondoers	%Difference	Odd Ratio	Confidence Interval		p-value
							Upper	Lower	
Perceived positive consequences: What are the advantages of doing the behaviour?									
Prevent disease	45	33	98	73	24	16.3	132	2.0	0.001
Proper hygiene	26	12	57	27	30	3.58	8.6	1.5	0.004
Prevent smell	7	6	15	13	2	1.17	3.8	0.36	0.517
Fell comfortable	1	2	2	4	-2	0.48	5.4	0.04	0.492
Don't know	12	14	85	31	54	12.3	34.3	4.4	0.000
Perceived negative consequences: What are the disadvantages of doing the behaviour?									
It causes diseases	45	35	98	78	20	12.8	105	1.57	0.003
Bad odour	24	13	52	29	23	2.69	6.39	1.13	0.020
Flies proliferation	23	18	50	40	10	1.50	3.44	0.65	0.227
Shameful	2	3	4	7	-2	0.64	4.00	0.10	0.489
Don't know	1	1	2	2	0	0.98	16.1	0.06	0.747
Perceived self-efficacy: What makes it easier to do the behaviour?									
Water	33	19	72	42	30	3.47	1.45	8.32	0.004
Soap	3	5	7	11	-5	0.56	0.13	2.49	0.345
Lime	2	0	4	0	4				0.253
Ash	11	7	24	16	8	1.71	0.60	4.89	0.231
Don't know	0	5	0	11	-11	0.00			0.026
Perceived self-efficacy: What makes it more difficult to do the behaviour?									
Elderly	5	12	11	53	-42	0.11	0.32	0.040.33	0.000
It's a spouse task	0	1	0	9	-9	0.0			0.056
Don't like	0	3	0	13	-13	0.0			0.012
Culture	0	0	0	2	-2	0.0			0.495
No time	14	16	30	36	-5	0.79	0.90	0.33	0.383
Disability	2	3	4	24	-20	0.14	0.68	0.03	0.006
Don't know	0	0	0	24	-24	0.0			0.000
Perceived social norms: Who would approve of/supports you doing the behaviour?									
CHC	19	18	41	40	1	1.06	2.4	0.46	0.535
CHW	32	3	70	7	63	32	120	8.5	0.000
Neighbours	5	1	11	2	9	5.4	0.60	47	0.107
Teachers	0	26	0	58	-58	0.0			0.000
Heads of savings group	0	0	0	0	0				1.000
Church leaders	2	0	4	0	4				0.253
Don't know	2	0	4	0	4				0.253
Perceived social norms: Who would disapprove of/does not support you doing the behaviour?									
Family members	0	1	0	2	-2	0.0			0.495
Neighbours	3	4	7	9	-2	0.72	0.39	0.15	0.488
Spouse	0	0	0	0					1.000
CHC	0	0	0	0					1.000
CHW	0	0	0	0					1.000
Don't know	10	16	22	36	-14	0.50	1.28	0.20	0.110

17. Full Tabulation Results: Ngoma District

*The p-values highlighted in red show the determinants that were measured as statistically significant (p<0.05).
* Some data values are missing, especially for variables determined insignificant likely to the small sample surveyed.
* Some values are missing in the odd ratio and confidence interview likely due to very few or no sample in at least one of the cells

Determinant	#Doers (Total,48)	#NonDoers (Total,43)	%Doers	%Nondoers	%Difference	Odd Ratio	Confidence Interval		p-value
							Upper	Lower	
Perceived positive consequences: What are the advantages of doing the behaviour?									
Prevent disease	48	44	100	102	-2				0.031
Proper hygiene	23	18	48	42	6	1.28	2.93	0.56	0.356
Prevent smell	10	7	21	16	5	1.35	3.94	0.47	0.389
Fell comfortable	0	1	0	2	-2	0.0			0.473
Don't know	10	7	21	16	5	1.35	3.94	0.47	0.389
Perceived negative consequences: What are the disadvantages of doing the behaviour?									
It causes diseases	43	41	90	95	-6	0.42	0.08	2.28	0.265
Bad odour	35	17	73	40	33	4.12	1.70	9.95	0.001
Flies proliferation	29	22	60	51	9	1.46	0.63	3.35	0.249
Shameful	9	6	19	14	5	1.42	0.46	4.39	0.371
Don't know	0	0	0	0	6				1.00
Perceived self-efficacy: What makes it easier to do the behaviour?									
Water	33	23	69	53	15	1.91	4.50	0.81	0.101
Soap	19	10	40	23	16	2.16	5.39	0.87	0.074
Lime	0	1	0	2	-2	0.00			0.473
Ash	12	11	25	26	-1	0.97	2.50	0.38	0.570
Don't know	0	1	0	2	-2	0.00			0.473
Perceived self-efficacy: What makes it more difficult to do the behaviour?									
Elderly	6	2	13	5	8	2.93	0.56	15.4	0.172
It's a spouse task	1	0	2	0	2		0	0	0.527
Don't like	0	3	0	7	-7	0.00	0	0	0.102
Culture	11	0	23	0	23		0	0	0.000
No time	0	8	0	19	-19	0.00	0	0	0.002
Disability	3	6	6	14	-8	0.41	0.10	1.76	0.191
Don't know	1	5	2	12	-10	0.16	0.02	1.44	0.078
Perceived social norms: Who would approve of/supports you doing the behaviour?									
CHC	30	17	40	42	-2	0.91	2.10	0.39	0.497
CHW	37	5	67	7	60	26.6	99.6	7.14	0.000
Neighbours	4	5	10	2	8	4.88	43.6	0.55	0.129
Teachers	0	15	0	60	-60	0.100			0.000
Heads of savings group	0	0	0	0	0	0			1.00
Church leaders	0	0	4	0	4	0			0.275
Don't know	1	0	4	0	4	0			0.275
Perceived social norms: Who would disapprove of/does not support you doing the behaviour?									
Family members	0	1	2	0	2				0.527
Neighbours	3	4	8	12	-3	0.69	2.76	0.17	0.429
Spouse	0	0	2	0	2				0.527
CHC	0	0	0	0	0				1.00
CHW	0	0	0	0	0				1.00
Don't know	10	16	17	21	-4	0.76	2.17	0.26	0.400

18. Full Tabulation Results: Nyarugenge District

*The p-values highlighted in red show the determinants that were measured as statistically significant (p<0.05).
* Some data values are missing, especially for variables determined insignificant likely to the small sample surveyed.
* Some values are missing in the odd ratio and confidence interview likely due to very few or no sample in at least one of the cells

Determinant	#Doers (Total,48)	#NonDoers (Total,44)	%Doers	%Nondoers	%Difference	Odd Ratio	Confidence Interval		p-value
							Upper	Lower	
Perceived positive consequences: What are the advantages of doing the behaviour?									
Prevent disease	42	32	88	73	15	2.6	7.7	0.89	0.064
Proper hygiene	33	7	69	16	53	11.6	32	4.22	0.000
Prevent smell	13	5	27	11	16	2.9	8.9	0.94	0.050
Fell comfortable	0	0	0	0	0	10.3			1.00
Don't know	8	15	17	34	-17		1.03	0.14	0.046
Perceived negative consequences: What are the disadvantages of doing the behaviour?									
It causes diseases	46	36	96	82	14	5.1	25.5	1.02	0.064
Bad odour	33	18	69	41	28	3.2	7.4	1.35	0.00
Flies proriferation	35	18	73	41	32	3.8	9.3	1.62	0.050
Shameful	4	6	8	15	-5	0.6	2.2	0.15	1.00
Don't know	0	0	0	0	0				0.046
Perceived self-efficacy: What makes it easier to do the behaviour?									
Water	20	13	42	30	12	1.70	4.05	0.72	0.160
Soap	13	9	27	20	7	1.44	3.81	0.55	0.309
Lime	1	0	2	0	2				0.522
Ash	11	8	23	18	5	1.34	3.71	0.48	0.382
Don't know	1	3	2	7	-5	0.29	2.91	0.03	0.276
Perceived self-efficacy: What makes it more difficult to do the behaviour?									
Elderly	3	6	6	14	-7	0.42	1.80	0.10	0.201
It's a spouse task	0	2	0	5	-5	0.00			0.226
Don't like	0	0	0	0	0				1.00
Culture	2	1	4	2	2	1.87	2.37	0.16	0.533
No time	11	16	23	36	-13	0.52	1.29	0.21	0.118
Disability	0	1	0	2	-2	0.00	0		0.478
Don't know	4	4	8	9	-1	0.91	3.88	0.21	0.593
Perceived social norms: Who would approve of/supports you doing the behaviour?									
CHC	30	22	63	50	13	1.67	3.83	0.73	0.159
CHW	26	4	54	9	45	11.8	38	3.65	0.000
Neighbours	4	1	8	2	6	3.9	36	0.42	0.209
Teachers	0	19	0	43	-43	0.00			0.000
Heads of savings group	0	0	0	0	0				1.000
Church leaders	0	0	0	0	0				1.000
Don't know	1	0	2	0	2				0.522
Perceived social norms: Who would disapprove of/does not support you doing the behaviour?									
Family members	1	0	2	0	2				0.522
Neighbours	2	2	4	5	0	0.91	6.77	0.12	0.658
Spouse	1	0	2	0	2				0.522
CHC	1	0	2	0	2	2			0.522
CHW	0	1	0	2	-2	0.00			0.478
Don't know	15	18	31	41	-10	0.66	1.55	0.28	0.227

19. Full Tabulation Results: Nyabihu District

*The p-values highlighted in red show the determinants that were measured as statistically significant (p<0.05).
* Some data values are missing, especially for variables determined insignificant likely to the small sample surveyed.
* Some values are missing in the odd ratio and confidence interview likely due to very few or no sample in at least one of the cells

Determinant	#Doers (Total,43)	#NonDoers (Total,47)	%Doers	%Nondoers	%Difference	Odd Ratio	Confidence Interval		p-value
							Upper	Lower	
Perceived positive consequences: What are the advantages of doing the behaviour?									
Prevent disease	37	33	86	70	16	2.6	7.5	0.90	0.059
Proper hygiene	34	15	79	32	47	8.0	20	3.09	0.000
Prevent smell	12	9	28	19	9	1.6	4.38	0.61	0.232
Fell comfortable	0	1	0	2	-2	0.00			0.522
Don't know	9	1	21	23	-2	0.87	2.35	0.32	0.490
Perceived negative consequences: What are the disadvantages of doing the behaviour?									
It causes diseases	36	38	84	81	3	1.2	3.6	0.41	0.059
Bad odour	13	10	30	21	9	1.6	4.2	0.62	0.000
Flies proliferation	23	17	53	36	17	2.0	4.7	0.87	0.232
Shameful	2	5	5	11	-6	0.41	2.2	0.08	0.522
Don't know	0	0	0	0	0				0.490
Perceived self-efficacy: What makes it easier to do the behaviour?									
Water	33	26	77	55	21	2.6	6.6	1.07	0.027
Soap	10	3	23	6	17	4.4	17	1.13	0.023
Lime	1	1	2	2	0	1.1	18	0.07	0.730
Ash	8	12	19	26	-7	0.67	1.83	0.24	0.297
Don't know	0	6	0	13	-13	0.00			0.017
Perceived self-efficacy: What makes it more difficult to do the behaviour?									
Elderly	3	4	7	9	-2	0.81	3.8	0.17	0.550
It's a spouse task	0	1	0	2	-2	0.00			0.522
Don't like	0	0	0	0	0				1.000
Culture	0	0	0	0	0				1.000
No time	13	19	30	40	-10	0.64	1.5	0.27	0.215
Disability	2	1	5	2	3	2.2	25	0.20	0.466
Don't know	3	2	7	4	3	1.6	10	0.27	0.457
Perceived social norms: Who would approve of/supports you doing the behaviour?									
CHC	30	25	70	53	17	2.0	4.8	0.85	0.081
CHW	22	9	51	19	32	4.4	11	1.7	0.001
Neighbours	5	1	12	2	10	6.0	54	0.68	0.082
Teachers	0	20	0	43	-43	0.00			0.000
Heads of savings group	0	0	0	0	0				1.000
Church leaders	0	0	0	0	0				1.000
Don't know	0	0	0	0	0				1.000
Perceived social norms: Who would disapprove of/does not support you doing the behaviour?									
Family members	1	0	2	0	2				0.478
Neighbours	2	2	5	4	0	1.1	8.1	0.15	0.657
Spouse	0	3	0	6	-6	0.10			0.138
CHC	0	0	0	0	0				1.000
CHW	0	0	0	0	0				1.000
Don't know	9	3	21	6	15	3.8	15	0.9	0.042

20. Average Barrier Analysis for Combined Districts Nyanza, Ngoma, Nyabihu and Nyarugenge

*The p-values highlighted in red show the determinants that were measured as statistically significant (p<0.05).
* Some data values are missing, especially for variables determined insignificant likely to the small sample surveyed.
* Some values are missing in the odd ratio and confidence interview likely due to very few or no sample in at least one of the cells

Determinants	Doers	Non-Doers	Doers %	Non-Doers %	Diff.	Odds Ratio	Confidence Interval		p-value
	Total	Total					Lower Limit	Upper Limit	
Perceived Positive Consequences	**Doer=414**	**Non-Doer=355**							
Prevent disease	172	120	42%	34%	8%	1.39	1.04	1.87	*0.016*
Proper Hygiene	79	60	19%	17%	2%	1.16	0.80	1.68	0.246
Prevent smell	96	85	23%	24%	-1%	0.96	0.69	1.34	0.436
Don't know	67	90	16%	25%	-9%	0.57	0.40	0.81	*0.001*
Perceived Negative Consequences	Doer=381	Non-doer=285							
Causes disease	166	146	44%	51%	-8%	0.96	0.72	1.28	0.030
Bad odour	105	47	28%	16%	11%	2.23	1.53	3.25	*0.000*
Flies proliferation	88	62	23%	22%	1%	1.28	0.89	1.83	0.377
Shameful	13	14	3%	5%	-2%	0.79	0.37	1.70	0.219
Self-Efficacy-What makes it easier?	Doer=210	Non-doer=166							
Water	119	88	57%	53%	4%	1.22	0.89	1.69	0.273
Soap	52	35	25%	21%	4%	1.31	0.83	2.07	0.237
Ash	39	43	19%	26%	-7%	0.75	0.48	1.19	0.057
Self-Efficacy- what makes it difficult?	Doer=75	Non-Doer=95							
Elderly	17	24	23%	25%	-3%	0.59	0.31	1.12	0.417
Culture	13	1	17%	1%	16%	11.48	1.49	88.17	0.000
No time	38	59	51%	62%	-11%	0.51	0.33	0.78	0.090
Disability	7	11	9%	12%	-2%	0.54	0.21	1.40	0.416
Social-Norms- Positive Influence	Doer=244	Non-Doer=191							
Community Health Centres	109	82	45%	43%	2%	1.19	0.86	1.65	0.395
Community Health Workers	117	21	48%	11%	37%	6.27	3.84	10.23	0.000
Neighbours	18	8	7%	4%	3%	1.97	0.85	4.59	0.116
Teachers	0	80	0%	42%	3%	0.00			0.000
Social-Norms- Negative Influence	Doer=12	Non-Doer=14							
Family Members	2	2	17%	14%	2%	0.86	0.12	6.11	0.641
Neighbours	10	12	83%	86%	-2%	0.71	0.30	1.66	0.641

21. Questionnaires

Group: ❑ Doer ❑ Non-Doer

Barrier analysis Questionnaire - "Adults (males and females of age18 to 60) ensure regular cleanliness of their households' latrines"

Interviewer's Name: _____ Questionnaire No.: _____

Date: ____/____/____ Village: _____ Age

Gender of interviewee: ❑ Male ❑ Female Language of Interview: _____

Ubudehe category of the family _____ Size of the family _____

Scripted Introduction: Hello, my name is_____ and I am part of a study team enquiring about household hygiene practices. The study includes a discussion of this issue and will take a maximum of 20 minutes. I would like to hear your views on this topic and make a few notes. Would you be willing to talk with me? You are not obliged to participate in the study and no services will be withheld if you decide not to. Everything we discuss will be held in strict confidence and will not be shared with anyone else. Would you like to participate in the study? [If yes, continue; if no, thank them for their time.]

Section A - Doer/Non-doer Screening Questions

5. Yesterday, did you clean the latrine at your home?
   ❑ a. Yes
   ❑ b. No ☐ *mark as Non-doer and pose question 1 in Section B*
   ❑ c. Can't recall/ won't say ☐ *End interview and look for another adult*

6. Thinking about yesterday, please tell me: how many times did you clean the latrine at your home? (This is just a reminder question and should not be used to classify.)
   ❑ a. 1 time
   ❑ b. 2 times
   ❑ c. 3 times
   ❑ d. 4 times
   ❑ e. 5 or more times.

7. Aside from water, did you use anything to clean the latrine yesterday?
   ❑ a. Yes
   ❑ b. No
   ❑ c. Does not know / no response ☐ end the interview and find another mother

8. If yes, what did you use?
   ❑ a. Soap
   ❑ b. Ash
   ❑ c. Toilet brush
   ❑ d. Other (specify) ……..

DOER /NON-DOER CLASSIFICATION TABLE

Doer (all the following)	**Non-doer** (any one of the following)
Question 1 = a	Question 1 = b, c
Question 2 = a,b,c,d,e	Question 2 = NA
Question 3 = a	Question 3 = b, c
Question 4 = a,b,c,d	Question 4 = NA

Group: ❑ Doer ❑ Non-Doer

Section B – Research Questions

(Perceived Positive Consequences)

1. a Doers: What are the ***advantages*** of cleaning the latrine at home?
(Write all responses below. Probe one or two times with "Who else?")

1. b What are the *advantages* of cleaning the latrine at home?
(Write all responses below. ***Probe one or two times with "Who else?")***

(Perceived Negative Consequences)

2. a Doers: What are the ***disadvantages*** of cleaning the latrine at home? ***(Write all responses below. Probe one or two times with "What else?")***

2. b What are the disadvantages of cleaning the latrine at home? (Write all responses below. ***Probe one or two times with "What else?")***

(Perceived Self-Efficacy / Skills) –What makes it easier?

3a. **Doers**: For you, what are the things that make it ***easier*** to cleaning the latrine at home?
(Write all responses below. Probe one or two times with "Who else?")

3b. Non-Doers: For you, what are the things that you think would make it ***easier*** to cleaning the latrine at home?

(Write all responses below. Probe one or two times with "What else?")

(Perceived Self-Efficacy / Skills)- What makes it difficult?

4a. Doers: What makes it ***difficult*** for you to cleaning the latrine at home?
(Write all responses below. Probe one or two times with "Who else?")

4b. Non-Doers: What would make it ***difficult*** for you to cleaning the latrine at home? ***(Write all responses below. Probe one or two times with "What else?")***

(Perceived Social Norms)-Influencing groups

5a. Doers: Who are the people that have a ***favorable opinion of you*** to clean the latrine at home?
(Write all responses below. Probe one or two times with "Who else?")

5b. Non-Doers: Who are the people that would have a ***favorable opinion of you*** to clean the latrine at home?
(Write all responses below. Probe one or two times with "Who else?")

(Perceived Social Norms)-Influencing groups

6a. Doers: Who are the people that have an **unfavorable opinion of you** to clean the latrine at home?
(Write all responses below. Probe one or two times with "Who else?")

6b. Non-Doers: Who are the people that would have an **unfavorable opinion of you** to clean the latrine at home?
(Write all responses below. Probe one or two times with "Who else?")

(Perceived Access)

7a. Doers: How difficult is it to clean the latrine at home?

- ❑ a. Very difficult
- ❑ b. Somewhat difficult
- ❑ c. Not difficult at all.
- ❑ d. Don't know / won't say

7b. Non-Doers: How difficult would it be to clean the latrine at home?

- ❑ a. Very difficult
- ❑ b. Somewhat difficult
- ❑ c. Not difficult at all.
- ❑ d. Don't know / won't say

- ❑ c. Not difficult at all.
- ❑ d. Don't know / won't say

(Perceived Action Efficacy)

8a. Doers and Non-Doers: If you ensure the cleanliness/If you clean the latrine? Do you think you and your family members will be less likely to get diarrheal disease?

- ❑ a. Yes
- ❑ b. Possibly
- ❑ c. No
- ❑ d. Don't know

(Perceived Susceptibility / Risk)

9a. Doers and Non Doers: How likely is it that you or your family members will get diarrhea? If you don't ensure the cleanliness/If you don't clean the latrine?

- ❑ a. Somewhat likely
- ❑ b. Not likely at all.
- ❑ c. Don't know / won't say

(Cues for Action / Reminders)

10. a. Doers and Non Doers: For you, how difficult is it to remember to clean the latrine at your home?

- ❑ a. Very difficult
- ❑ b. Somewhat difficult
- ❑ c. Not difficult at all.
- ❑ d. Don't know / won't say

(Perceived Severity)

11. a. Doers and Non-Doers: How serious would it be if your child/ children get sick from diarrhea and worms if you don't clean the latrine at home?

- ❑ b. Somewhat serious
- ❑ c. Not serious at all
- ❑ d. Don't know / won't say

(Social support)

12. a. Doers and Non Doers: For You, is there any proper way to assist people (poor, elderly, disabled, OVCs…) to clean the latrine at home?

- ❑ a. Yes
- ❑ b. No
- ❑ c. Don't know / won't say

(Policy)

13a. Doers and Non-Doers: Do you know of any laws or rules in place, including community laws, which make it more likely that you clean the latrine at home?

- ❑ a. Yes
- ❑ b. No
- ❑ c. Don't know / won't say

(Culture)-Gender assessment

14. Doers and Non-Doers: Are there any cultural rules or taboos that you know are against men to clean latrine at home?

- ❑ a. Yes, list them……
- ❑ b. No
- ❑ c. Don't know / won't say

(Question on Universal Motivators)

15. Doers and Non-Doers: This final question is different from the others. Please take a minute or two to tell me what the things are that you wish for most in life that would help you to clean the latrine at home?

THANK THE RESPONDENT FOR HER/HIS TIME!