

**WATER, SANITATION AND HYGIENE STANDARDS AND  
THEIR IMPACT ON PARTICIPATION IN EDUCATION IN  
BOARDING SECONDARY SCHOOLS**



## Background to the Study

- ▶ Water is the most important natural resource, indispensable for life and at the same time the backbone of growth and prosperity for mankind.
- ▶ 570 million children go to school every day without safe water
- ▶ Over 620 million children worldwide lacked a basic sanitation service at their school.
- ▶ Nearly 900 million children worldwide lacked a basic hygiene service at their school.
- ▶ A quarter of secondary schools had no hygiene service. (WHO/UNICEF, 2016)

## Background to the Study

- ▶ Globally, 69% of schools had a basic drinking water service in 2016.
- ▶ 66% of schools had a basic sanitation and
- ▶ 53% of schools had a basic hygiene service in 2016.
- ▶ A basic drinking water service means that water from an improved source is available at the school.
- ▶ A basic sanitation service means that schools have improved sanitation facilities that are usable and single-sex.
- ▶ A basic hygiene service means schools have a hand washing facility with water and soap available.

**(WHO/UNICEF, 2016)**

## Background to the Study

- ▶ In Kenya Water supply and sanitation is characterized by low levels of access, in particular in urban and in rural areas, as well as poor service quality in the form of intermittent water supply(WASREB), 2015).

## Background to the Study

- ▶ Domestic water sources in the rural setting include small-scale piped systems; water points with hand pumps (wells, boreholes) and traditional sources such as streams, dams, shallow wells and springs. These traditional sources are very susceptible to pollution because they are open or not protected.

## Background to the Study

- ▶ The Kenya Constitution 2010, entrenched the water and sanitation in the Bill of Rights, effectively making them human rights in Article 43(i) (b) & (d) of the Kenya Constitution.
- ▶ Sustainable Development Goals (SDGs) No. 6 is to ensure availability and sustainable management of water and sanitation for all.

## Background to the Study

Goal 4: Ensure inclusive and quality education for all and promote lifelong learning

4.(a) Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

(e) basic drinking water;

(f) single-sex basic sanitation facilities; and

(g) basic hand washing facilities (as per the WASH indicator definitions)

## Background to the Study

- ▶ The main documents that provide guidance on Water Sanitation Hygiene standards for schools are;
- ▶ Safety Standards Manual For Schools In Kenya (Ministry of Education-2008)
- ▶ Kenya's National School Health Policy (Ministry of Health(MoH), 2009),
- ▶ National School Health Strategy Implementation Plan 2011-2015 (MoH, 2011)
- ▶ Kenya National Water Services Strategy, 2007–2015,
- ▶ National Health Policy Framework 2012-2030



## Background to the Study

- School water, sanitation and hygiene seem inadequate in Kenyan schools in terms of number of facilities and hygiene practices.
- The management, operation and maintenance of these facilities also remain a major issue for schools.
- There is little/scanty data on the actual level of water, sanitation and hygiene in Kenya schools.
- As such this study sought to investigate water, sanitation and hygiene and their impact on participation education.

## This study investigated

- Water access,
- Water quality,
- Student toilet ratio,
- Waste Management
- Water Governance

in schools with the aim of establishing their impact on student's participation in education in Bungoma County.

## METHODOLOGY

- ▶ The study adopted a cross-sectional survey design approach utilizing both quantitative and qualitative techniques in order to comprehensively assess water, sanitation and hygiene (WASH) use and management in schools.
- ▶ The Study was carried out in Bungoma county secondary school because there are fewer Water, Sanitation and hygiene research carried out in the county.

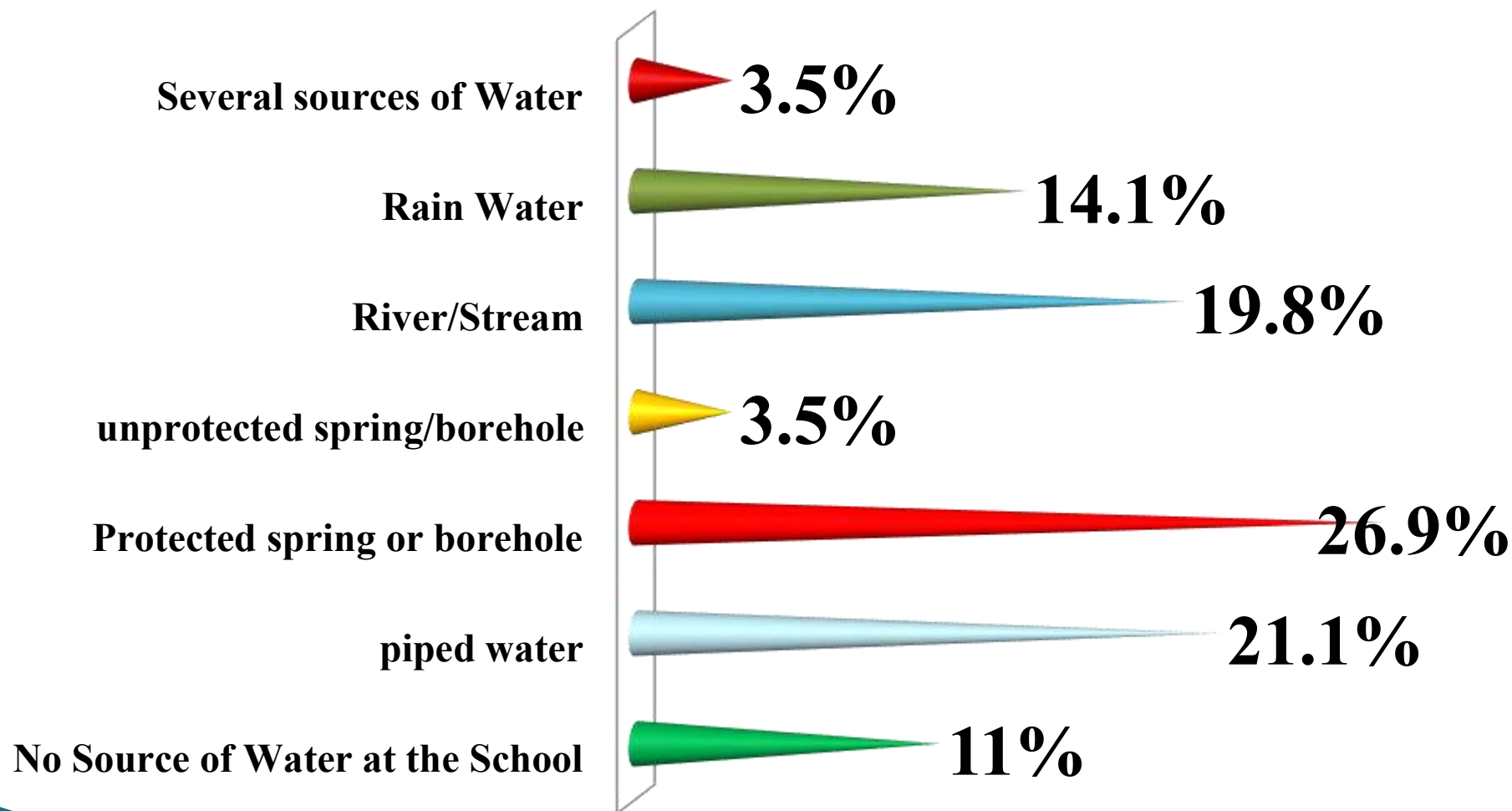
## METHODOLOGY

- ▶ The targeted population consisted of 289 secondary schools, it comprised of the seventy eight thousand four hundred and eighty one students (78,481), three thousand two hundred and thirty eight Teachers (3,238), two hundred and eighty nine principals (289), nine Public Health Officers (9) and nine Quality Assurance and Standards officers (9).

## METHODOLOGY

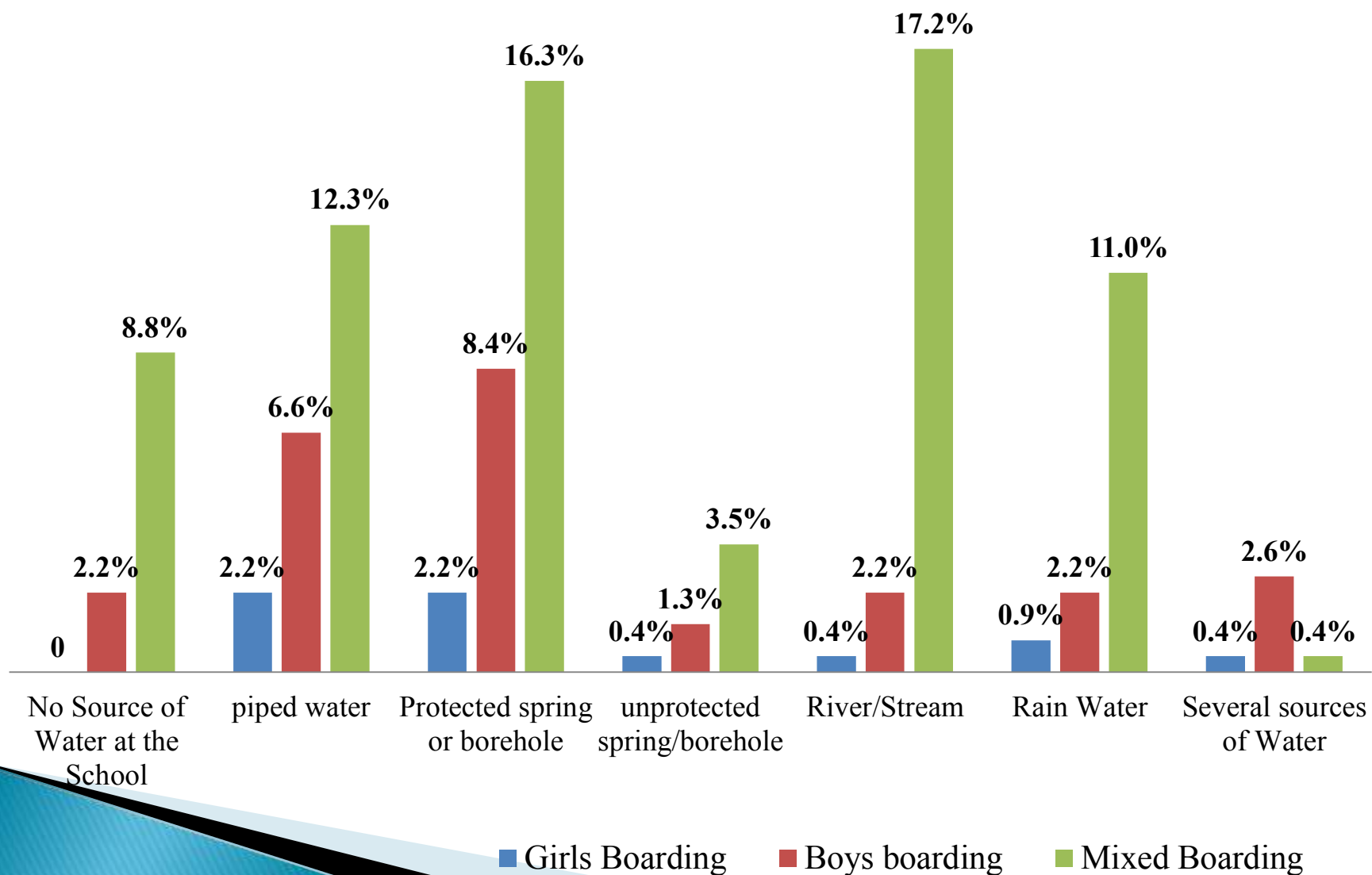
- ▶ The primary data was collected using questionnaires and interview guide.
- ▶ Standard multiple linear regressions  $\alpha = .05$  was used to examine whether Water access, Water Quality, Waste disposal, Student toilet Ratio and Water governance in schools could predict Student drop out schools.

# Sources of water used by the schools

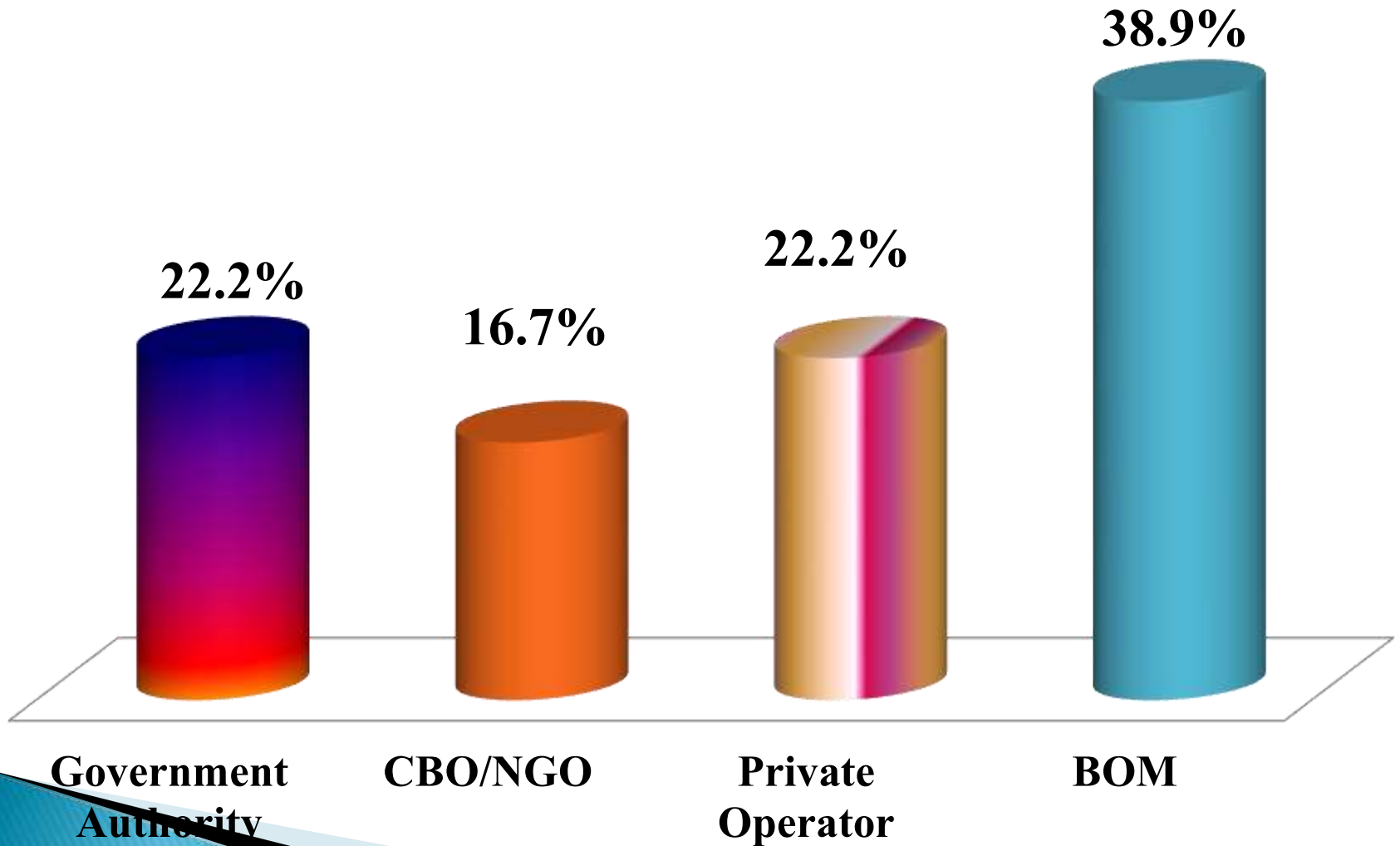


Sources of water used by the schools in Bungoma County  
(source Researcher) n=297

# Sources of water used by the schools



# WATER PROVIDERS IN SCHOOLS





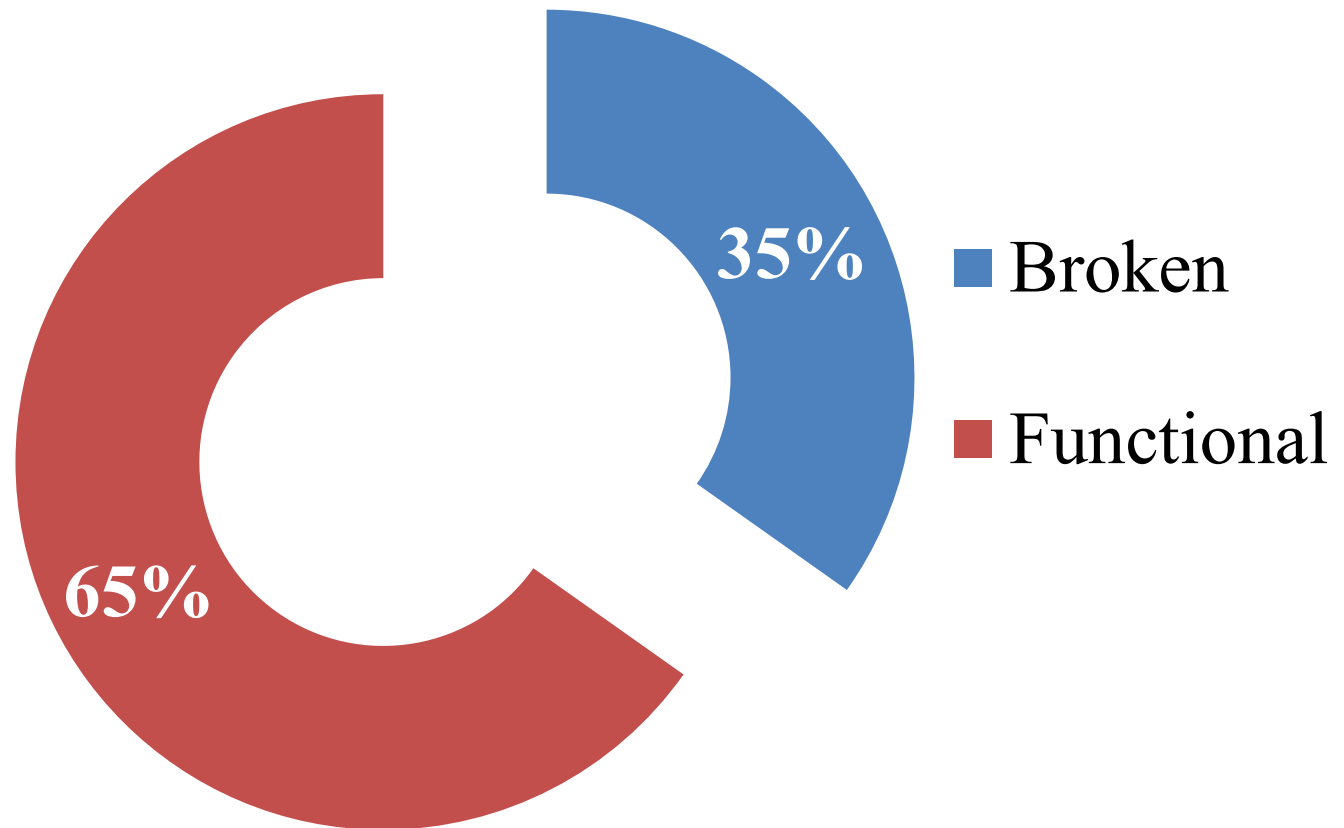
# Portable water connection in Bungoma County

Type of connection	Frequency	Percentage
Domestics connections	11259	90.5%
Commercial connections	756	6.1%
Industrial connections	9	0.07%
<b>Institutional connections</b>	<b>423</b>	<b>3.4%</b>
<b>Total</b>	<b>12447</b>	<b>100</b>

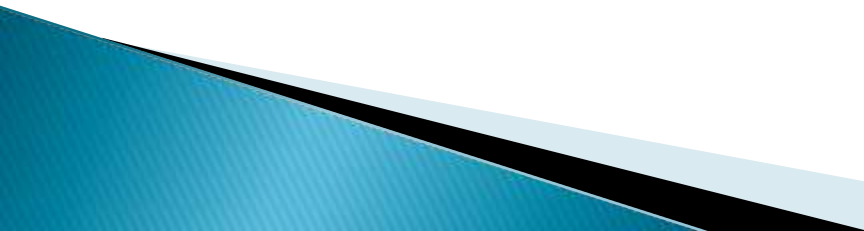
# Functionality of the Water Source

- ▶ A continuous supply of water from a Water source indicates the functionality of such a source; the source is classified as functional if at the time of the survey there was continuous supply of water, it is classified as broken if there is no continuous supply of water.

# Functionality of the Water Source



# Water Scarcity in schools

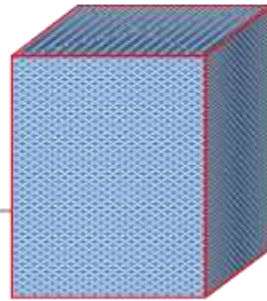
- ▶ Scarcity can be **physical** (lack of water of sufficient quality),
  - ▶ **economic** (lack of adequate infrastructure, due to financial, technical or other constraints)
  - ▶ **institutional** (lack of institutional for reliable, secure, and equitable supply of water (Banerjee and Morella 2011)).
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# Water Scarcity in schools

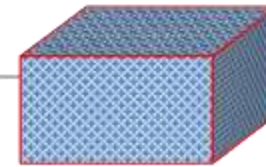
63.9%



25%



11.1%



**School  
Experiences  
Water Scarcity**

**School does Not  
Experience  
water scarcity**

**Not very sure**

# WATER SCARCITY IN SCHOOLS

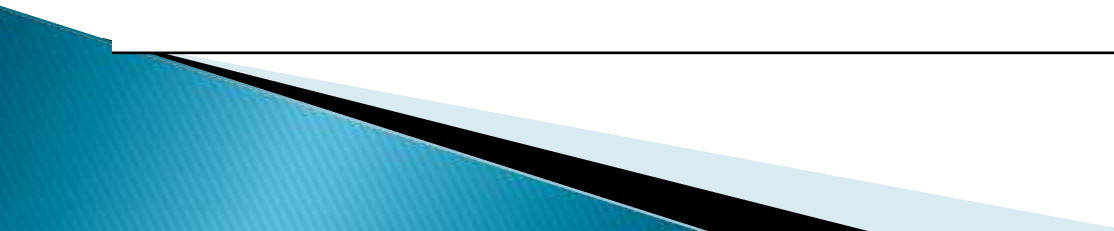


# WATER SCARCITY IN SCHOOLS

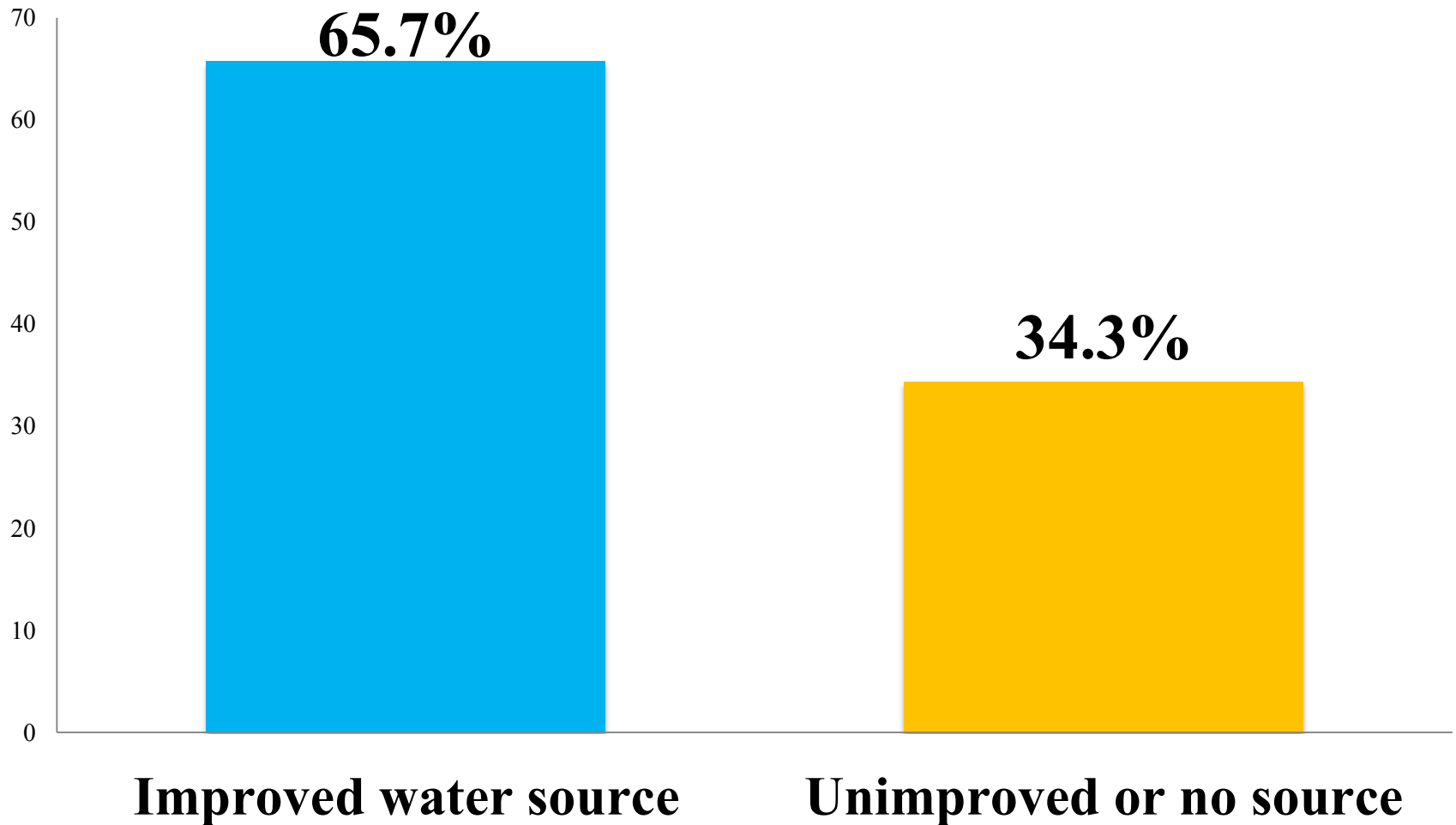
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	<b>Frequency/ Percent</b>
Student leave school due to water scarcity	<b>(1) 2.8%</b>
Student don't leave school due to water scarcity	<b>(35) 97.2%</b>

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# Proportion of schools with basic, limited and no drinking water services

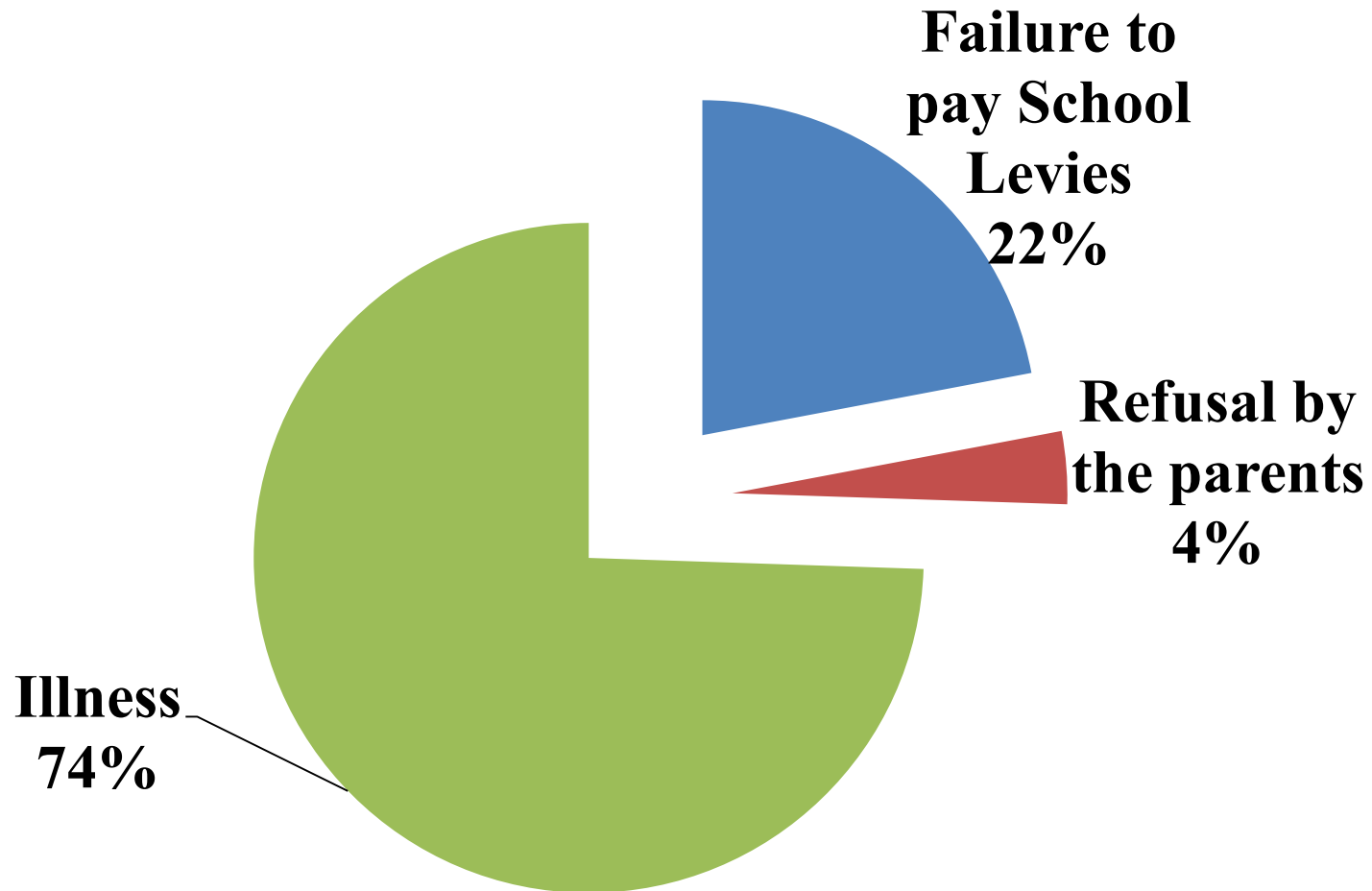




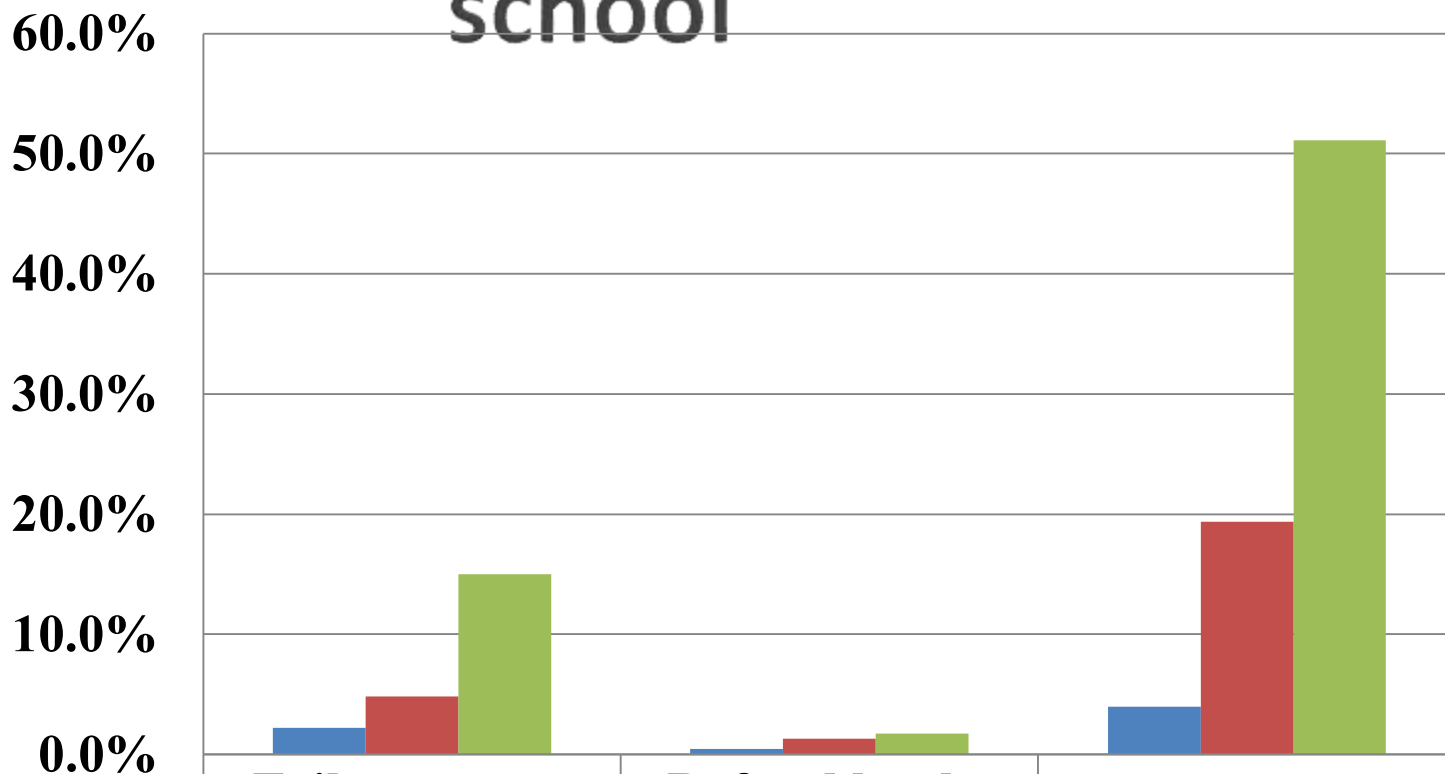
# Proportion of schools with basic, limited and no drinking water services

- ▶ Improved drinking water sources are those that have the potential to deliver safe water by nature of their design and construction they include: piped water, boreholes or tube-wells, protected dug wells, protected springs, and rainwater.
- ▶ Unimproved drinking Water sources include: unprotected well/spring, and surface water (e.g. lake, river, stream, pond, canals, irrigation ditches) or any other source where water is not protected from the outside environment (WHO/ UNICEF 2015, 2017, 2018)

# Causes of student absenteeism in school



# Causes of student absenteeism in school



<b>Girls Boarding</b>	<b>2.2%</b>	<b>0.4%</b>	<b>4.0%</b>
<b>Boys boarding</b>	<b>4.8%</b>	<b>1.3%</b>	<b>19.4%</b>
<b>Mixed Boarding</b>	<b>15.0%</b>	<b>1.8%</b>	<b>51.1%</b>

Causes of student absenteeism in school (source Researcher) n=297

# Treatment of water in schools

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**Frequency/  
Percentage**

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**Treatment  
of water in school**

**(23) 63.9%**

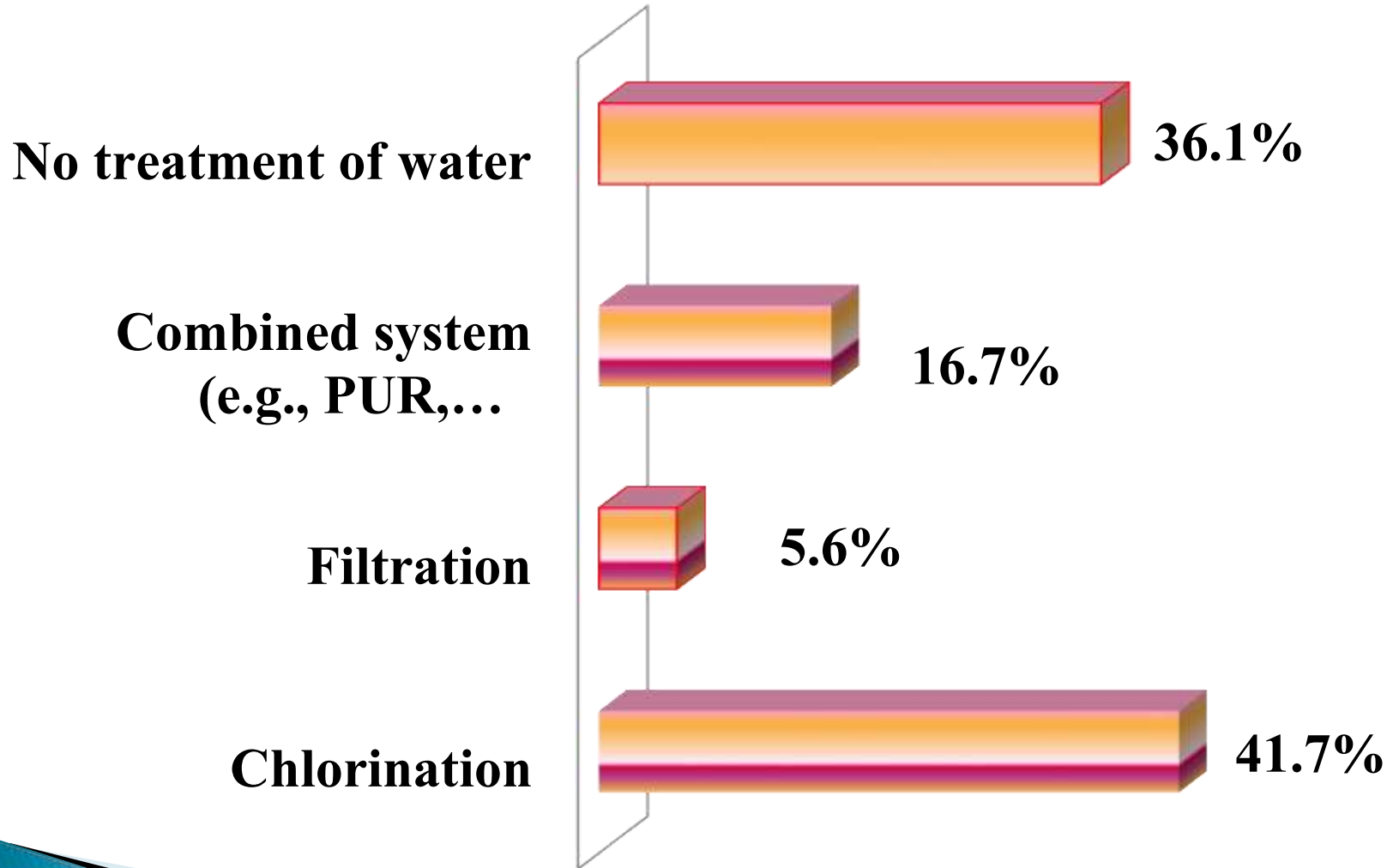
**No Treatment of water  
in  
school**

**(13) 36.1%**

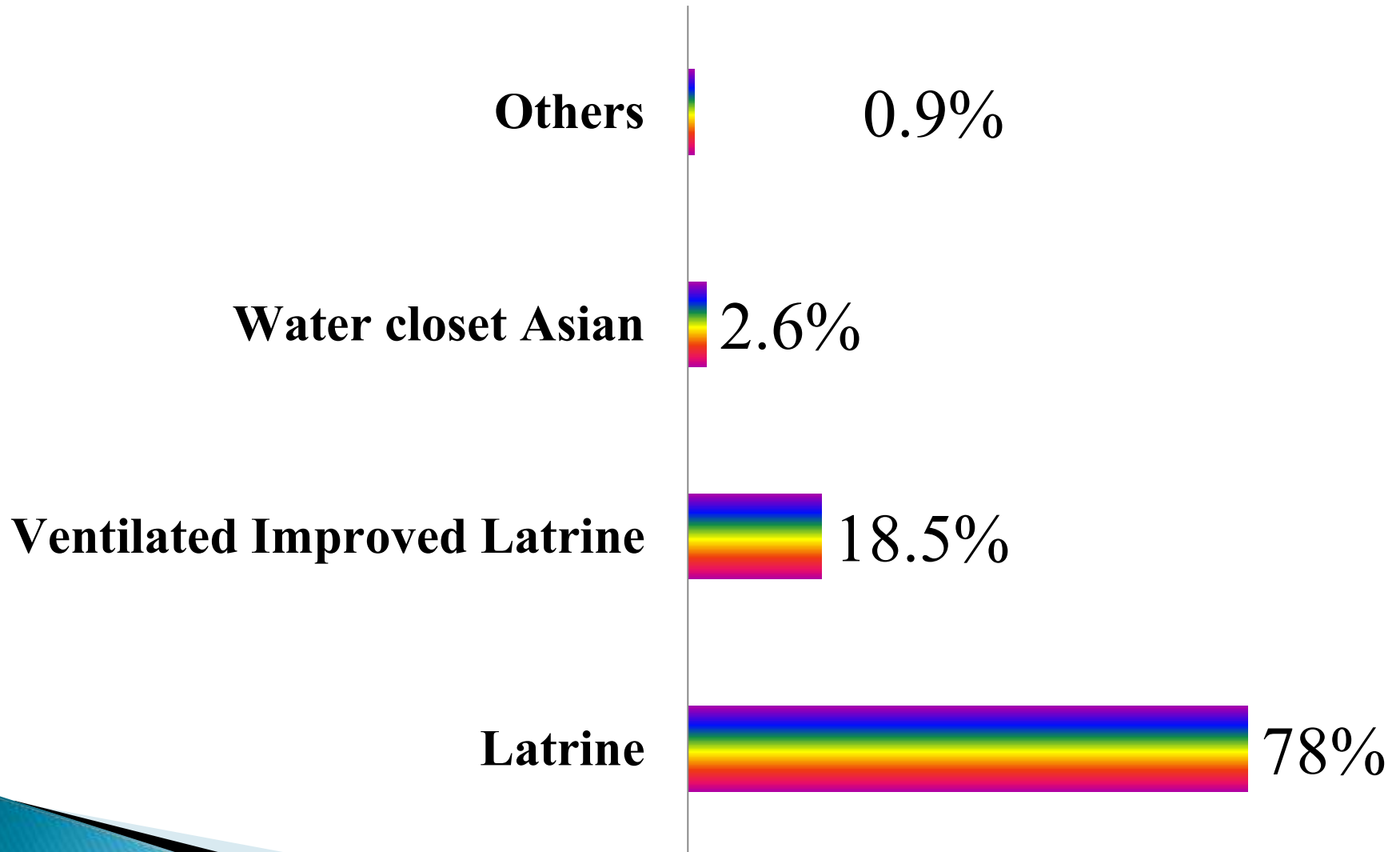
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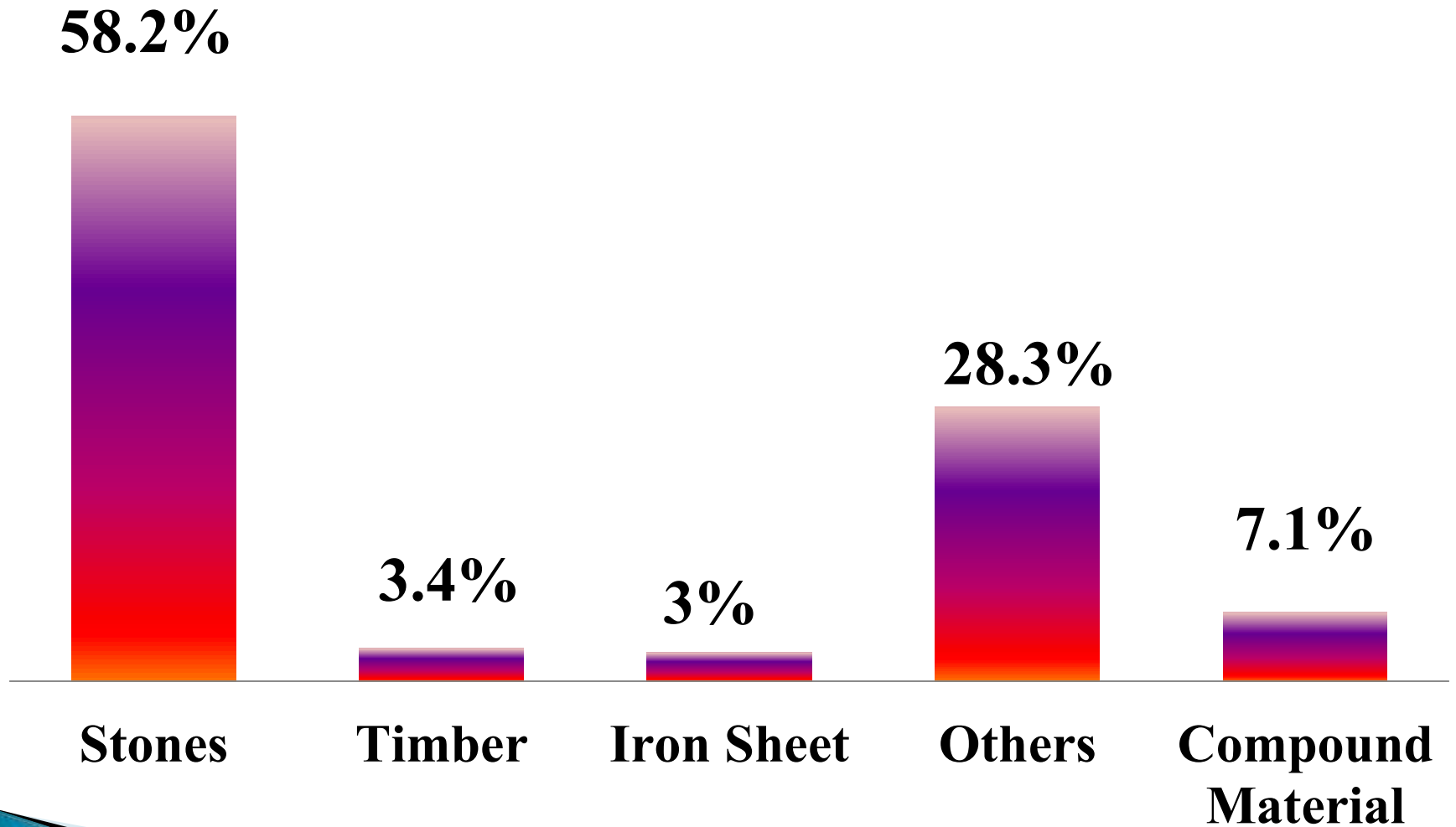
# Treatment of water in schools



# Types of toilets used in school

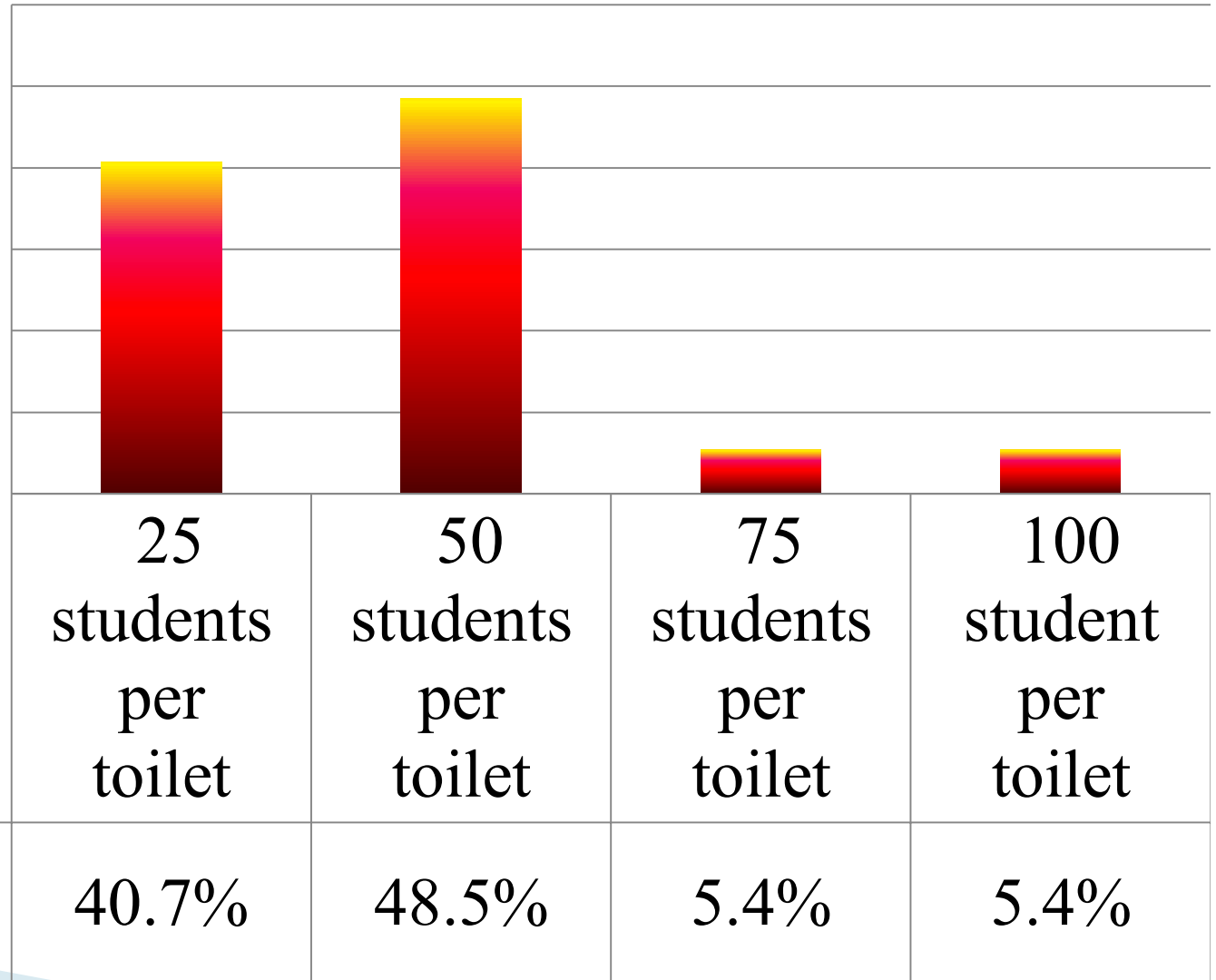


# Types of materials used to build toilets in schools



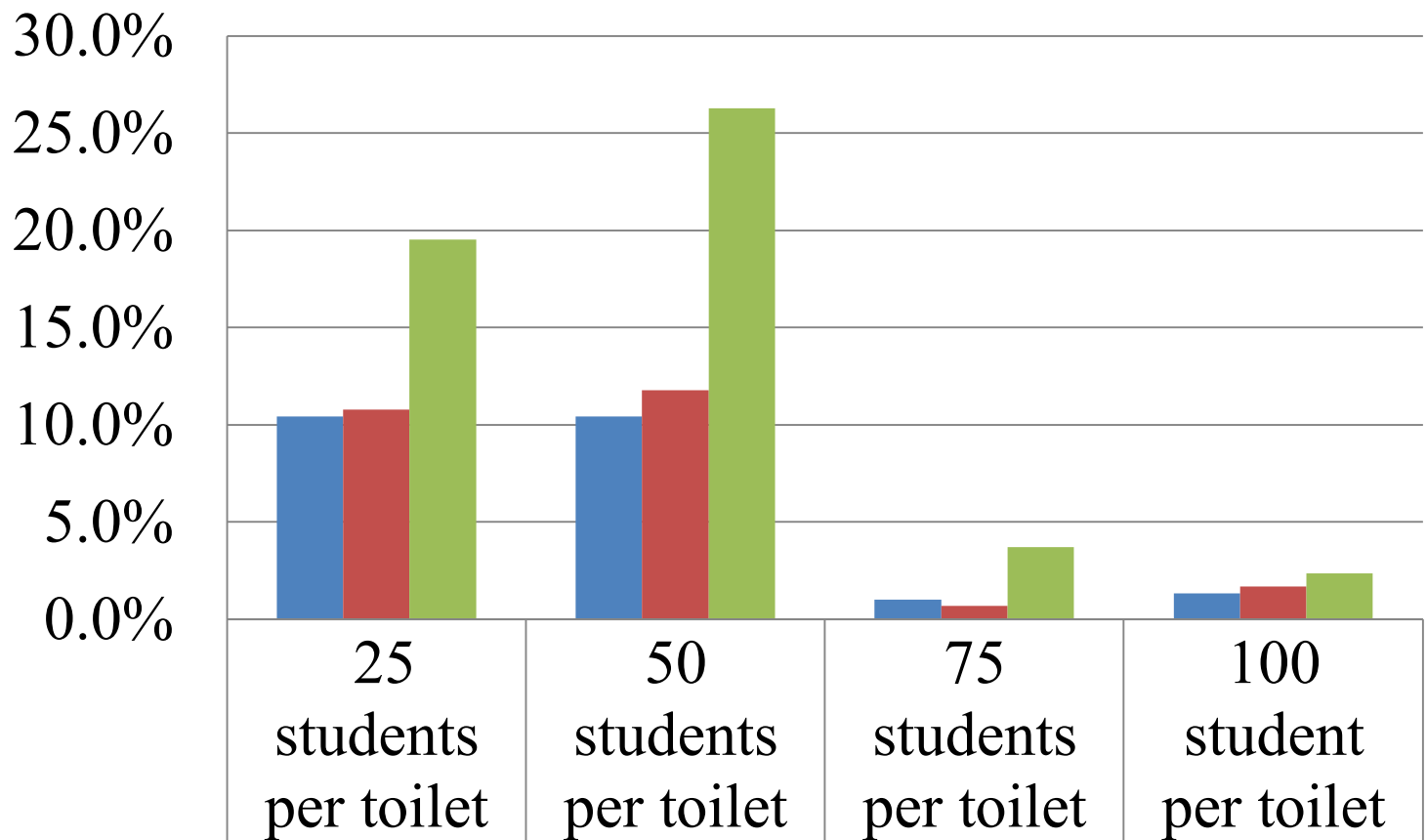
# Student toilet ratio

60.0%  
50.0%  
40.0%  
30.0%  
20.0%  
10.0%  
0.0%



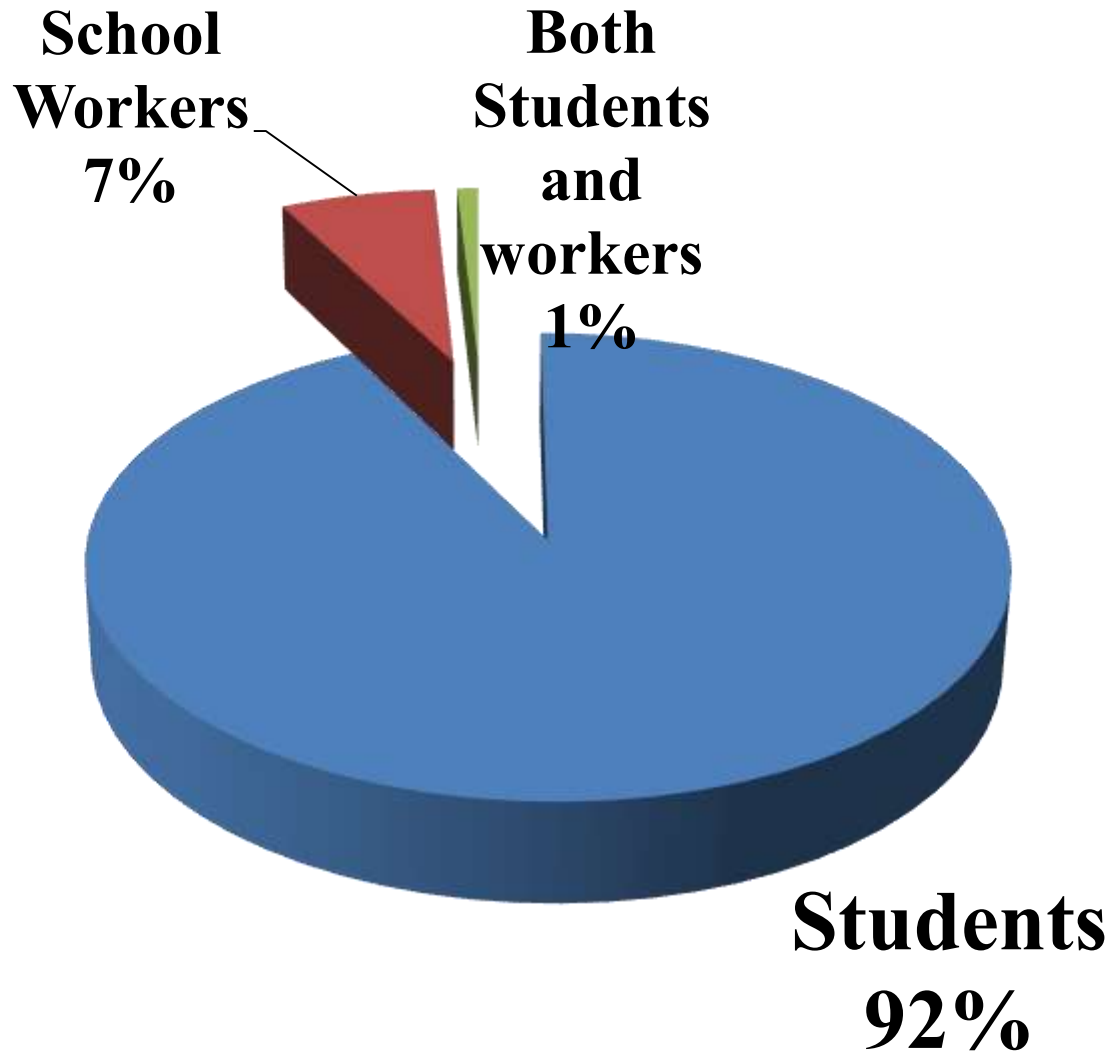


# Student toilet ratio



■ Girls Boarding	10.4%	10.4%	1.0%	1.3%
■ Boys boarding	10.8%	11.8%	0.7%	1.7%
■ Mixed Boarding	19.5%	26.3%	3.7%	2.4%

# Cleaning and maintenance of school toilets



# Sanitary facilities for students with special Needs in schools

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**Frequency/  
Percent**

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**Available**

**(29) 80.6%**

**Not Available**

**(7) 19.4%**

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# The condition of Schools toilet facilities, (*n* = 36).

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**Indicator**

**N (%)**

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**OBSERVED**

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**Maintenance of the toilet floor**

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No cleaning of toilet Floor


**2(5.6)**

Limited cleaning of toilet Floor

**25(69.4)**

Adequate cleaning of toilet Floor

**9(25.0)**



# The condition of Schools toilet facilities, ( $n = 36$ ).

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## Condition of the Toilet floor

N (%)

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Some fecal matter or smeared feces, urine,  
and/or anal cleansing material scattered on  
floor.

**24(66.7)**

Very little or no fecal matter, smeared feces,  
urine, or anal cleansing material on floor

**12(33.3)**

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# The condition of Schools toilet facilities, ( $n = 36$ ).

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## Condition of the Toilet roof

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Roof present, but leaky **2(5.6%)**

Roof present and provides shade **34(94.4%)**  
and at least some protection  
against rain.

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# The condition of Schools toilet facilities, ( $n = 36$ ).

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## The condition of the Toilet walls

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Cosmetic issues in need of repair, **2(5.6%)**  
even though user is not visible from  
the outside.

Walls in sufficient condition to **34(94.4%)**  
provide privacy.

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# The condition of Schools toilet facilities, ( $n = 36$ ).

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## **The Condition of the Toilet Doors**

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If door is part of design, door does not close properly **9(25.0%)**

Door is present and can be closed. **27(75.0%)**

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# The condition of Schools toilet facilities, (*n* = 36).

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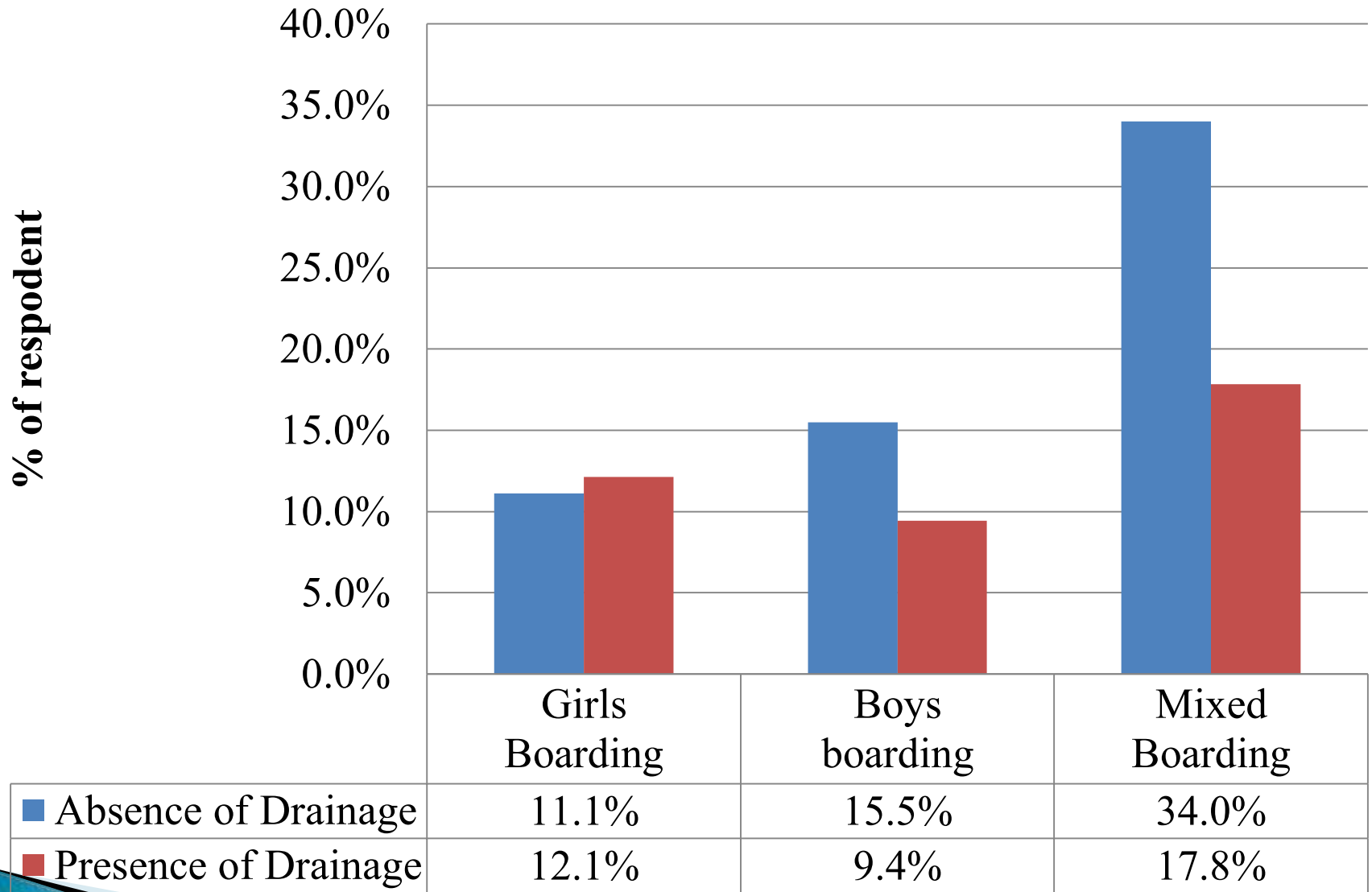
## Condition of the Toilet Slap

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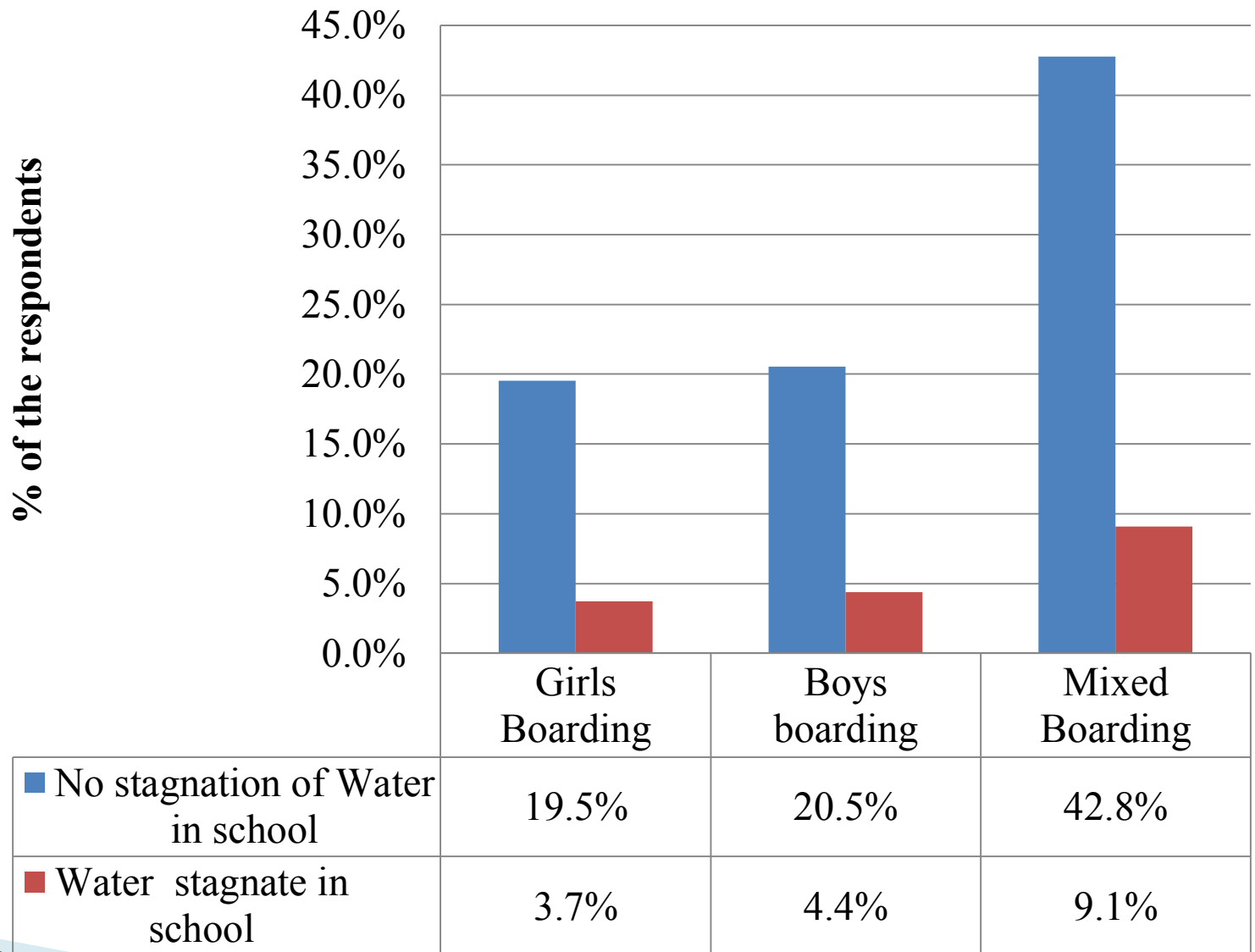
Hole significantly eroded or other small gaps or cracks in slab. Not yet a safety hazard.	<b>1(2.8%)</b>
Slab more or less intact. No danger of children or adults slipping	<b>35(97.2%)</b>

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# Waste Management



# proportion of schools with stagnant water



# Multiple regression

	<b>Mean</b>	<b>Std. Deviation</b>	<b>N</b>
The total rate of student dropping from school	4.89	4.185	297
Water Access by the students	3.72	1.023	297
Water quality in schools	3.86	.997	297
Student Toilet ratio	31.97	18.779	297
Water governance	23.67	10.462	297
Waste disposal in schools	2.24	.298	297

Model	R	R Square	Change Statistics				
			R Square Change	F Change	df1	df2	Sig. F Change
1	.109 <sup>a</sup>	.012	.012	1.765	2	294	.173
2	.111 <sup>b</sup>	.012	.001	.166	1	293	.684
3	.119 <sup>c</sup>	.014	.002	.269	2	291	.764

a. Predictors: (Constant), Water quality in schools, Water Access by the students

b. Predictors: (Constant), Water quality in schools, Water Access by the students, Student Toilet ratio

c. Predictors: (Constant), Water quality in schools, Water Access by the students, Student Toilet ratio, Water governance , Waste disposal in schools

d. Dependent Variable: The total rate of student dropping from school

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	6.683	1.355		4.933	<b>.000</b>
Water Access by the students	-.049	.239	-.012	-.205	<b>.837</b>
Water quality in schools	-.461	.245	-.110	-1.881	<b>.061</b>
Student Toilet ratio	.005	.013	.024	.407	<b>.684</b>
Student Toilet ratio	.006	.013	.028	.482	<b>.630</b>
Water governance	.004	.023	.009	.156	<b>.876</b>
Waste disposal in schools	-.595	.837	-.042	-.711	<b>.478</b>

# RECOMMENDATIONS

- ▶ Schools to partner with CBO and NGO for the provision of WASH facilities, the approach are essential for water and sanitation investment.
- ▶ Water Sanitation and hygiene promotion strategy should be implemented in all schools. This should include programmes that address water safety, access, improved sanitation facilities and good hygiene practices.
- ▶ There should be policy directive to all schools to have proper waste management system and adopt modern methods that reduce pressure on land.

# RECOMMENDATIONS

- ▶ County government through water providers to have affirmative action and provide water to learning institution and subsidize the cost of water to schools.
- ▶ Soap manufacturing companies to form partnerships with and adopt a school(s) and subsidize the cost of soap and cleaning materials. This will encourage many schools to have hand washing activity taking place in their schools.
- ▶ Promotion of WASH theme in schools. There should be organized inter-class, inter-dormitories competition for the cleanest and best-decorated toilets. Parents could be invited to participate. Students can be encouraged submit original composed songs about WASH activities in their school.



THE END

