

# Sanitation Market Assessment (SMA)

*Western Kenya and Marsabit*

**USAID/WASHPaLS**

*Compendium of findings*

*December 2021*



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# Acronyms

<b>ASAL</b>	Arid and semi-arid lands
<b>CHU</b>	Community health unit
<b>CHV</b>	Community health volunteer
<b>DIY</b>	Do-it-yourself
<b>HH</b>	Household
<b>HW</b>	Hardware
<b>JMP</b>	Joint Monitoring Program
<b>K</b>	Thousand ('000)
<b>KES</b>	Kenyan shilling
<b>kg</b>	Kilogram
<b>km</b>	Kilometer
<b>MBS</b>	Market-based sanitation
<b>MFI</b>	Microfinance institution
<b>OD</b>	Open defecation
<b>SACCO</b>	Savings and credit cooperative organization
<b>SMA</b>	Sanitation market assessment
<b>UNICEF</b>	United Nations Children's Fund
<b>VC</b>	Value chain
<b>vs.</b>	Versus
<b>WASH</b>	Water, Sanitation, and Hygiene
<b>WASHPaLS</b>	Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability
<b>WHO</b>	World Health Organisation

# Introduction

**Purpose:** This document is a compendium of findings for the sanitation market assessment (SMA) conducted by the Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability (WASHPaLS) in western Kenya and Marsabit. It presents the technical methodologies and detailed analyses of the assessment.

This document supplements the following documents, available upon request from the WASHPaLS Project Director:

- Final report of the SMA
- Summary of key findings of the SMA

**Organization:** The document is organized as follows:

- **Contents** of the document (with navigation links to different sections)
- **Overview** of the approach of the SMA
- **Compendium of findings** for rural western Kenya
- **Compendium of findings** for urban Marsabit

# Contents of the document

## Guidance:

Please click on the **white box** to go to the **relevant section**

Please click on the **“home” button** on your keyboard to return to the **first slide**

Section		Overview
		Objective of the assessment and overall research approach
		<b><u>Compendium of findings:</u></b>
Western Kenya	Marsabit	<b>Sanitation context</b> Current sanitation behavior of households
Western Kenya	Marsabit	<b>Barriers and drivers for MBS</b> Barriers and drivers for adoption of durable, improved toilets in the core market, business environment, and broader context
Western Kenya	Marsabit	<b>Customer segmentation</b> Deep-dive analysis of customers segmented based on propensity to invest in durable, improved toilets
Western Kenya	Marsabit	<b>Product economics</b> Cost breakdown of prevalent toilet types by toilet component (pit, interface, and shelter) and cost component (labor, material, transport)
Western Kenya	Marsabit	<b>Value-chain trace-back maps</b> Maps of customers, material, and service providers hired for toilet construction, found using a snowball sampling approach

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# Objective

The objective of the SMA is to understand the potential for market-based sanitation (MBS) in different contexts in Kenya



## Sanitation context in Kenya

**25 low-OD<sup>1</sup> counties** where uptake of sanitation products through markets is **low**, despite favorable conditions

**12 high-OD<sup>1</sup> counties** which are predominantly in the **ASAL regions** with a high proportion of pastoralist communities



## USAID/KEA objectives

**Inform future investments** by understanding current state and **potential opportunities for MBS** in different regions

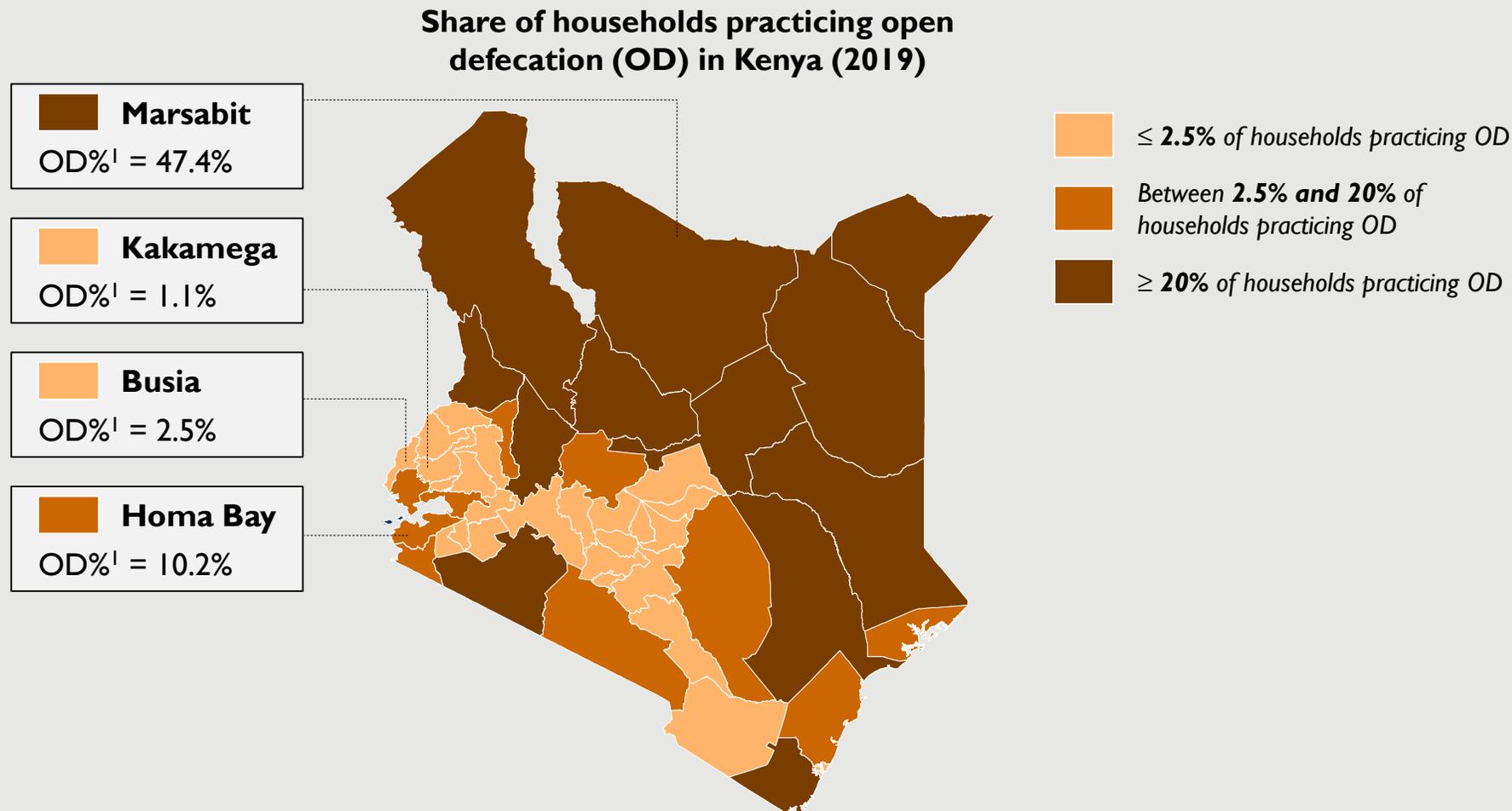
**Inform** the development of **context-specific rural sanitation guidance**

OD = open defecation; ASAL = arid and semi-arid lands

1. Low-OD refers to counties with  $\leq 2.5\%$  of households practicing OD and high-OD counties are those with  $\geq 20\%$  of households practicing OD; source: 2019 Kenya Population and Housing Census

# Approach | County selection

We selected three low-OD counties in western Kenya and one ASAL county for research, based on differences in context and USAID's plans for sanitation investment



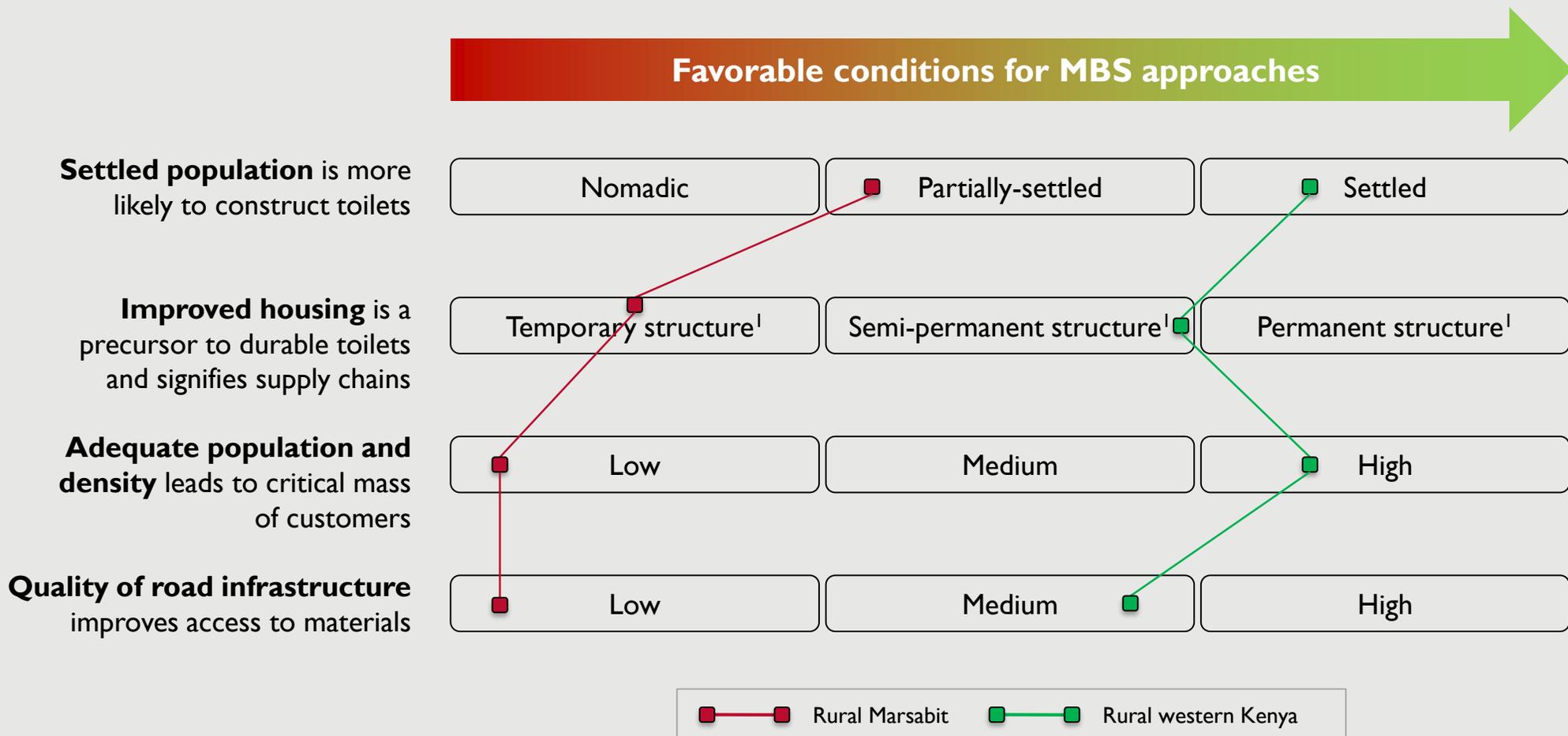
Based on inputs from experts and a review of county-level data, we selected Busia, Kakamega, and Homa Bay as broadly representative of rural western Kenya (comprising of 10 counties in the former Western and Nyanza provinces<sup>2</sup>)

OD = open defecation; ASAL = arid and semi-arid lands

1. OD% refers to the share of households that practice open defecation; source for data: 2019 Kenya Population and Housing Census
2. The 10 counties are Kisumu, Homa Bay, Migori, Kisii, Nyamira, Siaya, Vihiga, Busia, Bungoma, and Kakamega

# Scope for MBS | Rural western Kenya and Marsabit

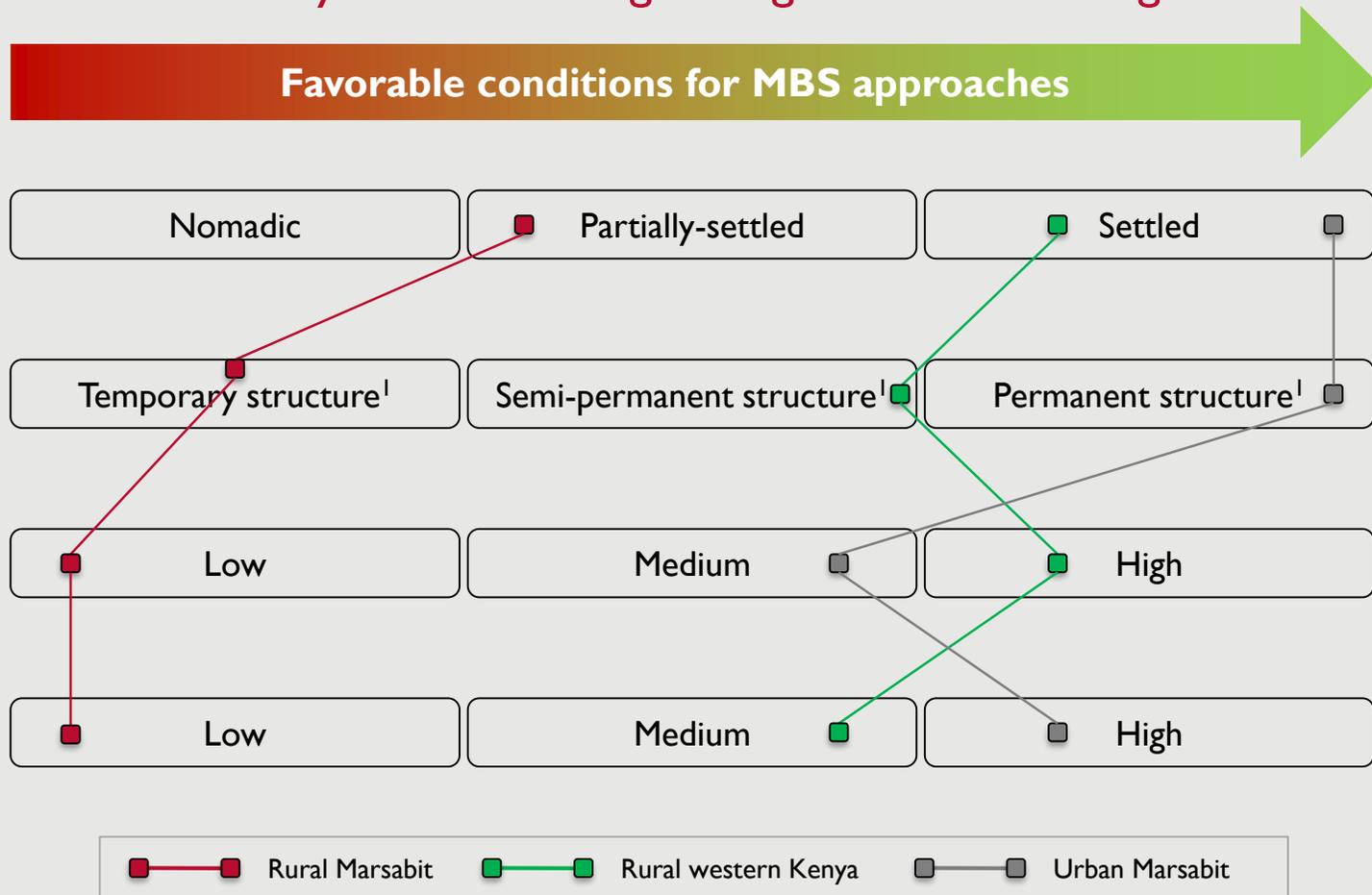
MBS requires certain contextual conditions which are present in rural western Kenya but not in rural Marsabit



1. Our categorization of housing structures is consistent with the Kenya Integrated Household Budget Survey 2015-16

# Scope for MBS | Urban Marsabit

Urban and secondary urban towns can serve as a starting point for MBS in Marsabit since conditions are more favourable and they will continue growing due to increasing sedentism



**We refined our scope to include urban Marsabit since it has greater potential for MBS**

**Note:** Two or more points inside a box convey that conditions are similar; distance between points inside a box are for representation only and are not relative to one another

1. Our categorization of housing structures is consistent with the Kenya Integrated Household Budget Survey 2015-16

# Focus on “durable, improved toilets”

We expanded the definition of an “improved toilet” used by the JMP to include durability as a criteria since collapsing of toilets is a key issue, particularly in western Kenya

Criteria	JMP definition <sup>1</sup>	WASHPaLS definition <sup>2</sup>	Requirements	
<b>Hygienic separation</b> of excreta from human contact	✓	✓	At least a pan, slab, or a covering for separating excreta from human contact	
<b>Durability</b> , i.e., avoid collapse for at least 10 years	✗	✓	A concrete foundation reinforced with iron bars/wire mesh under the toilet floor	
			At least a partial pit lining beyond the foundation	

1. Definition used by the WHO/UNICEF Joint Monitoring Program (JMP), 2017

2. Developed based on consultations with technical experts on the requirements for toilets to be durable in the Kenyan context

# Framework for analyses

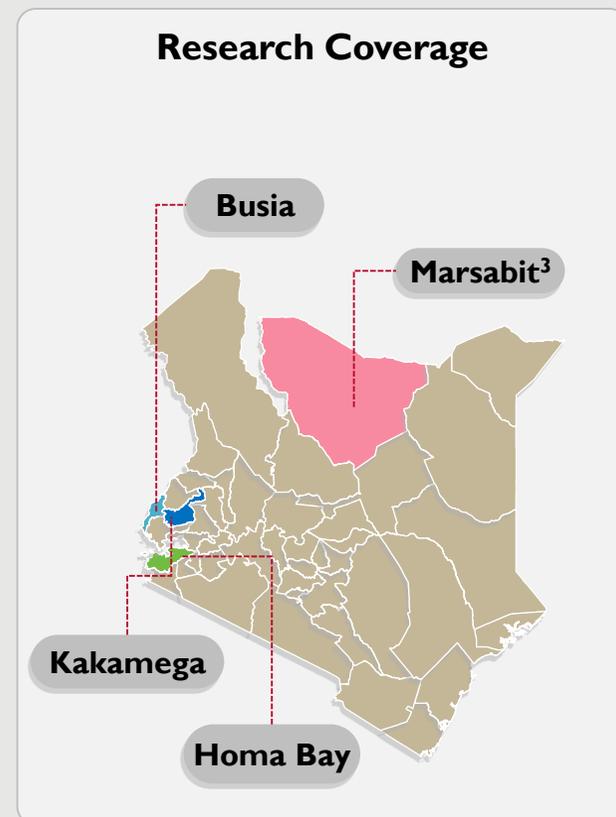
We used the USAID MBS framework<sup>1</sup> to analyze drivers and barriers for adoption of durable, improved toilets in rural western Kenya and urban Marsabit



# Research methodology

We mapped drivers and barriers using a desk review and state-of-the-art primary research methodologies

	Desk review	Households research	Value chain research
<b>Research tools and purpose</b>	<p><b>Key informant interviews (n=14)</b></p> <ul style="list-style-type: none"> <li>Understand the sanitation landscape</li> <li>Analyze the business environment and broader context</li> <li>Explore key drivers and barriers</li> </ul> <p><b>Literature review (n=51)</b></p> <ul style="list-style-type: none"> <li>Study existing sector reviews/evaluations</li> <li>Identify government policies and strategy for sanitation</li> <li>Understand the design and impact of past interventions</li> </ul>	<p><b>Quantitative listing interviews (n=1,140)</b></p> <ul style="list-style-type: none"> <li>Understand sanitation context and HH profiles</li> <li>Select HHs for detailed interviews, and size the resulting HH segments</li> </ul> <p><b>Quantitative detailed interviews<sup>1</sup> (n=316)</b></p> <ul style="list-style-type: none"> <li>Understand purchase process of HHs</li> <li>Segment HHs, and create detailed profiles</li> </ul> <p><b>Qualitative focus group discussions (n=65)</b></p> <ul style="list-style-type: none"> <li>Understand HH beliefs, attitudes, and rationale for purchase behavior</li> </ul>	<p><b>Value chain trace-backs<sup>2</sup> (11 toilets)</b></p> <ul style="list-style-type: none"> <li>Map the sanitation value chain through trace-backs</li> <li>Analyze the business environment and broader context</li> </ul> <p><b>Qualitative interviews with value chain players (n=58)</b></p> <ul style="list-style-type: none"> <li>Understand business models, unit economics, and drivers and barriers</li> </ul>



1. Conducted with a subset of households from listing interviews; overall, 1,216 unique HHs, 58 unique value chain actors, and 14 unique key informants were interviewed
2. A trace-back starts with a qualitative interview with a household that constructed a toilet in the past few years, followed by qualitative interviews with all the value chain actors that had provided materials or services towards the construction of that toilet, including upstream actors such as the supplier to the hardware store
3. Our primary research for urban Marsabit included Marsabit town and three secondary urban areas – outskirts of Marsabit town, Merille, and Karare

# Research sample

	Quantitative listing interviews	Quantitative profile interviews	Qualitative focus group discussions	Value chain trace-backs <sup>1</sup>	Qualitative interviews with value chain players <sup>2</sup>
<b>Rural western Kenya</b>	<b>940</b>	<b>221</b>	<b>50</b>	<b>7</b>	<b>36</b>
Busia	313	77	0	2	10
Kakamega	325	71	25	2	10
Homa Bay	302	73	25	3	16
<b>Urban Marsabit</b>	<b>200</b>	<b>95</b>	<b>15</b>	<b>4</b>	<b>22</b>
Marsabit town	100	45	10	2	12
Marsabit town outskirts	28	7	0	0	0
Merille	41	22	5	1	6
Karare	31	21	0	1	4
<b>Total</b>	<b>1,140</b>	<b>316</b>	<b>65</b>	<b>11</b>	<b>58</b>

1. Sample for trace-backs is in terms of number of toilets (not respondents)

2. Value chain players included fundis, hardware stores, transporters, pit diggers, other material suppliers (e.g., sand/timber/aggregate), and CHVs

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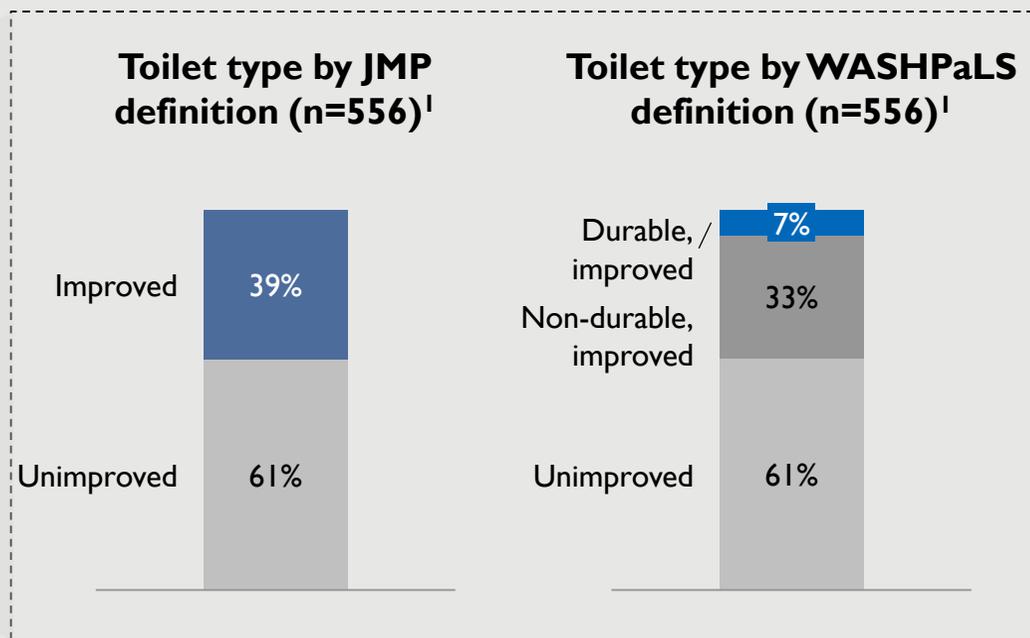
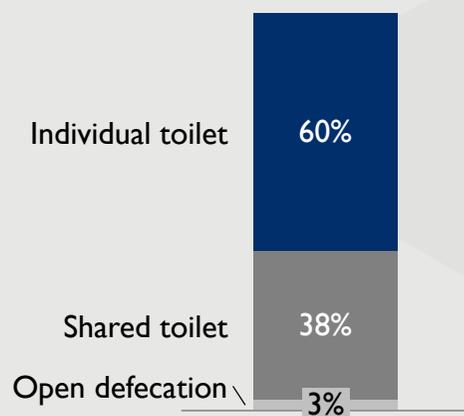
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# Sanitation context | Overview

Western Kenya is characterized by very low OD rates and a moderate prevalence of individual, improved toilets, but most individual, improved toilets are not durable

Type of sanitation facility (n=931) (2021)<sup>1,2</sup>



1. FSG quantitative interviews in rural Busia, Kakamega, and Homa Bay; the percentages in the bars do not add up to exactly 100% due to rounding off; the sum of “durable, improved” + “non-durable, improved” does not add up to 39% due to rounding off
2. Our sample had a lower share of households practicing OD in Homa Bay, compared to the Kenya Population and Housing Census 2019; we attribute this to some households shifting to OD as a temporary measure when their toilet collapses

# Sanitation context | Overview

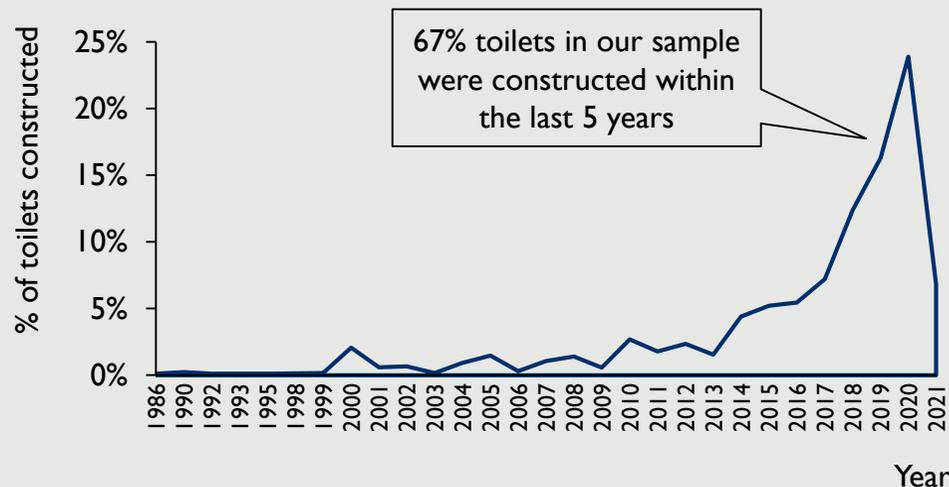
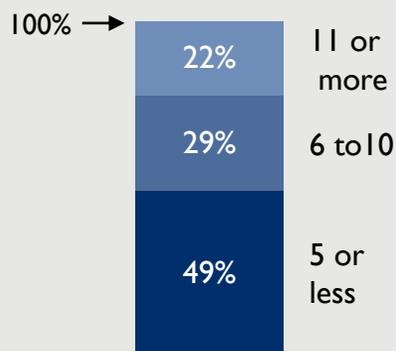
The lack of durable toilets, loose soil conditions, and flooding leads to regular collapsing or “sinking” of toilets and frequent new constructions

Toilets often collapse within 5 years of construction...

...forcing households to construct new toilets frequently

Number of years toilets last before collapsing as per households (n=192) (2021)<sup>1</sup>

Year of toilet construction (n=776) (2021)<sup>1</sup>



“Back home in my rural area, the toilet collapsed but it was not a permanent toilet...we just woke up one day and found it had collapsed.”

- Rural household, Kakamega

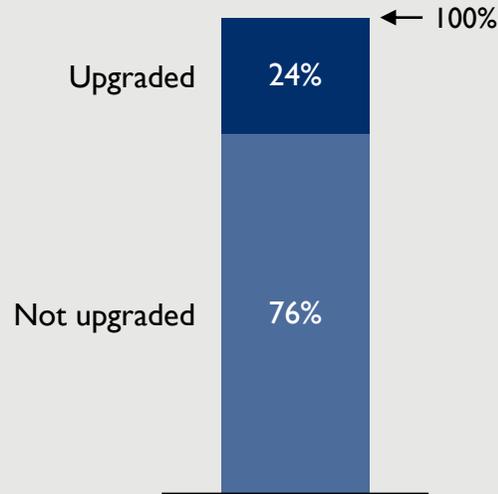
“A neighbor constructed a toilet and it didn’t last a month before collapsing because of the soft soil...toilets get filled up with water during the rainy season and collapse.”

- Rural household, Homa Bay

# Sanitation context | Overview

**Upgrades are less common since toilets collapse before an upgrade can be scheduled and it is challenging to upgrade or repair a collapsed toilet**

**Share of households who have upgraded or repaired their current toilet (n=781) (2021)<sup>1</sup>**



*“Upgrading requires emptying the pit which is costly...the exhausting process can also cause the existing pit to collapse.”*

*- Rural household, Kakamega*

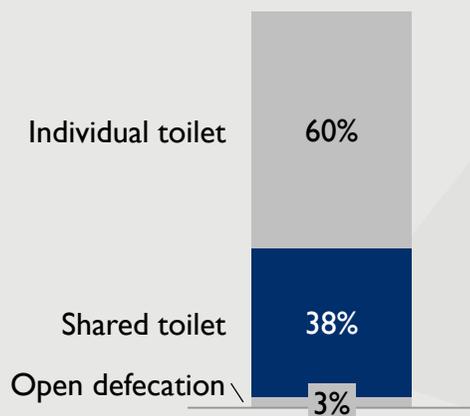
*“Sometimes the timber used for the floor is already eaten by termites, causing a collapse...it is easier to dismantle the walls and set up a new toilet over another pit.”*

*- Rural household, Kakamega*

# Sanitation context | Overview

Sharing of toilets is common due to lack of affordability and cultural norms, and is often a temporary measure post-collapse till the household constructs a new toilet

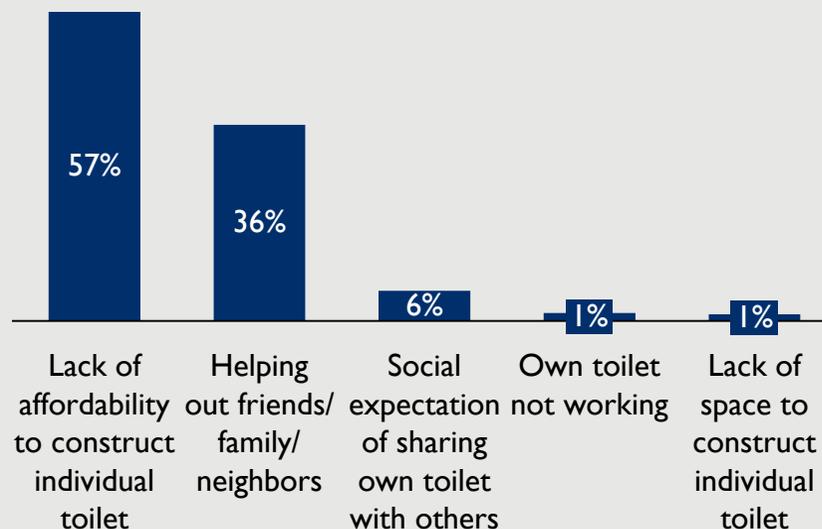
Type of sanitation facility (n=931) (2021)<sup>1</sup>



*“There is a cultural expectation to share...people ask us if we are not locking our kitchen , why lock the toilet.”*

*- Rural household, Homa Bay*

Reasons for sharing stated by households who use shared toilets (n=51) (2021)<sup>1,2</sup>



1. FSG quantitative interviews in rural Busia, Kakamega, and Homa Bay; the percentages on the bars don't add up to exactly 100% due to rounding off
2. The percentages do not add up to 100% since respondents could select multiple responses; the number of respondents is lower than 38% of 931 (the chart on the left-hand side) because reasons for not sharing were only asked in the detailed interviews

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# Barriers and Drivers | Definitions



**Barrier**

## *For customers*

A barrier is any factor that **inhibits a customer from paying for and constructing a toilet**

## *For value chain actors*

A barrier is any factor that **restricts a value chain (VC) actor's participation** in the sanitation market, thereby making it more difficult for customers to purchase toilets



**Driver**

A driver is any factor that **enables a customer to pay for and construct a toilet**

A driver is any factor that **enhances a VC actor's participation** in the sanitation market, thereby making it easier for customers to purchase toilets

# Barriers and Drivers | Framework for Market Based Sanitation

## What is the framework for MBS?

- The framework for market-based sanitation (MBS) helps funders and implementers to design, analyze, and improve MBS interventions by specifying the types of barriers that may need to be addressed to bring about systems change at scale
- The framework identifies three distinct domains: (1) the core **sanitation market**, comprising customers, enterprises, and entrepreneurs, that large-scale interventions can address (2) the **business environment**, shaped by government policy or the availability of raw materials and financial services, which governments, donors and funders, and large interventions can potentially influence, depending on the complexity and resources available; (3) **context**, such as social norms, economic environment, and geographic conditions, which interveners should understand but typically cannot influence in the short-term

### *The Sanitation Market System – Framework for MBS<sup>1</sup>*



1. **Source:** USAID, 2018. Scaling Market Based Sanitation: Desk review on market-based rural sanitation development programs. Washington, DC., USAID Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability (WASHPaLS) Project

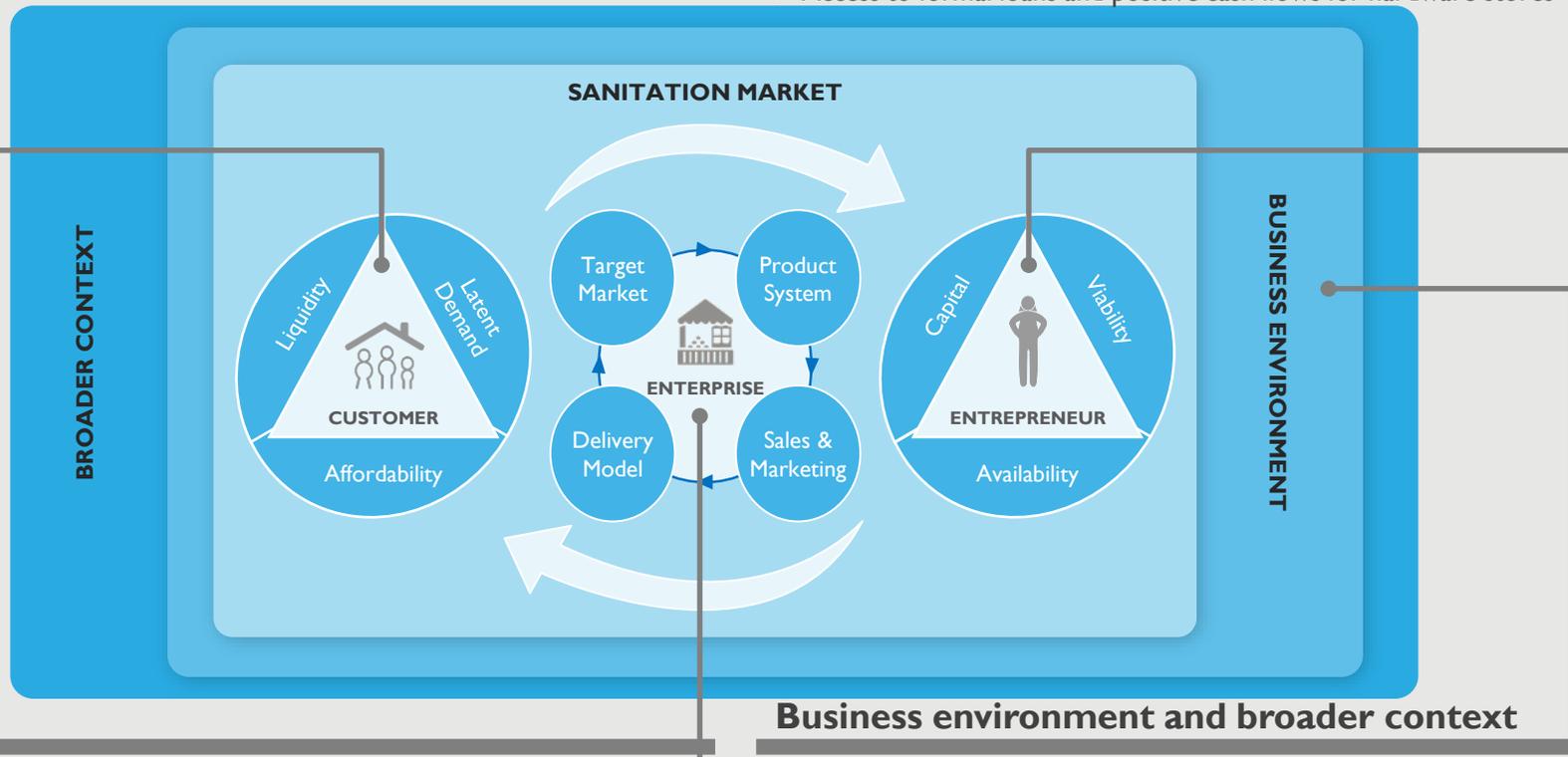
# Barriers and Drivers | Customer

## Customer

- High awareness of the benefits of sanitation
- Knowledge of durable toilet options
- Strong desire to improve the durability of toilets
- Significant proportion of households with a high ability to pay for durable toilets
- Poorer households with a low ability to pay market prices for durable toilets
- Reluctance to take loans for sanitation for fear of inability to pay back

## Entrepreneur

- Availability of full-time and part-time fundis
- Part-time fundis' limited skill in durable products
- Sanitation as primary source of income for full-time fundis
- Full-time fundis' willingness to stock materials
- Viability of sanitation business line for all entrepreneurs
- Inaccessibility of formal loans and working capital challenges for fundis
- Access to formal loans and positive cash flows for hardware stores



## Enterprise

- Households' willingness to engage with 3-4 market players to construct toilets
- Lack of information seeking by households and distrust of fundis by households
- Wide range of products across price points
- Incorrect perception of durable toilets being expensive
- Challenges in reducing costs or introducing new products
- Presence of CHVs who are trusted and promote sanitation
- Limited capacity of CHVs to do sales and marketing

## Business environment and broader context

- Well-established supply chains for construction materials
- Poor quality roads limiting potential market for pre-fabricated products
- Lack of training on durable products
- Support from county government for MBS efforts
- Reluctance to take loans for fear of inability to pay back

# Barriers and Drivers | Customer

## Customer

- High awareness of the benefits of sanitation
- Knowledge of durable toilet options
- Strong desire to improve the durability of toilets
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# Customer | Segmentation overview

**We classified rural households in western Kenya into 9 distinct segments based on their propensity to invest in individual, durable, improved toilets**

Source of drinking water		Surface <sup>1</sup>		Well		Piped			
Bank account		Yes	No	Yes	No		Yes	No	
Solar panel ownership					Yes	No		Yes	No
Gender of HH head	Elderly members in HH								
Female	No	A (12.5%)		E (11.6%)	F (10.7%)	G (7.6%)		I (10.5%)	
	Yes	B (14.5%)							
Male	Yes								
	No	C (7.4%)	D (13%)		H (12.2%)				

**Note:** The percentages in parentheses indicate the proportion of households in each segment out of the total population in rural western Kenya without individual, durable, improved toilets

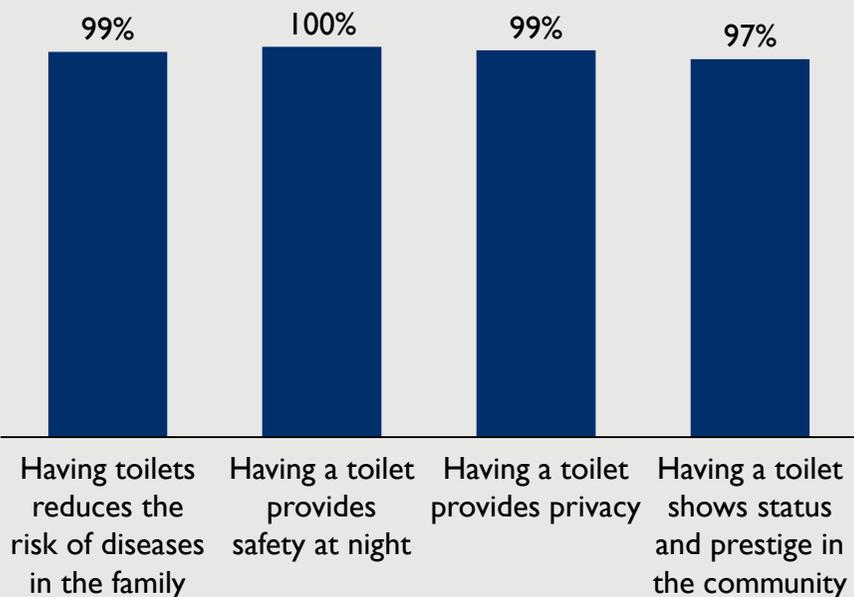
1. Surface water sources include ponds, springs, rainwater harvesting, etc.

# Customer | Driver | Awareness and latent demand

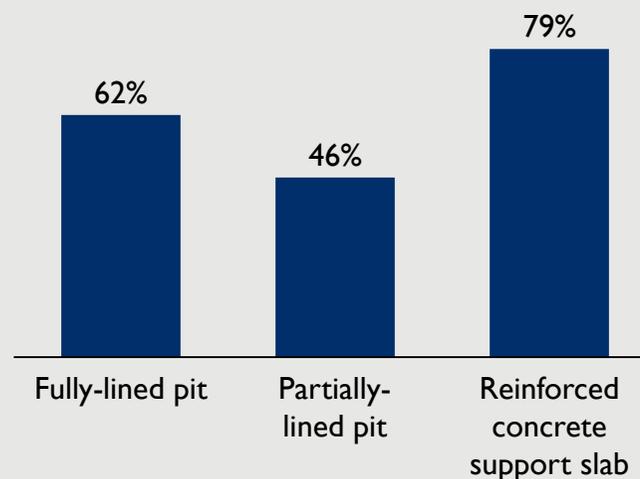


Households understand the benefits of sanitation, are aware of durable toilet designs, and have a strong desire to improve the durability of their toilets

Share of households that agree with the benefits of using toilets (n=221) (2021)<sup>1</sup>



Household's awareness of durable components (n=221) (2021)<sup>1</sup>



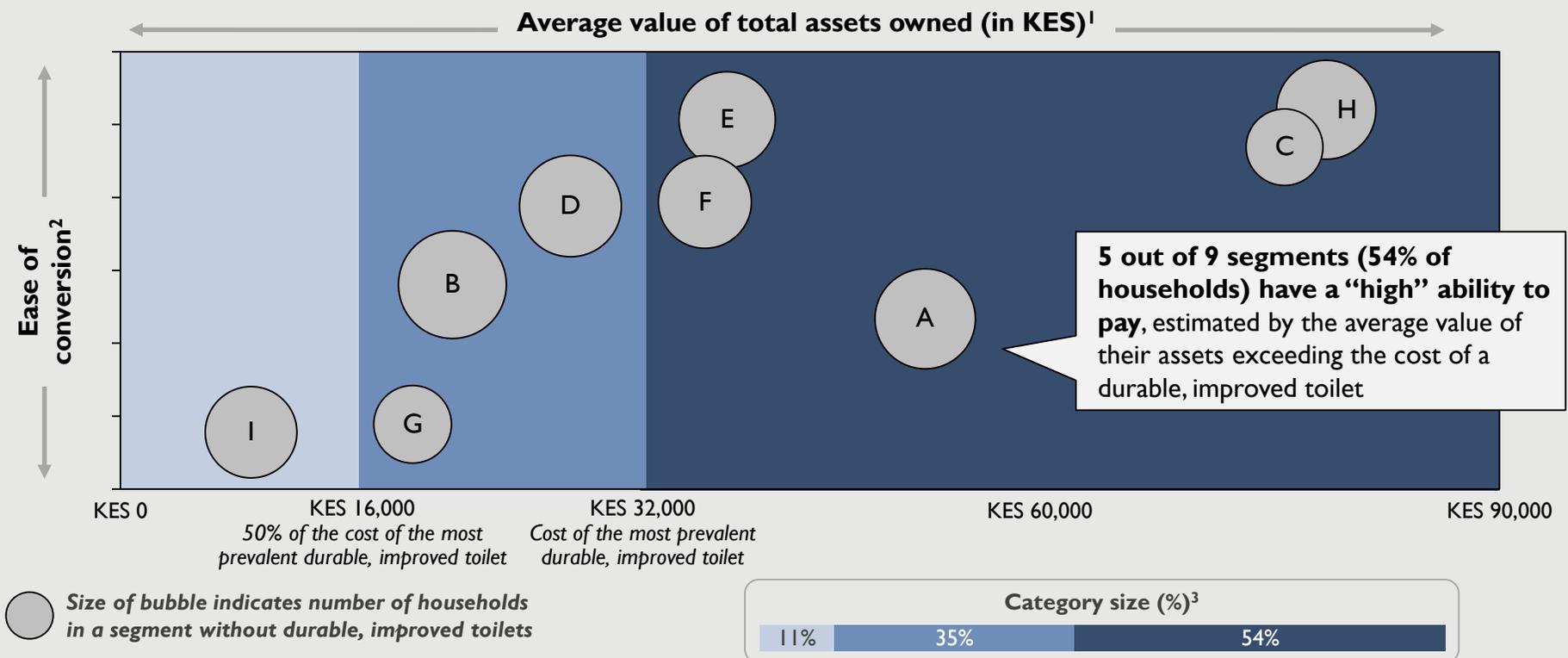
*“Growing up, my parents constructed almost ten toilets before I was even an adult and they would sink before getting full and so I told myself that when I am old enough to construct my own toilet, then I would construct a permanent toilet”*

- Rural household, Kakamega

1. FSG quantitative interviews in rural Busia, Kakamega, and Homa Bay

**A significant share of households have the ability to pay for durable, improved toilets**

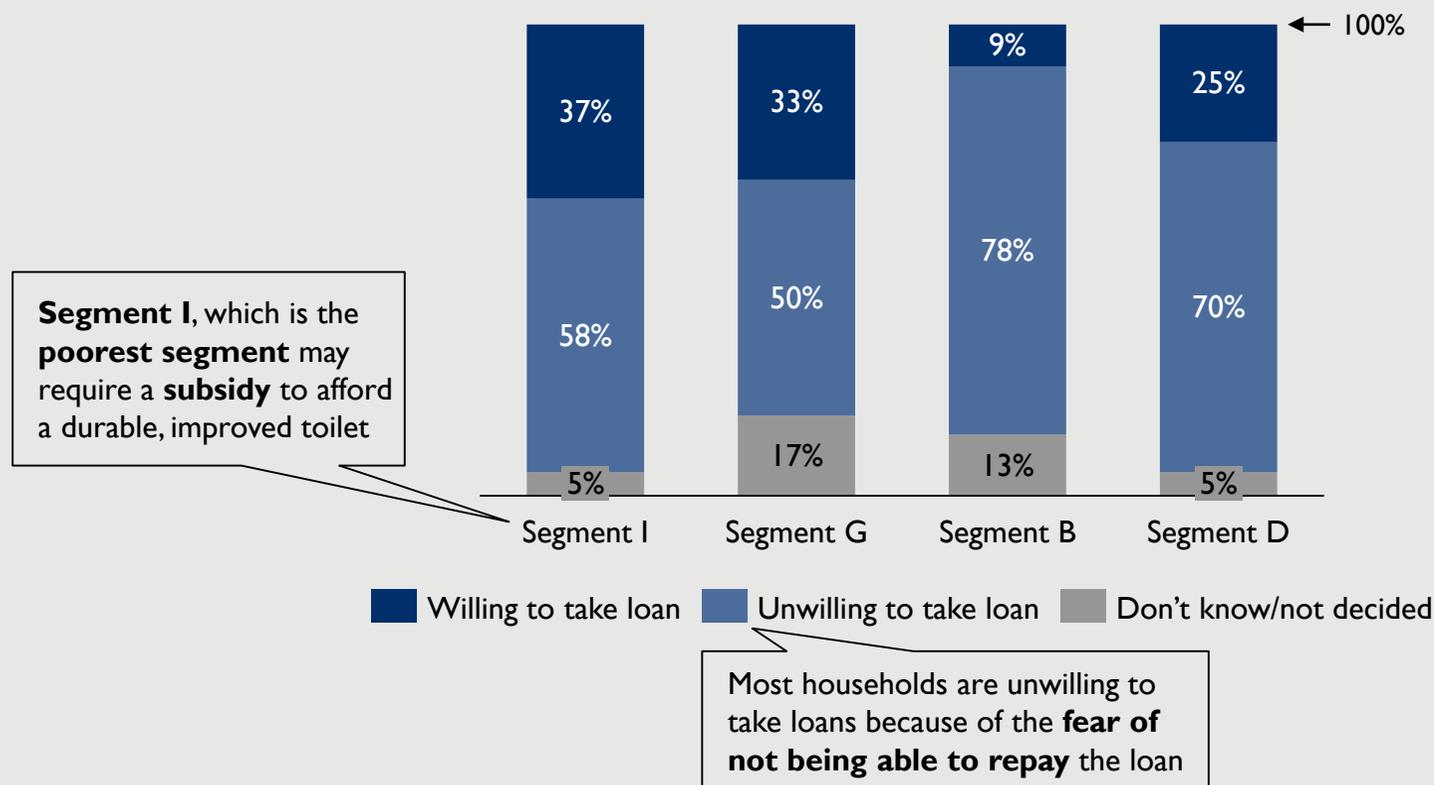
**Ease of conversion, average value of assets, and target market size by segment**



1. Average total asset value for households within the segment: includes farm animals (average of 2 animals), solar panel, motorbike, car/ truck, computer, mobile, bicycle, refrigerator, and television; KES 32,456 is the estimated cost of the most prevalent durable, improved toilet in rural western Kenya (partially-lined pit latrine with a concrete foundation and slab)
2. Ease of conversion is a composite score of awareness of durable toilets, involvement in sanitation category, and willingness-to-pay for sanitation
3. Category size is the proportion of households that are in each category, out of the total population of households without durable, improved toilets

**Less affluent households have lower ability to pay market prices but are unwilling to take loans for toilet construction because of the fear of not being able to repay it**

**Households' willingness to take a loan for future toilet construction or upgrade for segments with "low" or "medium"<sup>1</sup> ability to pay (n=68) (2021)<sup>2</sup>**



1. "Low" and "medium" ability to pay is estimated by the average value of households' assets being less than the estimated cost of the most prevalent durable, improved toilet in western Kenya
2. FSG quantitative interviews in rural Busia, Kakamega, and Homa Bay

# Barriers and Drivers | Entrepreneur

- Driver
- Barrier

## Entrepreneur

- Availability of full-time and part-time fundis
- Part-time fundis' limited skill in durable products
- Sanitation as primary source of income for full-time fundis
- Full-time fundis' willingness to stock materials
- Viability of sanitation business line for all entrepreneurs
- Inaccessibility of formal loans and working capital challenges for fundis
- Access to formal loans and positive cash flows for hardware stores



The sanitation market benefits from a thriving presence of “full-time” fundis who construct durable toilets and “part-time” fundis who fulfill the demand for temporary toilets due to a lack of adequate knowledge of durable toilets



## Full-time fundis



## Part-time fundis

*Sources of information on masonry and sanitation*

On-the-job; are **knowledgeable** about durable toilet construction

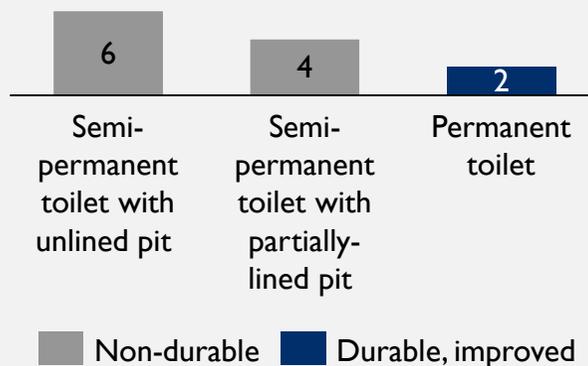
On-the-job; have **limited knowledge** of durable toilet construction

*Months worked as a fundi per annum<sup>1</sup>*

7-8 months

2-3 months

*Typical number and types of toilets constructed per annum<sup>1</sup>*



**Full-time fundis derive a significant share of their income from sanitation, which is driven by high volume of toilet jobs, and high per diem revenue and gross margins from constructing durable toilets**

**a**

**Sanitation is a viable business for both “full-time” and “part-time” fundis, with “full-time” fundis deriving a majority of their masonry income from sanitation**

**b**

**The high share of income from sanitation is driven by high demand for toilet jobs and a relatively lower demand for high-value general masonry jobs**

**c**

**The price premium on durable toilets also allows full-time fundis to earn high margins on durable toilets**

a

Sanitation is a viable business for both “full-time” and “part-time” fundis, with “full-time” fundis deriving a majority of their masonry income from sanitation

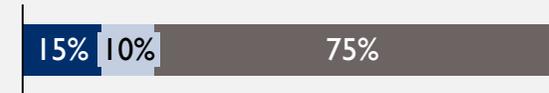


### Full-time fundis



### Part-time fundis

Typical split of annual revenue from all sources<sup>1</sup>



Typical split of profit from masonry (sanitation + general masonry)<sup>1,2</sup>



Typical gross margin per job<sup>1</sup>



■ Sanitation ■ General masonry ■ Other sources

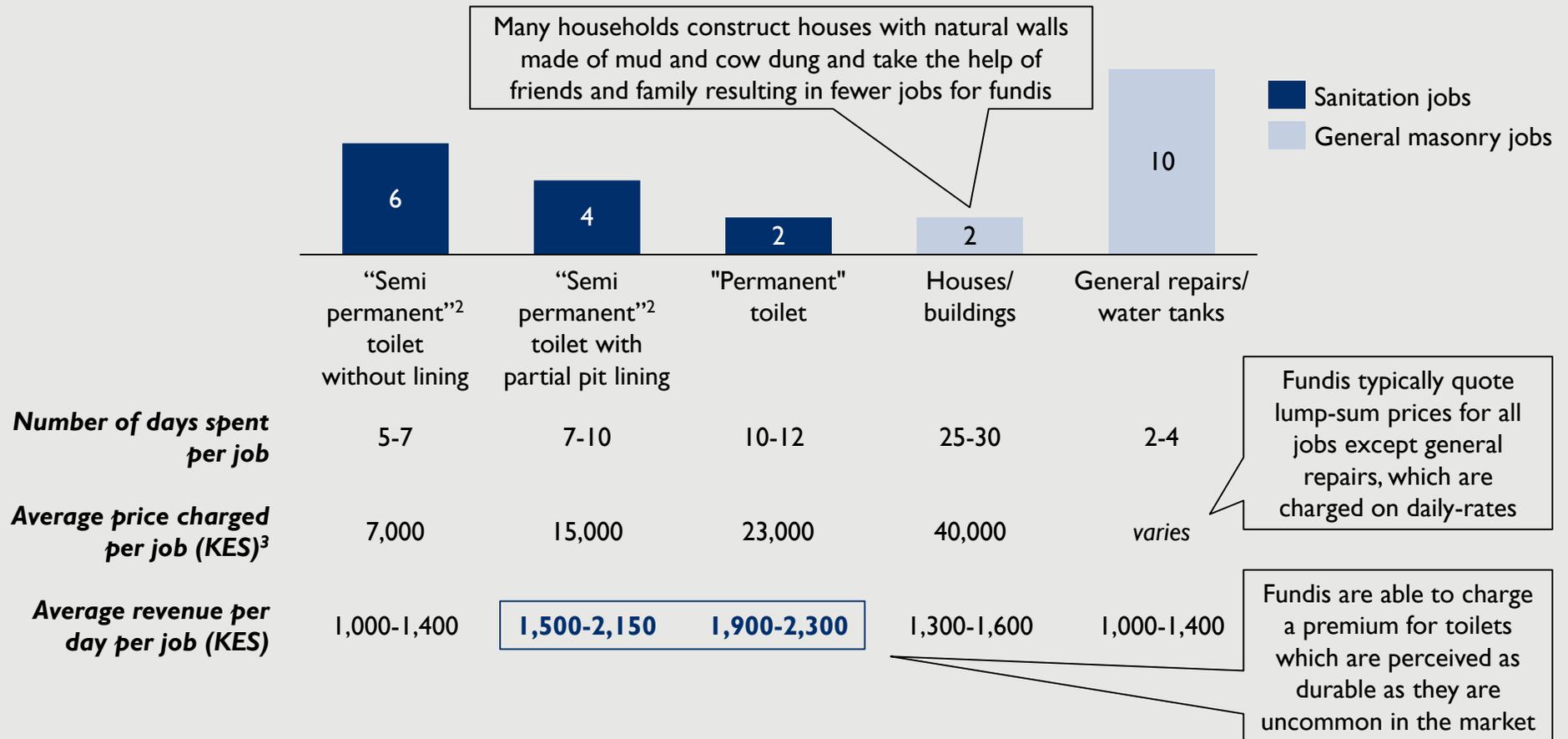
1. FSG analysis based on qualitative interviews with 3 “full-time” and 3 “part time” fundis across rural areas of Busia, Kakamega and Homa Bay

2. We were unable to estimate profit from “other sources” due to data limitations

b

The high share of income from sanitation is driven by high demand for toilet jobs and a relatively lower demand for high-value general masonry jobs

Typical number of masonry jobs per year for a “full-time” fundi, split by type (2021)<sup>1</sup>

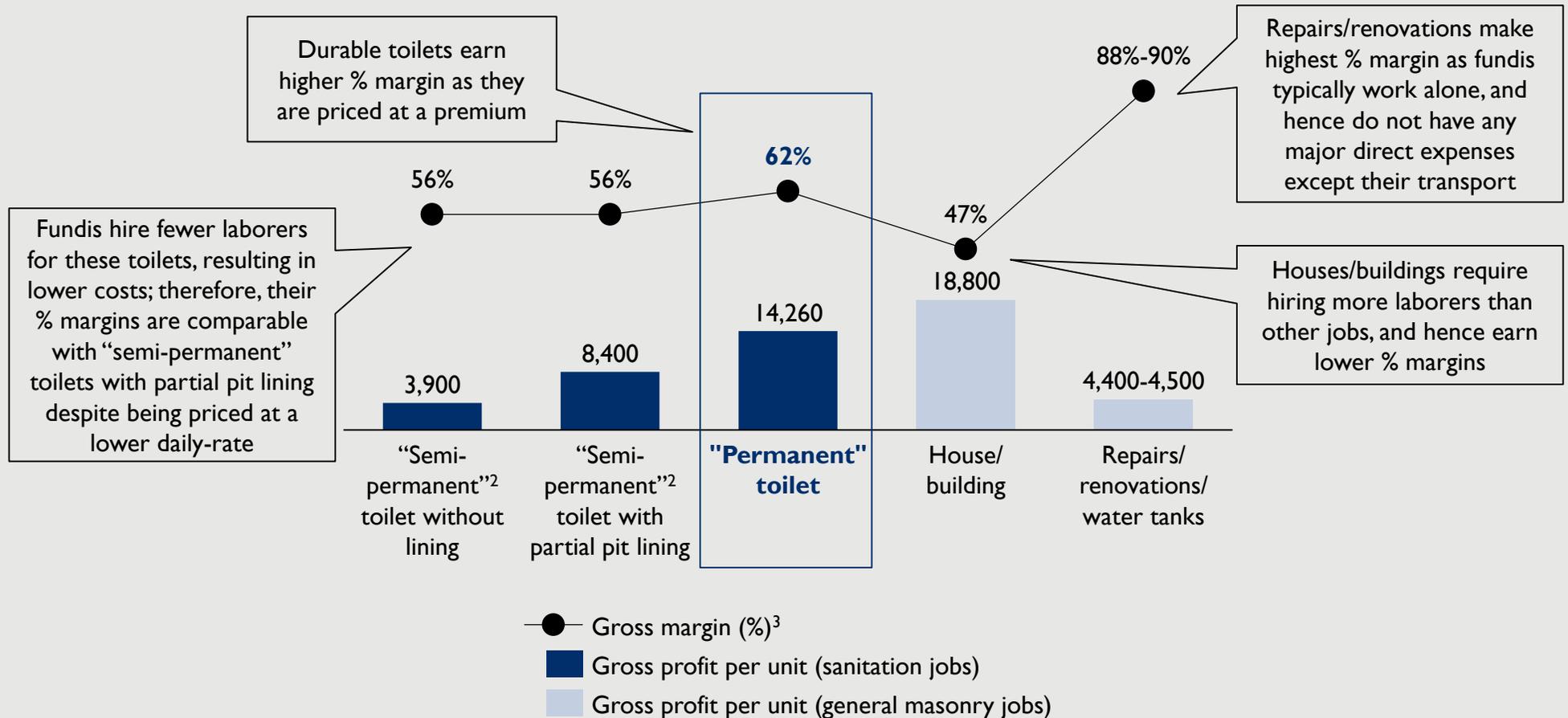


1. FSG analysis based on qualitative interviews with 3 “full-time” fundis across rural areas of Busia, Kakamega and Homa Bay  
 2. “Semi-permanent” is the common term used by fundis for a toilet with wood logs and cement floor, while “permanent” is used to indicate a lined pit and concrete foundation and slab  
 3. The price per job given here is for the entire toilet construction including pit digging and construction of the substructure, interface, and shelter

C

The price premium on durable toilets also allows “full-time” fundis to earn high margins on durable toilets

Typical gross profit and margin per job (KES) for sampled fundis, by type of job (2021)<sup>1</sup>



Fundis hire fewer laborers for these toilets, resulting in lower costs; therefore, their % margins are comparable with “semi-permanent” toilets with partial pit lining despite being priced at a lower daily-rate

Durable toilets earn higher % margin as they are priced at a premium

Repairs/renovations make highest % margin as fundis typically work alone, and hence do not have any major direct expenses except their transport

Houses/buildings require hiring more laborers than other jobs, and hence earn lower % margins

1. FSG analysis based on qualitative interviews with 7 fundis across rural areas of Busia, Kakamega and Homa Bay  
 2. “Semi-permanent” is the common term used by fundis for a toilet with wood logs and a cement floor, while “permanent” is used to indicate a lined pit, concrete foundation and slab toilet  
 3. Gross margin (%) = Gross profit per unit / Unit price; Gross profit = (Selling price) less (cost of direct labor) less (cost of own transport); gross margin is higher for repair jobs since they do not require hiring additional labor

“Full-time” fundis are capable of and willing to invest in further aggregation of materials for sanitation instead of being limited to constructing toilets

## Assets and capabilities of “Full-time” fundis

<b>Customer base</b>	●	Get 60-80% of business from repeat customers or client referrals
<b>Access to inputs</b>	◐	Have strong relationships with hardware stores
<b>Inventory management skills</b>	◐	Manage existing small-scale trading businesses

*“I already have a lot of customers so if I sell materials also to them, then it will make me a lot more money.”*

- Fundi, Kakamega

**For all other value chain actors (i.e., hardware stores, aggregate/sand/timber sellers and transporters), sanitation is viable as a business line but not as a standalone business**

**a**

**Unit margins from sanitation are attractive for each value chain player**

**b**

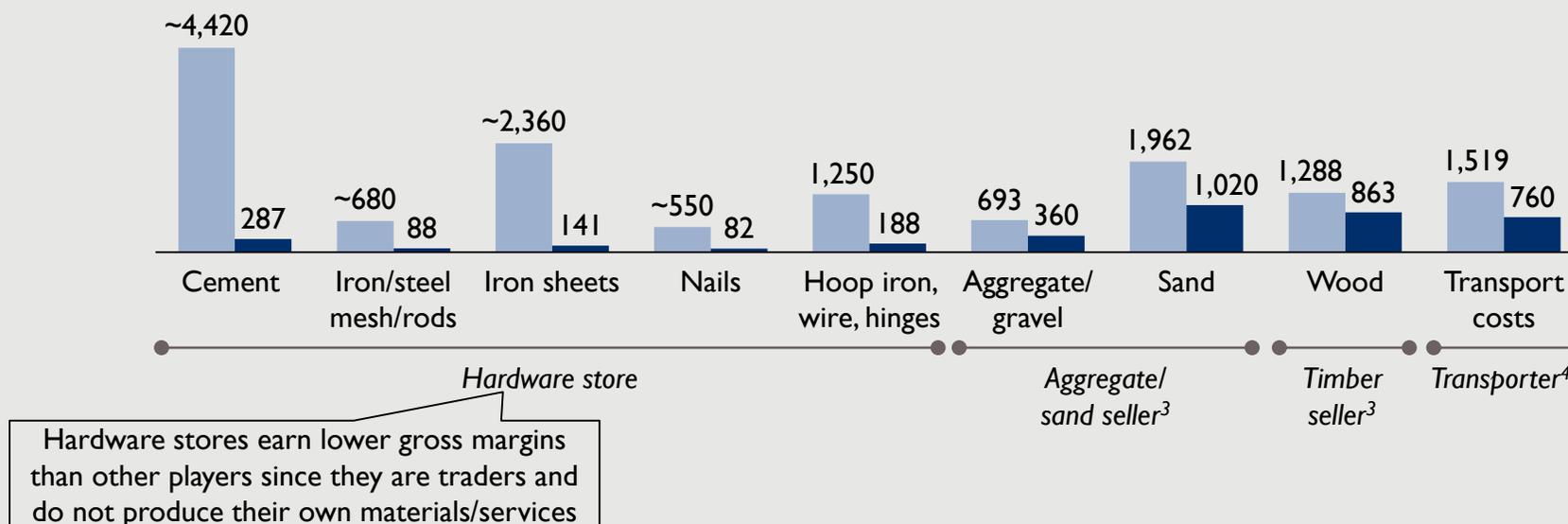
**Value chain players are willing to continue participating in the sanitation market despite sanitation accounting for a minority share of total revenue for them**

a

**Unit margins from sanitation are attractive for each value chain player**

**Margins earned by value chain actors (other than fundis) on the construction of a “durable, improved toilet” in rural western Kenya (in KES) (2021)<sup>1,2</sup>**

Unit margin (%)	5%-8%	13%	6%	15%	15%	52%	52%	67%	50%
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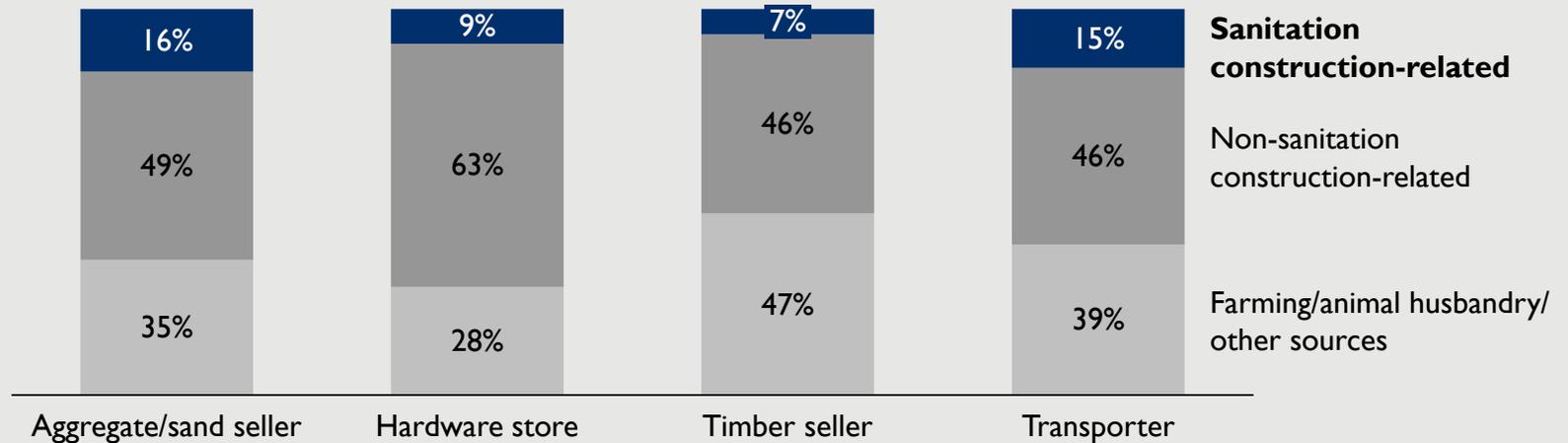
■ Cost borne by household for material/service ■ Margin earned by value chain actor

- The costs and margins depicted here are for construction of a durable, improved toilet (fully-lined pit latrine with a concrete foundation and slab, with an iron sheet shelter); source: FSG analysis based on qualitative interviews with value chain actors in Busia, Kakamega, and Homa Bay
- Unit margins exclude costs that are shared with other business lines, such as assets, rent, taxes etc.
- Unit margin (%) for aggregate/sand/timber sellers and hardware store owners = (selling price per unit - cost of material to the seller/retailer) / (selling price per unit)
- Unit margin (%) for transporter = (price charged per km - cost of fuel per km) / (price charged per km); transport costs includes cost of transporting both materials and service providers

b

Value chain players are willing to continue participating in the sanitation market despite sanitation accounting for a minority share of total revenue for them

% split of total annual revenue, by value chain player (2021)<sup>1</sup>



*"I [want to continue in this business because I] believe every customer is important and I get to help people build toilets for their betterment along"*

- Transporter, Busia

1. FSG analysis based on qualitative interviews with value chain actors across rural areas of Busia, Kakamega and Homa Bay, 2021

While both fundis and hardware stores have access to small amounts of capital from informal savings groups, fundis find it more difficult to access formal loans of higher value



## Fundis



## Hardware stores

### Informal capital<sup>1</sup>

**KES 3,000 to KES 20,000** every 6-8 months against weekly/fortnightly savings of KES 200-1,000

**KES 12,000 to KES 50,000** every 6-12 months against weekly/ fortnightly savings of KES 200-10,000

### Formal loans<sup>1</sup>

~ **KES 40,000** at **10% p.a.** from banks, depending on personal banking history/ account balance

**KES 100,000-200,000** at **8.5%-10% p.a.** from banks or via M-PESA as “mobile loans”, depending on assets and transaction volumes

*“If I could get support to take a loan, then I could expand my business by stocking materials also.”*

- Fundi, Busia

*“Mobile loans are reliable and fast. I can decide the week’s instalment amount based on my sales.”*

- Hardware store, Homa Bay

**While hardware stores benefit from trade credit, fundis face working capital challenges due to payment delays and bad debts**

**a**

**Hardware stores receive interest-free credit from suppliers and do not offer any credit to customers, leading to positive net cash flows**

**b**

**Fundis receive majority payments from customers in installments and also face delays and bad debts, leading to working capital constraints**

a

Hardware stores receive interest-free credit from suppliers and do not offer any credit to customers, leading to positive net cash flows

Illustration of a hardware store’s working capital position, using stock movement of cement as an example<sup>1</sup>

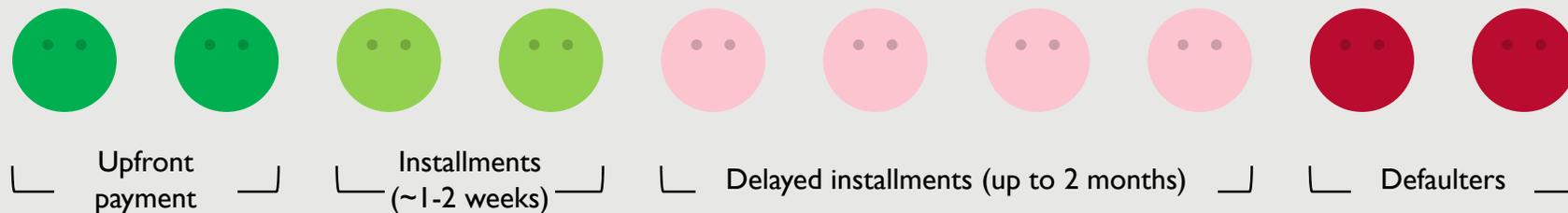
	Day 1	Day 10	Day 14
Per 50 kg bag of cement, Cost price: KES 650 Selling price: KES 700 14 days credit period, 0% interest	Receives fresh stock	Sells stock	Receives fresh stock, pays for last order
Number of units purchased	200	0	200
Number of units sold	(20)	(140)	(40)
Closing stock	180	40	200
Revenue (in KES)	14,000	98,000	28,000
Amount paid to supplier (in KES)	0	0	(130,000)
Net cash balance (cumulative)	14,000	112,000	10,000

1. We have used the average cost and selling price per unit, average inventory period of cement, and average credit period and time taken to receive orders from suppliers across 4 sampled hardware stores in rural Busia, Kakamega and Homa Bay for this example; source: FSG analysis based on qualitative interviews with value chain actors, 2021

b

Fundis receive majority payments from customers in installments and also face delays and bad debts... (1/2)

Illustrative split (out of 10 customers) of a fundi's customer base for sanitation, by payment method<sup>1</sup>



Annual sanitation revenue lost to bad debts = **KES 350 to KES 8,700**  
Bad debts as a % of annual sanitation revenue = **1% to 8%**

1. FSG analysis based on qualitative interviews with 7 fundis across rural areas of Busia, Kakamega and Homa Bay, 2021

b

...leading to working capital constraints (2/2)

**Illustration of a fundi's working capital position for an average toilet construction job where payment has been delayed by 1 month<sup>1</sup>**

	Day 1	Day 3	Day 12	Day 30
<i>Amounts in KES</i>	<b>Deposit received</b>		<b>Job completed, payment delayed</b>	<b>Balance payment received</b>
<b>Opening cash balance</b>	0	3,700	2,340	(2,260)
<b>Payments from customer</b>	3,800	0	0	11,200
<b>Transport cost incurred</b>	(100)	0	(100)	0
<b>Payments to laborers<sup>2</sup></b>	0	(1,360)	(4,500)	0
<b>Net cash balance</b>	3,700	2,340	(2,260)	8,940

1. We have used the average price charged by fundis for constructing a new toilet (KES 15,217, rounded to the nearest multiple of 100, i.e., KES 15,200), average % of the price collected as deposit upfront (25%), average transport cost (KES 217, rounded to the nearest multiple of 100, i.e., KES 200), average amount paid to pit diggers (4 man-days at KES 340 per man-day), and average amount paid to other laborers (9 man-days at KES 500 per man-day) across 6 sampled fundis in rural Busia, Kakamega and Homa Bay for this example; source: FSG analysis
2. Fundis are expected to pay hired laborers immediately after their work is completed (therefore, pit diggers are typically paid around the third or fourth day while all other laborers are typically paid when the entire job is completed); source: FSG analysis

# Barriers and Drivers | Enterprise

- Driver
- Barrier



## Enterprise

- Households' willingness to engage with 3-4 market players to construct toilets
- Lack of information seeking by households
- Distrust of fundis by households
- Wide range of products across price points
- Incorrect perception of durable toilets being expensive
- Challenges in reducing costs or introducing new products
- Presence of CHVs who are trusted and promote sanitation
- Limited capacity of CHVs to do sales and marketing

# Enterprise | Barrier | Delivery model (1/4)

**Households can construct a toilet by interacting with 3-4 players who are easily accessible, but they do not seek information and distrust critical value chain players like fundis**

**a**

**The current delivery model is largely “Do-it-yourself” (DIY), but households are satisfied because they can construct a toilet by interacting with 3-4 players who do some aggregation and are easily available**

**b**

**Households do not actively look for information and often form product preferences before they approach a fundi**

**c**

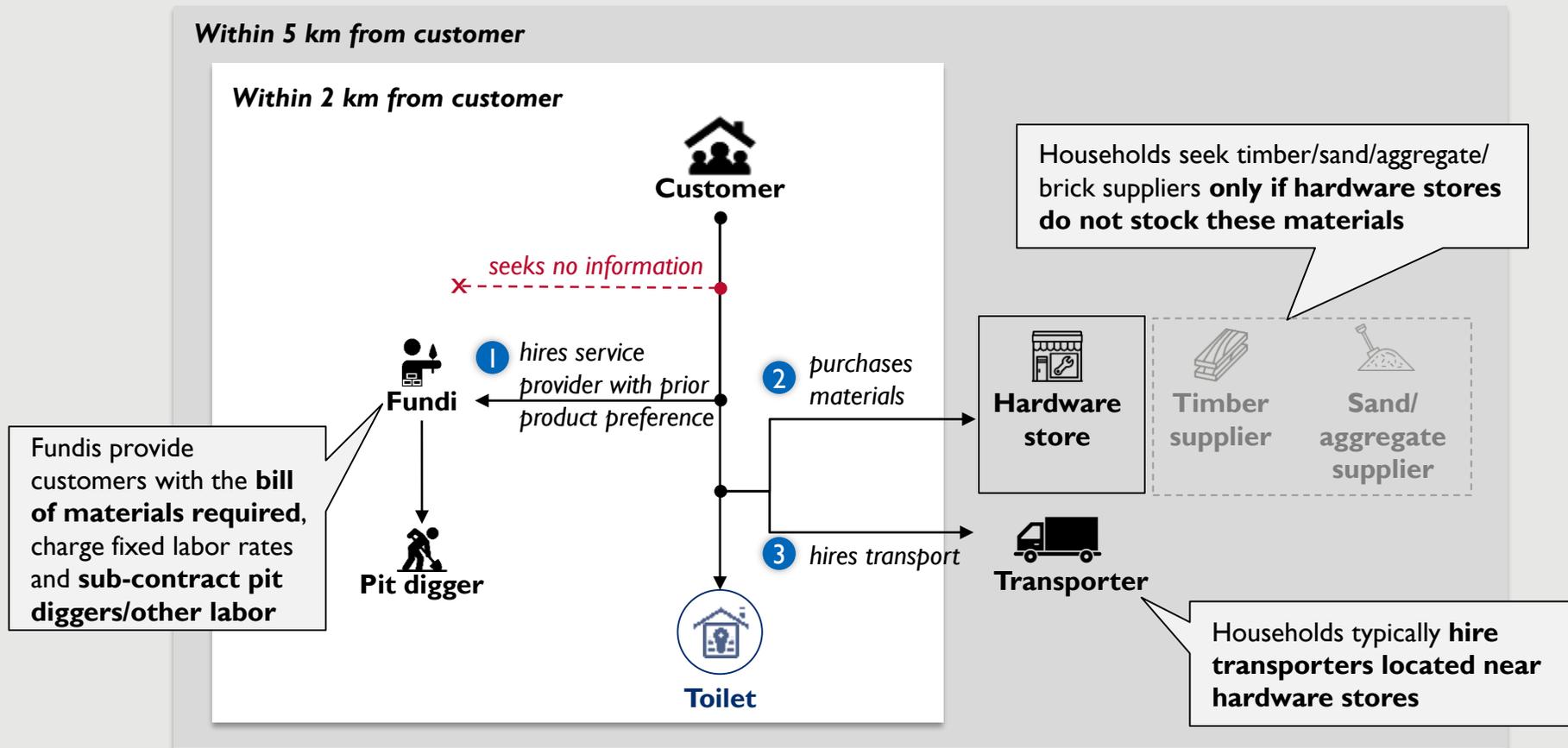
**Despite their critical role, fundis are not trusted by households**

# Enterprise | Barrier | Delivery model (2/4)

a

The current delivery model is largely “Do-it-yourself” (DIY), but households are satisfied because they can construct a toilet by interacting with 3-4 players who do some aggregation and are easily available

Illustrative diagram of the process to construct a toilet in rural western Kenya

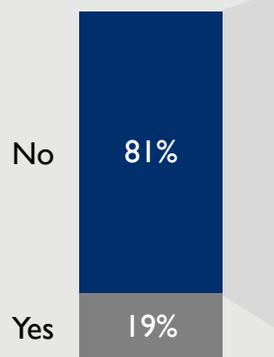


⊗ Steps taken by customer    — Typical process    - - - - - Optional step    - - - - - Missing step

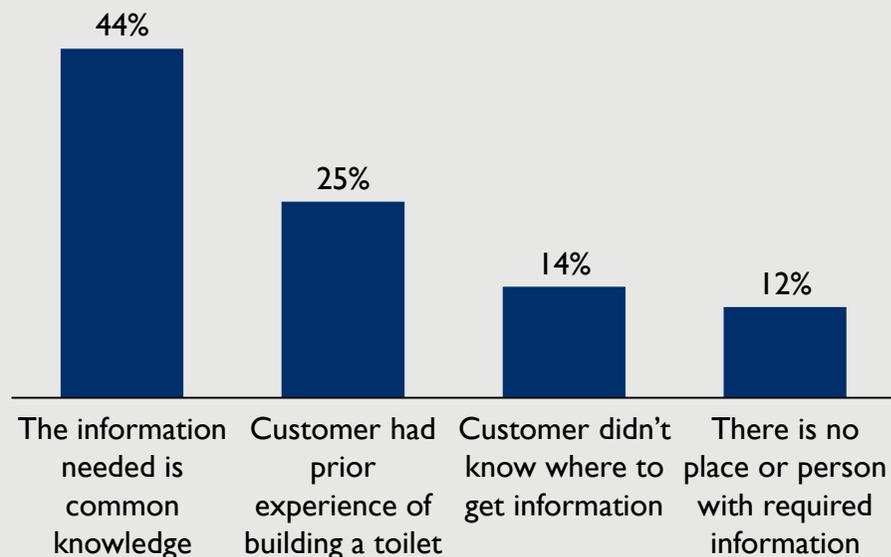
b

Households do not actively look for information and often form product preferences before they approach a fundi

% of households seeking information on toilets before reaching out to a fundi (n=99) (2021)<sup>1</sup>



% frequency of reasons for not seeking any information (n=80) (2021)<sup>1,2,3</sup>



*"We know what toilet we want because we see it in the community and do our own research, we don't need the fundi's advice"*

- Rural household, Homa Bay

*"Most of the times the customer comes to me with a plan and decision of what s/he wants to build."*

- Fundi, Homa Bay

1. FSG quantitative interviews in rural Busia, Kakamega, and Homa Bay  
2. The percentages on the bars don't add up to 100% since respondents could select multiple responses  
3. 11 respondents also stated other reasons for not seeking information besides the reasons shown in the chart and 1 respondent responded with "don't know" to the question

**Despite their critical role, fundis are not trusted by households**

*“Many fundis cannot be trusted because they may not turn up when the job starts...they ask for extra bags of cement and may carry some back for themselves”*

*- Rural household, Kakamega*

*“Most fundis are con-men and are not actually qualified... someone must watch them throughout the process”*

*- Rural household, Kakamega*

*“Nowadays so many people claim to be a fundi and you cannot completely trust them because not all are actually qualified”*

*- Rural household, Homa Bay*

*“There are some masons who just do shoddy work, which causes our toilets to sink as soon as it rains and water seeps in”*

*- Rural household, Kakamega*

**Households have product options suitable for a range of budgets but they incorrectly perceive durable toilets as expensive, which inhibits investment**

**a**

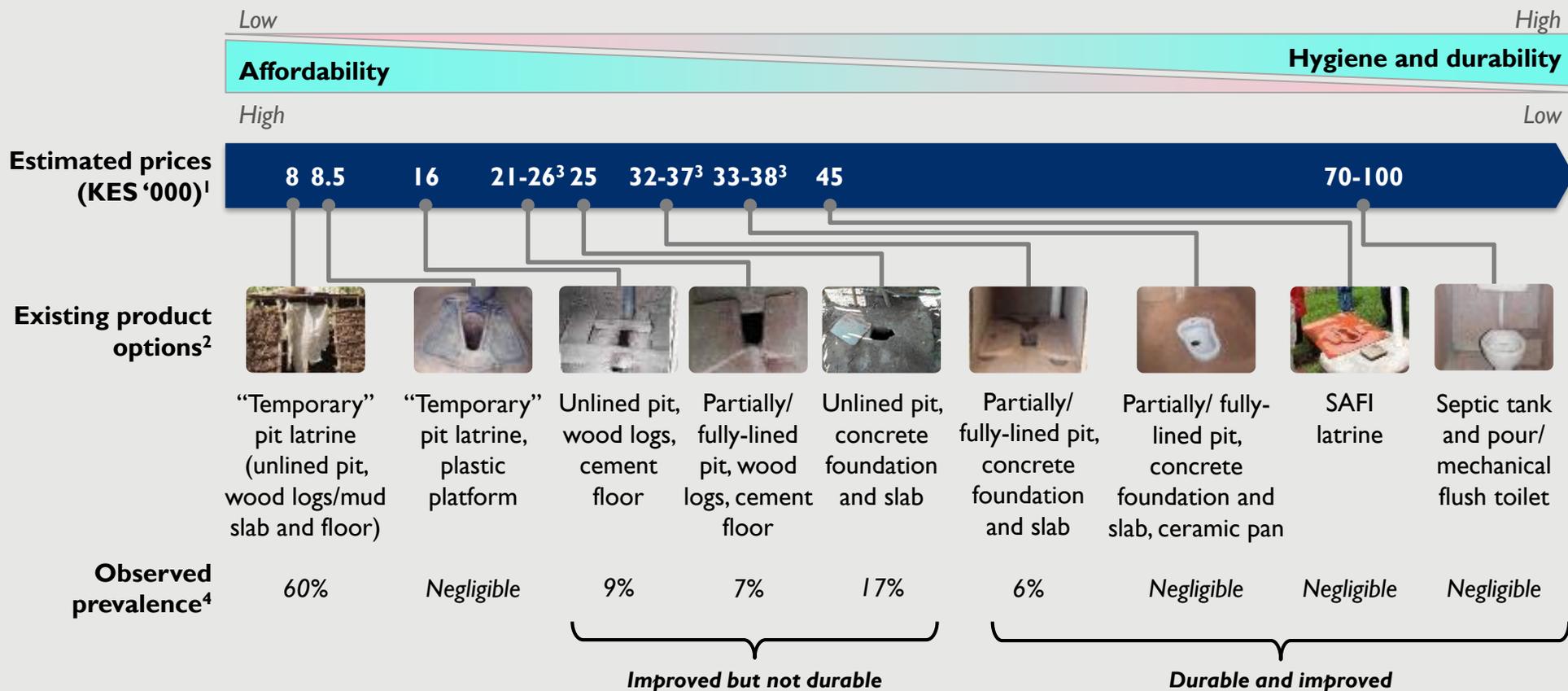
**The market has a wide range of products at different price points, including several options for durable, improved toilets**

**b**

**However, households incorrectly perceive durable, improved toilets to be expensive which can impede investment**

a

The market has a wide range of products at different price points, including several options for durable, improved toilets

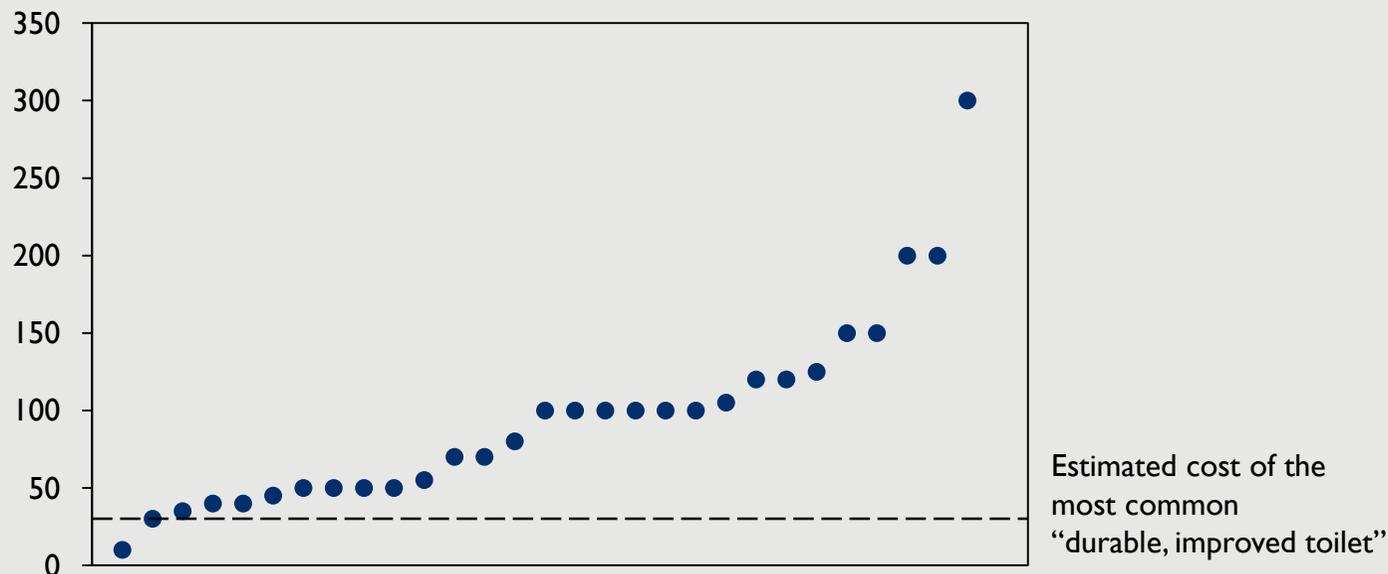


1. Estimated price represents the rounded-off consolidated price of substructure, interface, and shelter; estimated based on quantitative and qualitative interviews with households, value chain players, county government officials, and local program staff
2. Iron sheets are the most commonly used material for the toilet roof (87%) while the wall material varies by toilet type - mud/sticks walls are predominant for “temporary” toilets while others have iron sheet or brick and mortar walls; most toilets (87%) have rectangular pits
3. Price range represents the estimated price variation between partially- and fully-lined pit variants
4. Prevalence has been calculated based on a sample of 804 households (excludes 127 respondents who either practice open defecation or share toilets not constructed by them and 9 respondents with incomplete information on toilet components); source: FSG quantitative interviews in rural Busia, Kakamega and Homa Bay (n=940) (2021)

b

However, households incorrectly perceive durable, improved toilets to be expensive which can impede investment

Perceived cost of a “toilet that does not collapse” by respondent (KES ‘000) (n=29) (2021)<sup>1</sup>



*“I spent KES 10,000 for my current toilet...I am not ready to pay KES 100,000 to make my toilet durable”*  
- Rural household, Kakamega

*“A toilet for KES 28,000 collapses in 2 years, so even a KES 56,000 toilet would give me only 4-5 years... KES 50,000 is impossible for a durable toilet”*  
- Rural household, Homa Bay

**Cost reductions and introduction of new products may be challenging due to existing incentives and beliefs in the market**

**a**

**There is scope for reducing the cost of durable, improved toilets by re-engineering or reducing the fundi's premium**

**b**

**However, steps to reduce costs may face resistance from value chain players due to lower revenues and from households due to misconceptions about reduced quality**

**c**

**Sanitation-specific products, such as pans or platforms, must either be fast-moving or earn high margins, to compete with existing stocks of hardware stores**

a

There is scope for reducing the cost of durable, improved toilets by re-engineering or reducing the fundi's premium

Current durable, improved toilets are over-engineered compared to standards

Fundis charge a premium for durable components compared to other jobs

	Current specifications <sup>1</sup>	Standard specifications <sup>2</sup>	Net effect
 <b>Dimensions (feet)</b>			
<b>Pit</b> ( <i>length x breadth x depth</i> )	5x3x15	3.3x3.3x14	▼ Pit volume by <b>32%</b>
<b>Slab</b> ( <i>length x breadth x thickness</i> )	5x3x0.3	3.3x3.3x0.2	▼ Slab volume by <b>56%</b>
 <b>Material mix</b>			
<b>Gravel : cement : sand</b> ( <i>Ratio for slab</i> )	2:2:3	3:1:2	▲ Gravel by <b>75%</b> ▼ Cement by <b>42%</b> ▼ Sand by <b>33%</b>

Type of job <sup>3</sup>	Average per diem revenue (KES) <sup>1</sup>
“Semi-permanent” toilets without lining	1,200
“Semi-permanent” toilets with partial lining	1,825
“Permanent” toilet	2,100

1. FSG analysis of qualitative interviews with 7 fundis across rural areas of Busia, Kakamega and Homa Bay, 2021  
 2. Standard specifications of an onset pit latrine, with a partially-lined pit, and concrete foundation and slab, which can last a household of 6 for a minimum of 10 years; source: LifeWater Latrine Design & Construction Manual, April 2011  
 3. “Semi-permanent” is the common term used by fundis for a toilet with wood logs and a cement floor, while “permanent” is used to indicate a lined pit and concrete foundation and slab

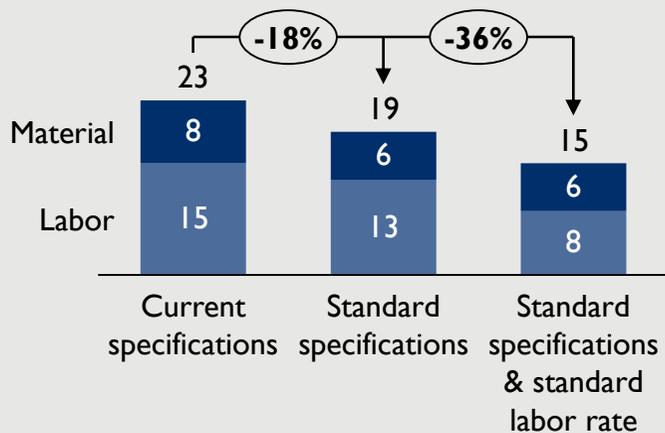
b

However, steps to reduce costs may face resistance from value chain players due to lower revenues and from households due to misconceptions about reduced quality

Reducing costs will also reduce per unit revenue of material and service providers...

...and may be unacceptable to households due to their misconceptions about reduced quality

Comparison of cost of a durable, improved toilet (only substructure and interface) (KES)<sup>1,2</sup>



<b>Pit specification (feet)<sup>3</sup></b>	5 x 3 x 15	3.3 x 3.3 x 14	3.3 x 3.3 x 14
<b>Slab specification (feet)<sup>3</sup></b>	5 x 3 x 0.3	3.3 x 3.3 x 0.2	3.3 x 3.3 x 0.2
<b>Fundi daily rate (KES)</b>	1,900	1,900	1,200

*“I can imagine a durable toilet costing KES 80,000 but nothing less than that; less than that means the materials are not durable”*

- Rural household, Homa Bay

*“Prices of materials has gone up, so a durable toilet at KES 50,000 can only have low quality material or low labor... I have seen toilets like that collapse”*

- Rural household, Homa Bay

1. We have considered the cost of the most prevalent durable, improved toilet, i.e., partially-lined pit latrine with a concrete foundation and slab
2. Our assumption is that the number of labor days required for pit digging reduces because of the re-engineering, but the labor required for the slab remains unchanged since fundis will typically invest the same effort regardless of slab specifications
3. The dimensions for the pit are given as (length x breadth x depth) and the dimensions for the slab are given as (length x breadth x thickness)



Sanitation-specific products, such as pans or platforms, must either be fast-moving or earn high margins, to compete with existing stocks of hardware stores

Inventory days and average margins for a typical hardware store, by type of products (n=5) (2021)<sup>1</sup>

	<b>Fast-moving stocks</b> <i>(e.g., cement, nails, wire mesh, iron sheets)</i>	<b>Slow-moving stocks</b> <i>(e.g., emulsion paint, red-oxide, ceramic pan)</i>
 <b>Inventory days<sup>2</sup></b>	<b>1-2 weeks</b>	<b>1-2 months</b>
 <b>Average margins</b>	<b>6% - 15%</b>	<b>20% - 40%</b>

*“I sell only 5 ceramic pans compared to 400 cement bags monthly. The items I stock should sell and they should make me good money.”*

*- Hardware store owner, Kakamega*

1. FSG qualitative interviews with 5 hardware stores fundis across rural areas of Busia, Kakamega and Homa Bay, 2021  
2. Inventory days represents the average time taken to convert existing inventory into sales and to replenish/ re-order stocks

**CHVs, while present across rural western Kenya, lack the capacity and incentives to effectively activate demand**

**a**

**CHVs are ubiquitous and have a positive reputation among rural households**

**b**

**However, CHVs are not considered as an important source of information on sanitation because they often manage multiple responsibilities and allocate limited time to sanitation promotion**

**c**

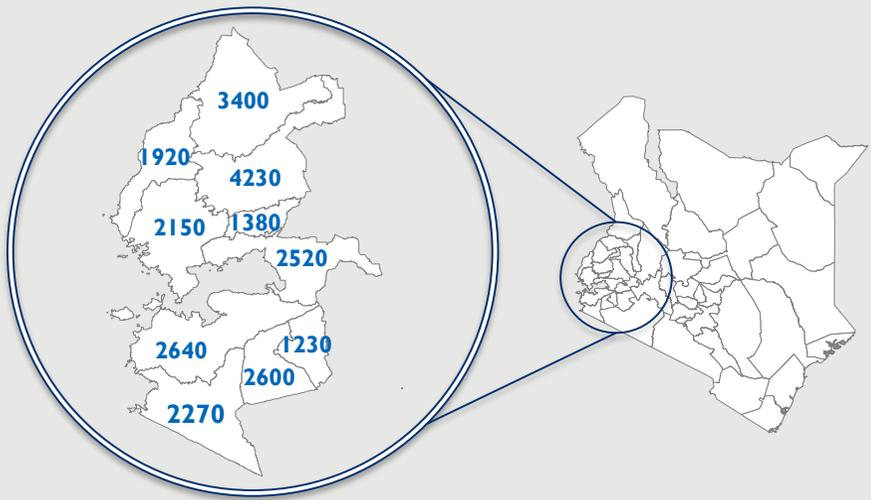
**CHVs lack adequate training and incentives to recommend products and do not connect households with value chain players**

a

**CHVs are ubiquitous and have a positive reputation among rural households**

**A network of ~23,500 CHVs operates across western Kenya**

**Estimated number of CHVs by county<sup>1</sup>**



**Average number of HHs per CHV ~ 110**

**Rural households in western Kenya believe CHVs are dedicated to their work**

*“CHVs are active in our communities and regularly check the situation of our toilets; they ensure we discontinue use if there is a danger of collapse”*

- Rural household, Kakamega

*“The CHVs positively influence the community. Now we do not experience cholera outbreaks in our area.”*

- Rural household, Kakamega

*“The CHVs check usage of water to clean utensils and whether items are being dried properly on a rack.”*

- Rural household, Kakamega

1. Number of CHVs per county estimated using the formula: Number of functioning community health units (CHUs) by county (source: Ministry of Health, Government of Kenya ([Link](#))) multiplied by 10 CHVs per functional CHU (Source: [Link](#)); the number of allocated HHs for CHVs interviewed by FSG varied between 32 and 150

b

However, CHVs are not considered as important sources of information on sanitation because they often manage multiple responsibilities and allocate limited time to sanitation promotion

Rural households do not consider CHVs to be a relevant source of information on sanitation...

*“The CHVs check if we have toilets and ask us to construct them if we don’t have it but **do not give any advice on what type of toilets to build or benefits of toilets**”*

- Rural household Homa Bay

*“Community health workers and volunteers provide preliminary information but **some people do not use this information**”*

- Rural household, Kakamega

*“Community health workers exist in our region but we **get our information from neighbors or NGOs**”*

- Rural household, Kakamega

...potentially because sanitation is one of several topics covered by CHVs

### List of topics to be covered per home visit by a CHV<sup>1</sup>

1 Health check-ups	5 Personal hygiene promotion
2 Immunization activities	6 <b>Sanitation promotion</b>
3 Nutrition awareness	7 Water conservation
4 Child rights awareness	8 Environmental cleanliness

**Typical visits per quarter per household = 2**  
**Average duration per visit = 10 min**

1. FSG qualitative interviews across Busia, Kakamega and Homa Bay, 2021

C

**CHVs lack adequate training and incentives to recommend products and do not connect households with value chain players**



## Lack of training and incentives

- Receive training on the **benefits of toilets** but not on types or specifics of improved toilets; as a result, **do not recommend components critical to hygiene and durability** (e.g., pit lining, slab material)
- Discouraged by **delays/ non-payment of stipend<sup>1</sup>**

*“I recommend the modern toilet and then bring the health officer to advise customers on how to construct it. **Other than that, I only know the ordinary toilet.**”*

- CHV, Homa Bay

*“There is no payment and that's why nowadays we don't report at the health center...because our hearts were already **discouraged due to of lack of payment**, I was not giving it much of my time”*

- CHV, Homa Bay



## Lack of links with value chain actors

- Believe their role is **limited to explaining benefits** of toilets
- **Do not connect** households with fundis or hardware stores

*“We **don't suggest** [fundis and hardware stores] to [households]... the only important part of [my job] is to **tell him the advantages and disadvantages** of having or not having a toilet”*

- CHV, Homa Bay

# Barriers and Drivers | Business environment

- Driver
- Barrier

## Business environment and broader context

- Well-established supply chains for construction materials
- Poor quality roads limiting potential market for pre-fabricated products
- Lack of training on durable products
- Support from county government for MBS efforts
- Reluctance to take loans for fear of inability to pay back



**The associated supply chain for sanitation is well-established with suppliers of construction material easily accessible to households across rural western Kenya**

**a**

**Material suppliers are present close to rural households and households have choice of suppliers**

**b**

**Material suppliers can easily produce/procure materials and make healthy producer/trader margins**

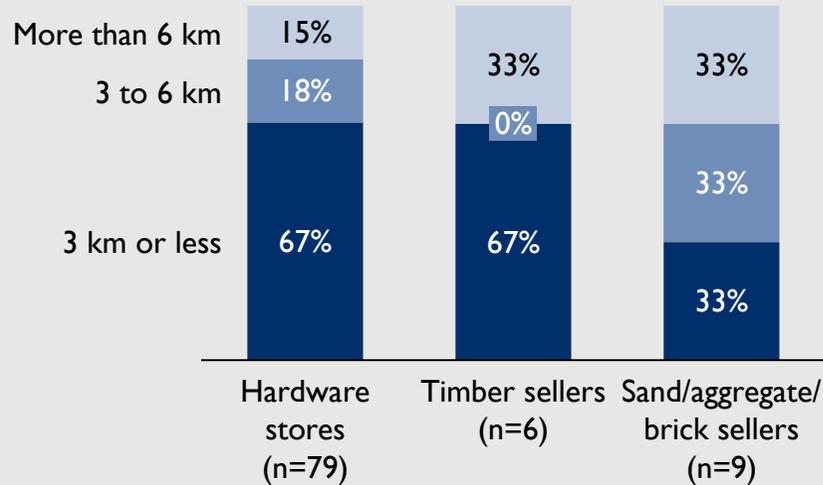
a

**Material suppliers are present close to rural households and households have choice of suppliers**

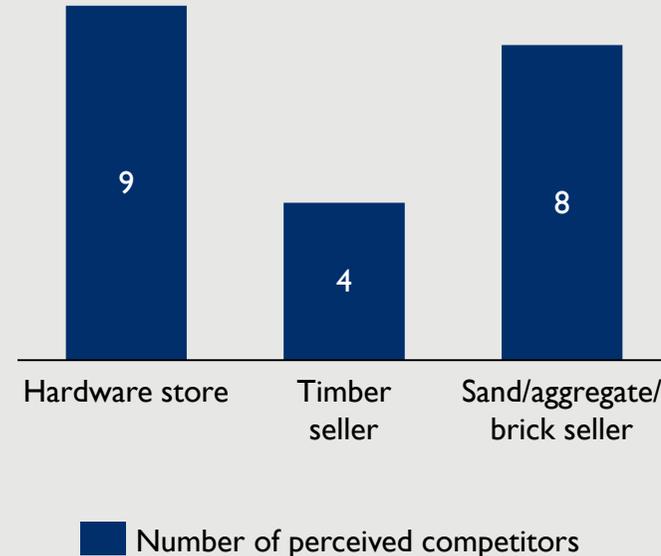
**Most households can purchase materials within a 6 km radius of their homes...**

**...and have the option of purchasing the same material from different suppliers**

**% split of rural households by distance traveled to reach respective material suppliers (2021)<sup>1</sup>**



**Average number of competitors perceived within a 5-km radius, by material supplier (n=4) (2021)<sup>2</sup>**



1. FSG quantitative interviews in rural Busia, Kakamega, and Homa Bay; the percentages on the bars don't add up to exactly 100% due to rounding off

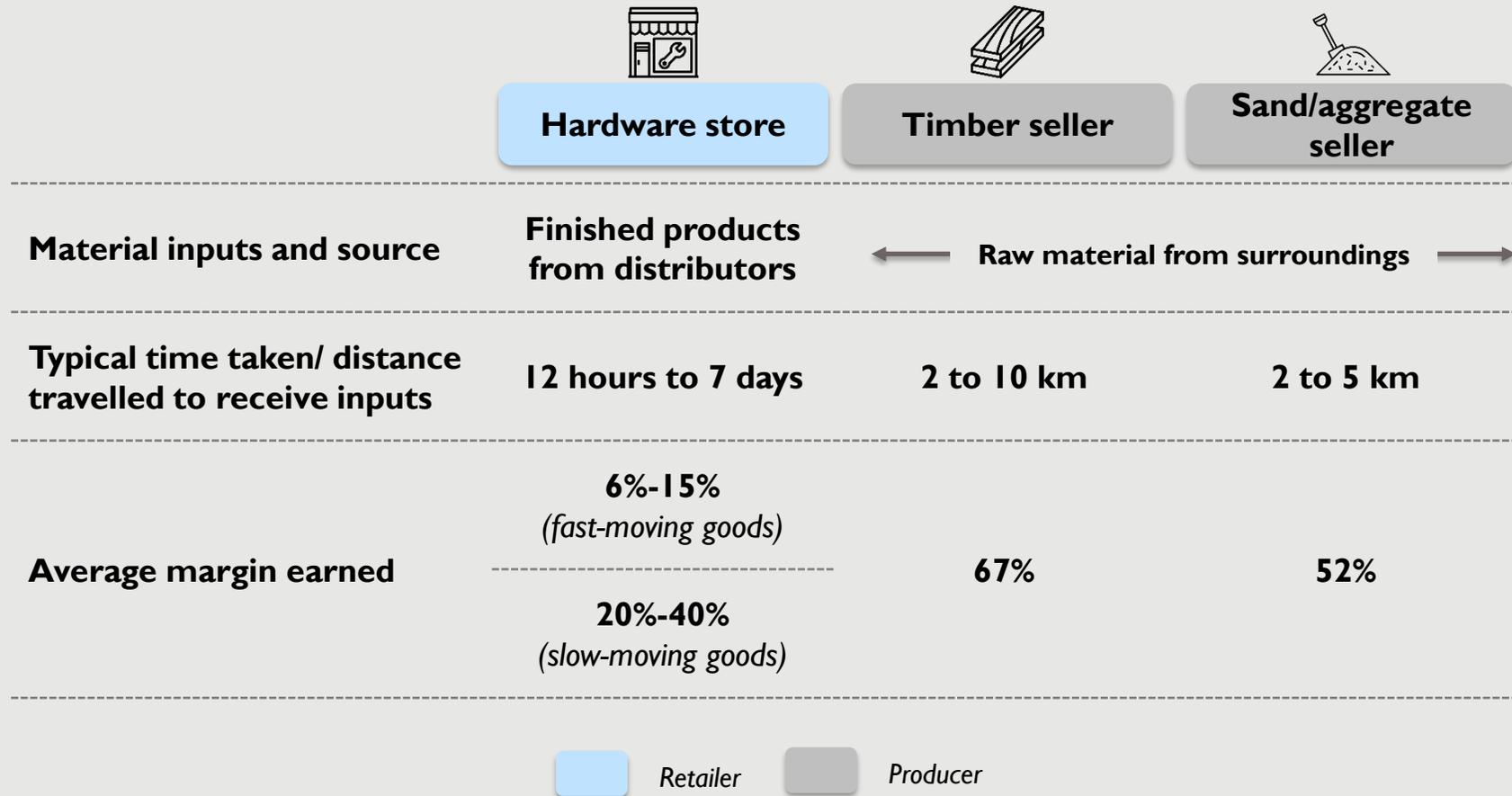
2. FSG analysis based on qualitative interviews with value chain players across Busia, Kakamega, and Homa Bay

# Business environment | Driver | Associated supply chain (3/3)



b

Material suppliers can easily produce/procure materials and make healthy producer/trader margins



**Poor quality roads limit service delivery to on-site construction since transport of pre-fabricated finished products is challenging and more expensive**

**Finished products require large vehicles and are prone to break during transportation...**

**...and have higher transport costs compared to materials required for on-site construction**

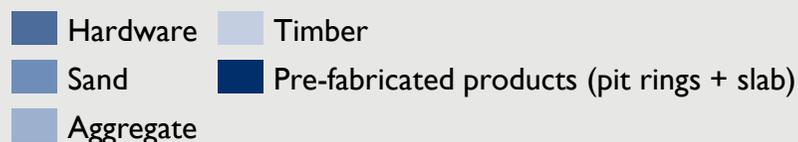
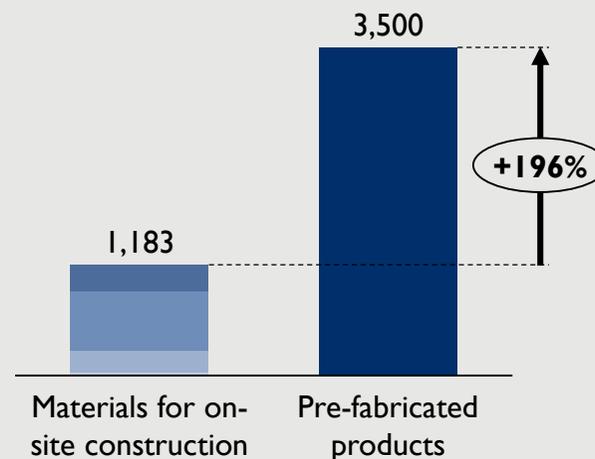
*“[Cement products] are heavy. Carrying it on a motorcycle is hectic. If I'm to take it somewhere, the best way to carry it is with a vehicle like a lorry.”*

- Transporter, Homa Bay

*“If the road is not okay, it is a challenge to transport [pre-fabricated materials like concrete slabs] and when loading they break a lot.”*

- Transporter, Kakamega

**Transport cost of materials for on-site construction versus pre-fabricated products (2021)<sup>1,2</sup>**



1. FSG analysis based on qualitative interviews with value chain players across Busia, Kakamega and Homa Bay  
 2. Transport cost for on-site construction is for the typical materials required for constructing the interface and substructure of a durable, improved toilet in the market (fully-lined pit, concrete foundation and slab); transport cost for pre-fabricated products is the average of the range of costs for transporting pre-fabricated rings/slabs stated by transporters who operate trucks/lorries

**Fundis lack access to formal training and information on newer toilet options and innovations**

**a**

**Most fundis have not received any formal training on general and toilet construction**

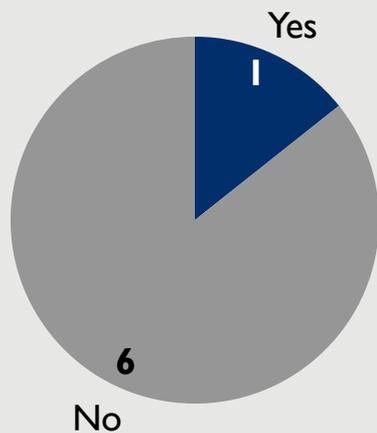
**b**

**As a result, they do not know how to construct newer toilet designs and do not innovate**

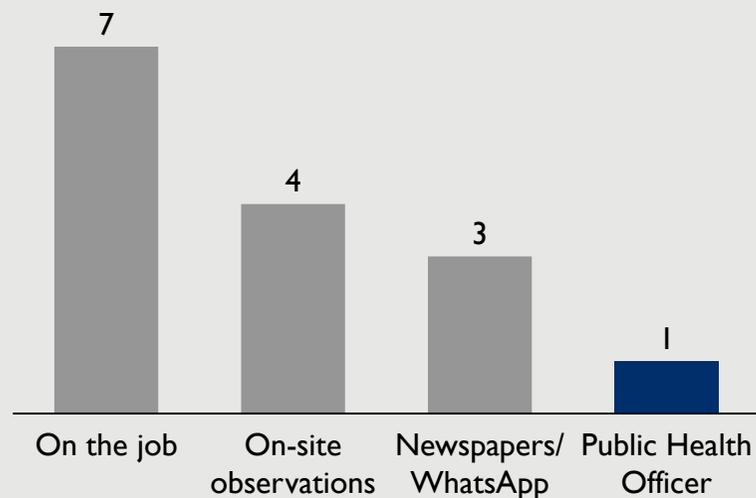
a

Most fundis have not received any formal training on general and toilet construction

Split of fundis who have received formal training on general construction (n=7) (2021)<sup>1</sup>



Frequency of fundis' stated source of information on toilet construction (n=7) (2021)<sup>1</sup>

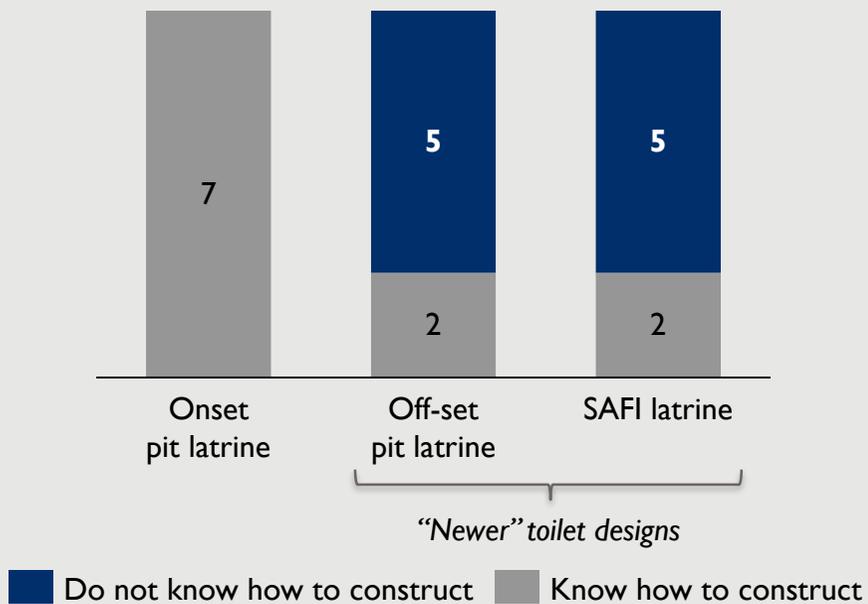


1. FSG analysis based on qualitative interviews with 7 fundis across rural Busia, Kakamega and Homa Bay

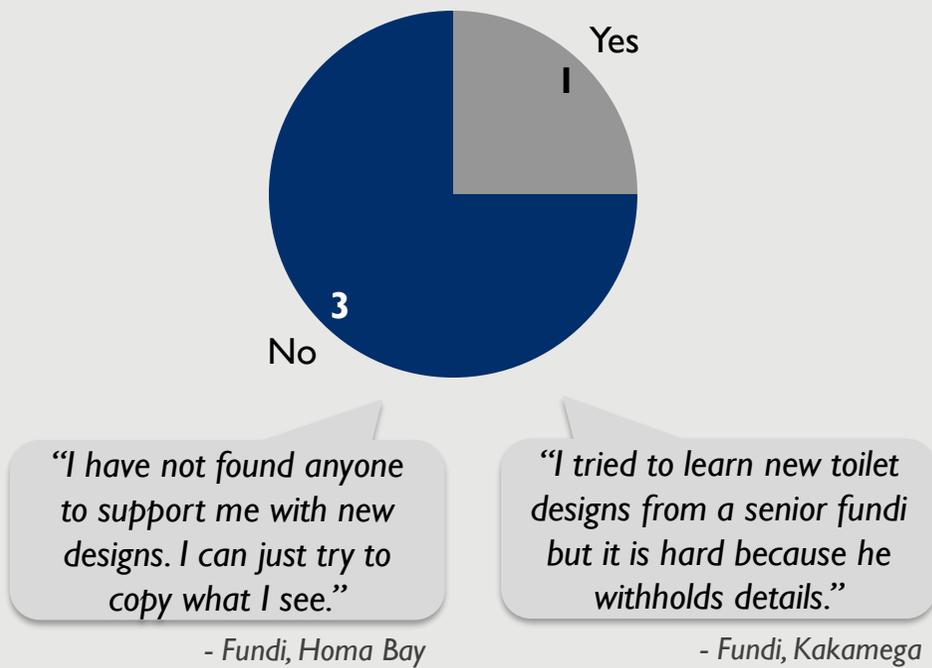
b

As a result, they do not know how to construct newer toilet designs and do not innovate

Split of fundis with knowledge of construction, by type of toilet (n=7) (2021)<sup>1</sup>



% split of fundis who have tried a new toilet design or technology in the last 5 years (n=4) (2021)<sup>1</sup>



1. FSG analysis based on qualitative interviews with 7 fundis across rural Busia, Kakamega and Homa Bay

County-level governments are supportive of market based sanitation efforts

*“We have trained 170 artisans, and we target 400 by the end of 2023. Every sub-county should have 50 fundis who can do SanMark products.”*

*- County WASH coordinator, western Kenya region*

*“Every sub-county has trained artisans and the toilets we are marketing are durable...We want some to be specialists of products like septic tanks.”*

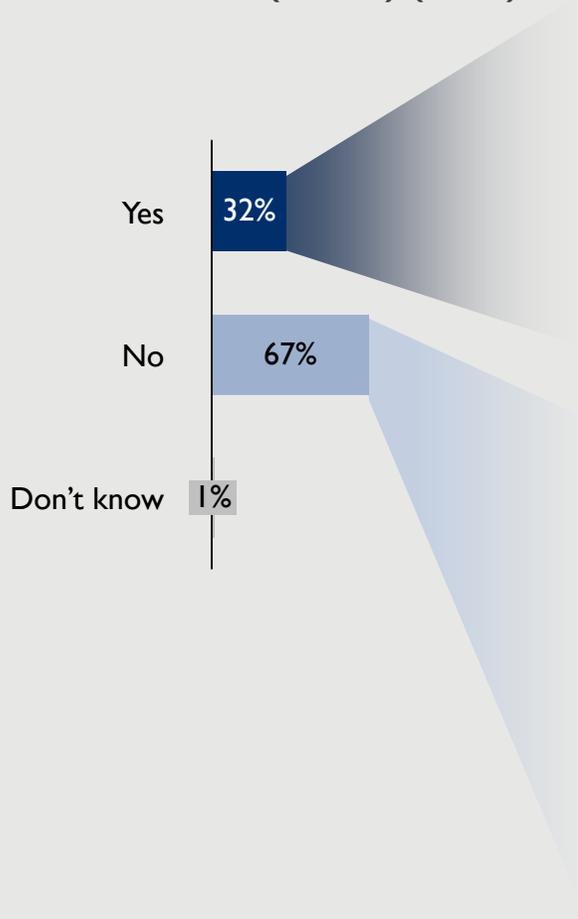
*- County WASH coordinator, western Kenya region*

*“Private sector can play a role in the WASH sector in Kakamega”*

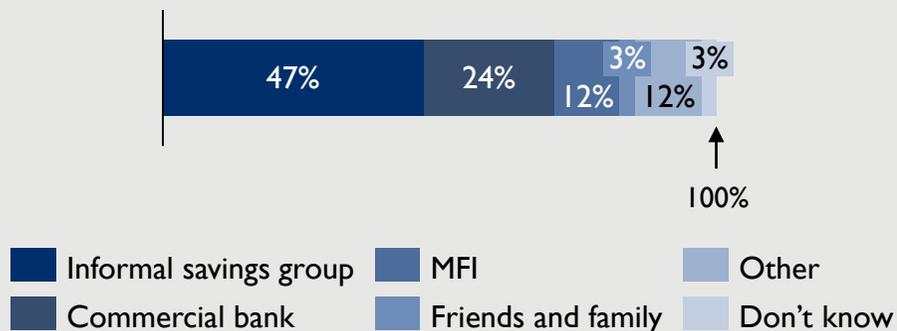
*- County WASH coordinator, western Kenya region*

**Households either don't take loans due to the fear of not being able to pay back, or take loans from informal sources**

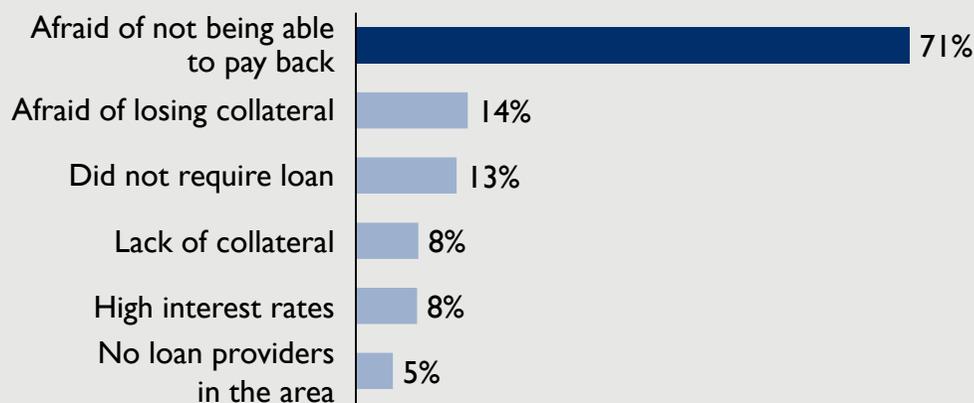
**Whether households have ever taken a loan (n=221) (2021)<sup>1</sup>**



**Source for loan (n=70) (2021)<sup>1</sup>**



**Reasons for not taking loans (n=148) (2021)<sup>1,2</sup>**



1. FSG quantitative interviews in rural Busia, Kakamega, and Homa Bay

2. Responses do not add up to 100% since respondents could select multiple options; 16% of respondents also selected other options and 1% said they "don't know"

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# Overview | Key concepts

Source of drinking water		Surface		Well		Piped		
Bank account		Yes	No	No		Yes	No	
Solar panel ownership				Yes	No		Yes	No
Gender	Elderly members in HH							
Female	No	A (12.5%)		E (11.6%)	F (10.7%)	G (7.6%)		I (10.5%)
	Yes	B (14.5%)						
Male	Yes							
	No	C (7.4%)	D (13%)			H (12.2%)		

**Customer segmentation** is a method of classifying customers into distinct and identifiable groups based on **statistically significant** differences in their attitudes, beliefs, preferences, and behavior. It helps in identifying customer groups, or segments, that are **more likely to exhibit a desired behavior** (in this case, investing in an individual durable, improved toilet). This allows for more targeted and actionable market strategies and efficient resource allocation.



**The buying process** is a tool that breaks down a customer's **journey towards achieving a desired behavior** (typically purchasing and using a specific product or service) into distinct stages, each ending with a key customer decision.

# Overview | Sample size

*We listed 940 households and conducted in-depth quantitative interviews with 221 households in 3 counties, through an external research agency<sup>1</sup>*

County	Number of households listed	Number of in-depth interviews
Busia	315	77
Kakamega	331	71
Homa Bay	294	73
<b>Total</b>	<b>940</b>	<b>221</b>

## Notes on sampling:

- We selected these three counties as broadly representative of rural western Kenya (comprising of 10 counties in the former Western and Nyanza provinces<sup>2</sup>)
- We sampled households from each sub-county in Busia, Kakamega, and Homa Bay, broadly proportionate to the share of rural population in the sub-county

1. These numbers refer to the useable number of interviews, i.e., after data cleaning to remove for errors made by enumerators and the survey software

2. The 10 counties are Kisumu, Homa Bay, Migori, Kisii, Nyamira, Siaya, Vihiga, Busia, Bungoma, and Kakamega

# Overview | Approach

We followed a three-step approach to segment the target market, i.e., households who do not own an individual, durable, improved toilet

## Define segmentation parameters

- Identify segmentation variables that may influence sanitation preferences and could potentially **predict the largest differences in behaviors** between customer groups (e.g., family profile, financial indicators)
- Identify key drivers (attitudes, preferences, behaviors) that **predict customer likelihood to engage in the desired behavior**
- Identify **segmentation variables that are appropriate**, i.e., demonstrate differences between key drivers of desired behavior
- Assess **which segmentation variables are executable**, i.e., they can be used to actionably identify different segments

## Apply parameters to arrive at final segments

- Select the most **appropriate and executable variables**
- Classify customers into groups using the selected segmentation variables, and combine similar groups<sup>1</sup> in order to arrive at a set of segments
- Use focus group discussions (FGDs) of select segments<sup>2</sup> to arrive at a final set of segments that are **internally homogenous** and **externally heterogeneous**

## Create customer profiles for each segment

- Use quantitative and qualitative research to **develop segment profiles** that detail the attitudes, beliefs, preferences, buying process, and barriers to purchase faced by customers in each segment

1. Combining of similar groups was done using a combination of statistical tools and qualitative interviews with households

2. We conducted FGDs with 5 segments in rural western Kenya – A, C, E, F, H

# Overview | Segmentation frame | X-axis

Source of drinking water		Surface		Well		Piped <sup>1</sup>			
Bank account		Yes	No	Yes	No		Yes	No	
Solar panel ownership					Yes	No		Yes	No
Gender of HH head	Elderly members in HH	<div data-bbox="683 528 1067 806" data-label="Text"> <p>Households that use surface water (e.g., ponds, springs, rainwater harvesting, etc.) are <b>affluent</b> and have <b>access to more fertile soils</b>; well and piped water sources indicate proximity to peri-urban areas</p> </div> <div data-bbox="1077 528 1460 742" data-label="Text"> <p>Households with bank accounts often have small businesses and <b>better access to market information</b></p> </div> <div data-bbox="1471 528 1854 742" data-label="Text"> <p>Lack of solar panels is an <b>indicator of poverty</b> since they are considered to be ubiquitous in western Kenya</p> </div>							
	Female								
1-3 elderly members									
Male	1-3 elderly members								
	No elderly members								

HH = Household

- Piped water includes public pipes as well as other sources of piped water. It also includes an “other” category such as vendors and bottled water. It is assumed that all these sources are an indicator of access to public infrastructure and hence can be clubbed together.

# Overview | Segmentation frame | Y-axis

Source of drinking water		Surface		Well		Piped <sup>1</sup>			
Bank account		Yes	No	Yes	No		Yes	No	
Solar panel ownership					Yes	No		Yes	No
Gender of HH head	Elderly members in HH								
Female	No elderly members	<p>Households with elderly members are <b>typically less affluent but have unique sanitation needs</b></p>							
	1-3 elderly members								
Male	1-3 elderly members	<p>Women-led households are <b>typically less affluent but value having a good quality toilet</b></p>							
	No elderly members								

# Overview | Segmentation frame | Final segments

Source of drinking water		Surface		Well		Piped			
Bank account		Yes	No	Yes	No		Yes	No	
Solar panel ownership					Yes	No		Yes	No
Gender of HH head	Elderly members in HH								
Female	No	A (12.5%)		E (11.6%)	F (10.7%)	G (7.6%)		I (10.5%)	
	Yes	B (14.5%)							
Male	Yes				H (12.2%)				
	No	C (7.4%)	D (13%)						

**Note:** Percentages in parentheses indicate the proportion of HHs that are in each segment **out of the total population of rural households in western Kenya without individual durable, improved toilets (n=212)**

# Overview | Segmentation frame | Segment descriptors

There is significant variation between segments on variables predicting propensity to purchase a durable, improved toilet, signifying that they are externally heterogeneous

	Awareness of durable, improved toilets	Involvement in sanitation category <sup>1</sup>	Ability to pay for a toilet	Willingness to pay for a toilet
<b>A</b>	H	M	H	M
<b>B</b>	H	H	M	L
<b>C</b>	H	H	H	L
<b>D</b>	H	H	M	M
<b>E</b>	H	M	H	H
<b>F</b>	M	M	H	M
<b>G</b>	H	L	M	L
<b>H</b>	H	M	H	H
<b>I</b>	L	L	L	L

High
  Medium
  Low

**Note:** Responses to multiple questions in a quantitative survey and qualitative assessments from the FGDs were combined in order to develop a definition of each of these categories; these figures do not correspond to any single question

1. Involvement in category measures households' degree of product preferences for sanitation



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# Segment profiles | Segment A

**Segment A households strongly desire better quality toilets...**

Non-durable individual toilets  
**60.8%**

Non-durable shared toilets  
**35.2%**

OD  
**4.0%**

Source of drinking water		Surface		Well		Piped			
Bank account		Yes	No	Yes	No		Yes	No	
Solar panel ownership					Yes	No		Yes	No
Gender of HH head	Elderly members in HH								
Female	No	A		E	F	G		I	
	Yes	B							
Male	Yes	B		E	F	G		I	
	No	C	D			H			

**...but their current toilets are not fully durable.  
Let's understand why**

## Segment A | Customer story

*Nia lives with her three children, nephew, and sister. She is educated till secondary school. She currently works in agriculture, on her own farm.*

*Nia and her family live in their own house, which is built with temporary materials, and are relatively affluent. Although they do not have access to electricity, they own a mobile phone and a solar panel, and possess agricultural land and their own farm animals. They typically obtain drinking water from a nearby pond or spring. They have convenient access to a hardware store; they only need to travel 15 to 30 minutes by a two-wheeler.*

*Nia strongly believes that it is important to keep the community clean, and is well-aware of the benefits of owning a toilet. She believes that owning a toilet reduces the possibility of disease, and provides privacy. She also believes that it is important for her family to get respect from the community.*

*She values having a durable toilet that will last her family many years and prioritizes investment in a toilet over school fees, as she believes only a healthy child can benefit from going to school.*

*Nia has already invested in some durable components (concrete floor) for her toilet, although it is not fully durable due to the lack of a pit lining. Her toilet has a 15-foot deep unlined onset pit, and a shelter with an iron sheet roof and walls built with mud, bricks, and poles.*

*Nia desires a two-stance toilet with a pit that is at least 20-foot deep and is fully-lined with bricks and mortar, a concrete floor, and a wood and iron sheets shelter. She is willing to pay ~KES 14,000 for this toilet. She prefers not taking a loan for toilet construction, as she is worried that she may not be able to repay it.*

# Segment A | Customer persona

## Setting

- **Typical family size:** 6 people, with 2 children under the age of 10
- **Type of house:** Predominantly live in temporary material houses
- **Income and occupation:** Typically have non-seasonal income, however over a quarter have seasonal income; agriculture (on their own farm) is the dominant occupation
- **Mobile phone:** Nearly all households have a mobile phone
- **Mobile money:** Nearly all households have access to mobile money transfer platforms
- **Total value of assets:** Households are relatively affluent; the average total asset value per household is ~KES 52,500<sup>1</sup>
- **Bank account and savings groups:** Most households do not have a bank account; half of the segment are members of a savings group<sup>2</sup>
- **Loans:** Three-fifths of the segment have not taken a loan in the past



## Mental Model

- Prioritize **spending savings on building toilets**, over other responsibilities such as school fees, or house repairs
- **Prefer approaching market players** for advice on sanitation-related topics;
- **Prioritize the needs and health of their children** while considering toilet options
- Recognize that toilets provide a **greater degree of privacy** than open defecation; acknowledge that having your own toilet allows you to defecate **conveniently and comfortably**
- **Community cleanliness is a significant priority**; all households believe that toilets reduce the possibility of diseases
  - **Strongly desire respect** from people in their community
  - **Conformity is less important to households**; believe it is important to learn from households who do things differently

- **Current product:** Non-durable individual toilets; one-third own non-durable shared toilets
- **Desired product:** A toilet that is easy to clean, durable, and can easily be used by children, and has the following attributes:
  - **Substructure:** At least a 20-foot deep onset pit, fully-lined with bricks and mortar
  - **Interface:** Two stances, a concrete floor with a cement pan/platform or ceramic pan

- **Superstructure:** A wood and iron sheets shelter
- **Willingness to pay:** ~KES 14,000<sup>1</sup>
- **Financing:** Typically do not take a loan for toilet construction, because they feel they can use their own savings and are afraid of failure of repayment; material providers and service providers are often paid in a lump-sum

## The Ask

Source: FSG quantitative survey with 221 rural households across Busia, Kakamega and Homa Bay

1. Figure has been rounded off to the nearest 500

2. Savings groups include MFIs, SACCOs and informal self-help groups called chamas

# Segment A | Key demographic statistics

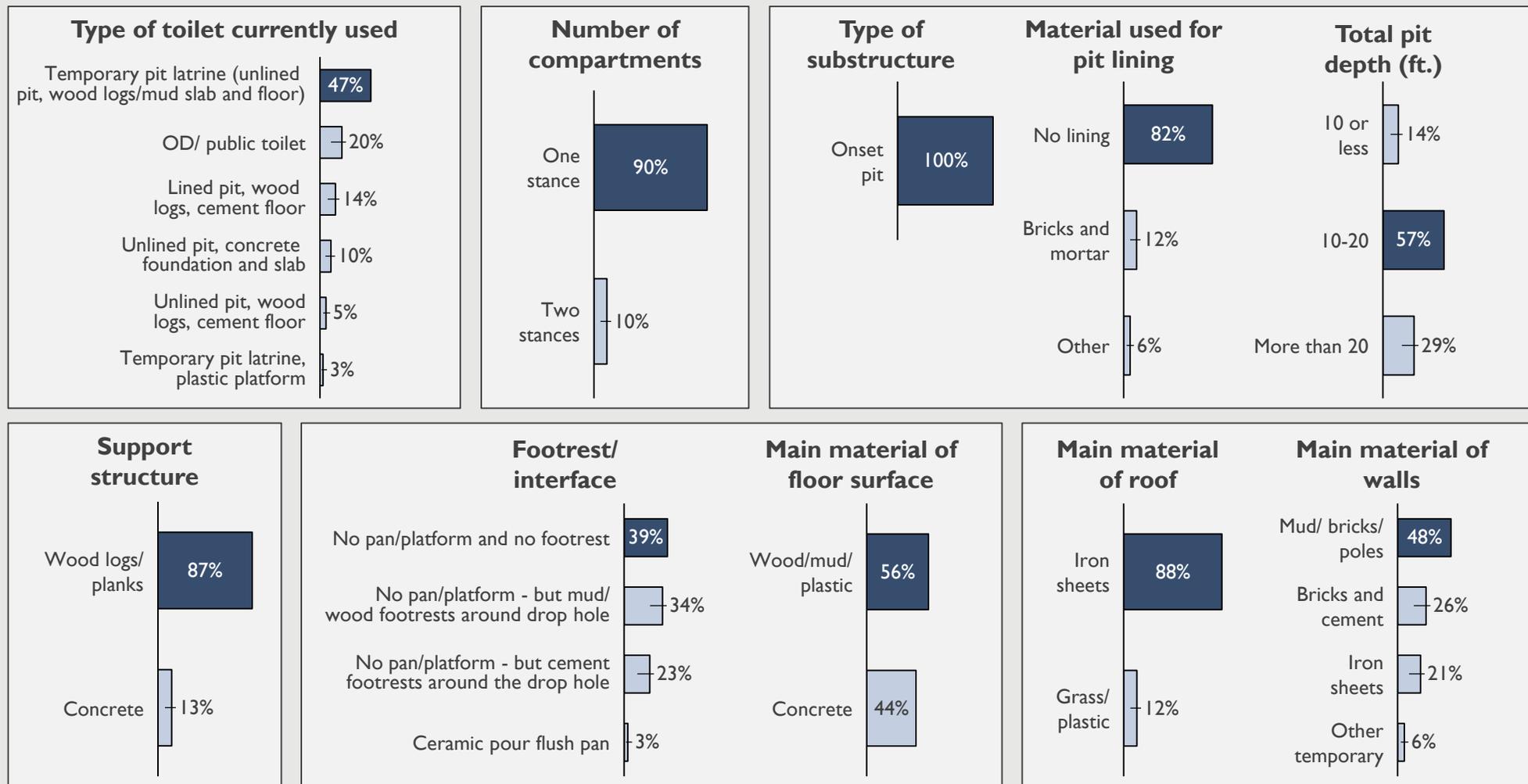
Segment size		Demographics		Income & occupation		Access indicators	
% of potential market	12.5%	Family size (avg.)	6	<b>Nature of income</b>		<b>Distance to nearest HW store<sup>1</sup></b>	
# of households	265K	<b>Gender of HH head</b>		Non-seasonal	72.4%	<15 minutes	30.5%
<b>Sanitation profile</b>		Male	0.0%	Seasonal	27.6%	15 to 30 minutes	48.2%
Non-durable individual toilets	60.8%	Female	100.0%	<b>Primary occupation</b>		> 30 minutes	21.4%
Non-durable shared toilets	35.2%	<b>Highest education in HH</b>		Works on own farm	61.2%	<b>Access to electricity</b>	13.6%
OD	4.0%	No education	2.0%	Works on other's farm	4.7%	<b>Drinking water source</b>	
		Primary	29.7%	Own business	19.6%	Well	0.0%
		Secondary	49.4%	Employed	6.3%	Piped or other	0.0%
		University	19.0%	Other	8.2%	Surface water <sup>2</sup>	100%

Affluence indicators		Assets and other indicators		Attitudes & beliefs		
<b>Total stated monthly expenditure</b>				I would be willing to pay for products that are prestigious		72.5%
High (> KES 10K)	25.2%	Agriculture land	97.3%	It is embarrassing to be seen defecating in the open		95.5%
Medium (KES 5K-10K)	34.8%	Computer	0.0%	Cleanliness of my community is important to me		100%
Low (< KES 5K)	40.0%	Solar panel	76.1%	It is taboo to use or live near a toilet		49.3%
<b>Total asset value (avg.)</b>	52.5k	Refrigerator	0.0%			
<b>Total asset value (spread)</b>		Farm animals	75.7%			
High (> KES 20K)	54.9%	Bicycle	40.5%			
Medium (KES 15K-20K)	18.0%	Mobile	94.8%			
Low (< KES 15K)	27.1%	Television	35.5%			
		Car or truck	4.7%			
		Motorbike	11.5%			

- Distance to nearest hardware store is calculated based on time taken to reach by bike/ two-wheeler
- Surface water includes water from ponds, springs, rainwater harvesting, etc.

# Segment A | Current sanitation profile

Toilet users in this segment typically use a one-stance traditional pit latrine, with a 10-20 feet onset unlined pit, a wood/mud/ plastic floor with no pan/platform or footrest, iron sheets roof and mud/bricks/poles walls



**Note:** Questions related to the toilet components were not asked to HHs that resort to OD or use shared facilities

# Segment A | Typical month of construction

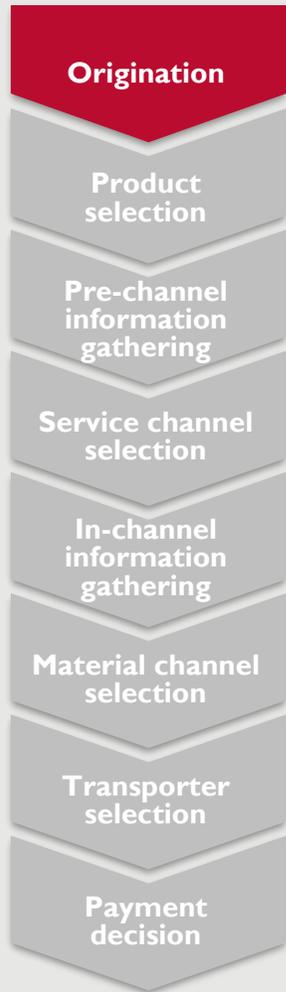
Households most commonly construct toilets in the months of July and April, due to better weather conditions for construction or due to the time coinciding with their existing pit collapsing or filling up



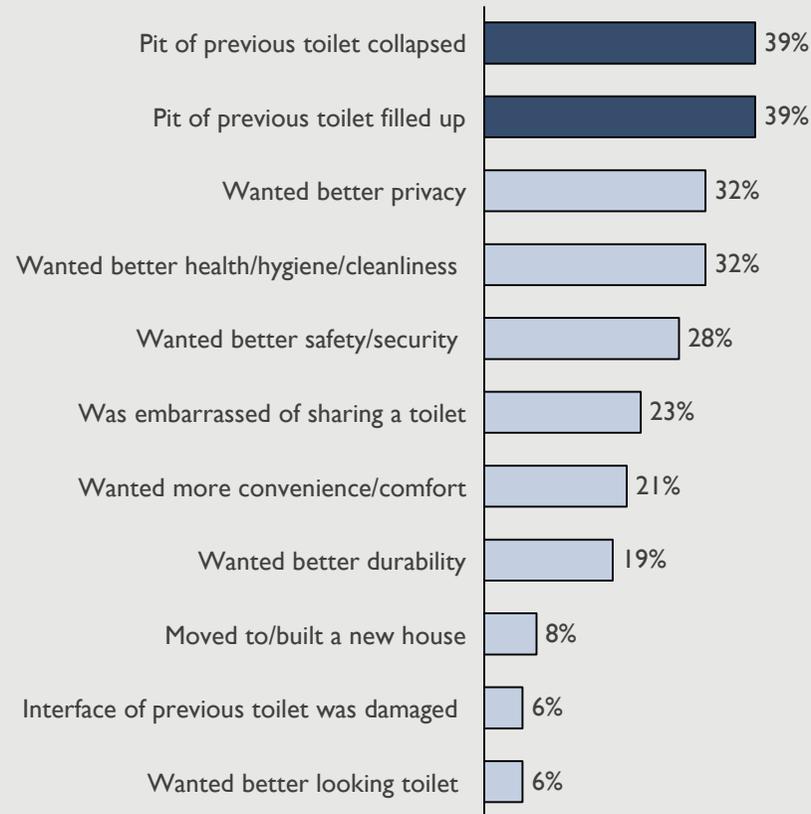
1. Households responding with 'Other reasons' mentioned various reasons such as their existing pit filling up or collapsing, or they realized they no longer wanted to practice OD

# Segment A | Buying process (1/9)

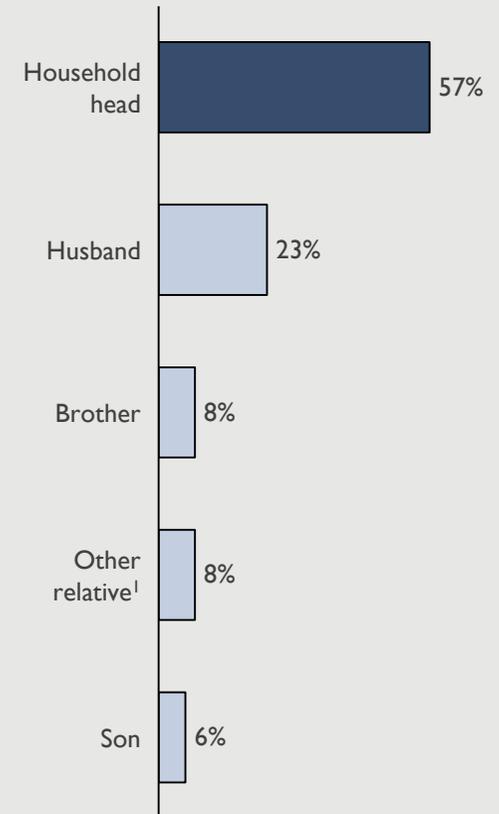
Many households wanted to construct a toilet because the pit of their previous toilet either collapsed or filled up; toilet construction discussions were initiated by the household head



## Origination of need for toilet



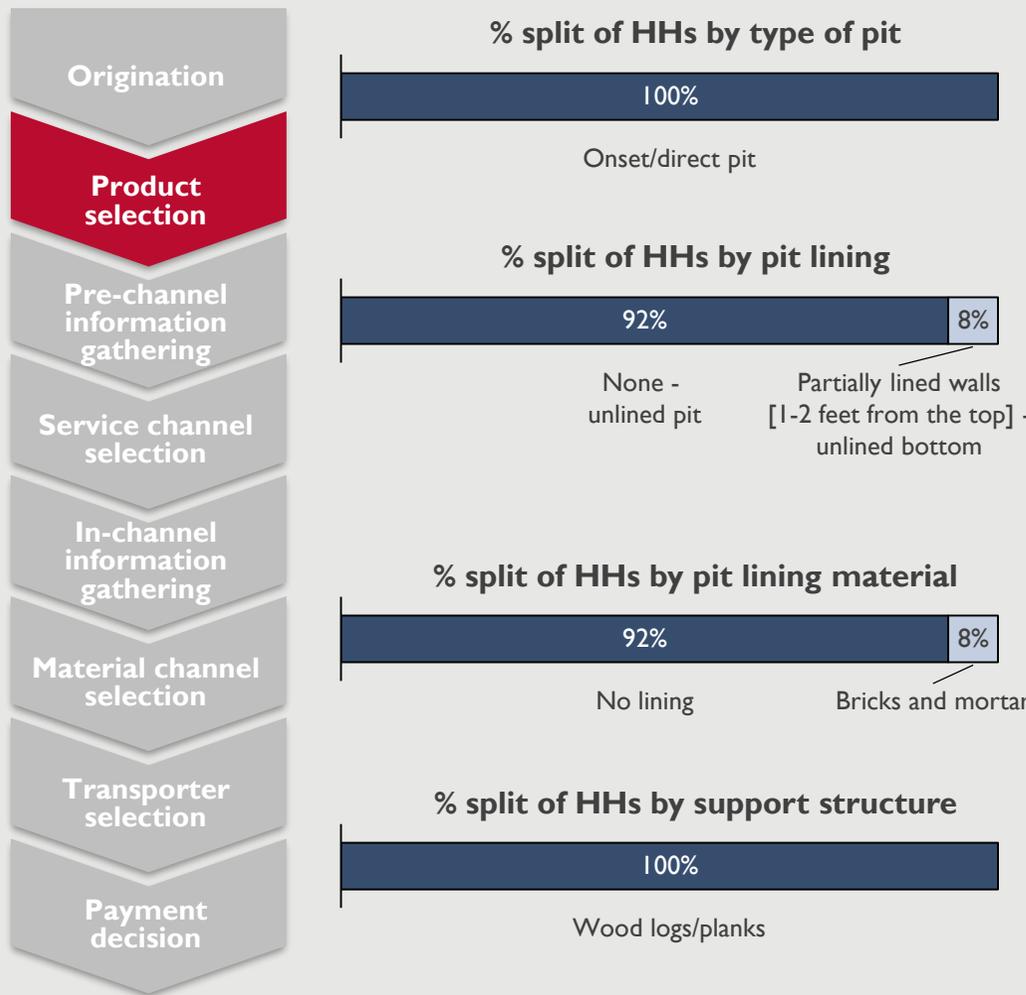
## Person who initiated discussion



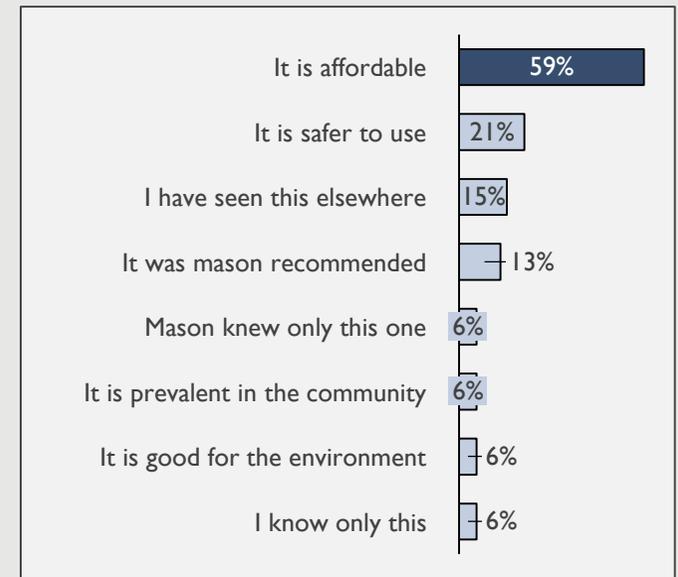
I. Other relatives include members outside of the immediate family

# Segment A | Buying process (2/9)

Households typically selected an unlined onset pit supported by wood logs/ planks,...

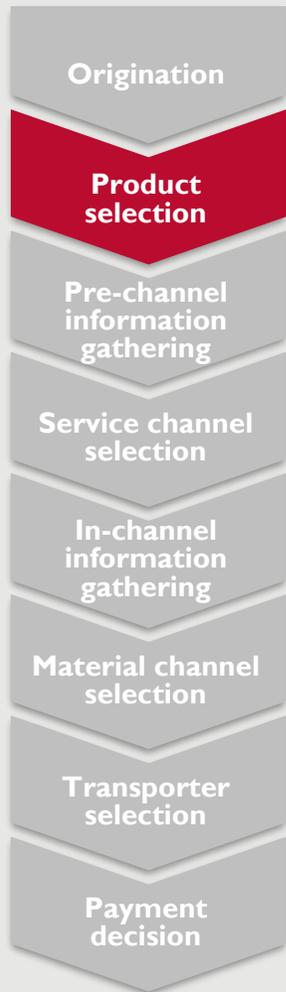


## Reasons for selecting type of pit

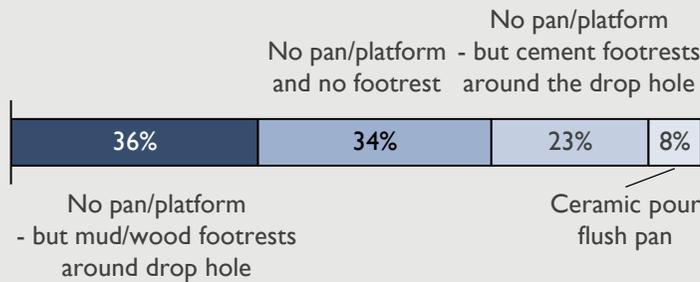


# Segment A | Buying process (3/9)

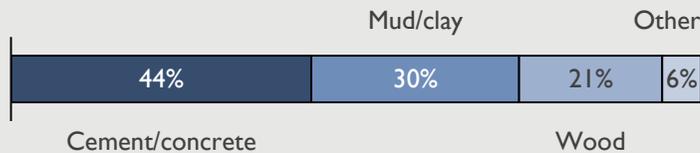
...with a cement/ concrete floor and mud/ wood footrests around the drop hole, due to affordability



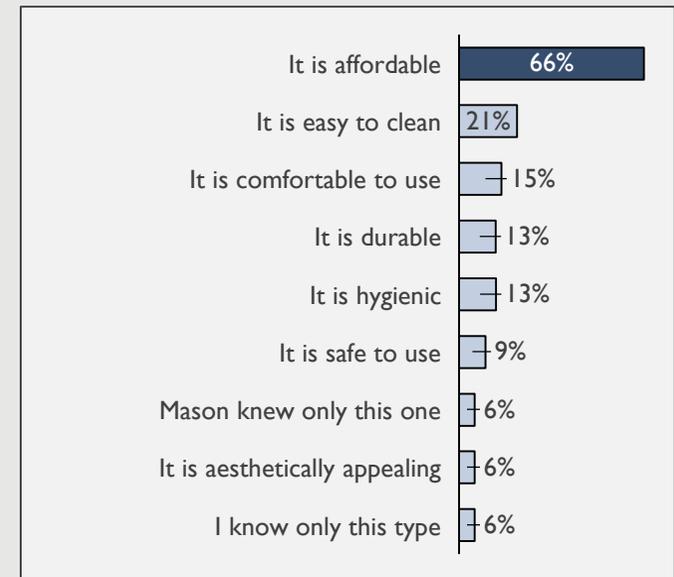
**% split of HHs by interface**



**% split of HHs by floor material**



**Reasons for selecting type of floor and interface**

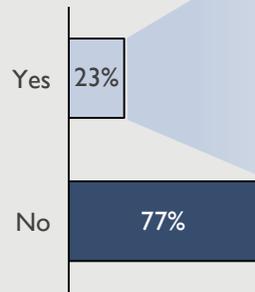


# Segment A | Buying process (4/9)

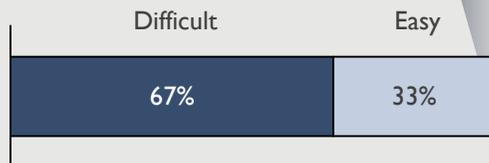
Most households did not seek information while constructing a toilet, primarily because they felt that information was common knowledge and didn't need to be sought out; information was typically difficult to access



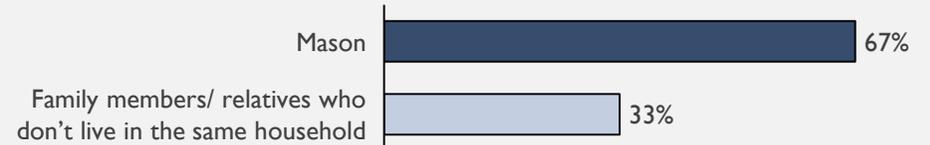
## Sought information while building a toilet



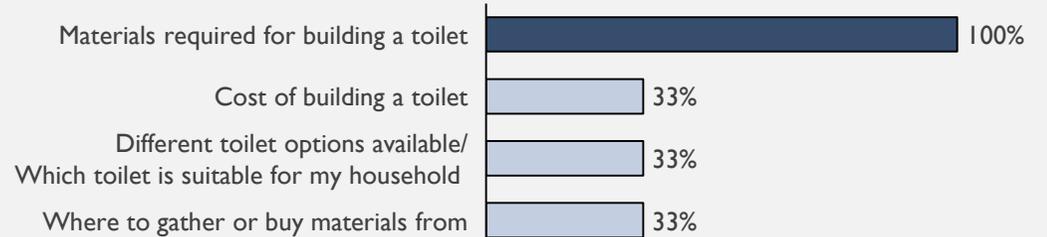
## Ease of access to information



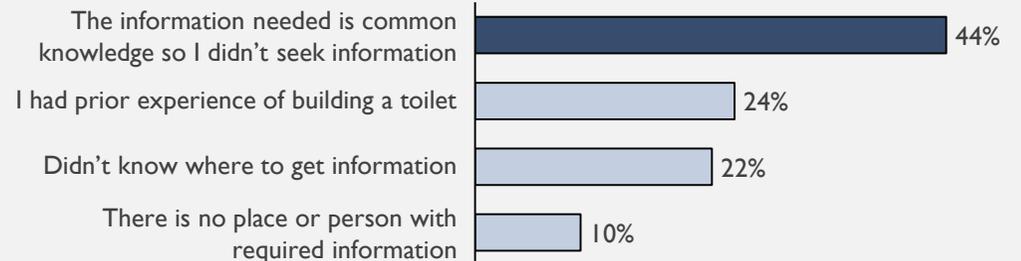
## Sources of information about toilets



## Nature of information sought



## Reasons for not seeking information

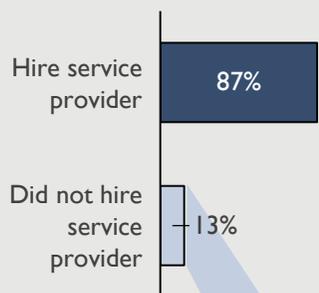


# Segment A | Buying process (5/9)

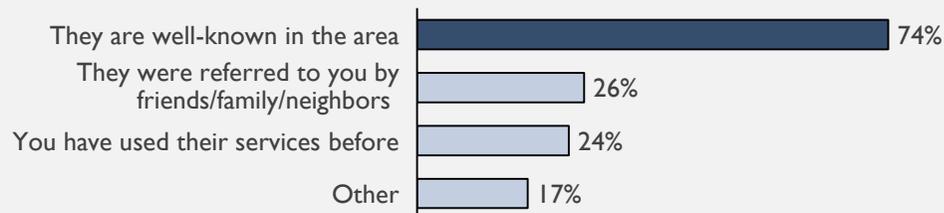
Most households hired a service provider for toilet construction, based on individuals who were well known locally, and were affordable



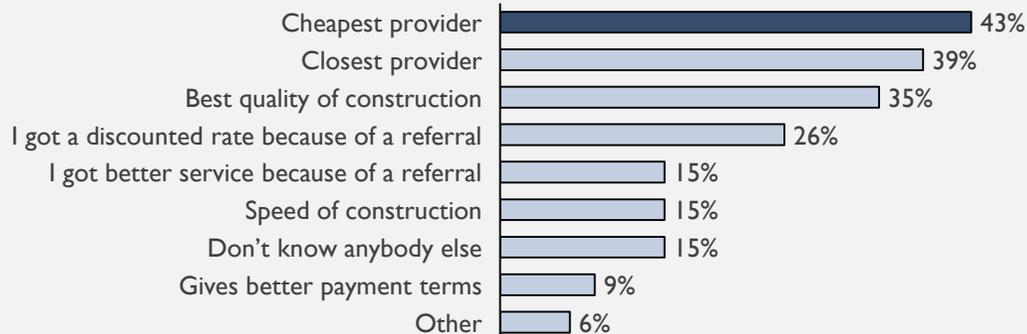
## Hired service provider to manage construction process<sup>1</sup>



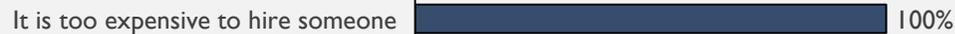
## Source for finding service provider



## Basis for selecting service provider



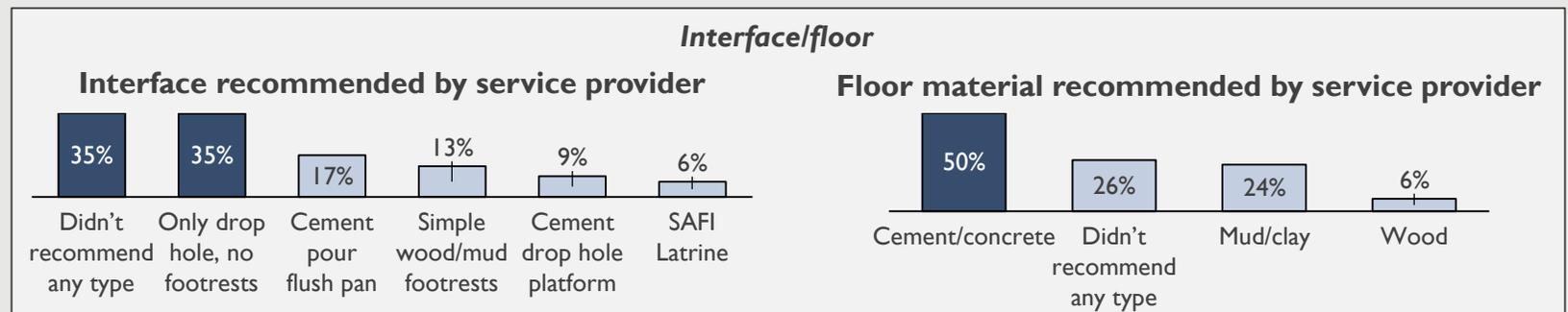
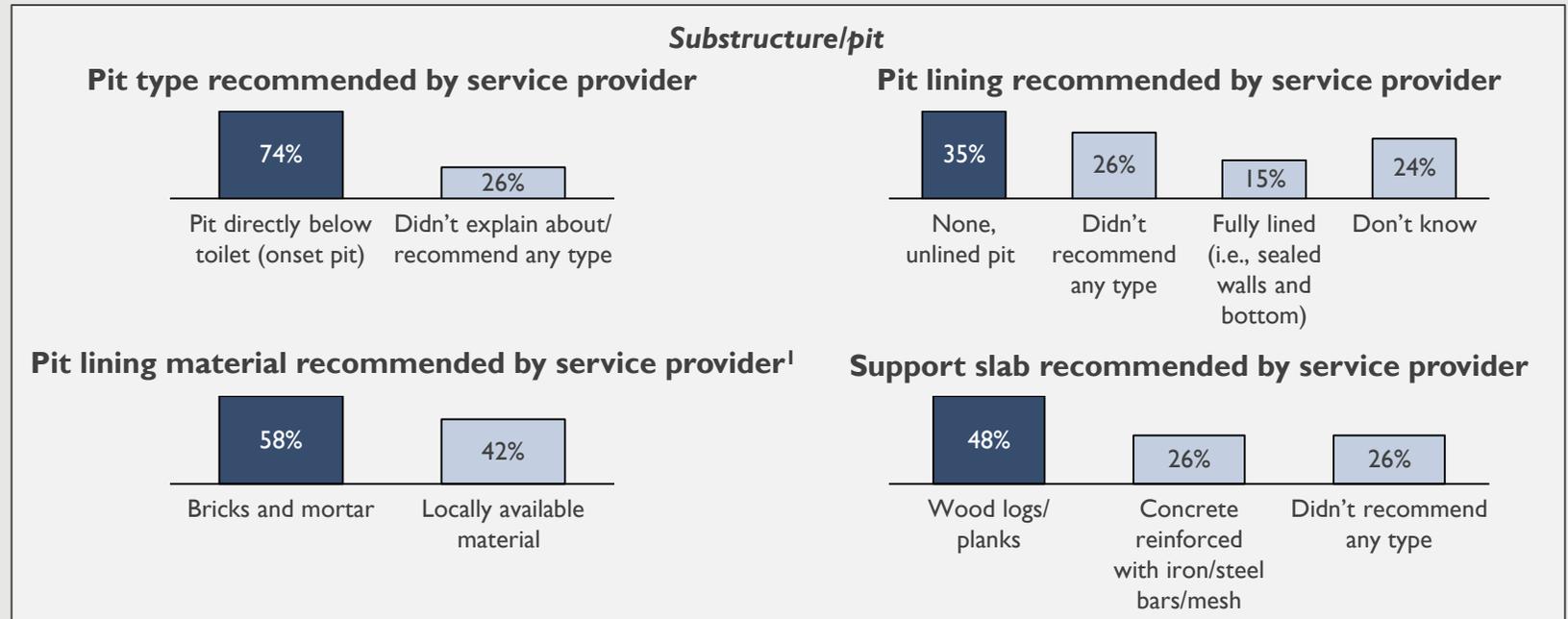
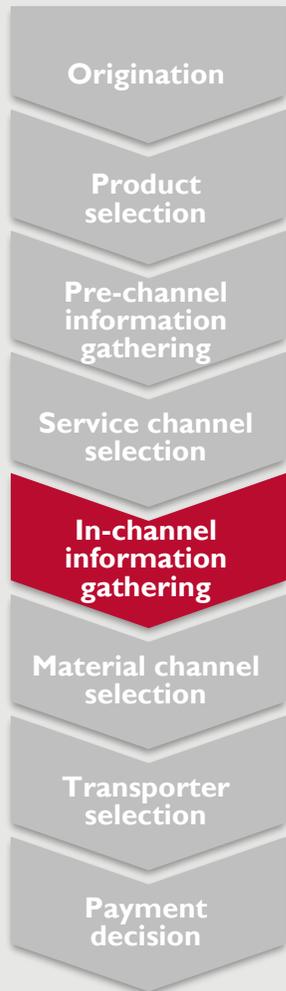
## Reasons for not hiring any service provider for toilet construction



1. Households that did not hire a service provider, oversaw the construction process themselves but had a friend, older son or nephew, or a sibling who was a mason or pit digger, assist them in the construction process

# Segment A | Buying process (6/9)

Masons often recommended that households construct unlined onset pits supported with wood logs/ planks, and a cement floor with no foot rests



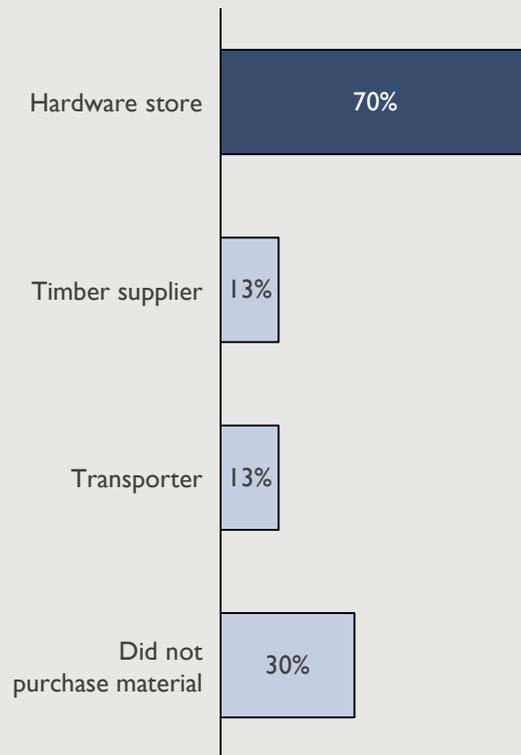
1. Proportions are for those who were recommended a fully or partially-lined pit by the service provider

# Segment A | Buying process (7/9)

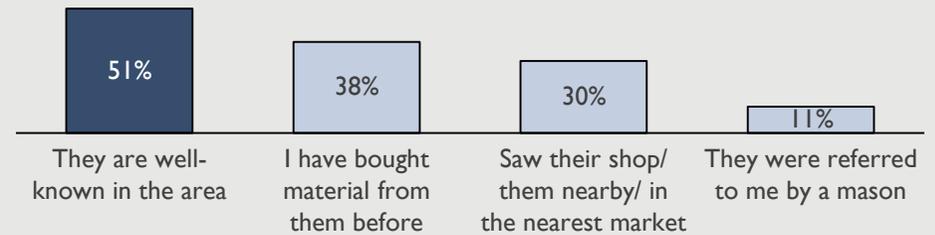
Households typically chose to source materials from hardware suppliers; certain suppliers were selected because they were well-known in the area, located close by, and because of prior experience purchasing materials from them



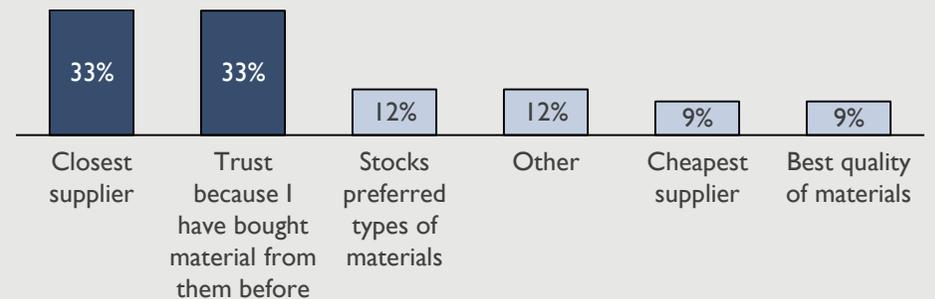
**Material suppliers opted for**



**Source for finding hardware store**

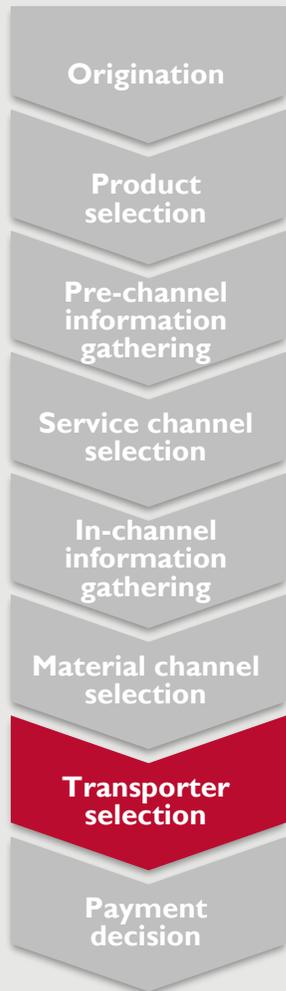


**Basis for selecting hardware store**

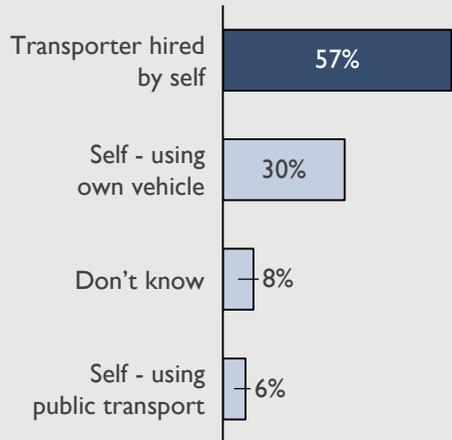


# Segment A | Buying process (8/9)

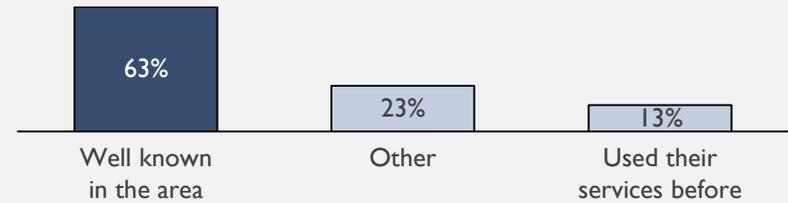
Households typically hired a transporter for their materials themselves; they chose transporters that were well known in the area and based on affordability



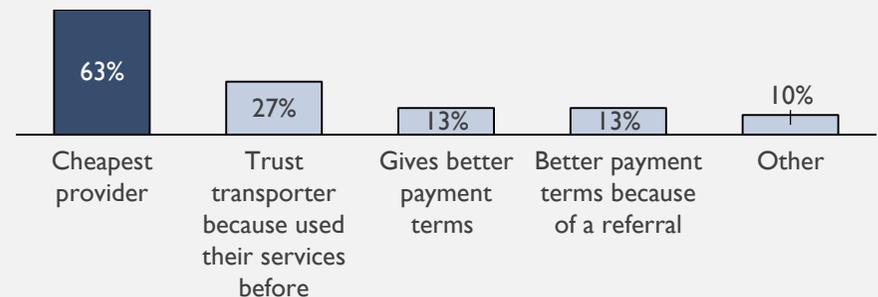
**Material transport option preferred**



**Source for finding transporter hired by self<sup>1</sup>**



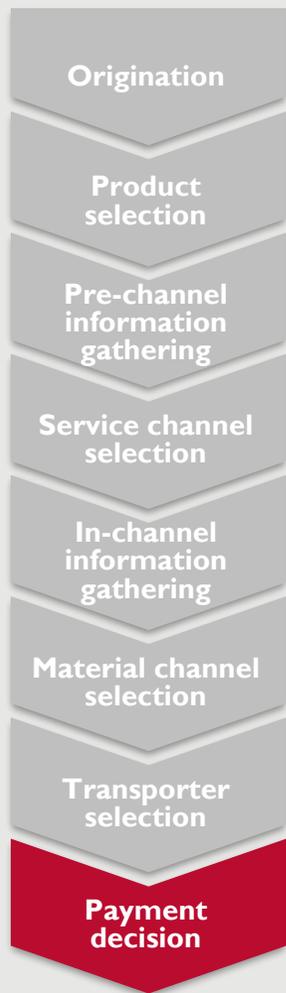
**Basis for selecting transporter hired by self<sup>2</sup>**



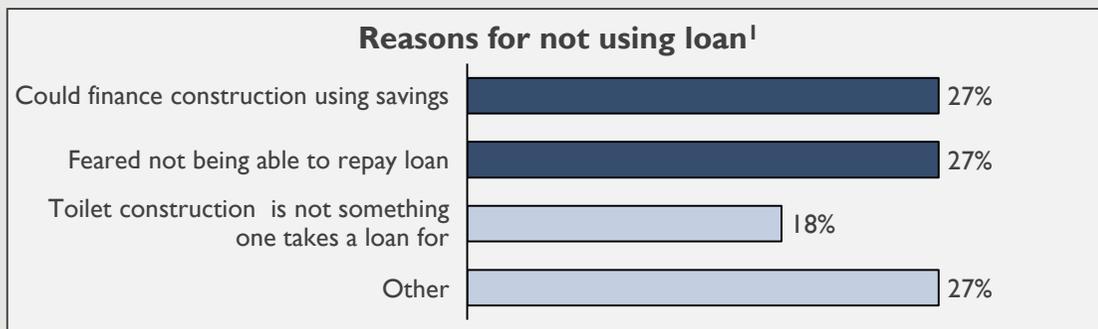
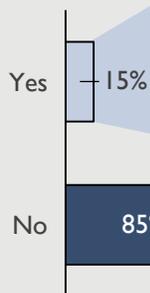
- Households that chose 'other' for source for finding transporter hired by self used motorbikes that are easily found in the area, the help of a family member, friend, or neighbor
- Households that chose 'other' for basis for selecting transporter hired by self mentioned reasons such as free service, lack of money, ease of availability, and ease of access through narrow roads

# Segment A | Buying process (9/9)

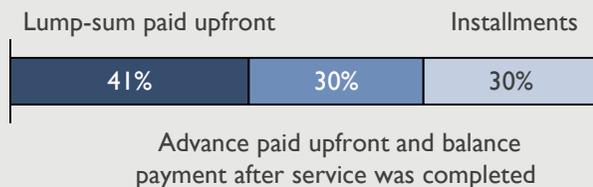
Most households did not use a loan for toilet construction because they felt they could use their own savings and were afraid of failure of repayment; hardware stores and material suppliers were often paid in a lump-sum



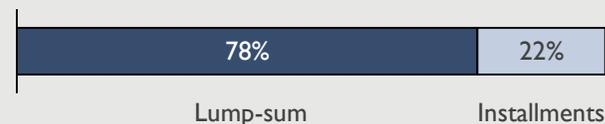
**% HHs using loans to finance toilet construction**



**% split of HHs by payment to service provider**



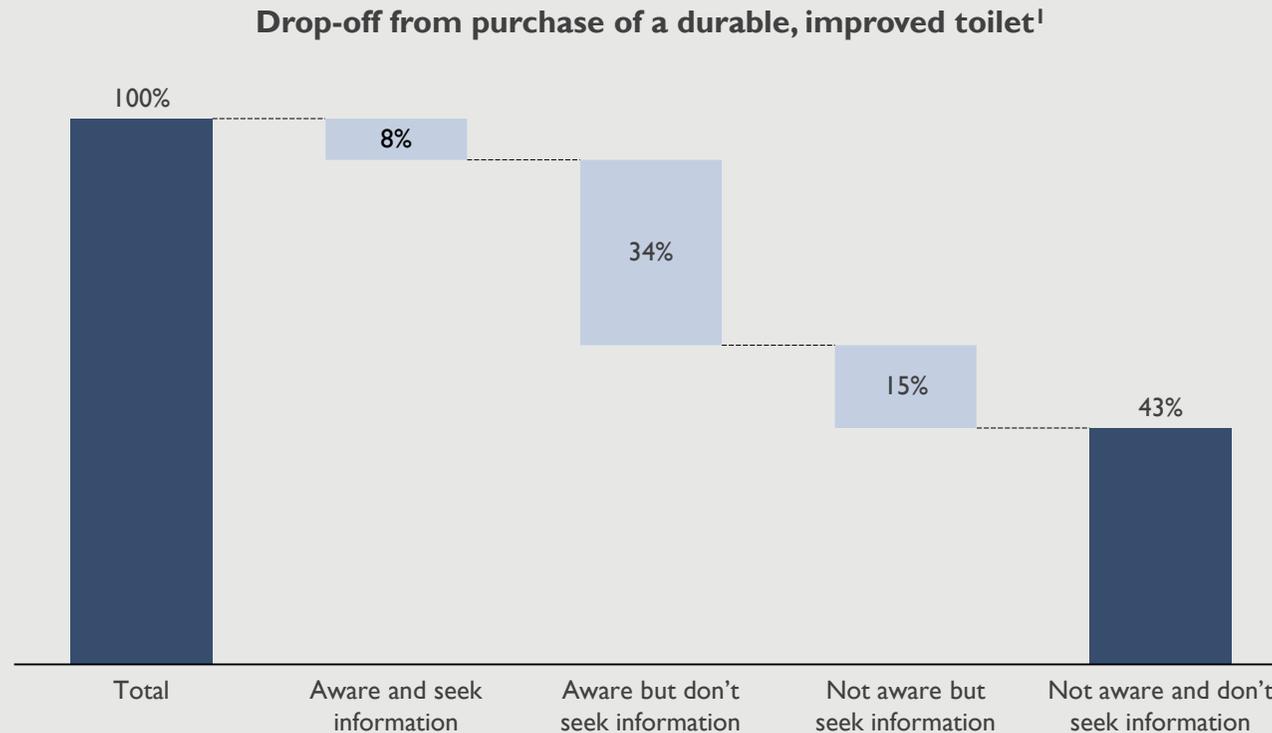
**% split of HHs by payment to hardware store**



1. Households that selected 'other' for not using loans mentioned varied reasons such as already having the finances, COVID related concerns, not being a member of savings group, etc.

# Segment A | Drop-offs from actual buying process

*Most households do not purchase durable toilets as they are neither aware of durable components, nor do they seek information when considering construction of a toilet*

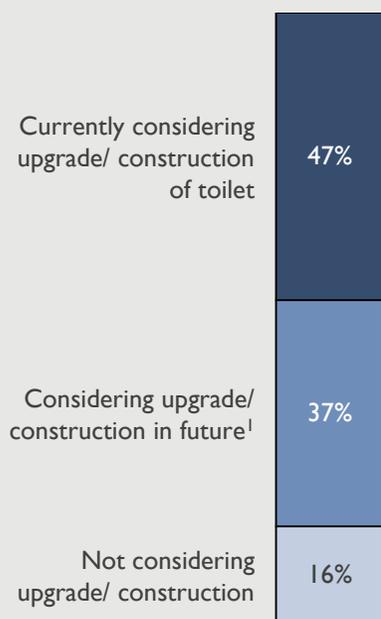


1. Households are considered to be aware if they know at least one durable component each for floor, interface, pit lining, and support structure of a toilet

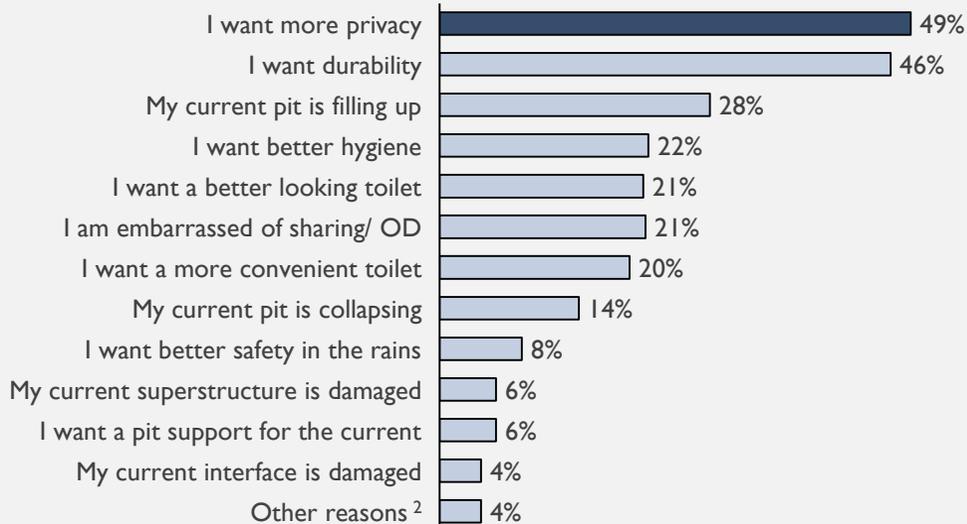
# Segment A | Future consideration

Most households are currently considering a toilet purchase because they want more privacy, or will consider one in the future if necessary materials become available or if there is more information on product options

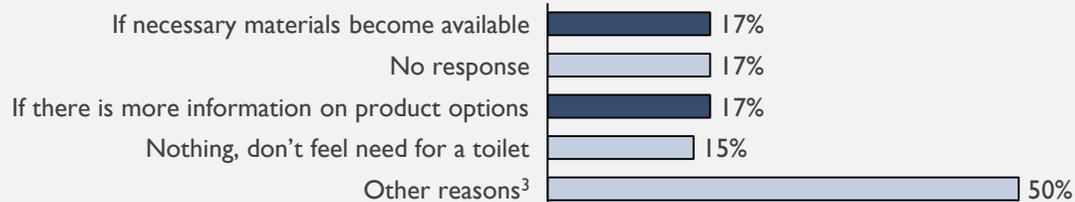
**% split of HHs without their own toilet by future preference for toilet purchase/upgrade**



**Reasons for currently considering toilet purchase/upgrade**



**Factors that could influence consideration in the future**



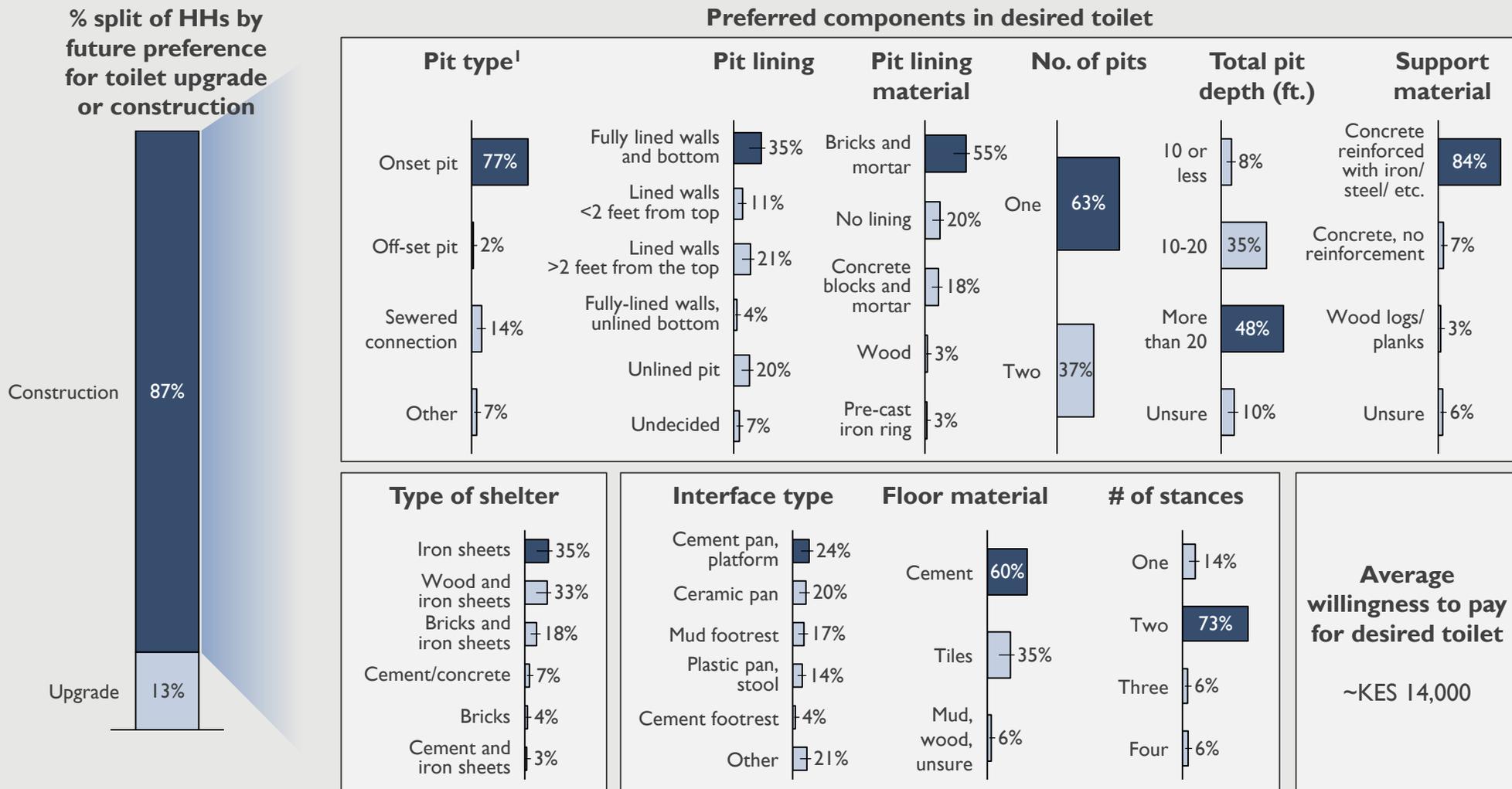
1. Those who were considering construction/ upgrade in the future were not asked for their reasons as their intent is unclear

2. Other reasons for currently considering a new toilet include needing more privacy from older members of the household or for visitors to use, and existing pit beginning to fill up

3. Other reasons that could influence future consideration include better access to assistance for labor and finances, existing pit filling up, and collapse of existing structure

# Segment A | Desired toilet

Segment A households desire a new construction with two stances, at least 20-feet deep onset pit fully-lined with bricks and mortar, a cement floor with a cement pan/platform or ceramic pan, and an iron sheets shelter



1. If 'Pit type' chosen is sewer connection, further questions regarding pits are not asked to the respondents; proportions shown in all further charts on pits exclude respondents who chose sewer connection as their pit type

# Segment profiles | Segment B

**Segment B households want a comfortable toilet for their family members...**

Non-durable individual toilets  
**57.1%**

Non-durable shared toilets  
**28.4%**

OD  
**14.6%**

Source of drinking water		Surface		Well		Piped			
Bank account		Yes	No	Yes	No		Yes	No	
Solar panel ownership					Yes	No		Yes	No
Gender of HH head	Elderly members in HH								
Female	No	A		E	F	G		I	
	Yes	<b>B</b>							
Male	Yes				H				
	No	C	D						

**...but do not have a toilet that satisfies this need.  
Let's understand why**

## Segment B | Customer story

*Moses lives in Homa Bay with his wife, child, and parents. He is educated till primary school. He currently works in agriculture, on his own farm.*

*Moses and his family live in their own house, which is built with temporary materials, and are not very affluent. Although they do not have access to electricity, they own a mobile phone and a solar panel, and possess agricultural land and their own farm animals. They typically obtain drinking water from a river. They have convenient access to a hardware store; they only need to travel 15 minutes by a two-wheeler.*

*Moses is well-aware of the benefits of owning a toilet. He believes that owning a toilet reduces the possibility of disease, allows his family to relieve themselves at night, and provides privacy. He also believes that it is important for his family to get respect from the community, and wants to follow in the example of other community members.*

*Providing a comfortable toilet for his elderly parents is important to him, and he shows a preference for a durable toilet that is safe to use. However, he is not willing to invest a significant amount for this, and would resort to OD or using traditional toilets to keep his costs low.*

*Moses and his family have their own traditional toilet, which has a 15-foot deep unlined onset pit, and a shelter with an iron sheet roof and walls built with mud, bricks, and poles.*

*Moses desires a single-stance toilet with a 15-foot deep pit that is fully-lined with bricks and mortar, and has a concrete floor. He would like his toilet to have a shelter made of bricks and iron sheets. He is willing to pay ~KES 9,000 for this toilet. He has never taken a loan for a toilet before, because he prefers to use his own savings to finance the construction.*

# Segment B | Customer persona

## Setting

- **Typical family size:** 5 people, with 1 child under the age of 10
- **Type of house:** Predominantly live in temporary material houses
- **Income and occupation:** Half have non-seasonal income while the other half have seasonal income; agriculture (on their own farm) is the dominant occupation
- **Mobile phone:** Nearly all households have a mobile phone
- **Mobile money:** Nearly all households have access to mobile money transfer platforms
- **Total value of assets:** Households are relatively less affluent; the average total asset value per household is ~KES 22,000<sup>1</sup>
- **Bank account and savings groups:** Most households do not have a bank account or membership in a savings group<sup>2</sup>
- **Loans:** Almost three-fifths of the segment have not taken a loan in the past

## Mental Model

- Believe that **building a toilet is a high priority**, but prioritize affordability over durability
- Few believe that it is **taboo to live near a toilet**
- Recognize that toilets provide **safety at night** and a **greater degree of privacy** than open defecation
- **Community cleanliness is a significant priority**; almost all households believe that toilets reduce the possibility of disease in your family
- **Value being respected** by people in their community
  - **Conformity is very important to households**, with over three-fifths suggesting that one should not do things differently from their community



- **Current product:** Non-durable individual toilets; a quarter have non-durable shared toilets
- **Desired product:** A toilet that affords privacy, is durable, can be used by relatives and guests, and has the following attributes:
  - **Substructure:** A single 10-20 feet deep onset pit, fully-lined with bricks and mortar
  - **Interface:** Two stances and a concrete floor
  - **Superstructure:** A bricks and iron sheets shelter
- **Willingness to pay:** ~KES 9,000<sup>1</sup>
- **Financing:** Do not take a loan for toilet construction because they can use their own savings and are afraid of failure of repayment; material providers are often paid in a lump-sum, while service providers are often paid in two installments

## The Ask

Source: FSG quantitative survey with 221 rural households across Busia, Kakamega and Homa Bay

1. Figure has been rounded off to the nearest 500

2. Savings groups include MFIs, SACCOs and informal self-help groups called chamas

# Segment B | Key demographic statistics

Segment size		Demographics		Income & occupation		Access indicators	
% of potential market	14.5%	Family size (avg.)	5	<b>Nature of income</b>		<b>Distance to nearest HW store<sup>1</sup></b>	
# of households	305K	<b>Gender of HH head</b>		Non-seasonal	49.8%	<15 minutes	44.2%
<b>Sanitation profile</b>		Male	56.3%	Seasonal	50.2%	15 to 30 minutes	41.7%
Non-durable individual toilets	57.1%	Female	43.7%	<b>Primary occupation</b>		> 30 minutes	14.1%
Non-durable shared toilets	28.4%	<b>Highest education in HH</b>		Works on own farm	75.5%	<b>Access to electricity</b>	23.6%
OD	14.6%	No education	9.0%	Works on other's farm	0.0%	<b>Drinking water source</b>	
		Primary	43.6%	Own business	9.5%	Well	0.0%
		Secondary	27.3%	Employed	3.7%	Piped or other	0.0%
		University	20.1%	Other	11.3%	Surface water <sup>2</sup>	100%

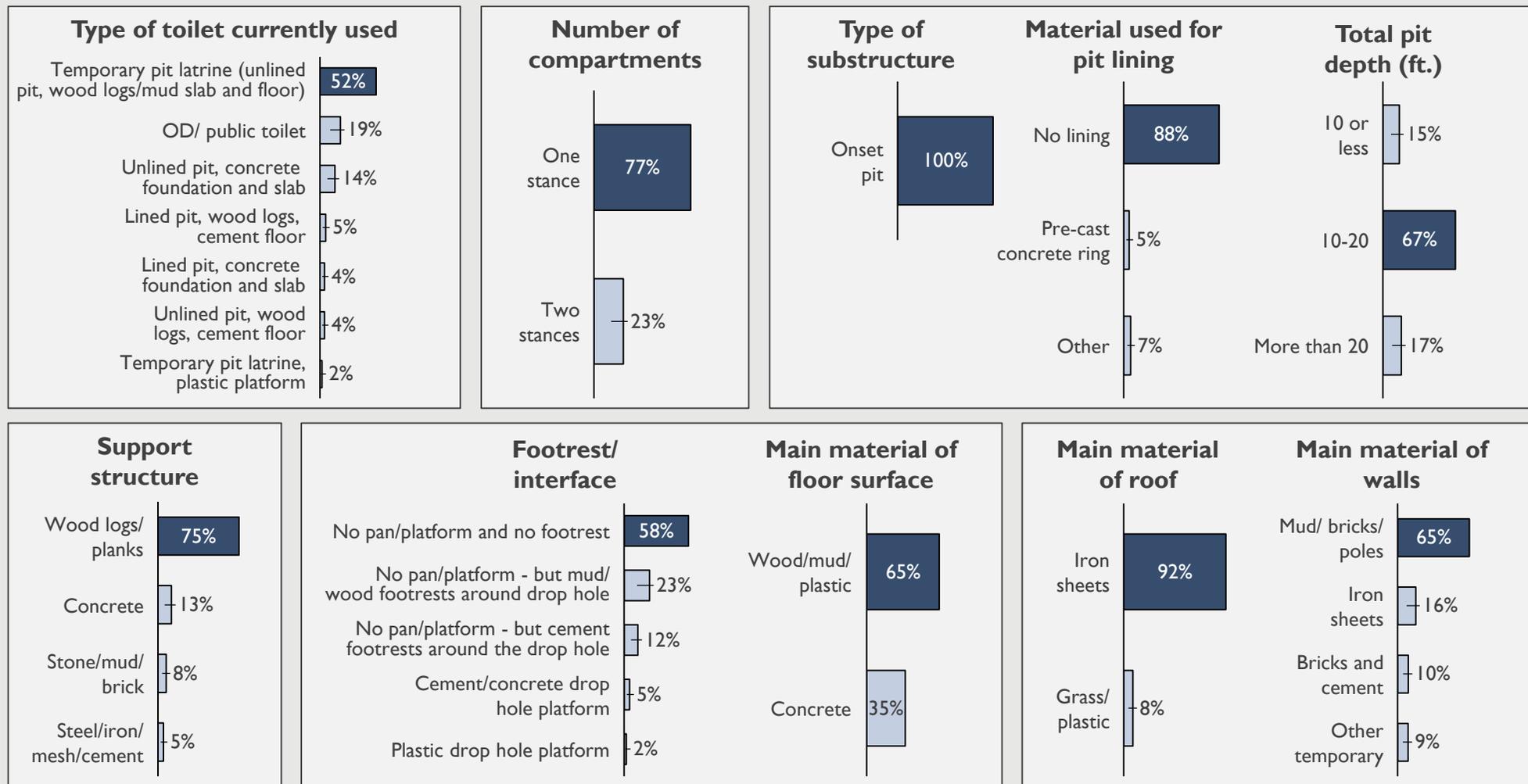
Affluence indicators		Assets and other indicators		Attitudes & beliefs	
<b>Total stated monthly expenditure</b>		Agriculture land	95.3%	I would be willing to pay for products that are prestigious	70.3%
High (> KES 10K)	30.1%	Computer	4.1%	It is embarrassing to be seen defecating in the open	97.6%
Medium (KES 5K-10K)	15.6%	Solar panel	39.0%		
Low (< KES 5K)	54.3%	Refrigerator	0.0%	Cleanliness of my community is important to me	92.3%
<b>Total asset value (avg.)</b>	21.7k	Farm animals	62.2%		
<b>Total asset value (spread)</b>		Bicycle	16.2%	It is taboo to use or live near a toilet	29.2%
High (> KES 20K)	26.7%	Mobile	97.0%		
Medium (KES 15K-20K)	18.2%	Television	23.6%		
Low (< KES 15K)	55.1%	Car or truck	0.0%		
		Motorbike	6.2%		

1. Distance to nearest hardware store is calculated based on time taken to reach by bike/ two-wheeler

2. Surface water includes water from ponds, springs, rainwater harvesting, etc.

# Segment B | Current sanitation profile

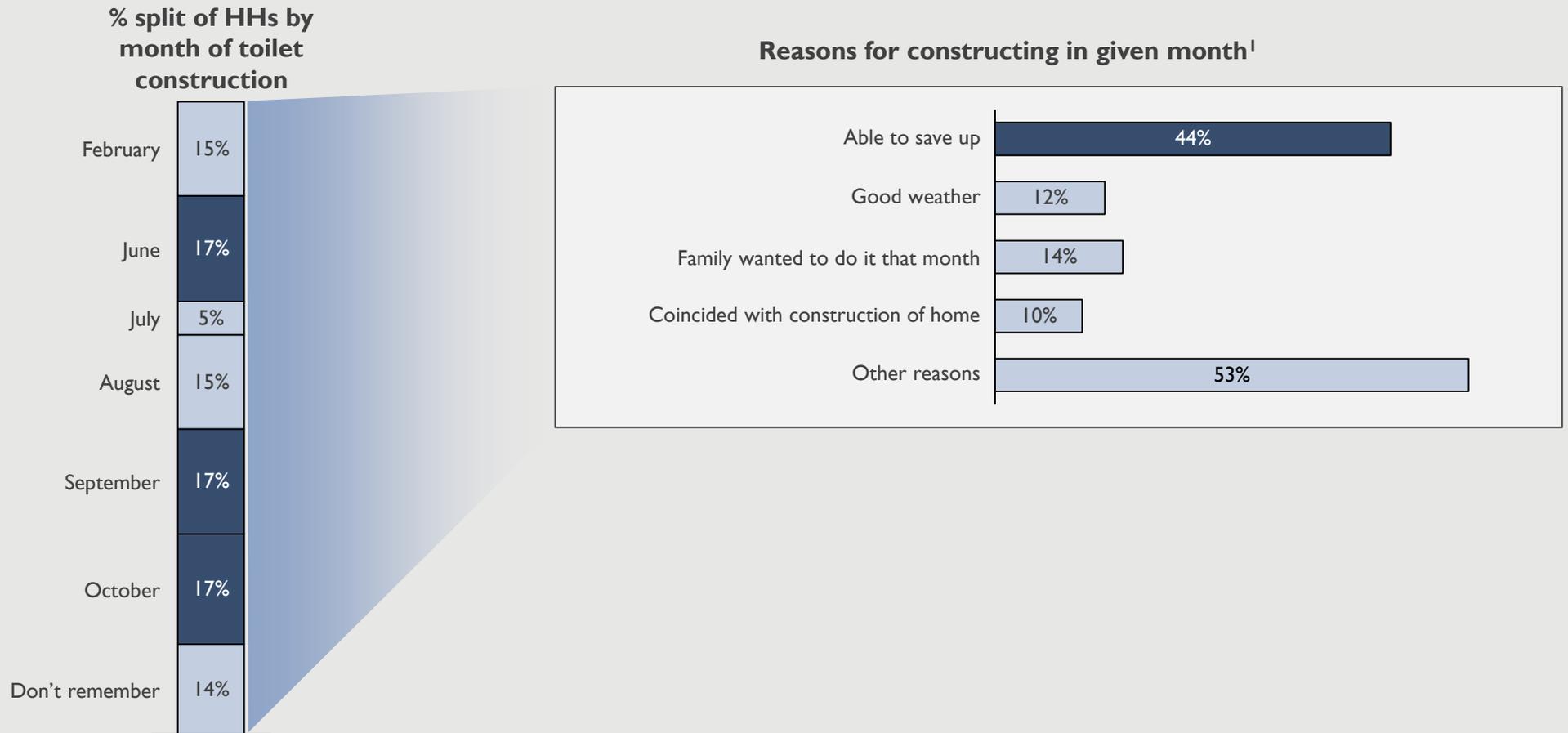
Toilet users in this segment typically use a one stance traditional pit latrine, with a 10-20 feet unlined onset pit, a wood/mud/ plastic floor with no pan/platform or footrest, iron sheets roof and mud/bricks/poles walls



**Note:** Questions related to the toilet components were not asked to HHs that resort to OD or use shared facilities

# Segment B | Typical month of construction

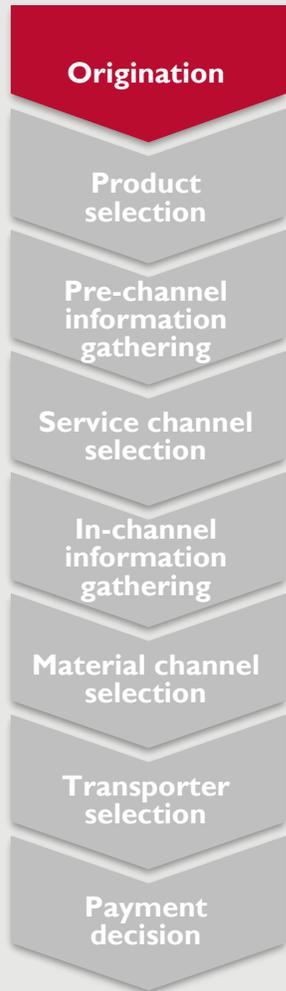
Households most commonly construct toilets in the month of October, June and September, due to their existing pit filling up or due to their ability to save up that month



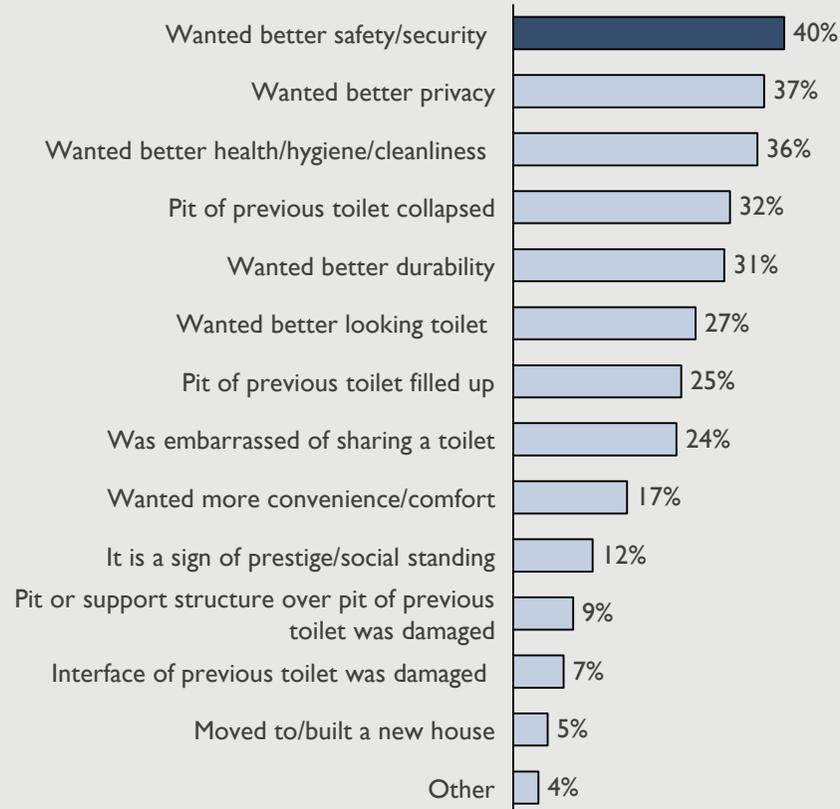
1. Households responding with other mentioned various reasons such as their existing pit filling up or collapsing, or they realized they no longer wanted to practice OD

# Segment B | Buying process (1/9)

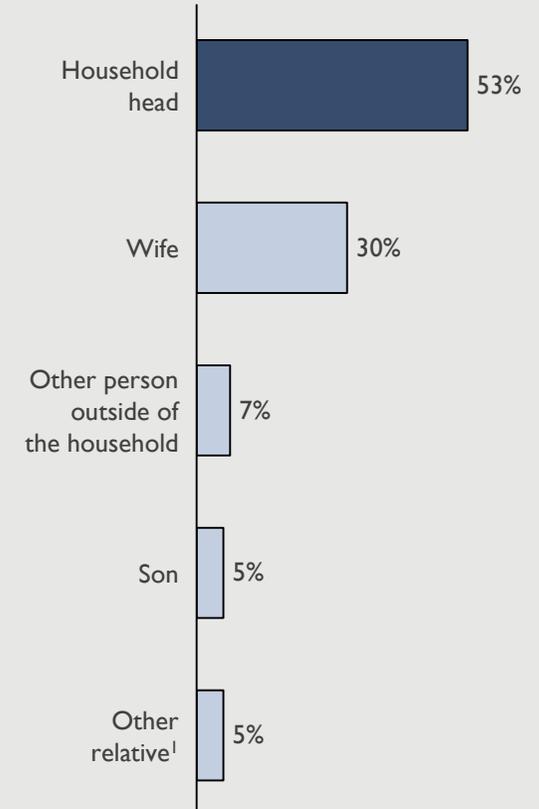
Many households wanted to construct a toilet because they wanted a safer, more private and hygienic defecation place; toilet construction discussions were initiated by the household head



## Origination of need for toilet



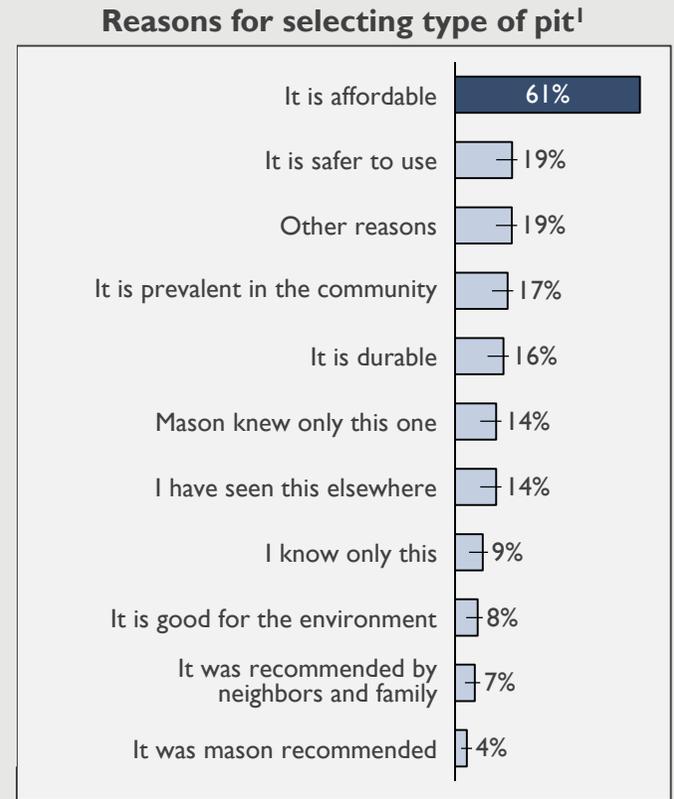
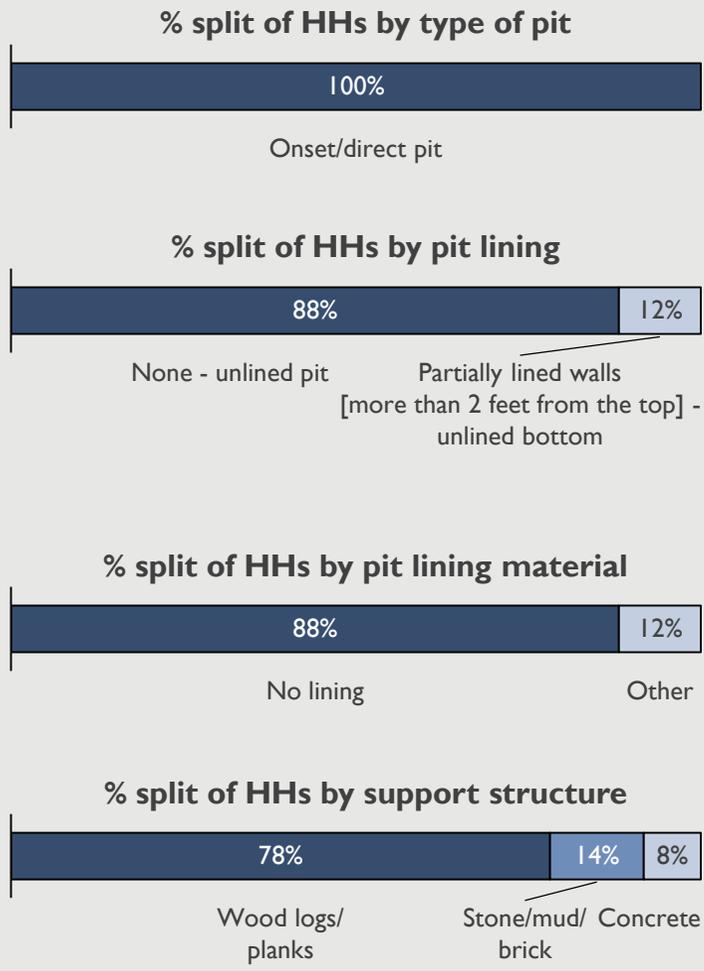
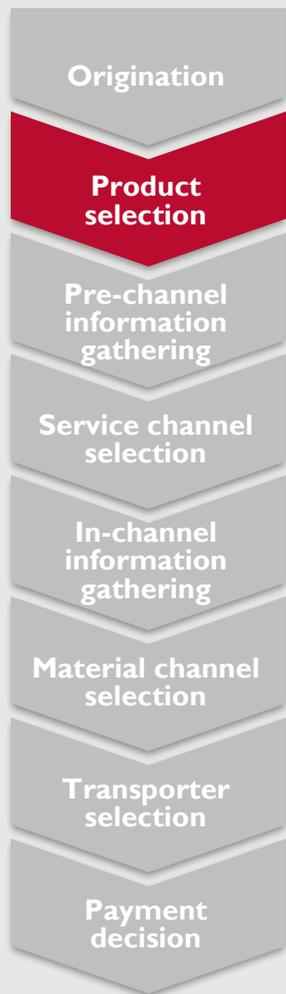
## Person who initiated discussion



1. Other relatives include members outside of the immediate family

# Segment B | Buying process (2/9)

Households typically selected an unlined onset pit supported by wood logs/ planks...



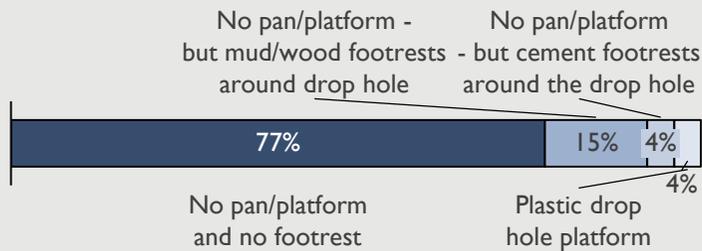
1. Other reasons for selecting this pit include safety for children, lack of capital, and easily accessible materials

# Segment B | Buying process (3/9)

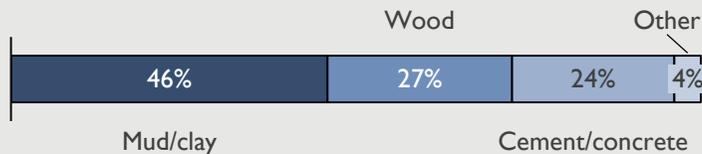
...with a mud/clay floor without a pan/platform, due to affordability



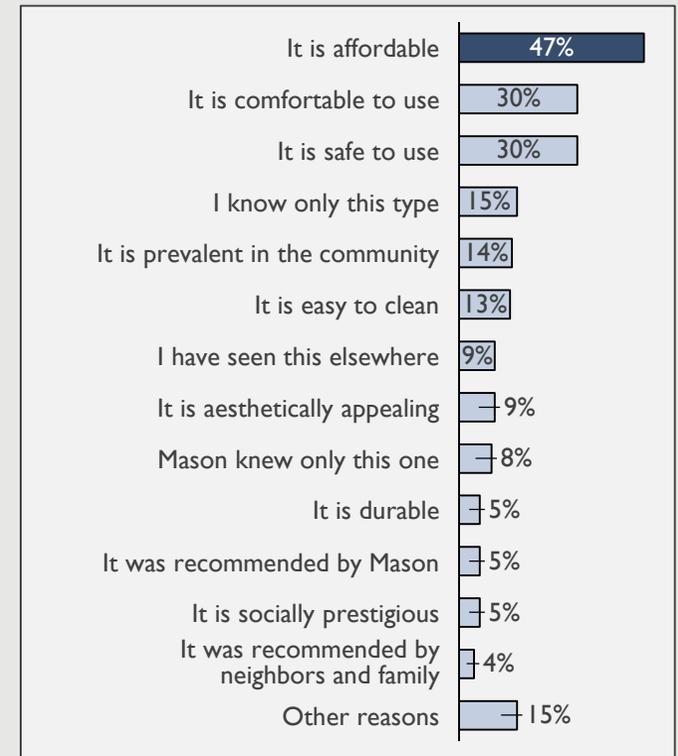
**% split of HHs by interface**



**% split of HHs by floor material**



**Reasons for selecting type of floor and interface<sup>1</sup>**



1. Households that responded with 'other reasons' for selecting type of floor and interface mostly responded with lack of money

# Segment B | Buying process (4/9)

A majority of households did not seek information while constructing a toilet, primarily because they felt that information was common knowledge; information was typically easy to access from friends, family and local leaders



## Sought information while building a toilet



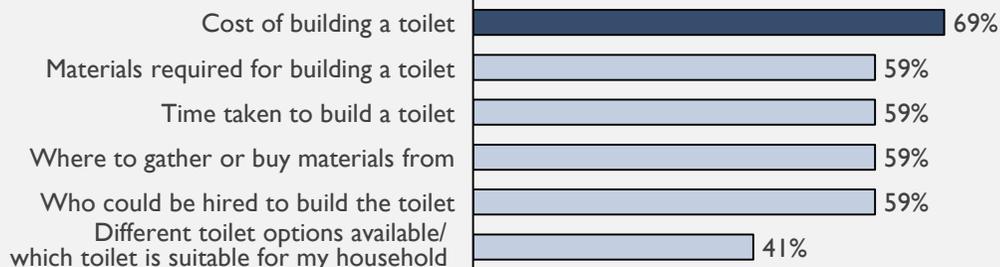
## Ease of access to information



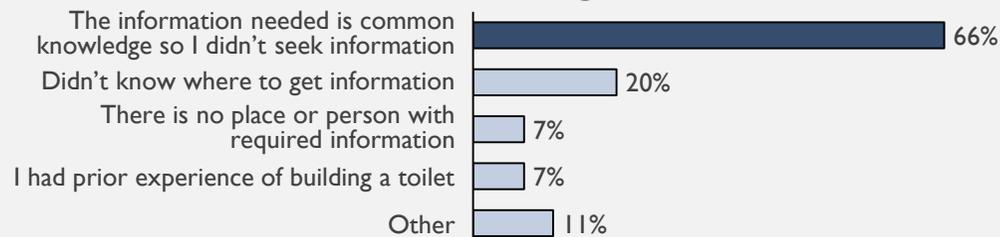
## Sources of information about toilets



## Nature of information sought



## Reasons for not seeking information



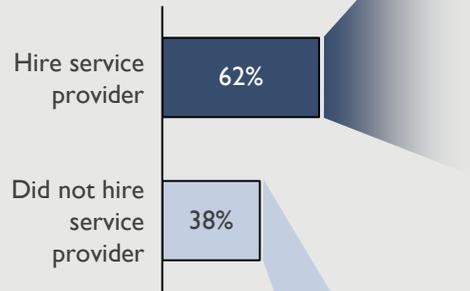
1. Households responding with 'Other' for reasons for not seeking information cited reasons such as it being an emergency case and hence not having the time to seek information, or because someone in the family already had the information that was needed

# Segment B | Buying process (5/9)

A majority of households hired a service provider who is close by or well known in their area to manage the construction process; those that manage the process themselves do so because they feel it is too expensive to hire someone



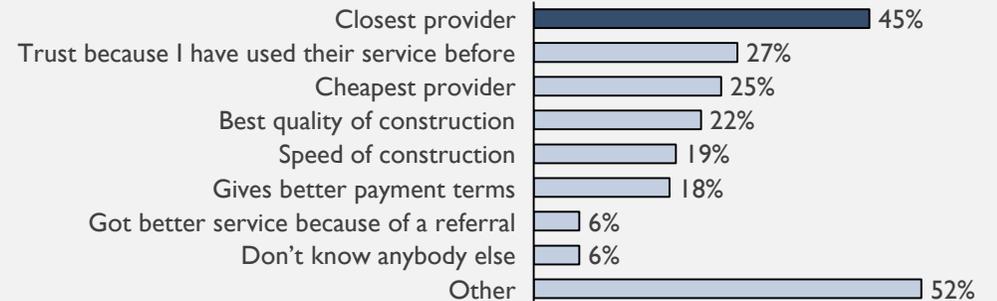
## Hired service provider to manage construction process<sup>1</sup>



## Source for finding service provider



## Basis for selecting service provider



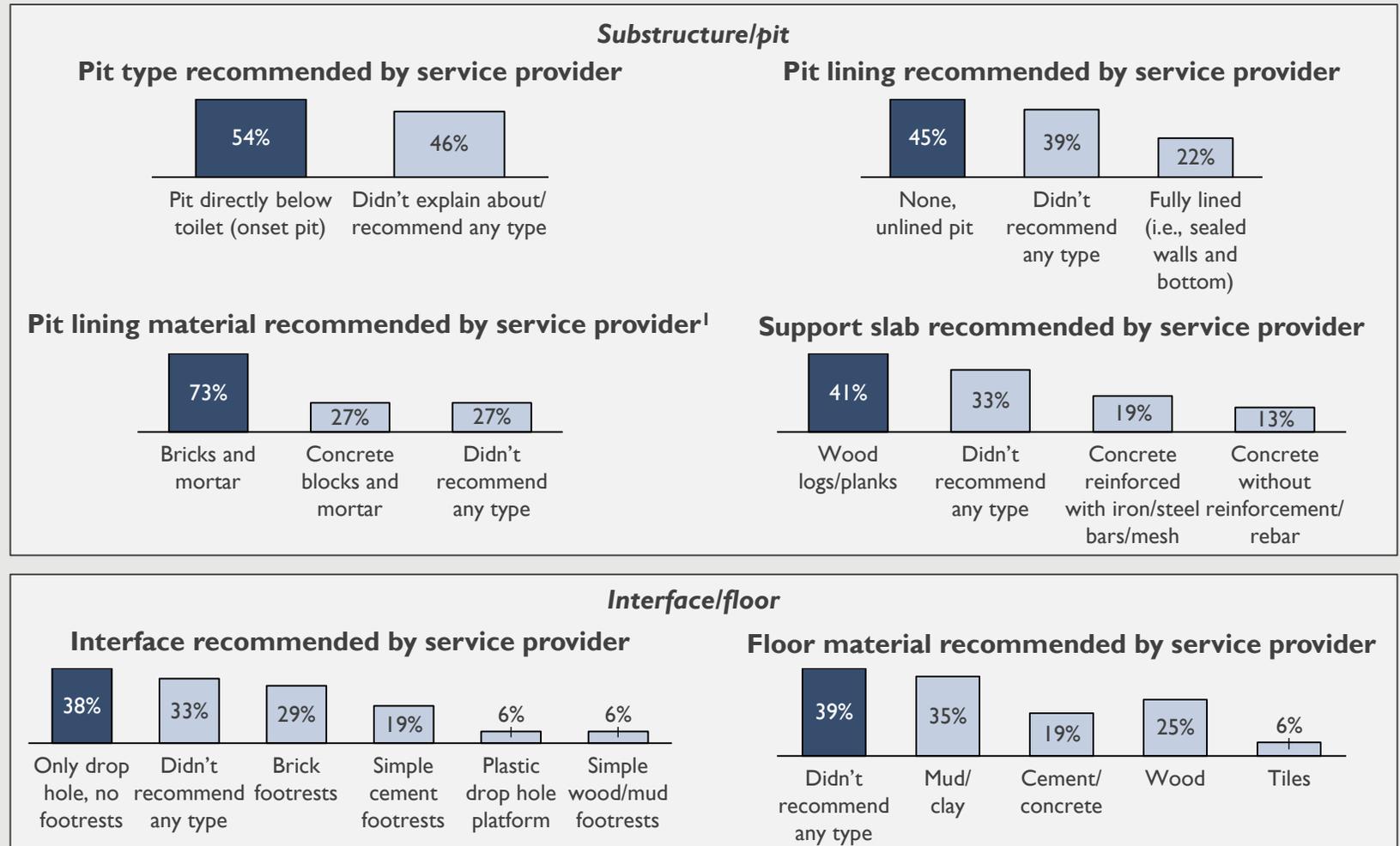
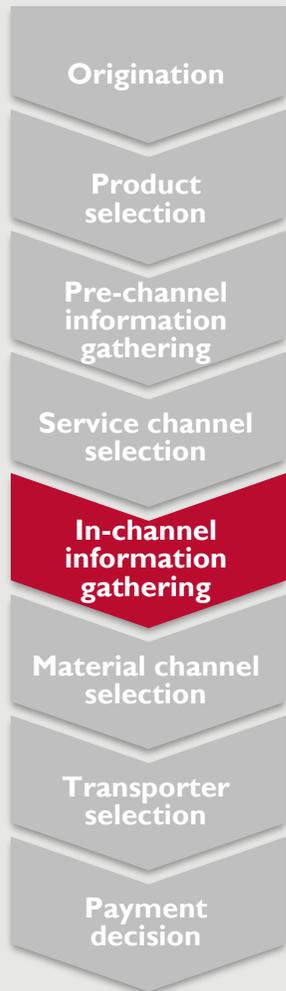
## Reasons for not hiring any service provider for toilet construction



1. Households that did not hire a service provider, oversaw the construction process themselves but had a friend, older son or nephew, or a sibling who was a mason or pit digger, assist them in the construction process

# Segment B | Buying process (6/9)

Masons often did not recommend any components, but those that did recommended that households construct unlined onset pits supported with wood logs/planks, and a mud/clay floor with no foot rests



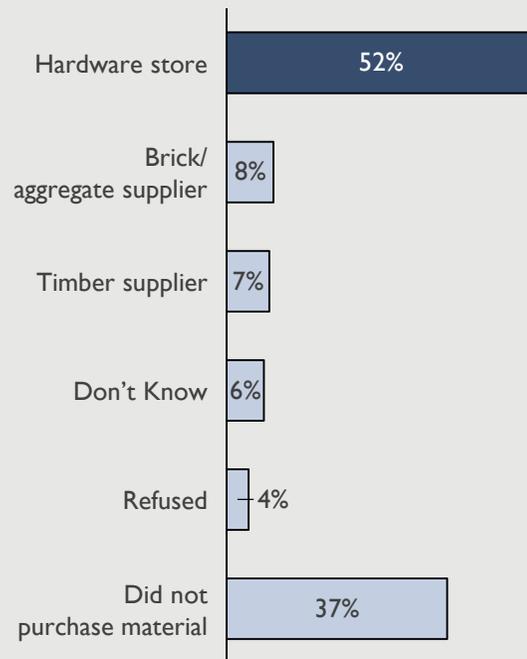
1. Proportions are for those who were recommended a fully or partially-lined pit by the service provider

# Segment B | Buying process (7/9)

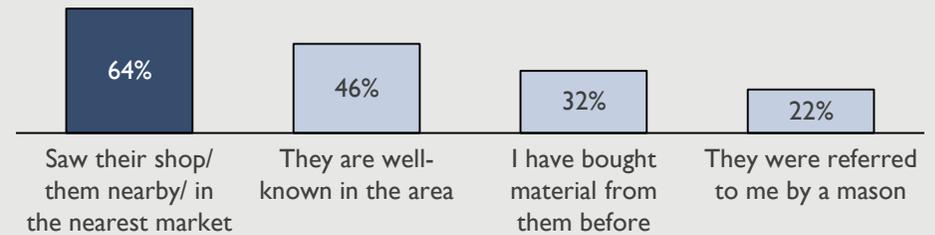
Households typically chose to source materials from hardware suppliers; certain suppliers were selected because they were located close by, and gave the best prices



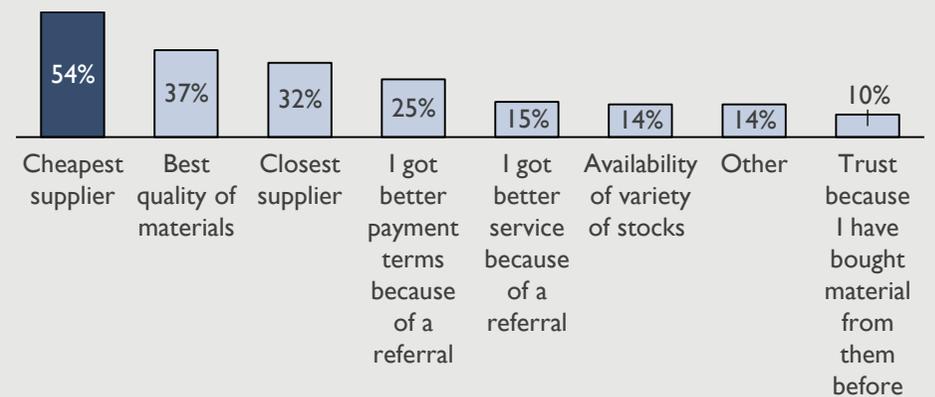
**Material suppliers opted for**



**Source for finding hardware store**

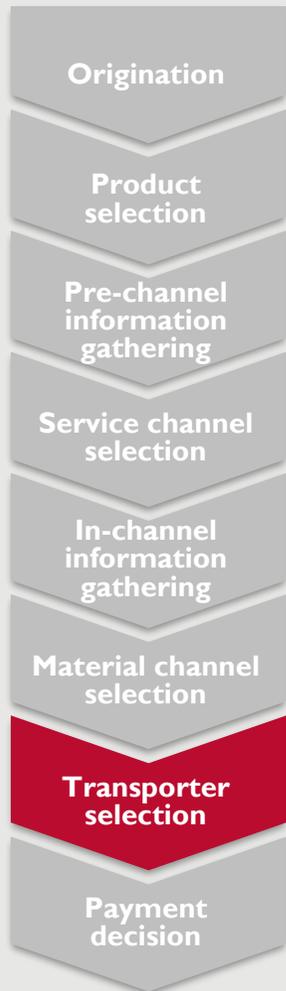


**Basis for selecting hardware store**

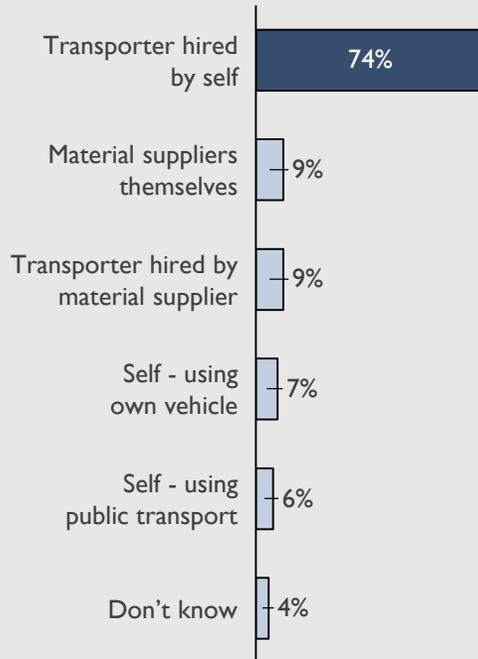


# Segment B | Buying process (8/9)

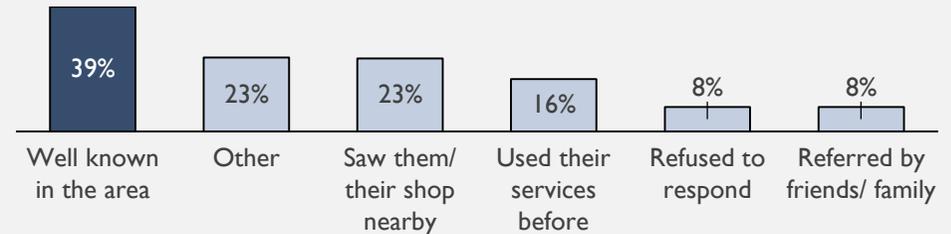
Households typically hired a transporter for their materials themselves; they chose transporters that were well known in the area and served close to their homes



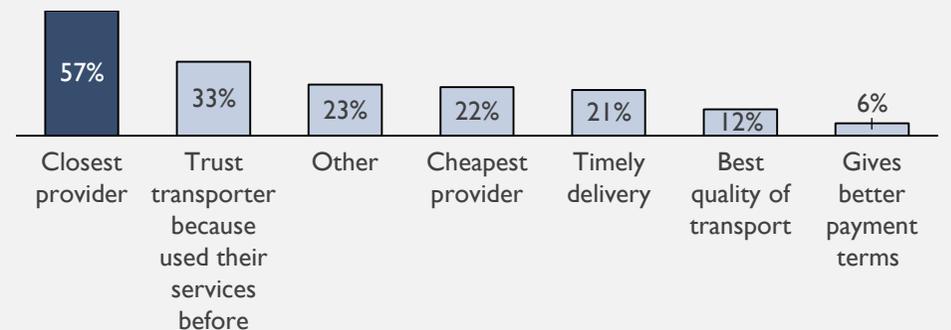
**Material transport option preferred**



**Source for finding transporter hired by self<sup>1</sup>**



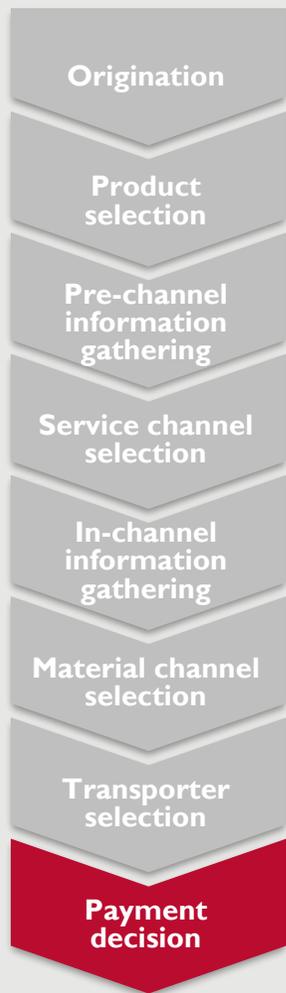
**Basis for selecting transporter hired by self<sup>2</sup>**



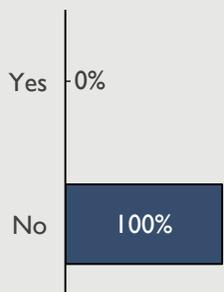
1. Households that chose 'other' for source for finding transporter hired by self used motorbikes that are easily found in the area, the help of a family member, friend, or neighbor  
 2. Households that chose 'other' for basis for selecting transporter hired by self mentioned reasons such as free service, lack of money, ease of availability, and ease of access through narrow roads

# Segment B | Buying process (9/9)

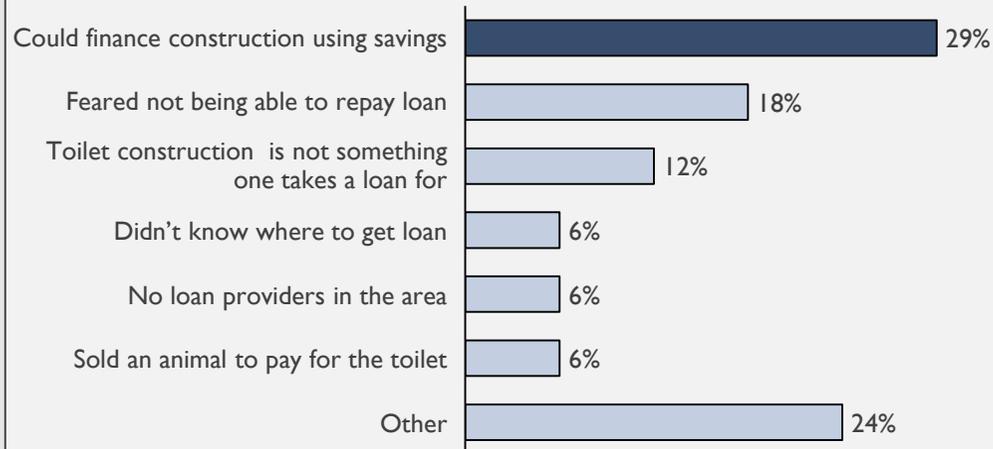
None of the households used a loan for toilet construction because they felt they could use their own savings; hardware stores were often paid in a lump-sum while service providers were paid in two installments



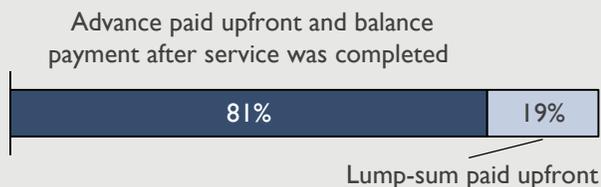
**% HHs using loans to finance toilet construction**



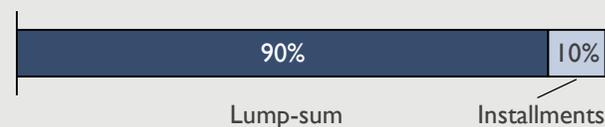
**Reasons for not using loan<sup>1</sup>**



**% split of HHs by payment to service provider**



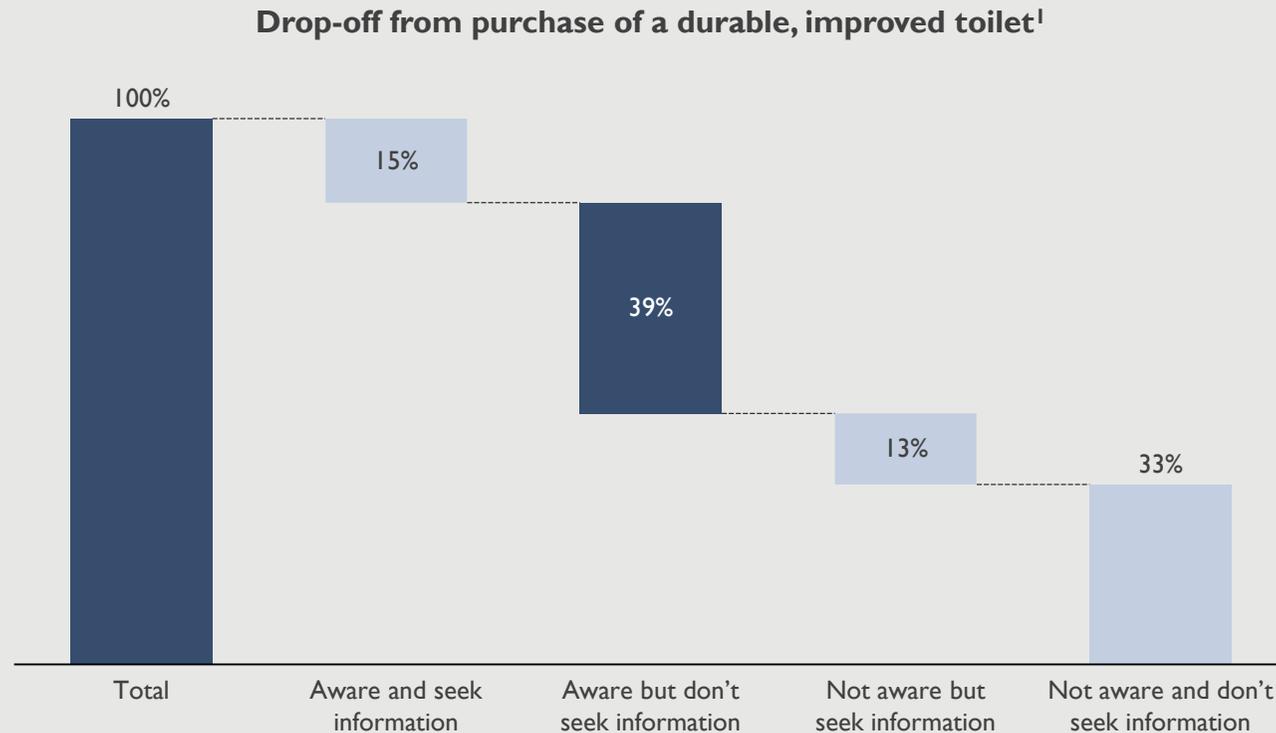
**% split of HHs by payment to hardware store**



1. Households that selected 'other' for not using loans mentioned varied reasons such as already having the finances, COVID related concerns, not being a member of savings group, etc.

## Segment B | Drop-offs from actual buying process

Many households do not purchase durable toilets as they do not seek information when considering construction of a toilet, despite being aware of durable components

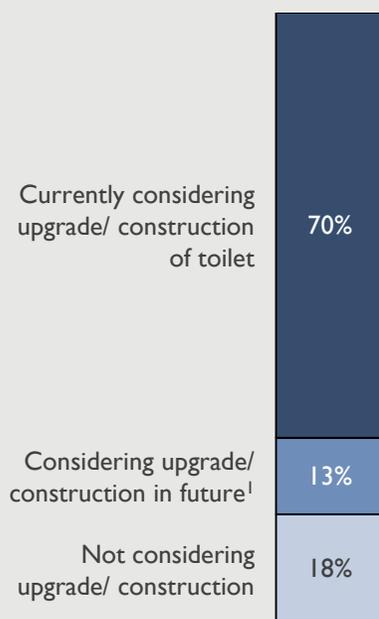


1. Households are considered to be aware if they know at least one durable component each for floor, interface, pit lining, and support structure of a toilet

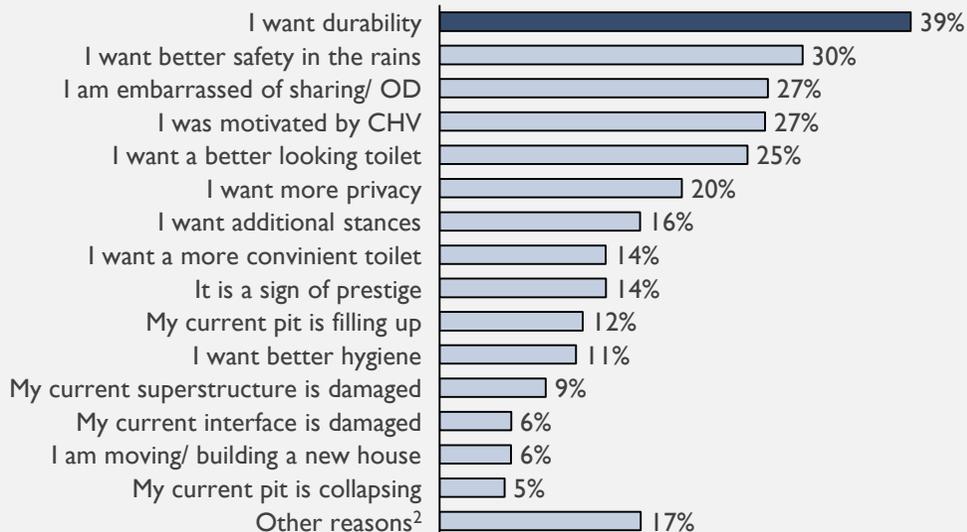
# Segment B | Future consideration

Most households are currently considering a toilet purchase because they want more durability, or will consider one in the future if more affordable options become available, or if savings are left after other priorities

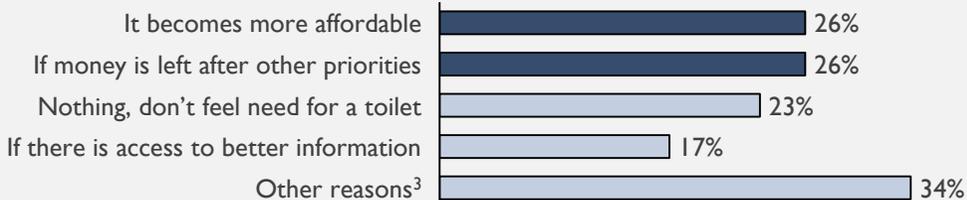
**% split of HHs without their own toilet by future preference for toilet purchase/upgrade**



**Reasons for currently considering toilet purchase/upgrade**



**Factors that could influence consideration in the future**



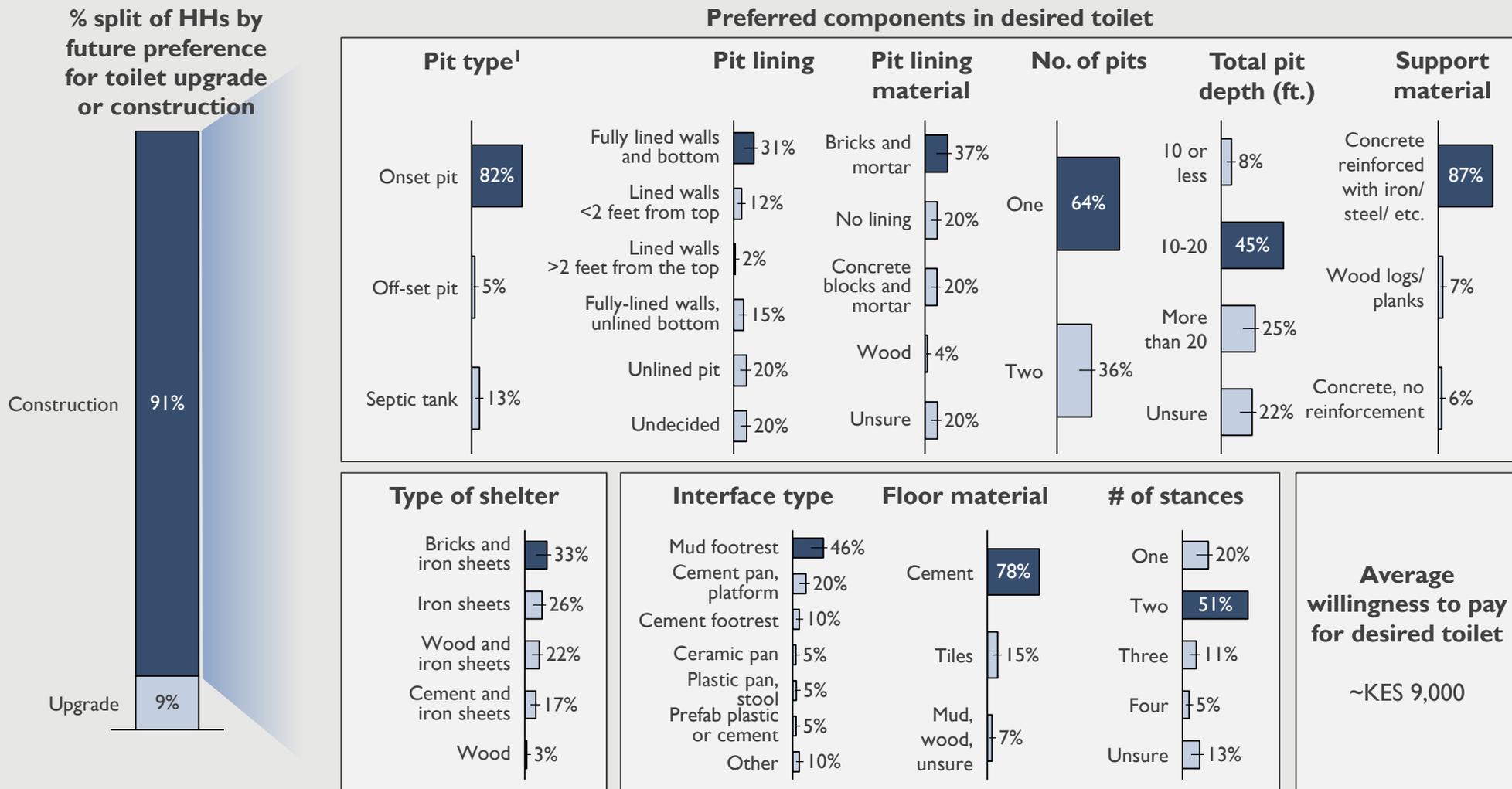
1. Those who were considering construction/ upgrade in the future were not asked for their reasons as their intent is unclear

2. Other reasons for currently considering a new toilet include needing more privacy from older members of the household or for visitors to use, and existing pit beginning to fill up

3. Other reasons that could influence future consideration include better access to assistance for labor and finances, existing pit filling up, and collapse of existing structure

# Segment B | Desired toilet

Segment B households desire a new construction with two stances, a 10-20 feet deep onset pit fully-lined with bricks and mortar, a cement floor with mud footrests, and a bricks and iron sheets shelter



1. If 'Pit type' chosen is sewer connection, further questions regarding pits are not asked to the respondents; proportions shown in all further charts on pits exclude respondents who chose sewer connection as their pit type

# Segment profiles | Segment C

**Segment C households are very affluent but share toilets...**

Non-durable individual toilets  
**39.6%**

Non-durable shared toilets  
**53.0%**

OD  
**7.3%**

Source of drinking water		Surface		Well		Piped			
Bank account		Yes	No	Yes	No		Yes	No	
Solar panel ownership					Yes	No		Yes	No
Gender of HH head	Elderly members in HH								
Female	No	A		E	F	G		I	
	Yes	B							
Male	Yes	B		E	F	G		I	
	No	C	D			H			

**...and are satisfied with sharing.  
Let's understand why**

## Segment C | Customer story

*Peter lives with his wife, two children, and brothers. He has completed education till secondary school. He currently works in agriculture, on his own farm.*

*Peter and his family live in their own house, which is built with temporary materials, and are very affluent. Although they do not have access to electricity, they own a mobile phone and a solar panel, and possess agricultural land and several farm animals. They typically obtain drinking water from a nearby pond. They have convenient access to a hardware store; they need to travel less than 15 minutes by a two-wheeler.*

*Peter strongly believes that it is important to keep the community clean, and is well-aware of the benefits of owning a toilet. He also believes that it is important for his family to get respect from the community, which is why he allows friends and neighbors to use his toilet. He believes this is a better alternative than them defecating in the open.*

*Peter would like to own a durable toilet that would last many years. However, he believes it would cost him over ~KES 100,000 so he continues investing in cheaper toilets, which he replaces frequently.*

*Peter and his family use a traditional toilet, which has a 15-foot deep unlined onset pit, and a shelter with an iron sheet roof and walls built with mud, bricks, and poles.*

*Peter desires a two-stance toilet with a 25-foot deep pit that is fully-lined with bricks and mortar, and has a concrete floor. He would like his toilet to have a shelter made of bricks and iron sheets. He is willing to pay ~KES 13,000 for this toilet. He has not taken a loan for toilet construction before as he can pay for it using savings.*

# Segment C | Customer persona

## Setting

- **Typical family size:** 6 people, with 2 children under the age of 10
- **Type of house:** Predominantly live in temporary material houses
- **Income and occupation:** Typically have non-seasonal income, however, over a third have seasonal income; agriculture (on their own farm) is the dominant occupation
- **Mobile phone:** All households have a mobile phone
- **Mobile money:** All households have access to mobile money transfer platforms
- **Total value of assets:** Households are highly affluent; the average total asset value per household is KES 76,000<sup>1</sup>
- **Bank account and savings groups:** All households have a bank account; all households are members of a savings group
- **Loans:** Almost half of the segment have not taken a loan in the past

## Mental Model

- **Perceive durable toilets to be as expensive as ~KES 100K,** and believe that lower costs imply inferior quality
- **Value other priorities, over building a durable toilet;** would rather build a cheap, temporary toilet, or share one with a neighbor, and spend savings on children's education
- **Lack willingness to spend heavily on toilet construction,** despite affluence, due to a tendency for toilets to collapse
- **Community cleanliness is important;** willing to share toilet with the community to discourage OD
- **Value products that make their life more convenient,** and that are **prestigious**
  - **Conformity is very important to many households,** with over three-fifths of households suggesting that one should not do things differently from their community



- **Current product:** Non-durable shared toilets; two-fifths have non-durable individual toilets
- **Desired product:** A toilet that is durable, can be used by children/elderly, and visitors, and has the following attributes:
  - **Substructure:** A single onset pit, over 20-feet deep, fully-lined with bricks and mortar
  - **Interface:** Two stances, a concrete floor with cement footrests
  - **Superstructure:** A bricks and iron sheets shelter
- **Willingness to pay:** ~KES 13,000<sup>1</sup>
- **Financing:** Do not take loans for toilet construction, because they are afraid of not being able to repay it or are able to pay themselves; service providers are paid in installments, while material providers are paid in lump-sums

## The Ask

Source: FSG quantitative survey with 221 rural households across Busia, Kakamega and Homa Bay

1. Figure has been rounded off to the nearest 500

2. Savings groups include MFIs, SACCOs and informal self-help groups called chamas

# Segment C | Key demographic statistics

Segment size		Demographics		Income & occupation		Access indicators	
% of potential market	7.4%	Family size (avg.)	6	<b>Nature of income</b>		<b>Distance to nearest HW store<sup>1</sup></b>	
# of households	156K	<b>Gender of HH head</b>		Non-seasonal	67.1%	<15 minutes	60.9%
<b>Sanitation profile</b>		Male	100.0%	Seasonal	32.9%	15 to 30 minutes	31.8%
Non-durable individual toilets	39.6%	Female	0.0%	<b>Primary occupation</b>		> 30 minutes	7.3%
Non-durable shared toilets	53.0%	<b>Highest education in HH</b>		Works on own farm	57.7%	<b>Access to electricity</b>	10.7%
OD	7.3%	No education	3.4%	Works on other's farm	9.5%	<b>Drinking water source</b>	
		Primary	16.8%	Own business	9.5%	Well	0.0%
		Secondary	72.5%	Employed	0.0%	Piped or other	0.0%
		University	7.3%	Other	23.4%	Surface water <sup>2</sup>	100%

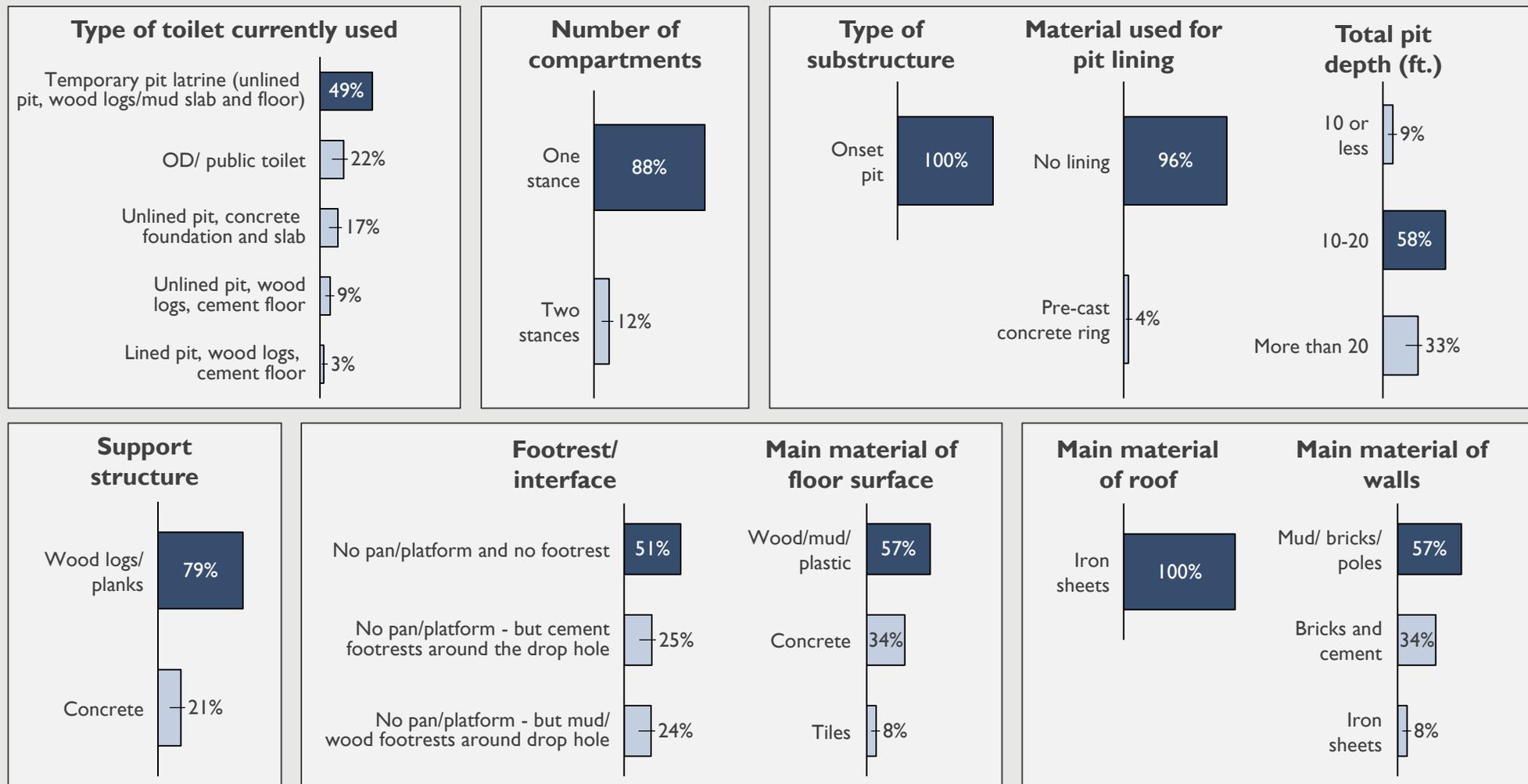
Affluence indicators		Assets and other indicators		Attitudes & beliefs	
<b>Total stated monthly expenditure</b>		<b>Assets and other indicators</b>		I would be willing to pay for products that are prestigious	
High (> KES 10K)	40.9%	Agriculture land	92.7%	82.7%	
Medium (KES 5K-10K)	32.8%	Computer	0.0%	It is embarrassing to be seen defecating in the open	
Low (< KES 5K)	26.2%	Solar panel	75.9%	86.1%	
<b>Total asset value (avg.)</b>	76.0k	Refrigerator	6.6%	Cleanliness of my community is important to me	
<b>Total asset value (spread)</b>		Farm animals	90.5%	100%	
High (> KES 20K)	68.6%	Bicycle	29.5%	It is taboo to use or live near a toilet	
Medium (KES 15K-20K)	24.1%	Mobile	100.0%	20.2%	
Low (< KES 15K)	7.3%	Television	43.1%		
		Car or truck	0.0%		
		Motorbike	45.7%		

1. Distance to nearest hardware store is calculated based on time taken to reach by bike/ two-wheeler

2. Surface water includes water from ponds, springs, rainwater harvesting, etc.

# Segment C | Current sanitation profile

Toilet users in this segment typically use a one stance traditional, unlined pit latrine, with a 10-20 feet onset pit, a wood/mud/ plastic floor with no pan/platform or footrest, iron sheets roof and mud/ bricks/ poles walls

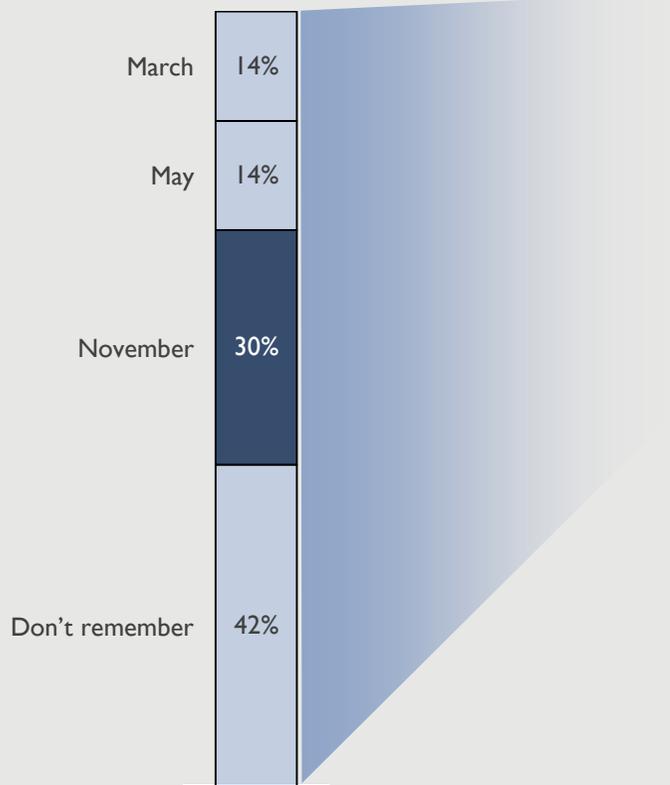


**Note:** Questions related to the toilet components were not asked to HHs that resort to OD or use shared facilities

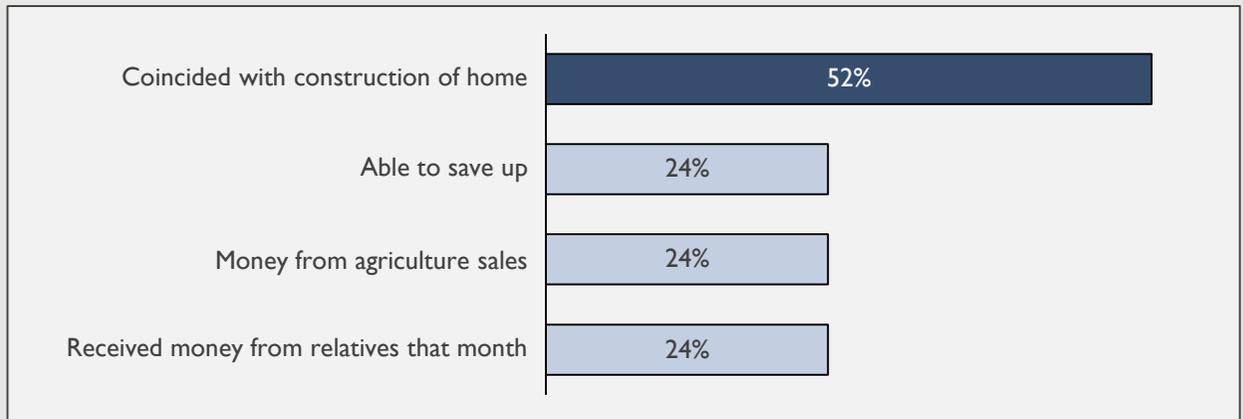
# Segment C | Typical month of construction

Households commonly construct toilets in the month of November and typically align that with construction or upgrade of their homes

**% split of HHs by month of toilet construction**



**Reasons for constructing in given month**

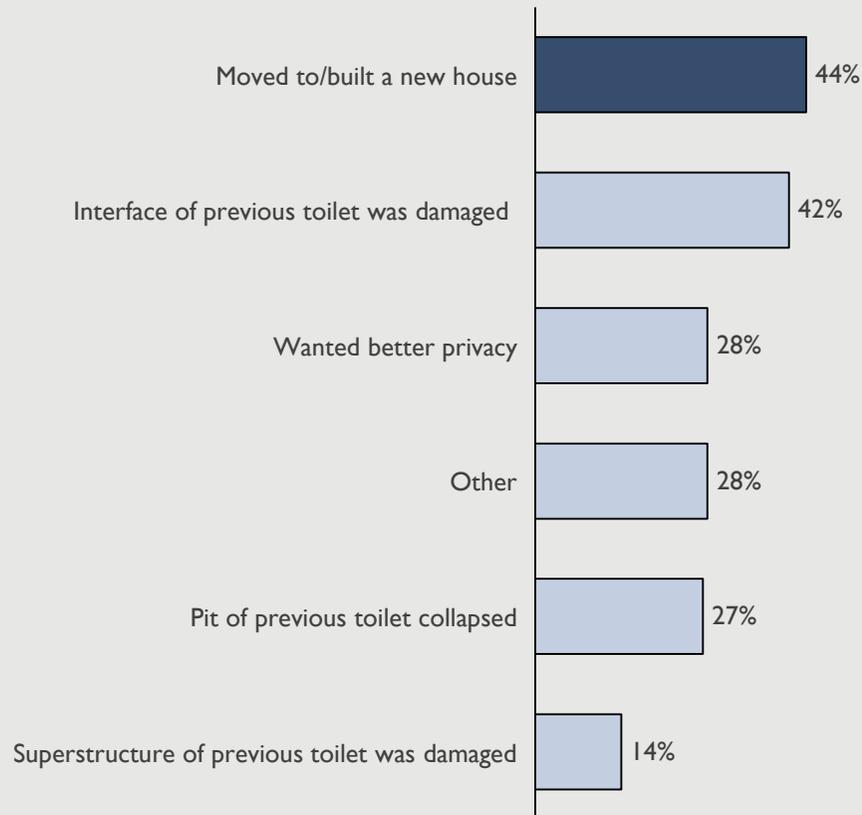


# Segment C | Buying process (1/9)

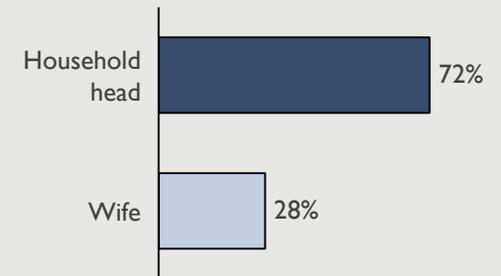
Many households wanted to construct a toilet because it aligned with construction of a new house or due damage to the existing toilet interface; toilet construction discussions were initiated by the household head



### Origination of need for toilet

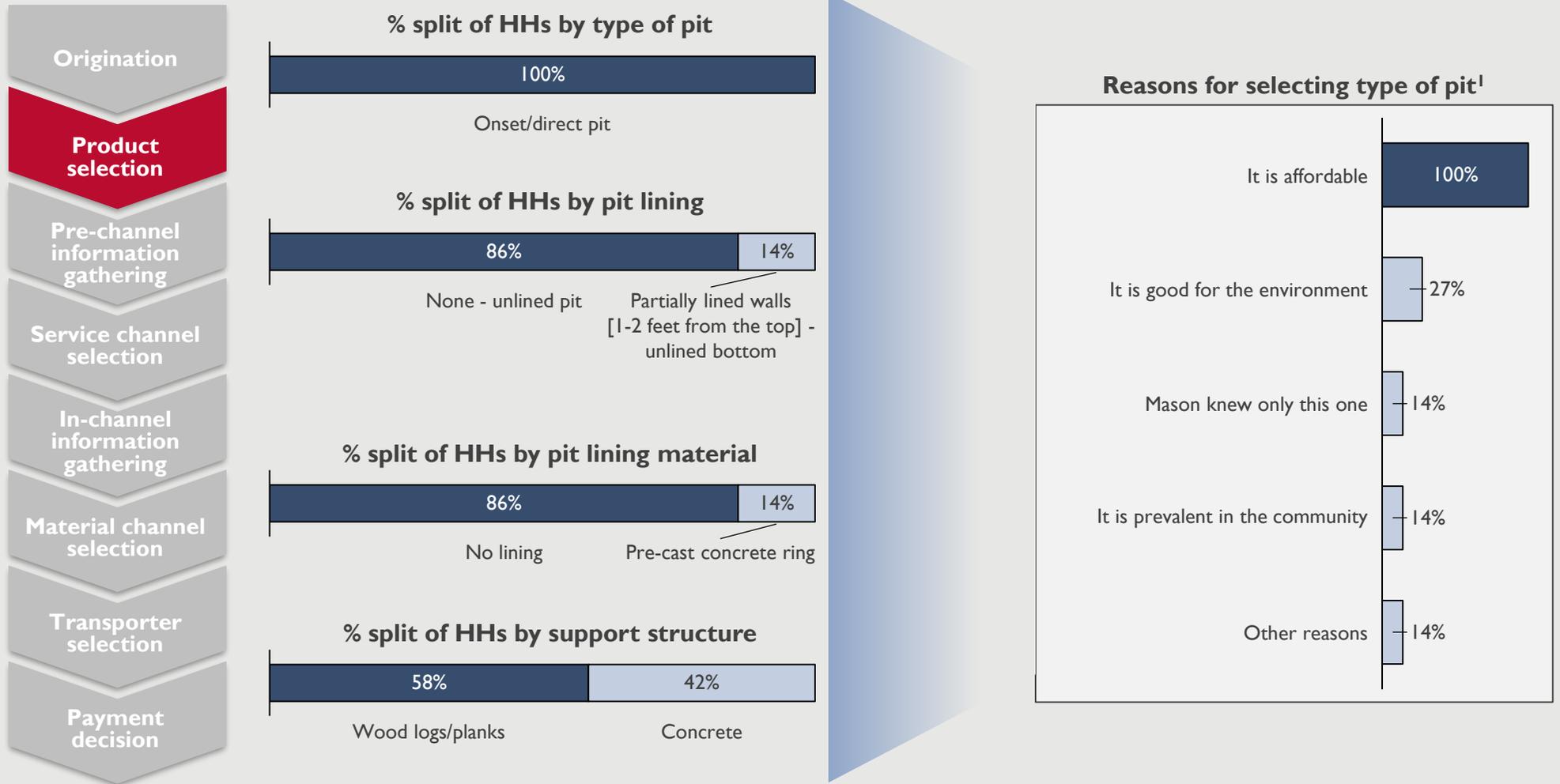


### Person who initiated discussion



# Segment C | Buying process (2/9)

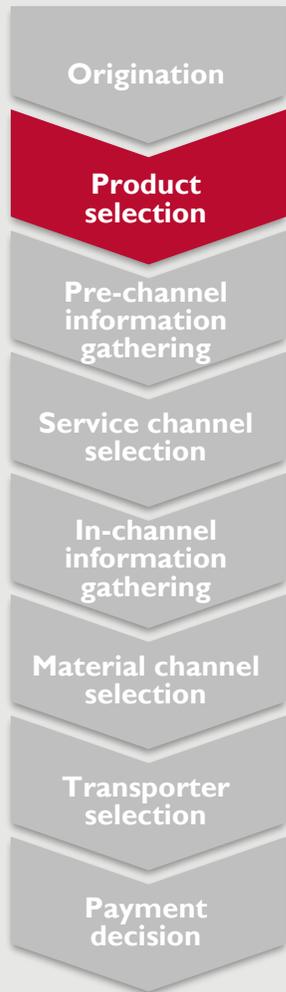
Households typically selected an unlined onset pit supported by wood logs/ planks...



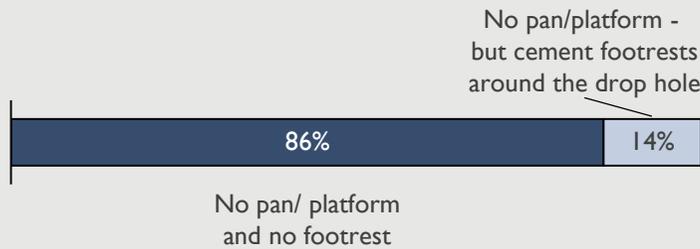
1. Other reasons for selecting this pit include safety for children, lack of capital, and easily accessible materials

# Segment C | Buying process (3/9)

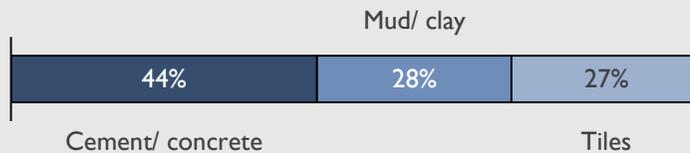
...and a cemented floor without a pan/platform or footrest, mainly due to affordability



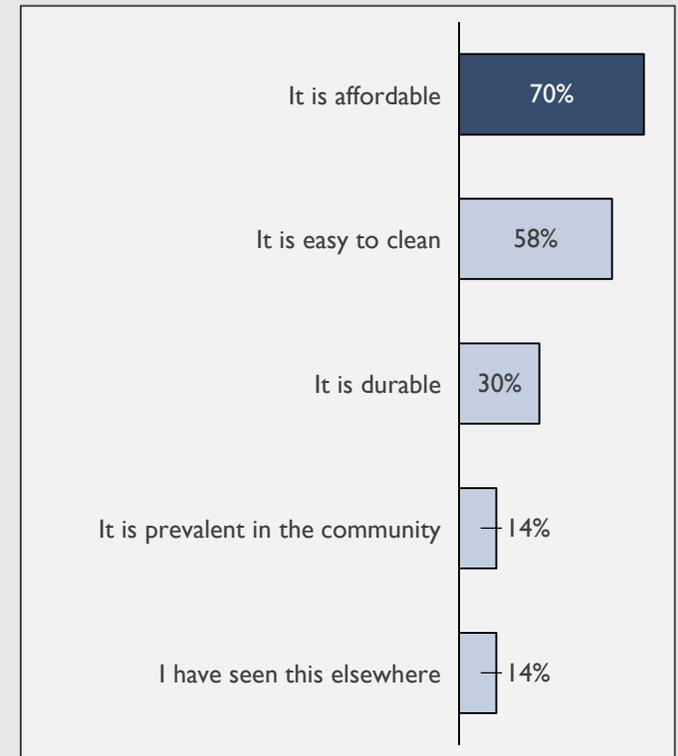
### % split of HHs by interface



### % split of HHs by floor material

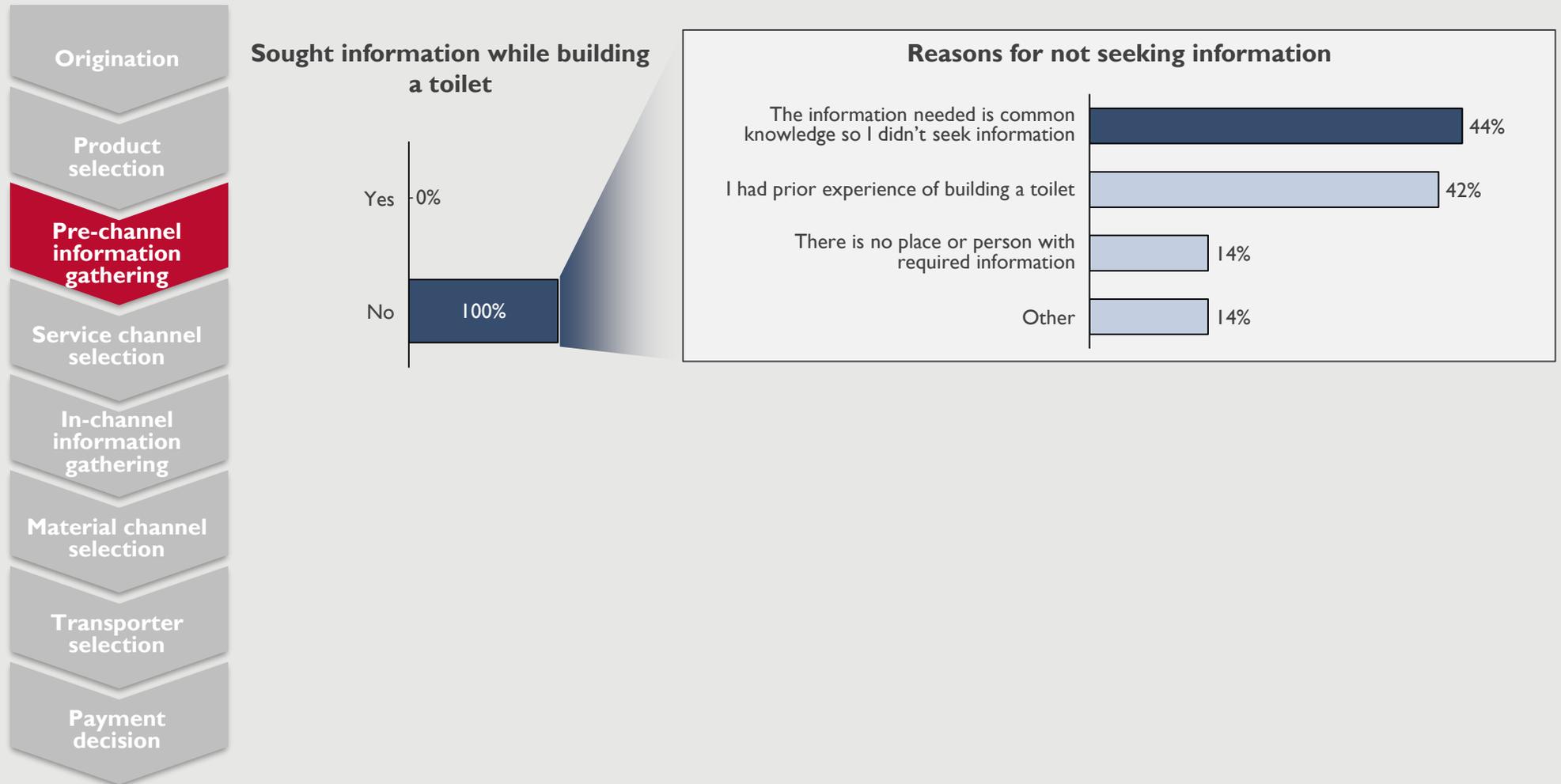


### Reasons for selecting type of floor and interface



# Segment C | Buying process (4/9)

Households did not seek information while constructing a toilet, either because they felt that the information was common knowledge or they had prior experience building a toilet



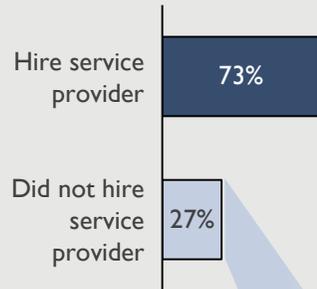
1. Households responding with 'Other' for reasons for not seeking information cited reasons such as it being an emergency case and hence not having the time to seek information, or because someone in the family already had the information that was needed

# Segment C | Buying process (5/9)

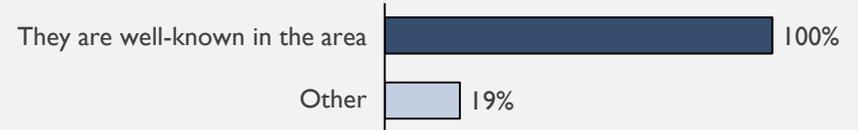
Most households hired a service provider, who was well-known locally and affordable, for toilet construction; Households that did not hire service providers preferred to manage the process themselves as they had time to do so



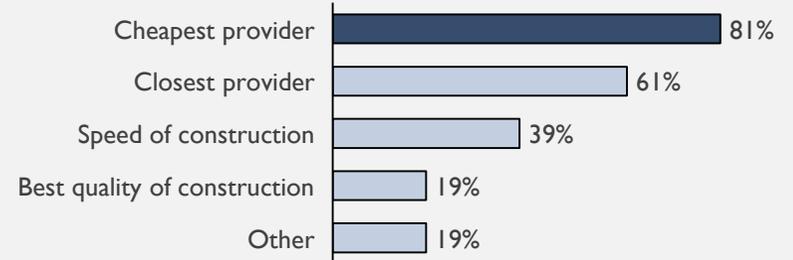
## Hired service provider to manage construction process<sup>1</sup>



## Source for finding service provider



## Basis for selecting service provider



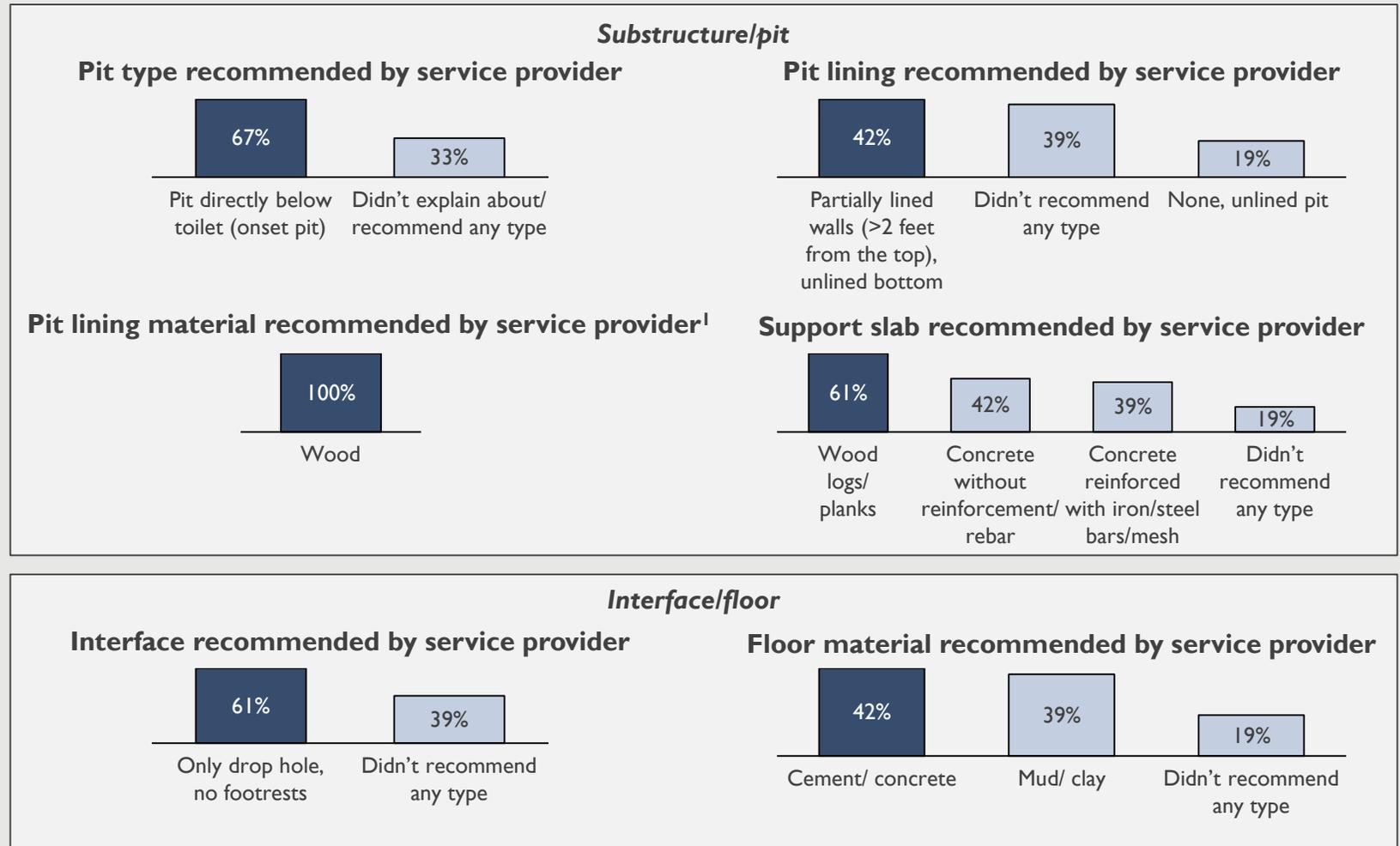
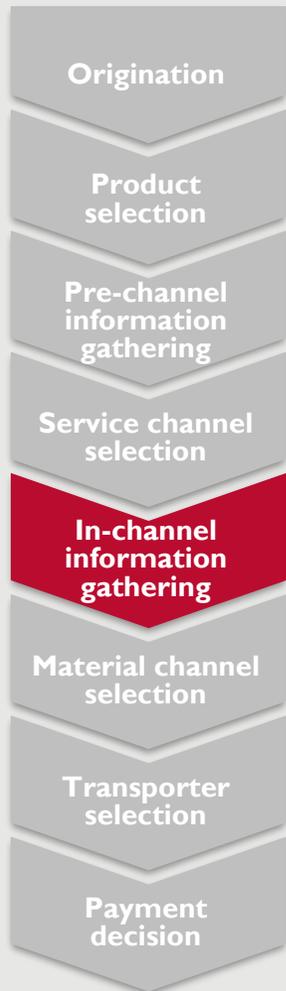
## Reasons for not hiring any service provider for toilet construction



1. Households that did not hire a service provider, oversaw the construction process themselves but had a friend, older son or nephew, or a sibling who was a mason or pit digger, assist them in the construction process

# Segment C | Buying process (6/9)

Masons often recommended that households construct partially-lined onset pits, supported with wood logs/ planks without any reinforcement, and a cement/concrete floor with only a drop hole and no footrests



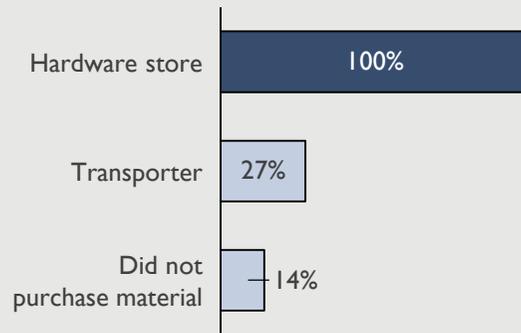
1. Proportions are for those who were recommended a fully or partially-lined pit by the service provider

# Segment C | Buying process (7/9)

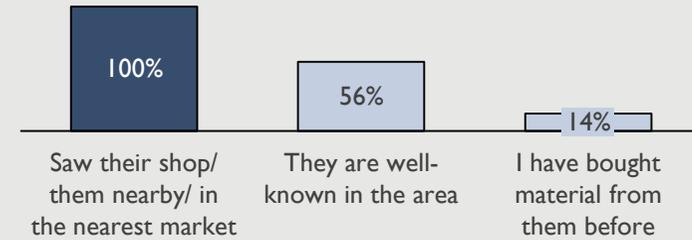
Households typically chose to source materials from hardware suppliers; suppliers were chosen because their shops were in the nearest market and had availability of variety of stocks



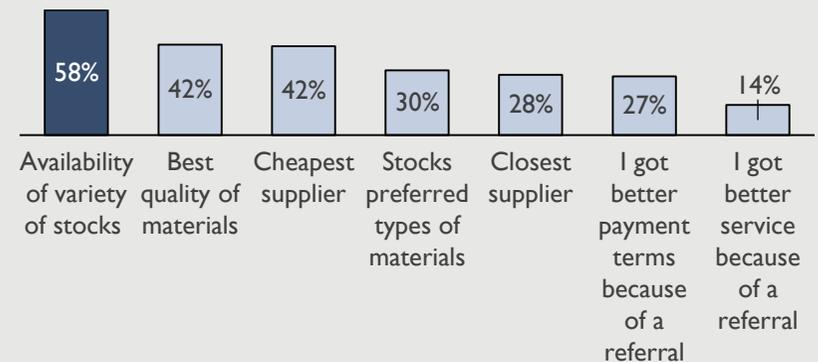
**Material suppliers opted for**



**Source for finding hardware store**

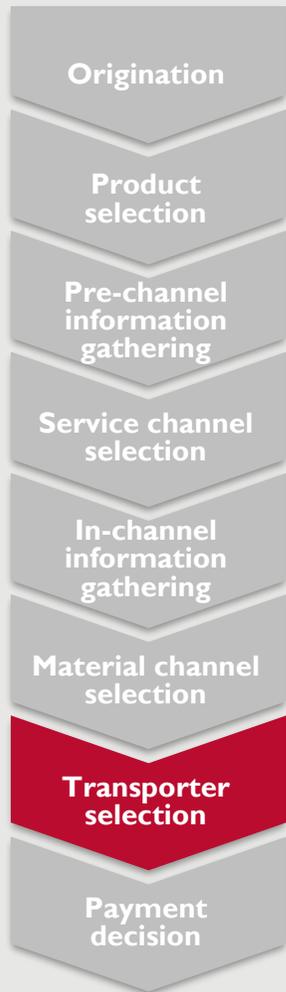


**Basis for selecting hardware store**

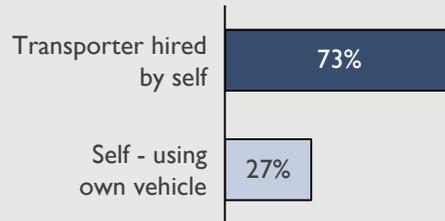


# Segment C | Buying process (8/9)

Households typically hired a transporter for their materials themselves; they chose transporters that were well known in the area and those they had good past experiences with



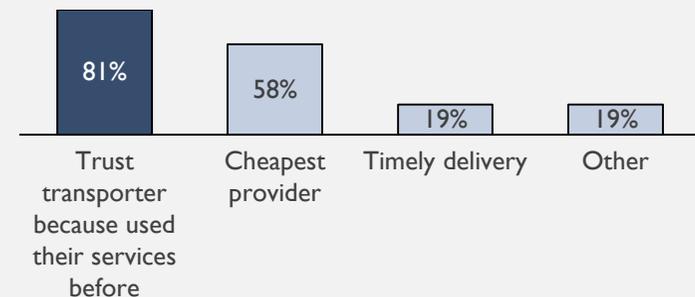
## Material transport option preferred



## Source for finding transporter hired by self



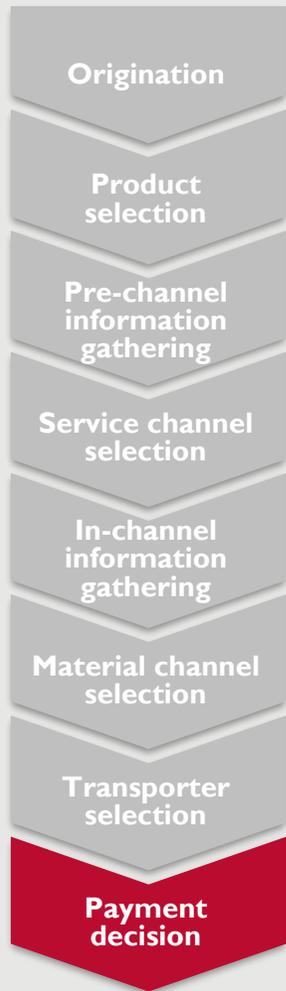
## Basis for selecting transporter hired by self<sup>1</sup>



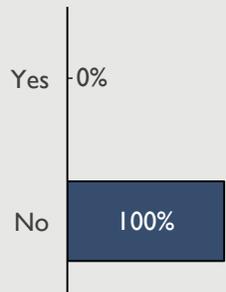
1. Households that chose 'other' for basis for selecting transporter hired by self mentioned reasons such as free service, lack of money, ease of availability, and ease of access through narrow roads

# Segment C | Buying process (9/9)

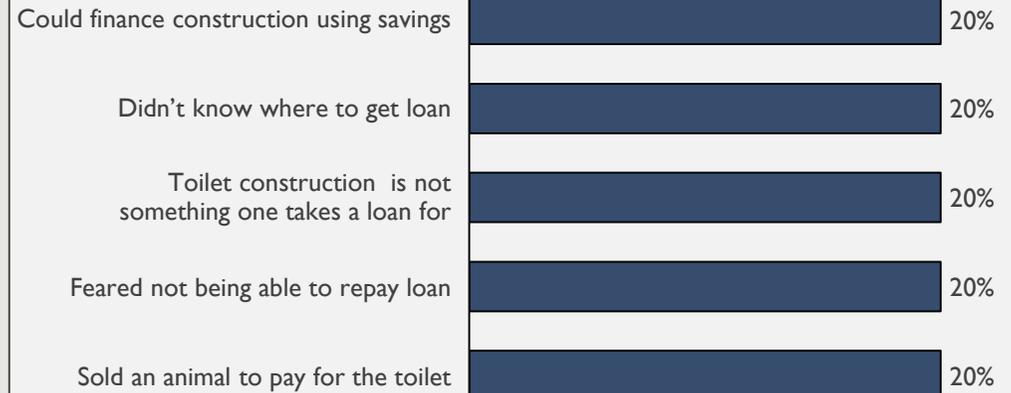
Households did not take a loan for toilet construction due to multiple reasons including fear of not repaying, and ability to manage with savings; Hardware stores were paid upfront in lump-sums while masons were paid in installments



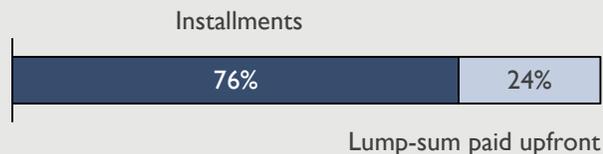
**% HHs using loans to finance toilet construction**



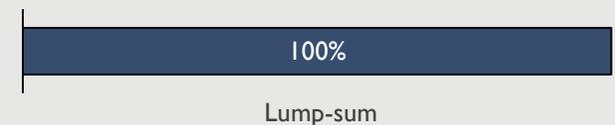
**Reasons for not using loan**



**% split of HHs by payment to service provider**

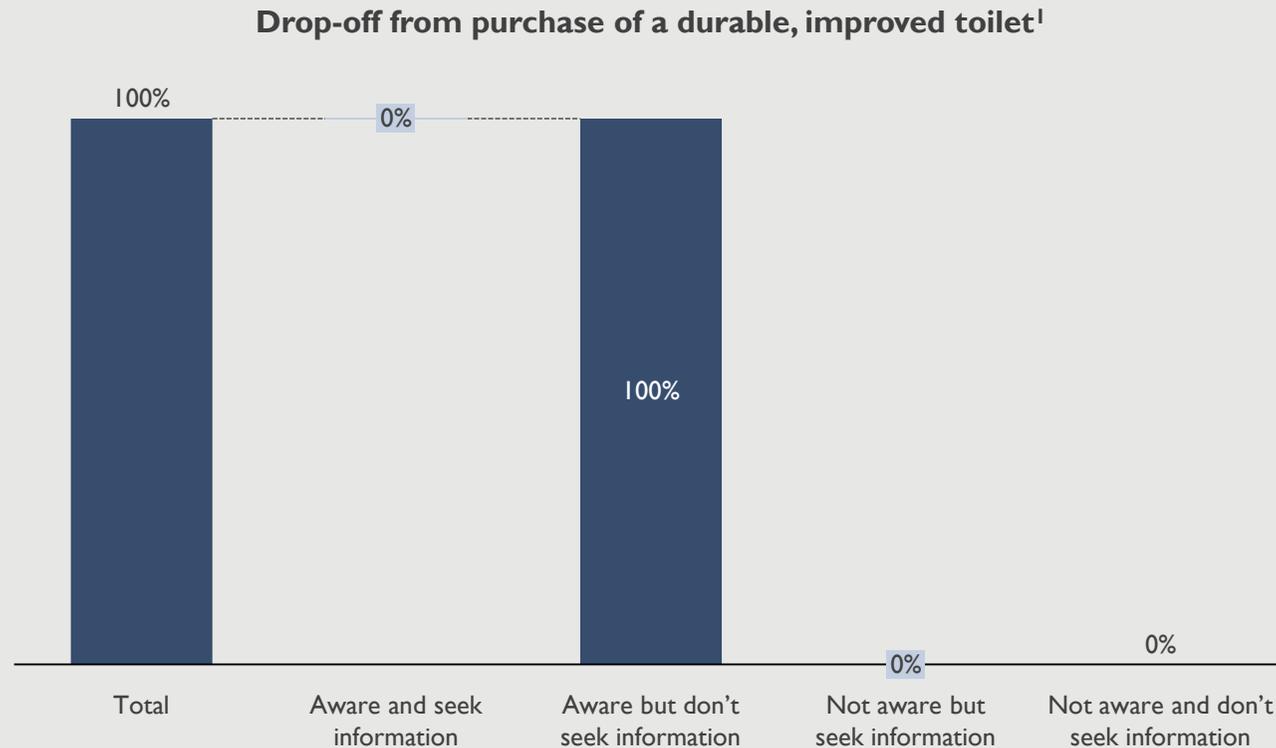


**% split of HHs by payment to hardware store**



## Segment C | Drop-offs from actual buying process

*Households do not purchase durable toilets as they do not seek information when considering construction of a toilet, despite being aware of durable components*

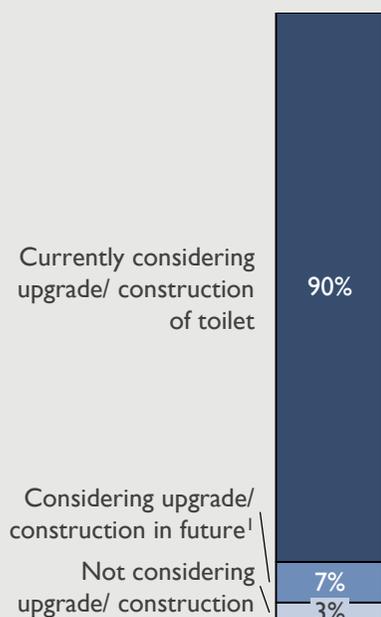


1. Households are considered to be aware if they know at least one durable component each for floor, interface, pit lining, and support structure of a toilet

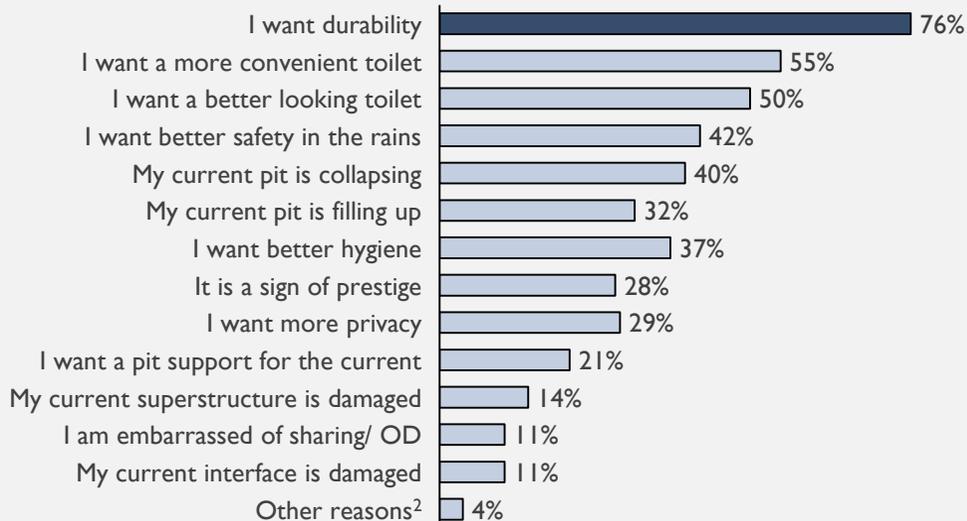
# Segment C | Future consideration

Most households are currently considering a toilet purchase because they want more durability, or will consider one in the future if more affordable options and better access to information becomes available

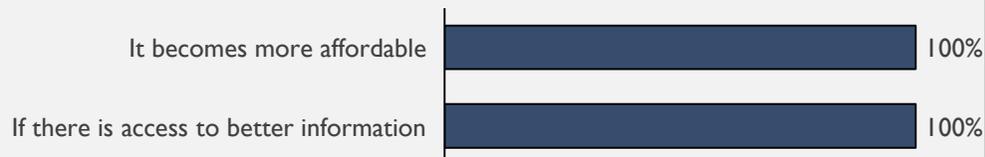
**% split of HHs without their own toilet by future preference for toilet purchase/upgrade**



**Reasons for currently considering toilet purchase/upgrade**



**Factors that could influence consideration in the future**

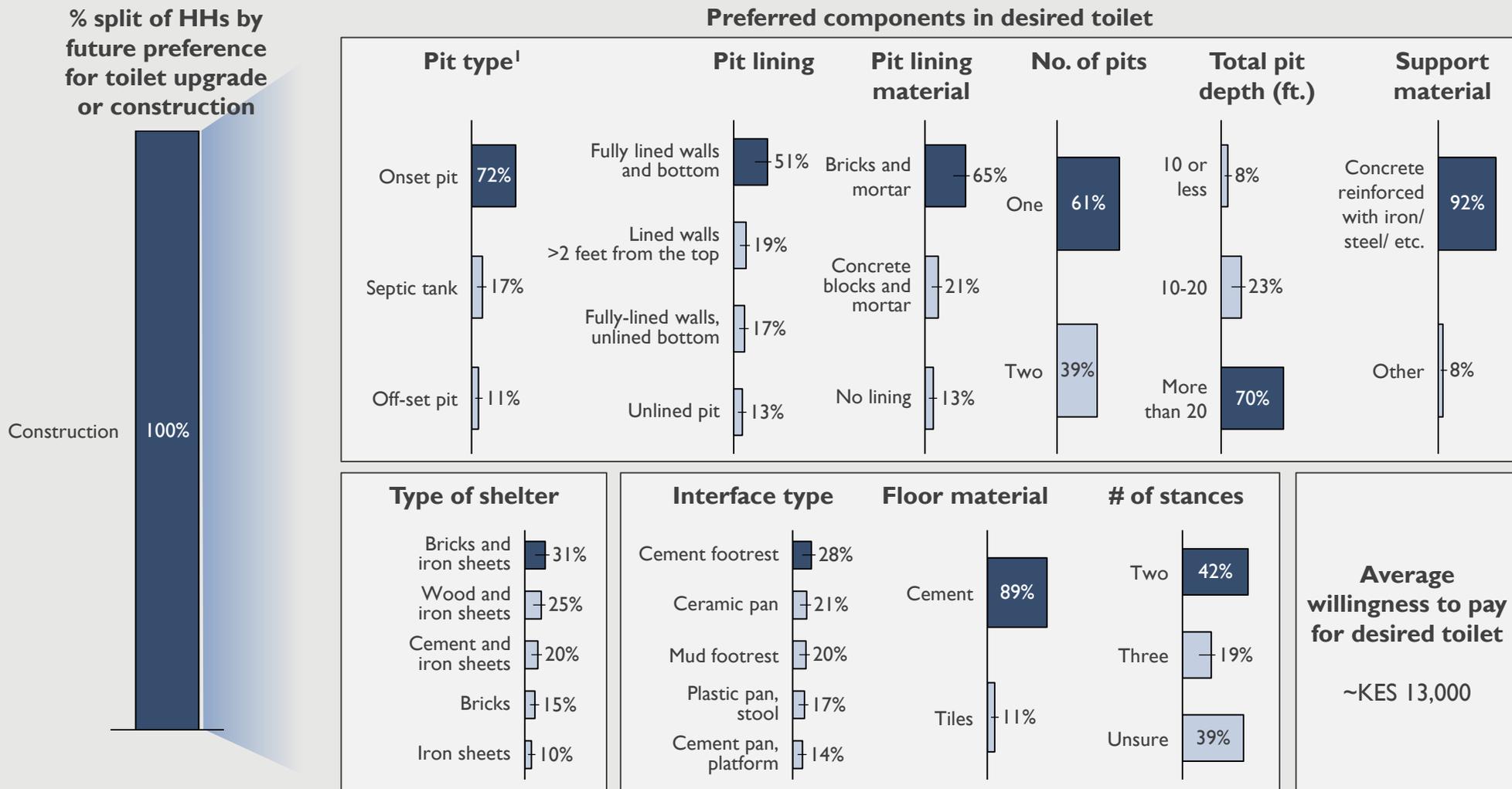


1. Those who were considering construction/ upgrade in the future were not asked for their reasons as their intent is unclear

2. Other reasons for currently considering a new toilet include needing more privacy from older members of the household or for visitors to use, and existing pit beginning to fill up

# Segment C | Desired toilet

Segment C households desire a new toilet with two stances, an onset pit, over 20-feet deep, that is fully-lined with bricks and mortar, a cement floor with cement footrests, and a shelter made of bricks and iron sheets



1. If 'Pit type' chosen is sewer connection, further questions regarding pits are not asked to the respondents; proportions shown in all further charts on pits exclude respondents who chose sewer connection as their pit type

# Segment profiles | Segment D

**Segment D households are knowledgeable about sanitation...**

Source of drinking water		Surface		Well		Piped			
		Yes	No	Yes	No		No		
Bank account		Yes	No	Yes	Yes	No	Yes	No	
Solar panel ownership					Yes	No		Yes	No
Gender of HH head	Elderly members in HH								
Female	No	A		E	F	G		I	
	Yes	B							
Male	Yes	B		E	F	G		I	
	No	C	D			H			

**...but their current toilets are not durable.  
Let's understand why**

Non-durable individual toilets  
**75.7%**

Non-durable shared toilets  
**20.1%**

OD  
**4.1%**

## Segment D | Customer story

*Wyclife lives with his wife, two children, brothers, and nephew. He has completed education till secondary school. He currently works in agriculture, on his own farm.*

*Wyclife and his family live in their own house, which is built with temporary materials, and own a solar panel, agricultural land, and a few farm animals. They typically obtain drinking water from a nearby pond or spring, and can conveniently access a hardware store within 15 minutes. While he owns his own land, he does not have access to a regular source of income, and occasionally relies on help from his son or other relatives.*

*Wyclife believes that it is important to keep the community clean, and understands the benefits of owning a toilet. He is aware that a toilet reduces the possibility of disease, allows his family to relieve themselves at night, and provides privacy. Although he desires respect from his community, he is comfortable with doing things differently from them.*

*He also believes that knowledge related to sanitation is common and trusts himself to know and manage the process of constructing a toilet. Durability of the toilet is important to him but he prefers not seeking information on potential product options.*

*Wyclife owns a toilet with a 15-foot deep onset unlined pit, and a shelter with an iron sheet roof and walls built with mud, bricks, and poles.*

*He desires a two-stance toilet with a 15-foot deep pit that is fully-lined with bricks and mortar, a concrete floor with a plastic pan, and a wood and iron sheets shelter. He is willing to pay ~KES 20,000 for this toilet. He has never taken a loan for a toilet before, as he fears not being able to repay it.*

# Segment D | Customer persona

## Setting

- **Typical family size:** 7 people, with 2 children under the age of 10
- **Type of house:** Predominantly live in temporary material houses
- **Income and occupation:** Typically have non-seasonal income, however over a third have seasonal income; agriculture (on their own farm) is the dominant occupation
- **Mobile phone:** Nearly all households have a mobile phone
- **Mobile money:** Nearly all households have access to mobile money transfer platforms
- **Total value of assets:** Households are moderately affluent; the average total asset value per household is KES 31,500<sup>1</sup>
- **Bank account and savings groups:** Two-thirds of the segment are members of a savings group<sup>2</sup>; none have a bank account
- **Loans:** Over two-thirds of the segment have not taken loans in the past

## Mental Model

- Believe that **building a toilet is a high priority**
- Recognize that toilets provide **protection against diseases and a greater degree of privacy** than open defecation; **community cleanliness is a significant priority**;
- **Typically trust their own knowledge in sanitation** and prefer not paying for service providers to manage the construction process
- **Desire respect** from people in their community but believe in **doing things differently from their neighbors**
- **Value products that make their life more convenient**, but do not place high value on products that are a sign of prestige



- **Current product:** Non-durable individual toilets; a fifth have non-durable shared toilets
- **Desired product:** A toilet that provides privacy, can be used by children/elderly, can be used by visitors, and has the following attributes:
  - **Substructure:** A single 10-20 feet deep onset pit, unlined or fully-lined with bricks and mortar
  - **Interface:** Two stances, a concrete floor with a plastic pan or stool
  - **Superstructure:** A wood and iron sheets shelter
- **Willingness to pay:** ~KES 20,000<sup>1</sup>
- **Financing:** Do not take loans for toilet construction, because they are afraid of not being able to repay it; material providers and service providers are often paid in installments

## The Ask

Source: FSG quantitative survey with 221 rural households across Busia, Kakamega and Homa Bay

1. Figure has been rounded off to the nearest 500

2. Savings groups include MFIs, SACCOs and informal self-help groups called chamas

# Segment D | Key demographic statistics

Segment size		Demographics		Income & occupation		Access indicators	
% of potential market	13.1%	Family size (avg.)	7	<b>Nature of income</b>		<b>Distance to nearest HW store<sup>1</sup></b>	
# of households	276K	<b>Gender of HH head</b>		• Non-seasonal	65.8%	<15 minutes	41.0%
<b>Sanitation profile</b>		Male	100.0%	• Seasonal	34.2%	15 to 30 minutes	33.7%
Non-durable individual toilets	75.7%	Female	0.0%	<b>Primary occupation</b>		> 30 minutes	25.3%
Non-durable shared toilets	20.1%	<b>Highest education in HH</b>		• Works on own farm	42.5%	<b>Access to electricity</b>	20.7%
OD	4.1%	No education	1.9%	• Works on other's farm	7.9%	<b>Drinking water source</b>	
		Primary	36.5%	• Own business	19.9%	Well	0.0%
		Secondary	57.9%	• Employed	3.7%	Piped or other	0.0%
		University	3.7%	• Other	25.9%	Surface water <sup>2</sup>	100%

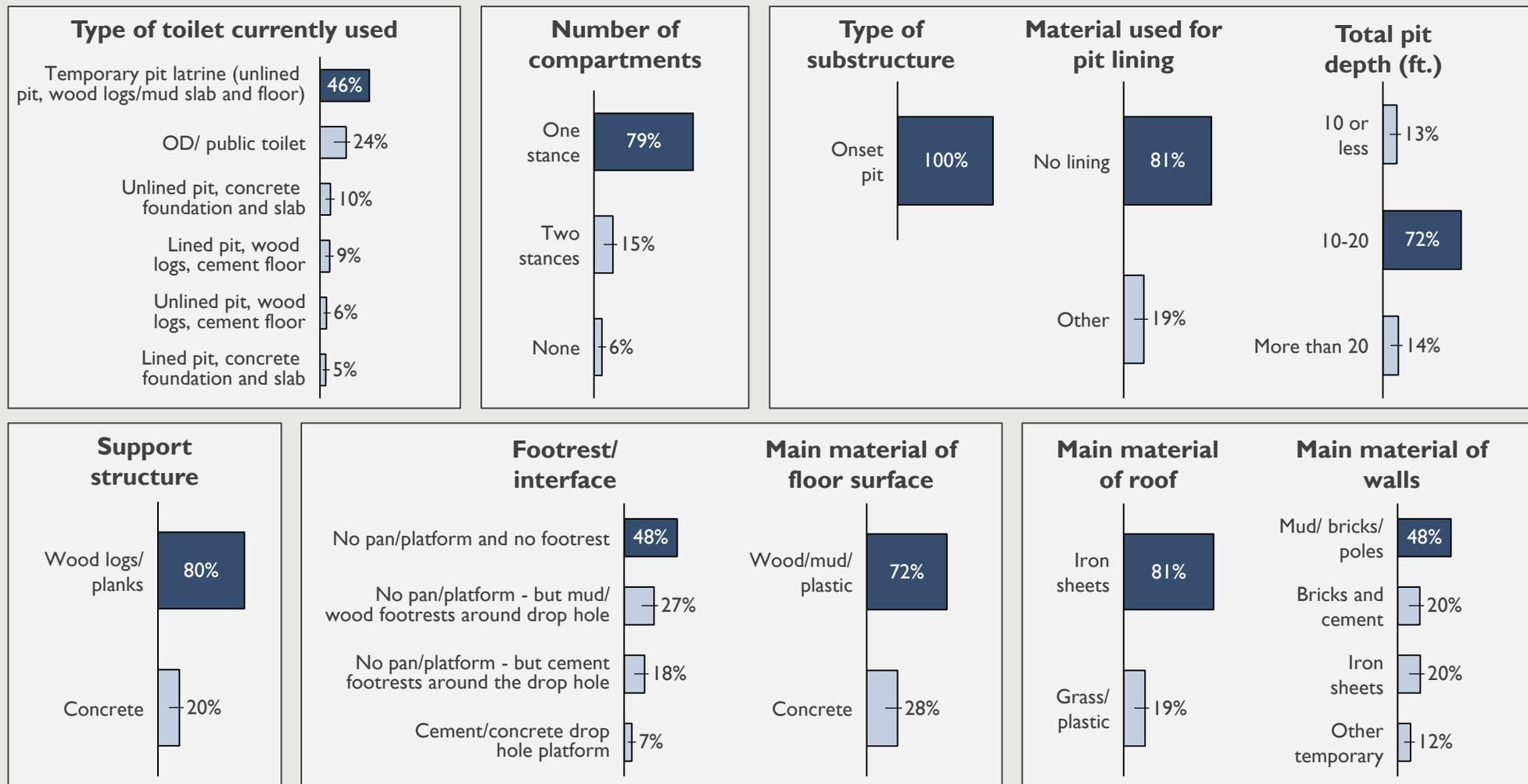
Affluence indicators		Assets and other indicators		Attitudes & beliefs	
<b>Total stated monthly expenditure</b>		<b>Assets and other indicators</b>		I would be willing to pay for products that are prestigious	
High (> KES 10K)	32.8%	Agriculture land	87.0%	61.1%	
Medium (KES 5K-10K)	39.3%	Computer	0.0%	It is embarrassing to be seen defecating in the open	
Low (< KES 5K)	27.9%	Solar panel	79.7%	89.6%	
<b>Total asset value (avg.)</b>	31.7k	Refrigerator	0.0%	Cleanliness of my community is important to me	
<b>Total asset value (spread)</b>		Farm animals	74.0%	96.3%	
High (> KES 20K)	43.3%	Bicycle	32.3%	It is taboo to use or live near a toilet	
Medium (KES 15K-20K)	22.0%	Mobile	98.1%	46.7%	
Low (< KES 15K)	34.6%	Television	28.4%		
		Car or truck	0.0%		
		Motorbike	12.1%		

1. Distance to nearest hardware store is calculated based on time taken to reach by bike/ two-wheeler

2. Surface water includes water from ponds, springs, rainwater harvesting, etc.

# Segment D | Current sanitation profile

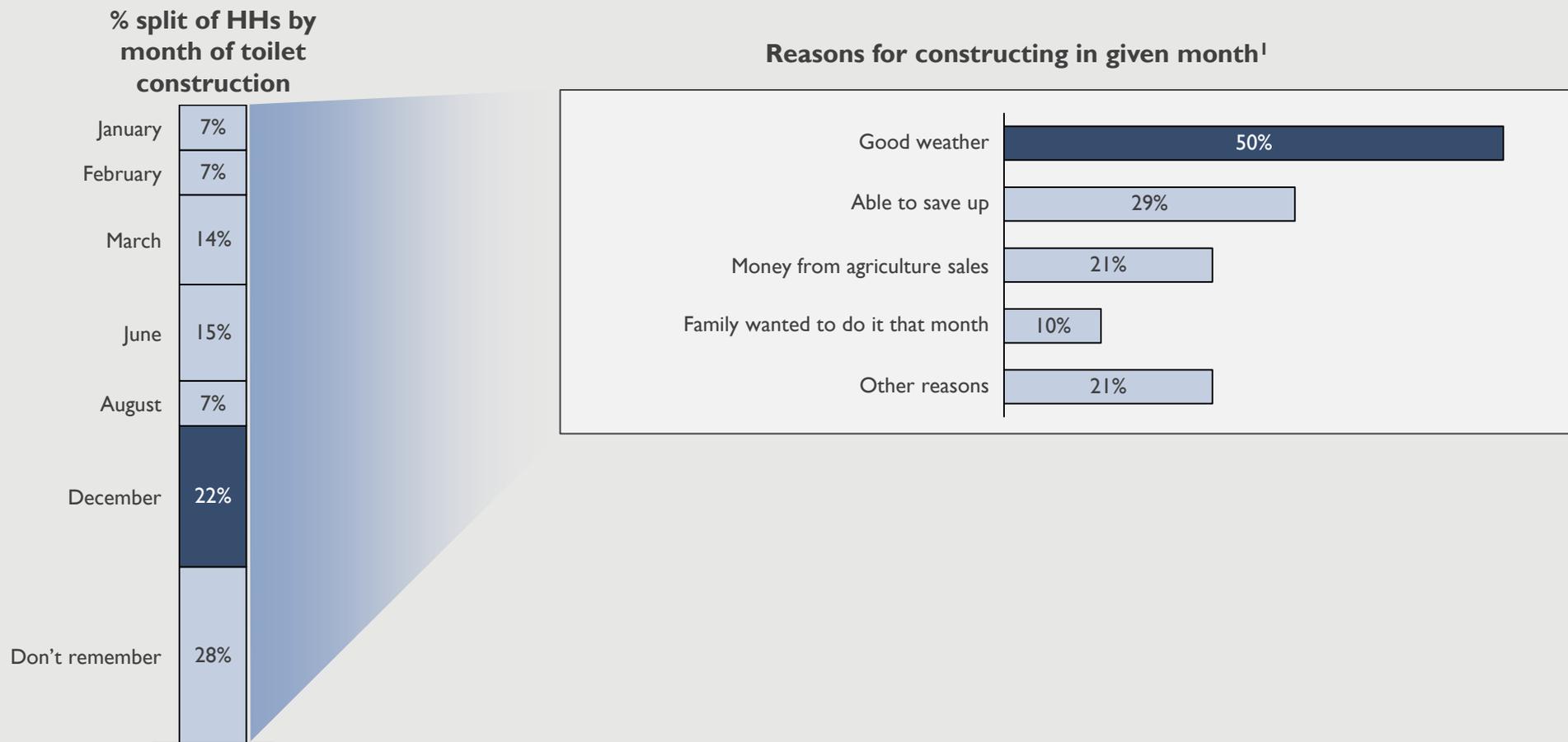
Toilet users in this segment typically use a one stance traditional, unlined pit latrine, with a 10-20 feet onset pit, a wood/mud/ plastic floor with no pan/platform or footrest, an iron sheets roof and mud/bricks/poles walls



**Note:** Questions related to the toilet components were not asked to HHs that resort to OD or use shared facilities

# Segment D | Typical month of construction

*Households commonly construct toilets in the month of December, due to good weather*



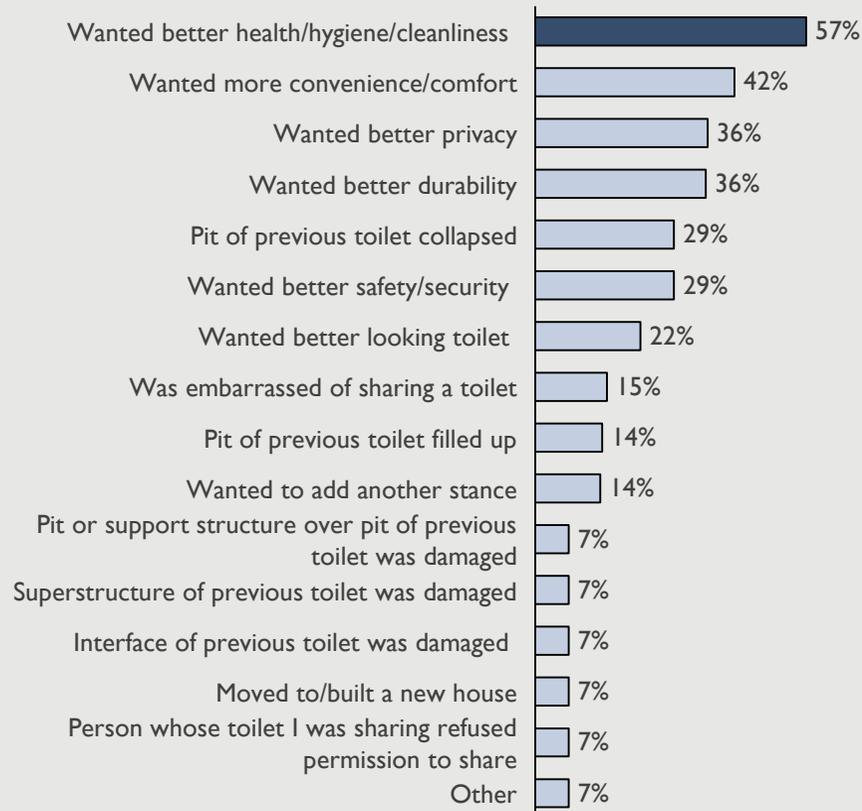
1. Households responding with other mentioned various reasons such as their existing pit filling up or collapsing, or they realized they no longer wanted to practice OD

# Segment D | Buying process (1/9)

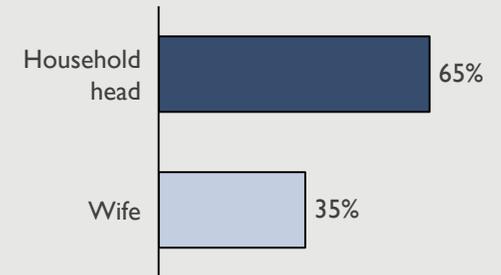
Most households wanted to construct a toilet because they wanted better health, hygiene, and cleanliness; toilet construction discussions were initiated by the household head



## Origination of need for toilet

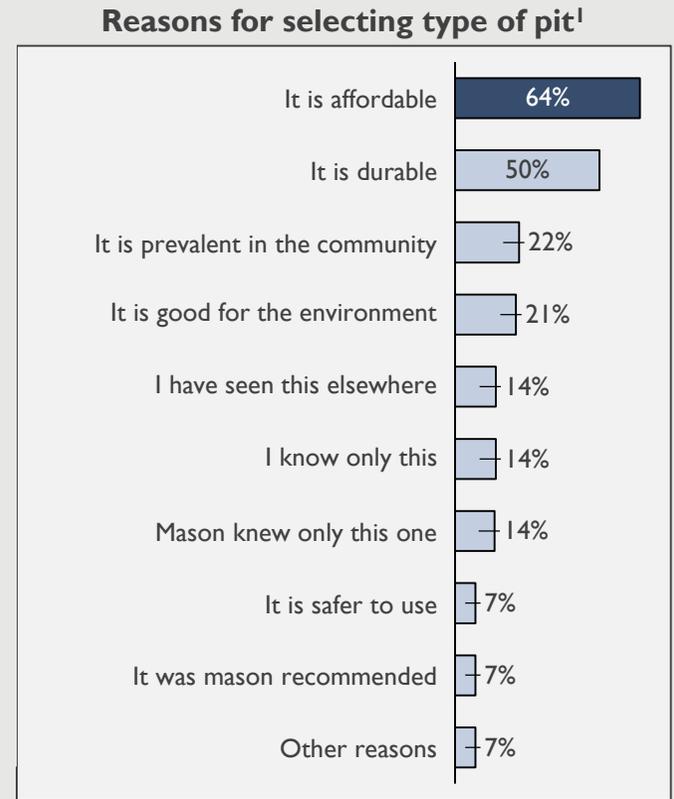
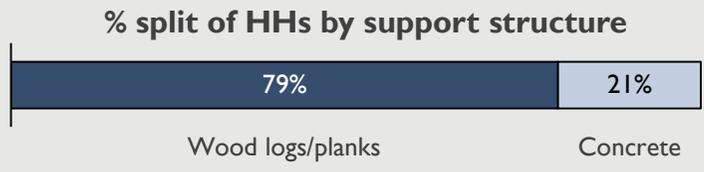
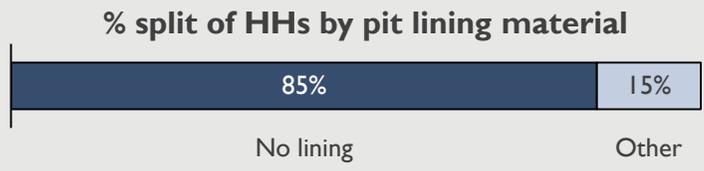
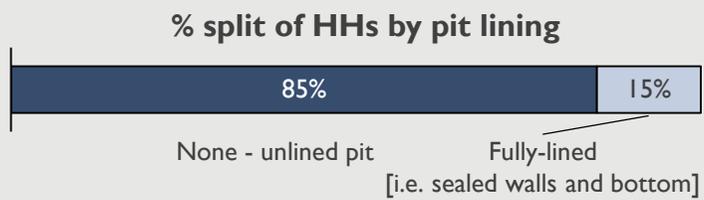
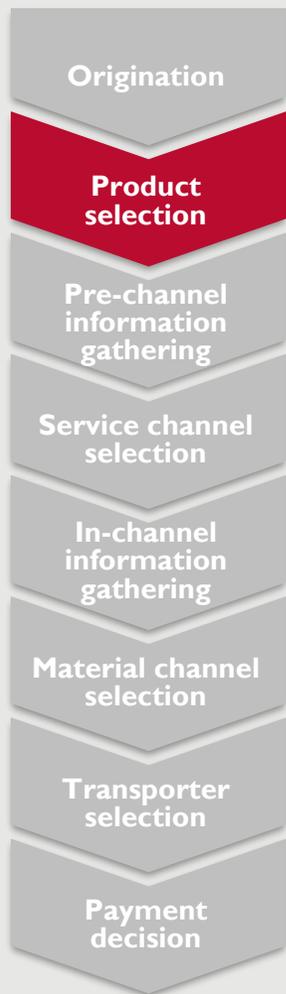


## Person who initiated discussion



# Segment D | Buying process (2/9)

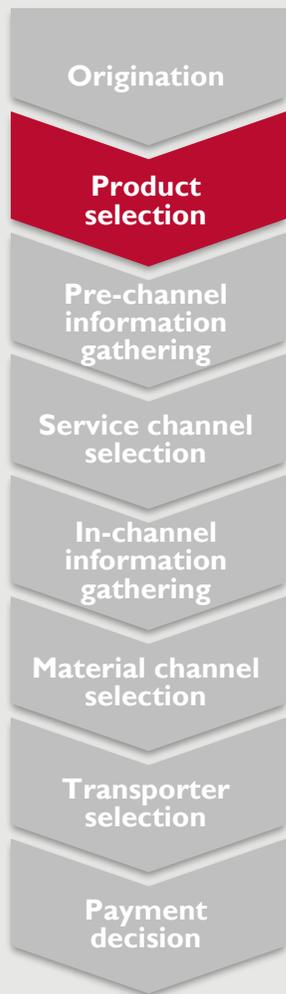
Households typically selected an unlined onset pit supported by wood logs/ planks...



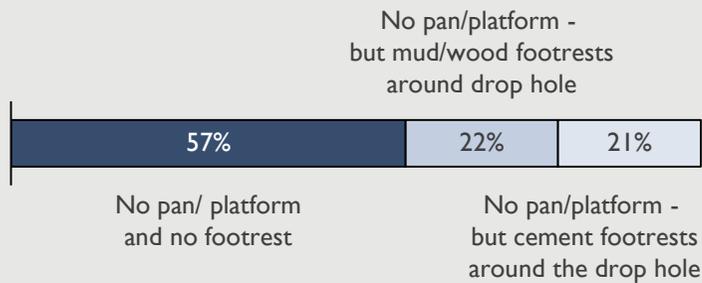
1. Other reasons for selecting this pit include safety for children, lack of capital, and easily accessible materials

# Segment D | Buying process (3/9)

...and a mud/clay floor without a pan/platform or footrest, due to affordability



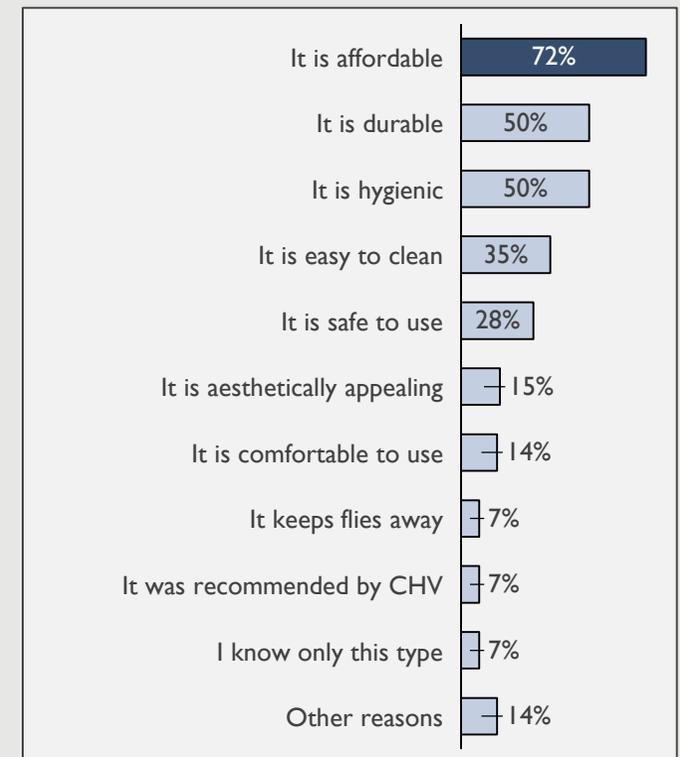
**% split of HHs by interface**



**% split of HHs by floor material**



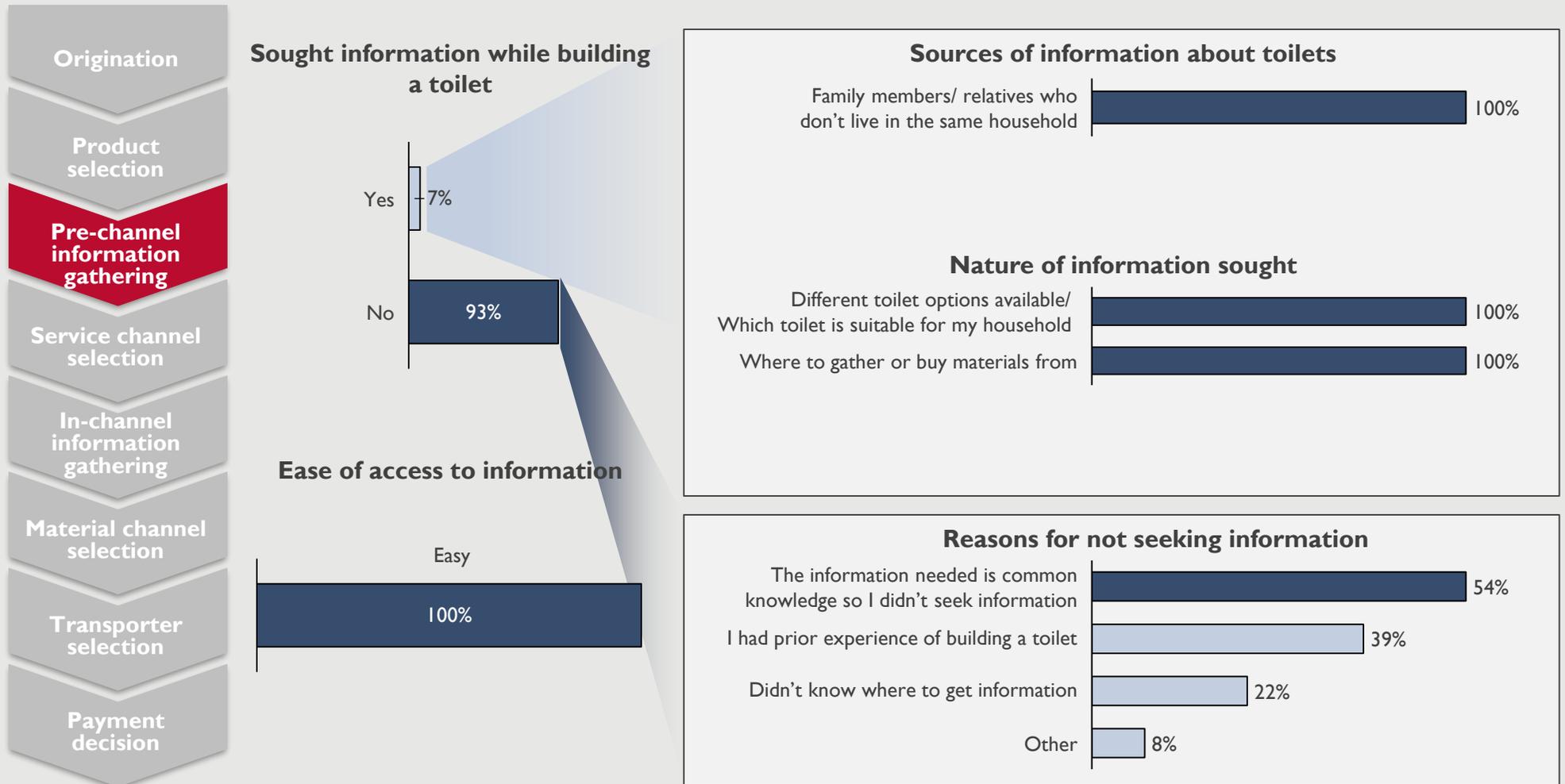
**Reasons for selecting type of floor and interface<sup>1</sup>**



1. Households that responded with 'other reasons' for selecting type of floor and interface mostly responded with lack of money

# Segment D | Buying process (4/9)

Most households did not seek information while constructing a toilet, primarily because they felt that information was common knowledge; information was typically easy to access



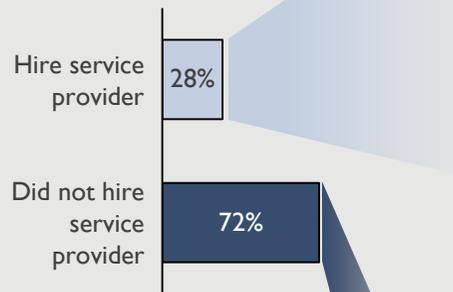
1. Households responding with 'Other' for reasons for not seeking information cited reasons such as it being an emergency case and hence not having the time to seek information, or because someone in the family already had the information that was needed

# Segment D | Buying process (5/9)

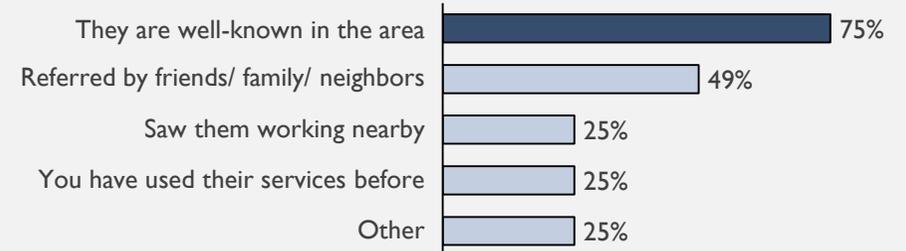
A majority of households did not hire a service provider as they felt it was too expensive to do so; those that hired one, hired individuals who were well known in the area, and because they did not know anyone else



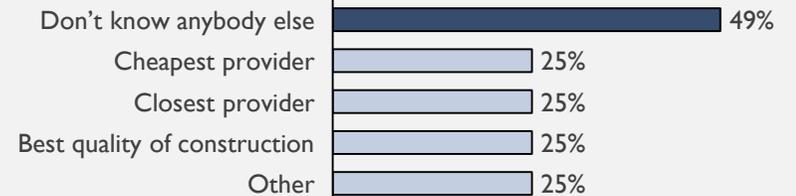
## Hired service provider to manage construction process<sup>1</sup>



## Source for finding service provider



## Basis for selecting service provider



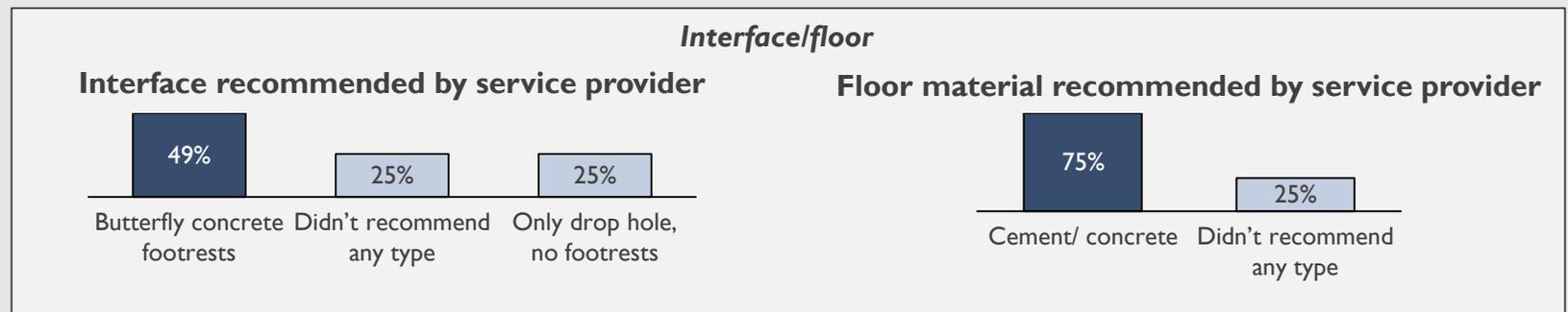
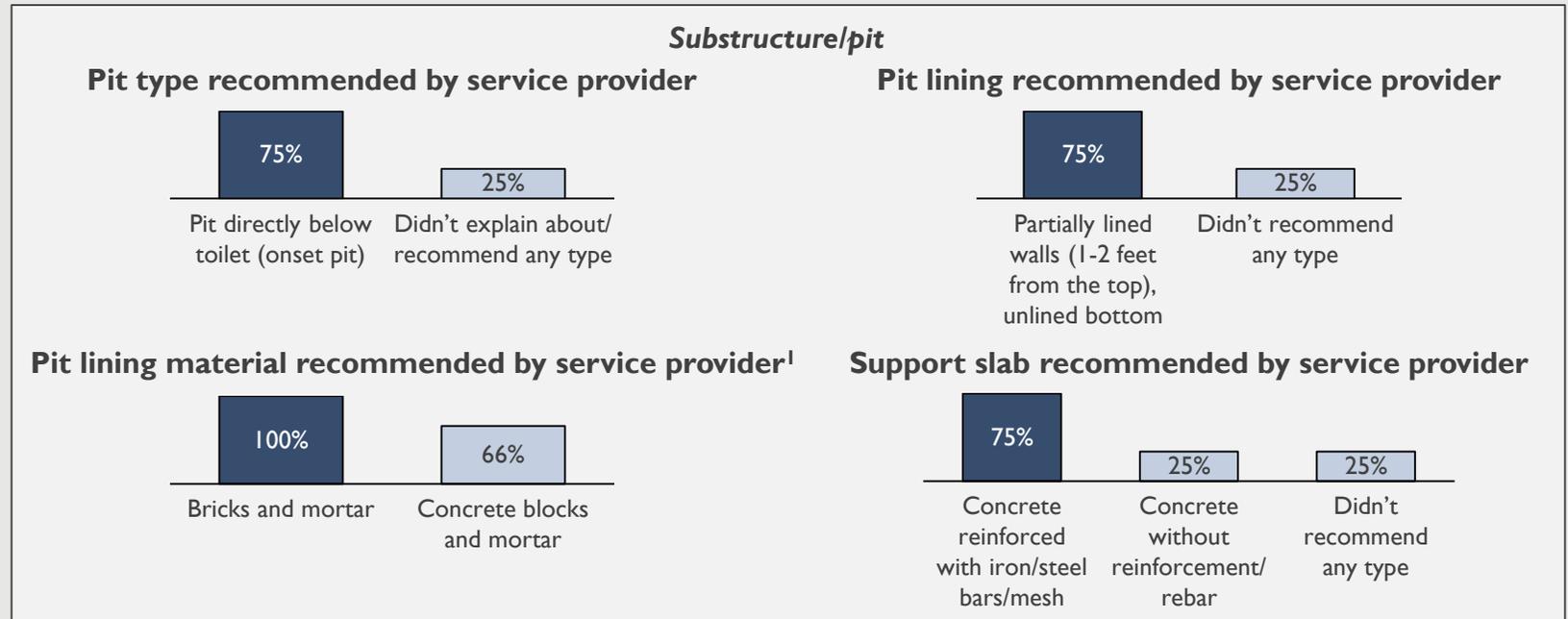
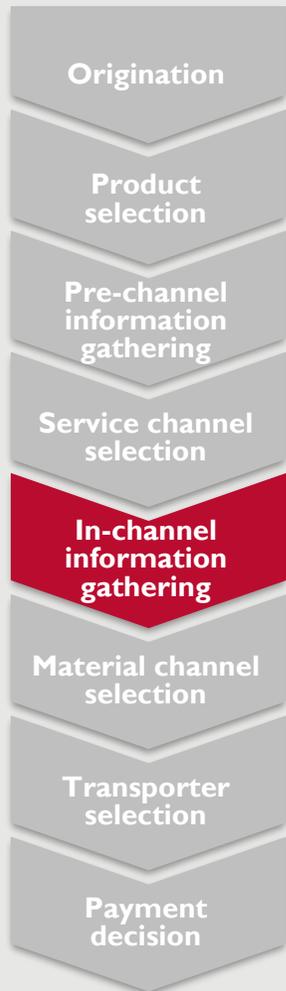
## Reasons for not hiring any service provider for toilet construction



1. Households that did not hire a service provider, oversaw the construction process themselves but had a friend, older son or nephew, or a sibling who was a mason or pit digger, assist them in the construction process

# Segment D | Buying process (6/9)

Masons often recommended that households construct partially-lined onset pits, supported with concrete reinforced with steel bars, and a cement floor with butterfly concrete footrests



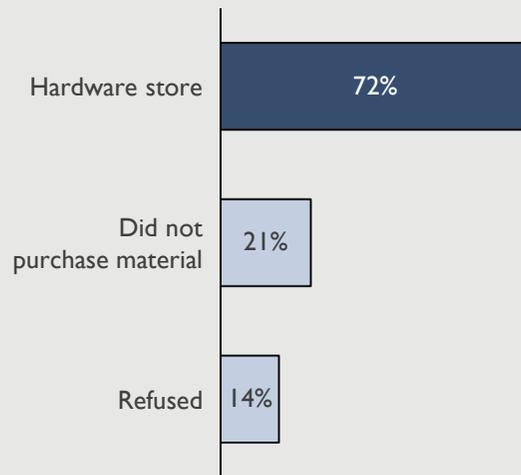
1. Proportions are for those who were recommended a fully or partially-lined pit by the service provider

# Segment D | Buying process (7/9)

Households typically chose to source materials from hardware suppliers; certain suppliers were selected because they are well known in the area and offered the cheapest products



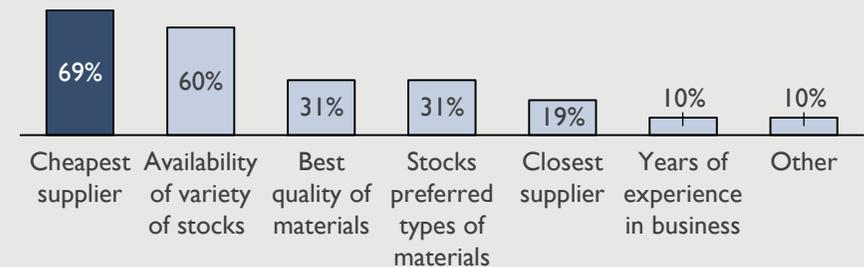
### Material suppliers opted for



### Source for finding hardware store

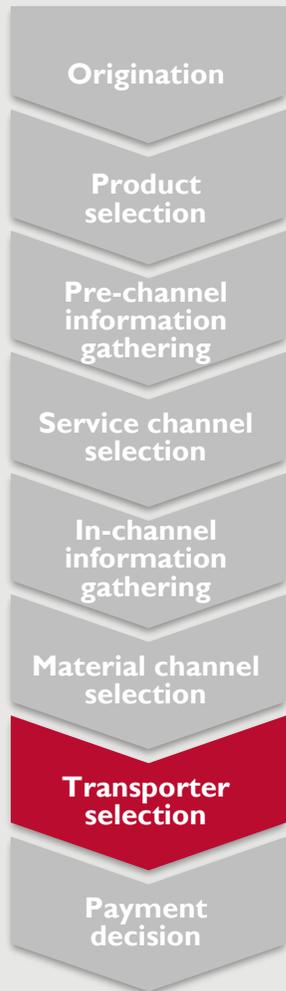


### Basis for selecting hardware store

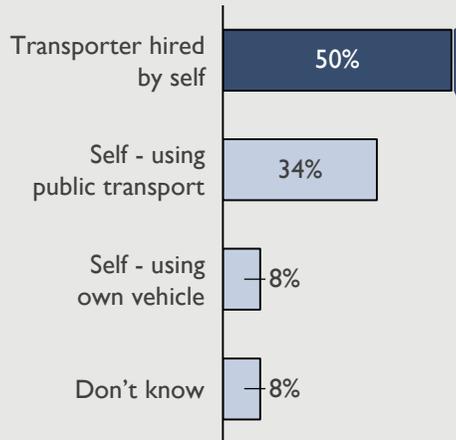


# Segment D | Buying process (8/9)

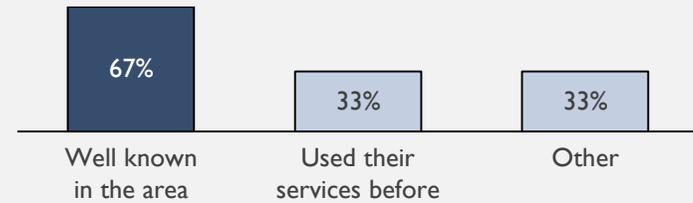
Households typically hired a transporter for their materials themselves; they chose transporters that were well known in the area and had experience in the business



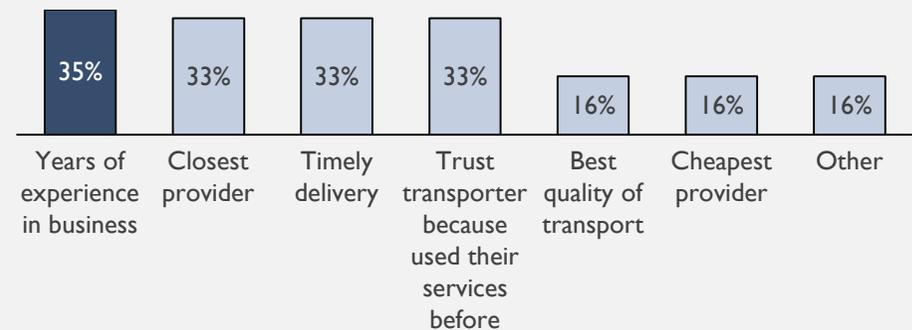
**Material transport option preferred**



**Source for finding transporter hired by self<sup>1</sup>**



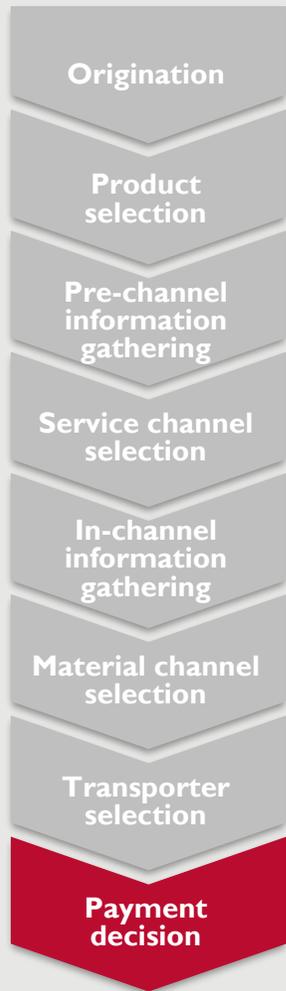
**Basis for selecting transporter hired by self<sup>2</sup>**



- Households that chose 'other' for source for finding transporter hired by self used motorbikes that are easily found in the area, the help of a family member, friend, or neighbor
- Households that chose 'other' for basis for selecting transporter hired by self mentioned reasons such as free service, lack of money, ease of availability, and ease of access through narrow roads

# Segment D | Buying process (9/9)

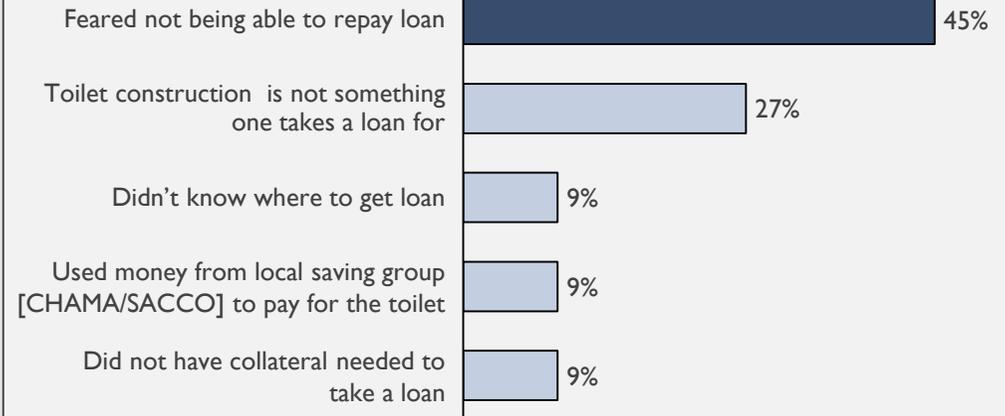
Households did not take a loan for toilet construction because they were afraid of not being able to repay it; hardware stores and material suppliers were often paid in installments



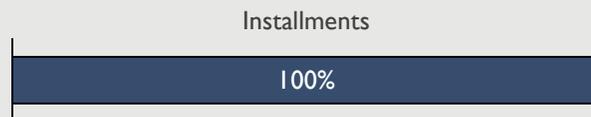
**% HHs using loans to finance toilet construction**



**Reasons for not using loan**



**% split of HHs by payment to service provider**

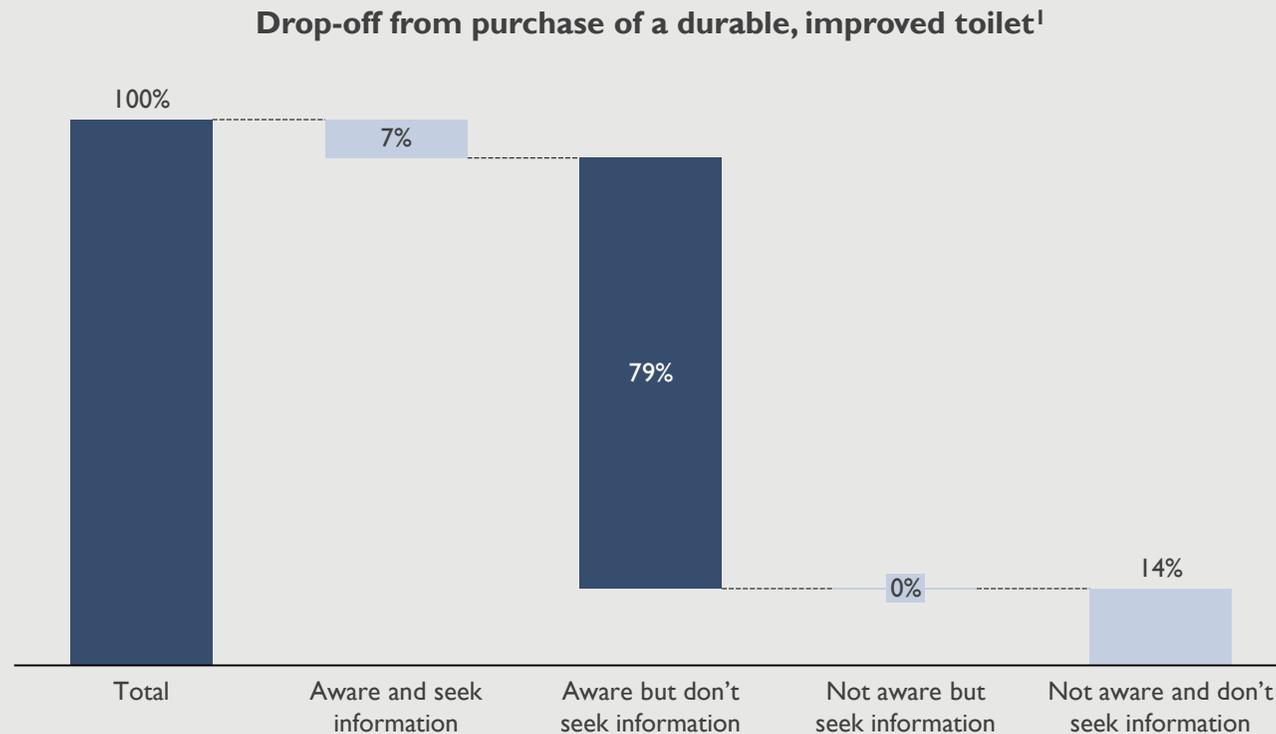


**% split of HHs by payment to hardware store**



## Segment D | Drop-offs from actual buying process

Most households do not purchase durable toilets as they do not seek information when considering building a toilet, despite being aware of durable components

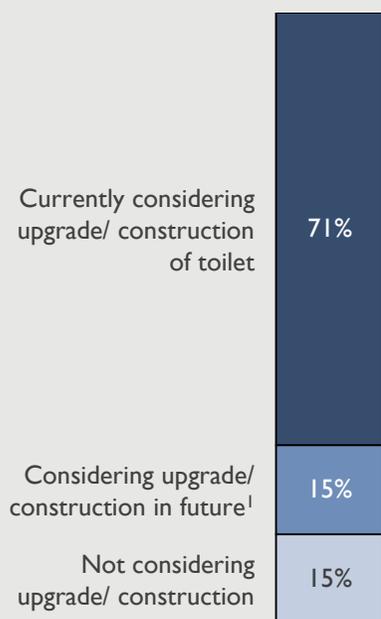


1. Households are considered to be aware if they know at least one durable component each for floor, interface, pit lining, and support structure of a toilet

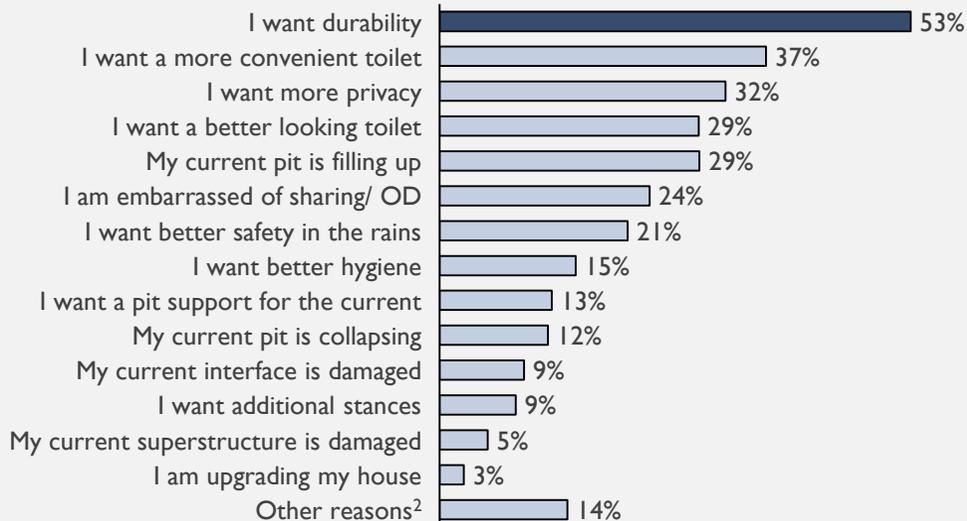
# Segment D | Future consideration

Most households are currently considering a toilet purchase because they want durability and a more convenient toilet, or will consider one in the future if savings remain after spending on other priorities

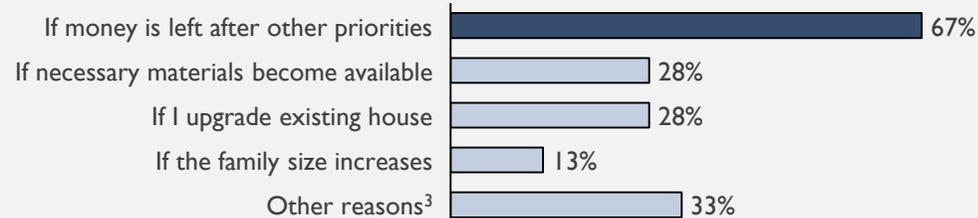
**% split of HHs without their own toilet by future preference for toilet purchase/upgrade**



**Reasons for currently considering toilet purchase/upgrade**



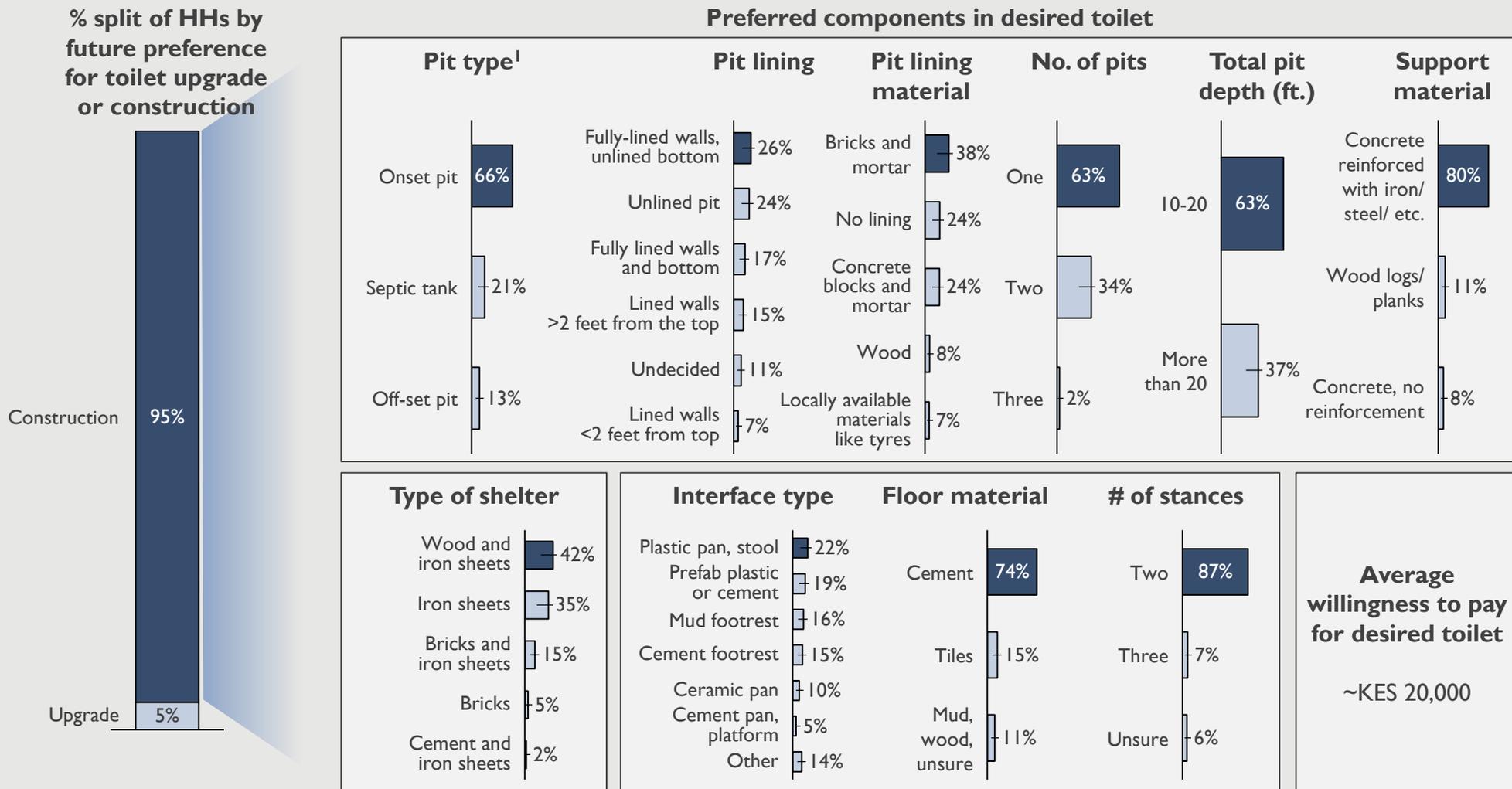
**Factors that could influence consideration in the future**



- Those who were considering construction/ upgrade in the future were not asked for their reasons as their intent is unclear
- Other reasons for currently considering a new toilet include needing more privacy from older members of the household or for visitors to use, and existing pit beginning to fill up
- Other reasons that could influence future consideration include better access to assistance for labor and finances, existing pit filling up, and collapse of existing structure

# Segment D | Desired toilet

Segment D households desire a new construction with two stances, a 10-20 feet deep onset pit that is unlined or fully-lined with bricks and mortar, a cement floor with a plastic pan or stool, and a wood and iron sheets shelter



1. If 'Pit type' chosen is sewer connection, further questions regarding pits are not asked to the respondents; proportions shown in all further charts on pits exclude respondents who chose sewer connection as their pit type

# Segment profiles | Segment E

Segment E households are educated and have good access to market information...

Source of drinking water		Surface		Well		Piped				
Bank account		Yes	No	Yes	No		Yes	No		
Solar panel ownership					Yes	No		Yes	No	
Gender of HH head	Elderly members in HH									
Female	No	A		E	F	G		I		
	Yes	B				H				
Male	Yes	C			D		H		I	
	No	C			D		H			

...but they do not own durable toilets that they desire.  
Let's understand why

Non-durable individual toilets  
**57.2%**

Non-durable shared toilets  
**42.8%**

## Segment E | Customer story

*John lives with his wife, two daughters, and parents. He graduated from university and currently works as a school teacher.*

*John and his family live in their own house, which is built with temporary materials, and own a solar panel, agricultural land, and a few animals. John's family is only moderately affluent but he has setup a bank account because he believes it will benefit his family's finances. They typically obtain drinking water from a well within their compound, and can conveniently access a hardware store within 15 minutes.*

*John keeps himself well-informed and has a good understanding of toilet prices and options in the market. He is aware that a toilet reduces the possibility of disease, allows his family to relieve themselves at night, and provides privacy. Although he desires respect from his community, he believes that it is sometimes okay to do things differently from them.*

*John also believes that information regarding toilets is common knowledge. He has a strong distrust towards service providers like fundis and prefers to pay them only once they have completed the service. However, he trusts his community, prefers seeking information from family and friends, and typically uses products, like bricks, built locally. He is not aware of all the durable toilet options in the market.*

*John owns a 25-feet deep traditional pit latrine with an iron sheet roof and walls built with mud, bricks, and poles.*

*He desires a two-stance toilet with a septic tank, a cement pour flush pan, and a brick and iron sheets shelter. He is willing to pay ~KES 37,000 for this toilet. He has not taken a loan for toilet construction before as he can pay for it using savings.*

# Segment E | Customer persona

## Setting

- **Typical family size:** 6 people, with 1 child under the age of 10
- **Type of house:** Predominantly live in temporary material houses
- **Income and occupation:** Typically have non-seasonal income; agriculture (on their own farm) is the dominant occupation
- **Mobile phone:** Nearly all households have a mobile phone
- **Mobile money:** Nearly all households have access to mobile money transfer platforms
- **Total value of assets:** Households are moderately affluent; the average total asset value per household is KES 39,500<sup>1</sup>
- **Bank account and savings groups:** Two-thirds of the segment are members of a savings group<sup>2</sup>; nearly all have a bank account
- **Loans:** Over two-thirds of the segment have not taken a loan in the past

## Mental Model

- Believe that **building a toilet is a high priority**
- Have a **strong distrust towards formal service providers** such as fundis
- Recognize that toilets provide **safety at night** and a **greater degree of privacy** than open defecation
- **Community cleanliness is a significant priority**; believe that **toilets help reduce the risk of OD** impacting farms during the rains
- Acknowledge that having your own toilet allows you to defecate **conveniently and comfortably**
  - **Desire respect** from people in their community; share a strong **sense of trust and have open communication** with each other
  - **Value products that make their life more convenient**



- **Current product:** Non-durable individual toilets; two-fifths have non-durable shared toilets
- **Desired product:** A toilet that provides safety from harsh weather, can be easily cleaned, and provides privacy, and has the following attributes:
  - **Substructure:** A septic tank over 20-feet deep
  - **Interface:** Two stances, a concrete floor with a cement pan or platform

- **Superstructure:** A brick shelter
- **Willingness to pay:** ~KES 37,000<sup>1</sup>
- **Financing:** Do not take loans for toilet construction, because they can finance it using savings; material providers and service providers are often paid in lump-sums

## The Ask

Source: FSG quantitative survey with 221 rural households across Busia, Kakamega and Homa Bay

1. Figure has been rounded off to the nearest 500

2. Savings groups include MFIs, SACCOs and informal self-help groups called chamas

# Segment E | Key demographic statistics

Segment size		Demographics		Income & occupation		Access indicators	
% of potential market	11.6%	Family size (avg.)	6	<b>Nature of income</b>		<b>Distance to nearest HW store<sup>1</sup></b>	
# of households	244K	<b>Gender of HH head</b>		• Non-seasonal	70.0%	<15 minutes	72.0%
<b>Sanitation profile</b>		Male	94.8%	• Seasonal	30.0%	15 to 30 minutes	10.3%
Non-durable individual toilets	57.2%	Female	5.2%	<b>Primary occupation</b>		> 30 minutes	17.8%
Non-durable shared toilets	42.8%	<b>Highest education in HH</b>		• Works on own farm	54.6%	<b>Access to electricity</b> 35.8%	
		No education	0.0%	• Works on other's farm	6.0%	<b>Drinking water source</b>	
		Primary	14.0%	• Own business	0.0%	Well	100%
		Secondary	42.5%	• Employed	22.9%	Piped or other	0.0%
		University	43.6%	• Other	16.5%	Surface water <sup>2</sup>	0.0%

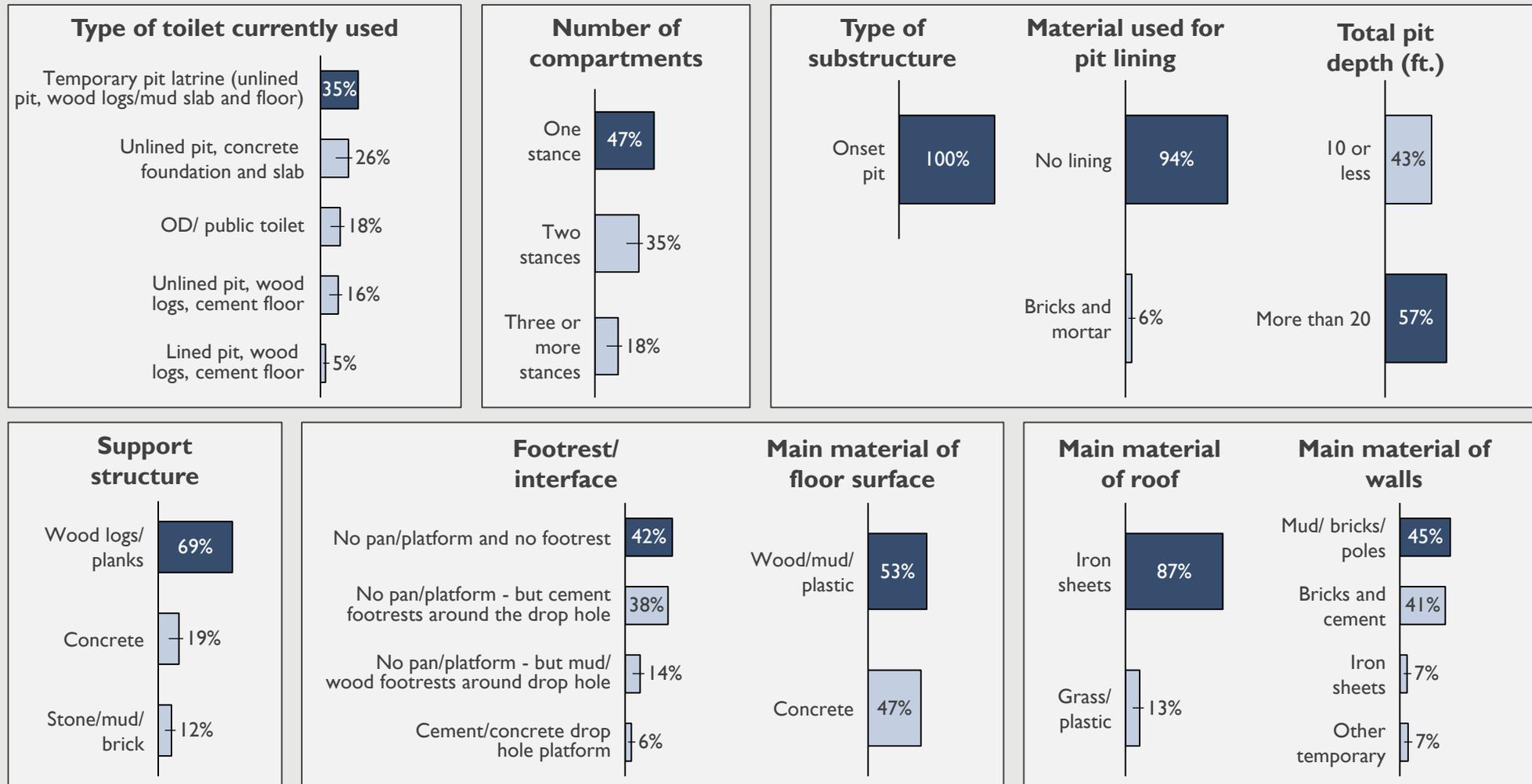
Affluence indicators		Assets and other indicators		Attitudes & beliefs	
<b>Total stated monthly expenditure</b>		<b>Assets and other indicators</b>		I would be willing to pay for products that are prestigious	
High (> KES 10K)	61.9%	Agriculture land	100.0%	74.3%	
Medium (KES 5K-10K)	27.4%	Computer	5.4%	It is embarrassing to be seen defecating in the open	
Low (< KES 5K)	10.6%	Solar panel	64.0%	70.3%	
<b>Total asset value (avg.)</b>	39.6k	Refrigerator	10.8%	Cleanliness of my community is important to me	
<b>Total asset value (spread)</b>		Farm animals	65.8%	100%	
High (> KES 20K)	43.4%	Bicycle	25.7%	It is taboo to use or live near a toilet	
Medium (KES 15K-20K)	19.3%	Mobile	100.0%	23.6%	
Low (< KES 15K)	37.3%	Television	36.7%		
		Car or truck	0.0%		
		Motorbike	16.5%		

1. Distance to nearest hardware store is calculated based on time taken to reach by bike/ two-wheeler

2. Surface water includes water from ponds, springs, rainwater harvesting, etc.

# Segment E | Current sanitation profile

Toilet users in this segment typically use a one stance, unlined, traditional pit latrine, with an onset pit, over 20-feet deep, a wood/ mud/ plastic floor with no pan, platform or footrests, iron sheets roof, and mud, bricks and pole walls

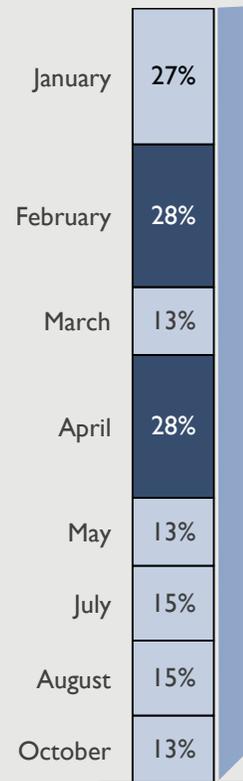


**Note:** Questions related to the toilet components were not asked to HHs that resort to OD or use shared facilities

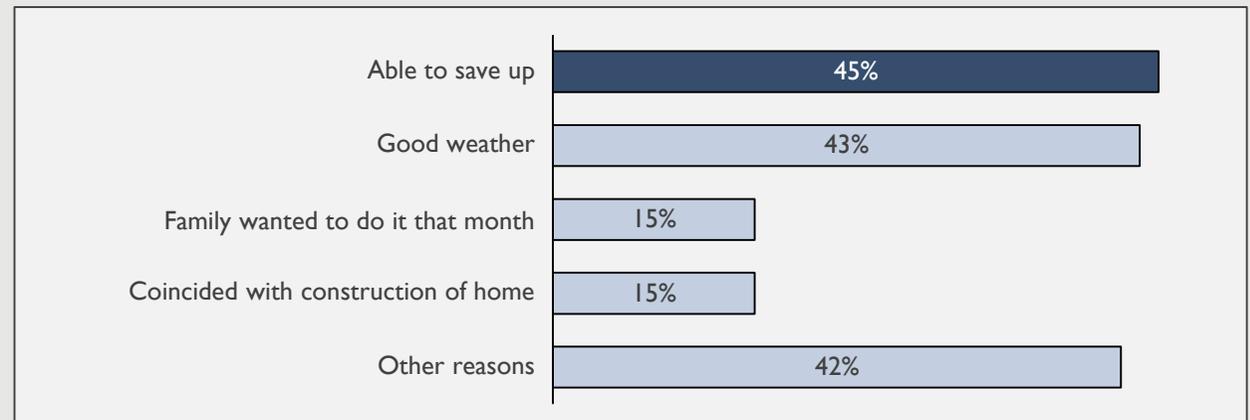
# Segment E | Typical month of construction

Households commonly construct toilets in the month of February and April, typically due to better weather conditions for construction or because they are able to save up by then

**% split of HHs by month of toilet construction**



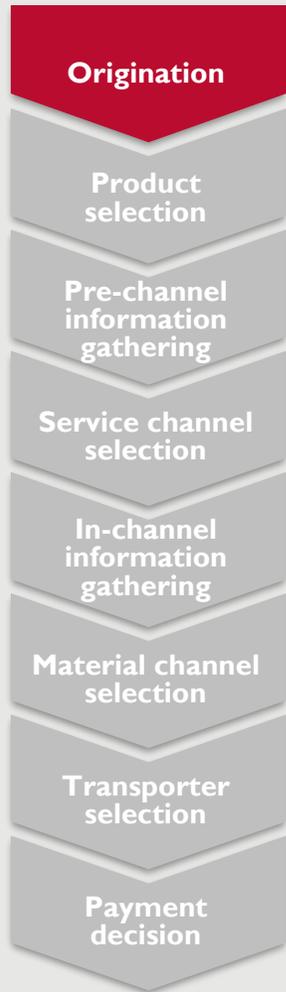
**Reasons for constructing in given month<sup>1</sup>**



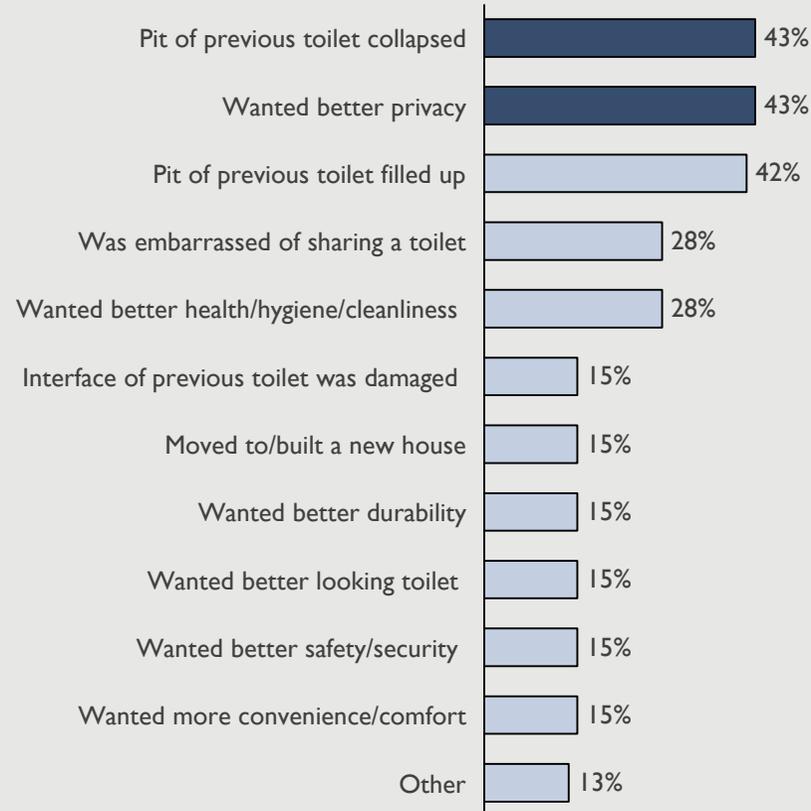
1. Households responding with other mentioned various reasons such as their existing pit filling up or collapsing, or they realized they no longer wanted to practice OD

# Segment E | Buying process (1/9)

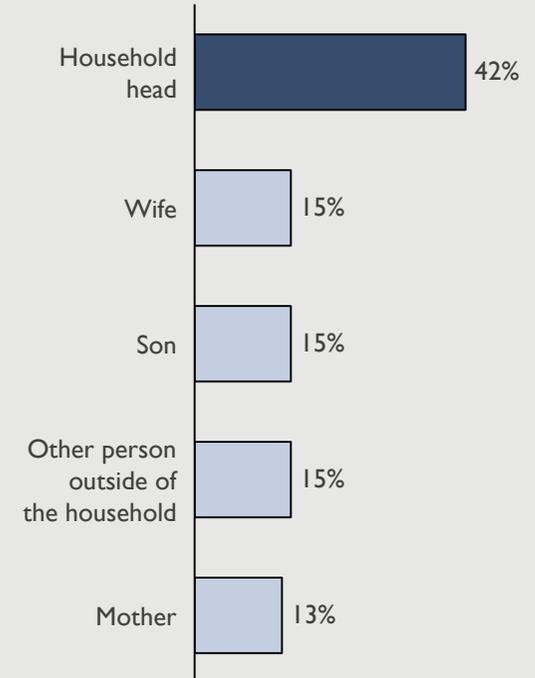
Many households wanted to construct either because their previous pit collapsed or filled up, or they wanted more privacy; toilet construction discussions were initiated by the household head



## Origination of need for toilet

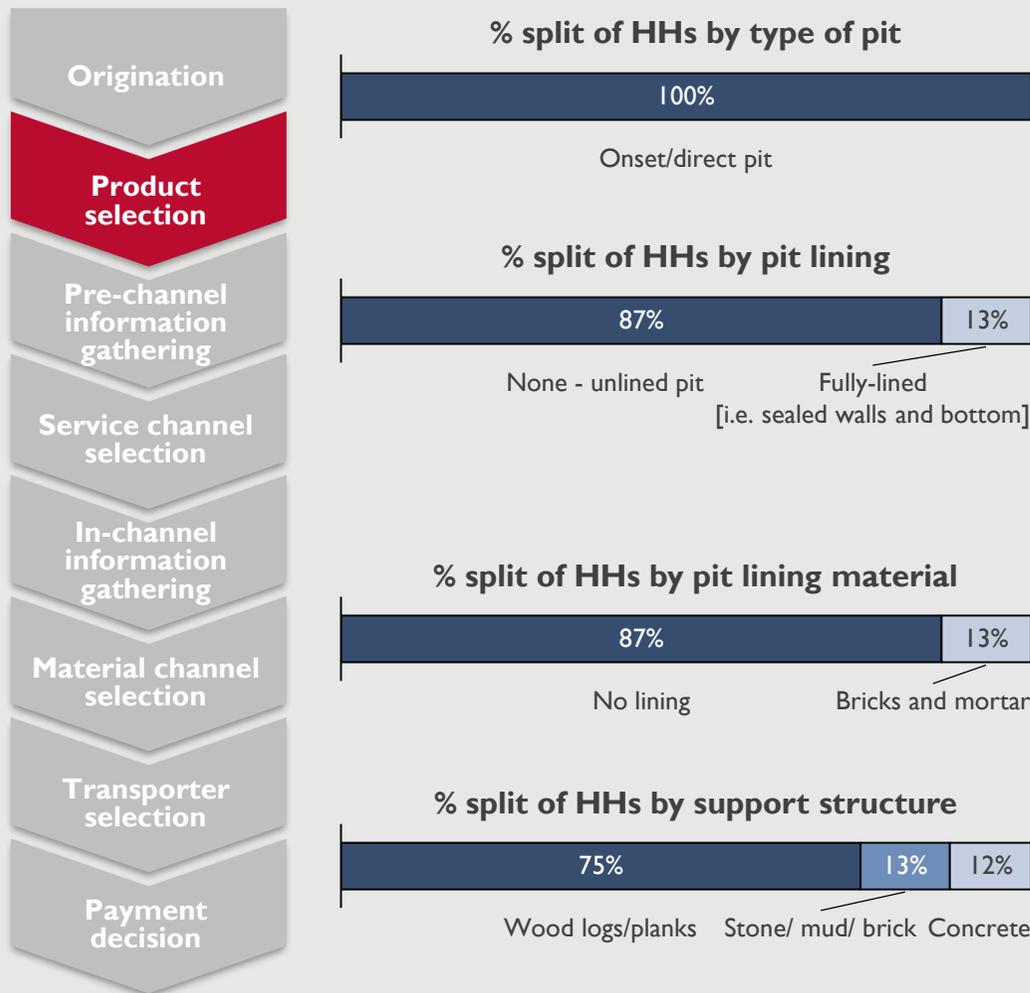


## Person who initiated discussion

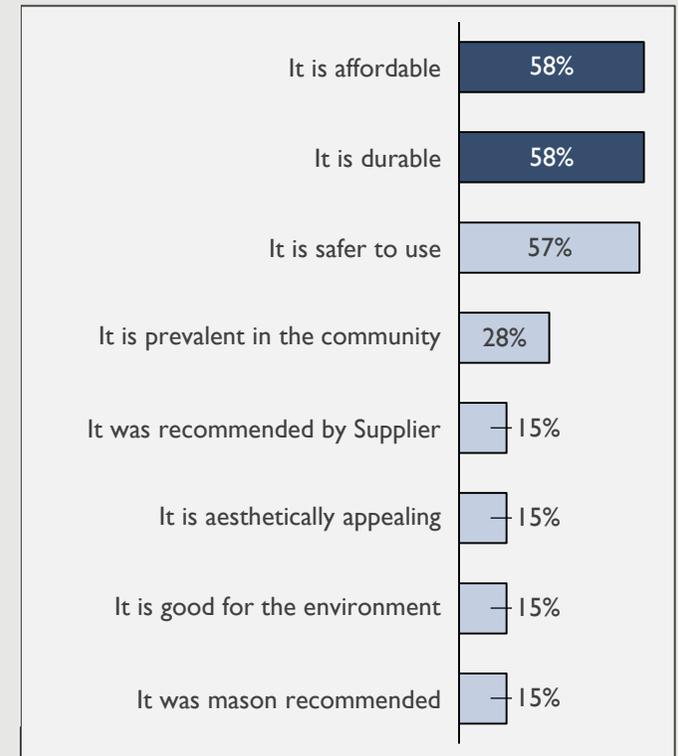


# Segment E | Buying process (2/9)

Households typically selected an unlined onset pit supported by wood logs/ planks...



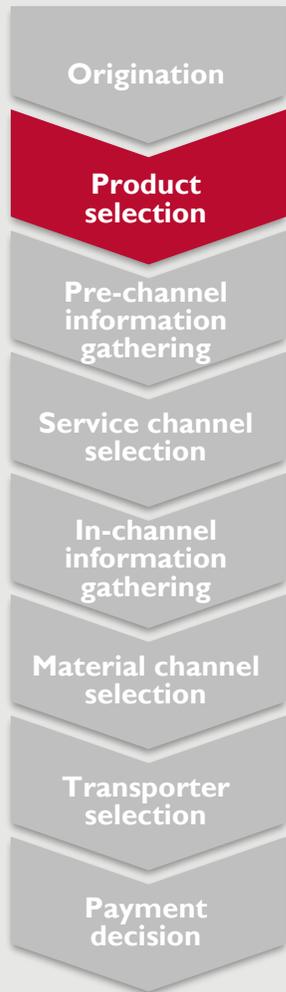
## Reasons for selecting type of pit<sup>1</sup>



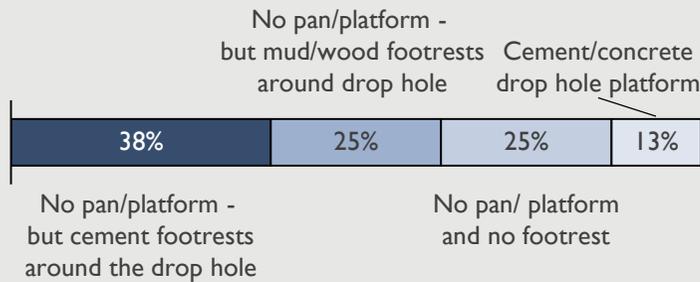
1. Other reasons for selecting this pit include safety for children, lack of capital, and easily accessible materials

# Segment E | Buying process (3/9)

...with a mud/clay floor and cement footrests, as they believed this was safe to use



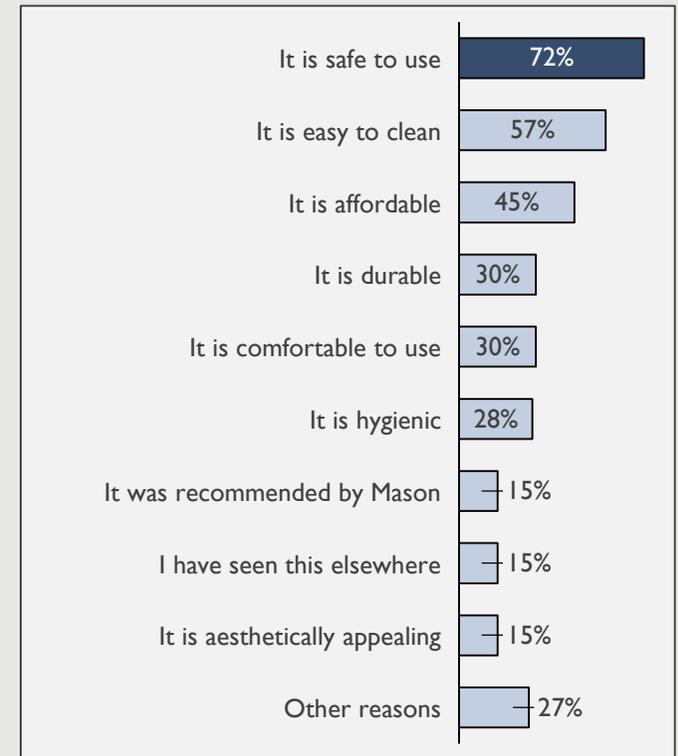
**% split of HHs by interface**



**% split of HHs by floor material**



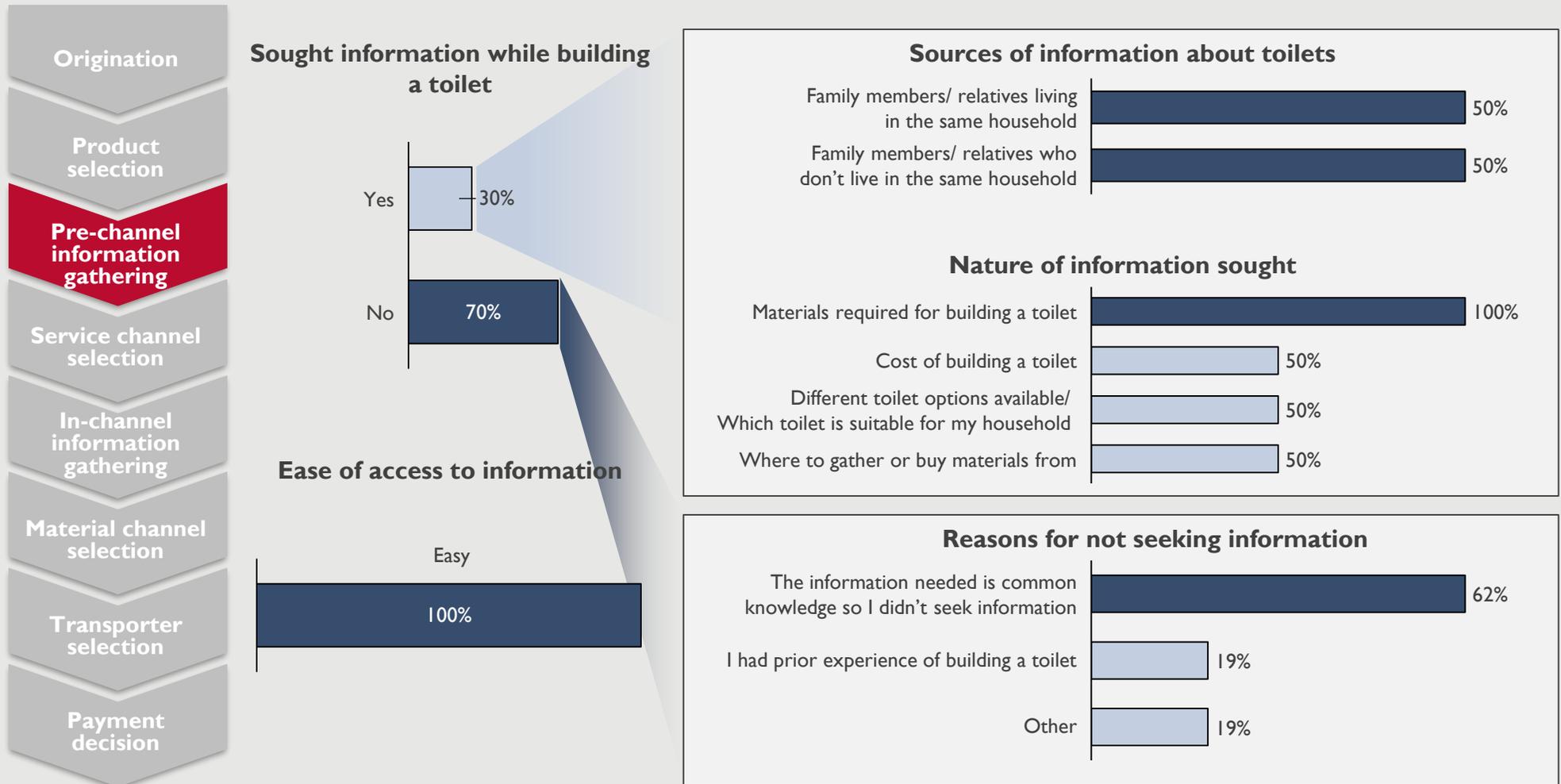
**Reasons for selecting type of floor and interface<sup>1</sup>**



1. Households that responded with 'other reasons' for selecting type of floor and interface mostly responded with lack of money

# Segment E | Buying process (4/9)

A majority of households did not seek information while constructing a toilet, primarily because they felt that information was common knowledge; information was typically easy to access



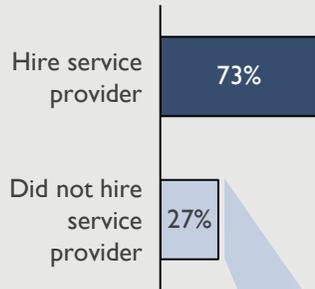
1. Households responding with 'Other' for reasons for not seeking information cited reasons such as it being an emergency case and hence not having the time to seek information, or because someone in the family already had the information that was needed

# Segment E | Buying process (5/9)

Most households hired a service provider for toilet construction, and selected individuals who were well-known locally, and provided the best quality of work; Households that did not hire service providers found it too expensive to hire someone



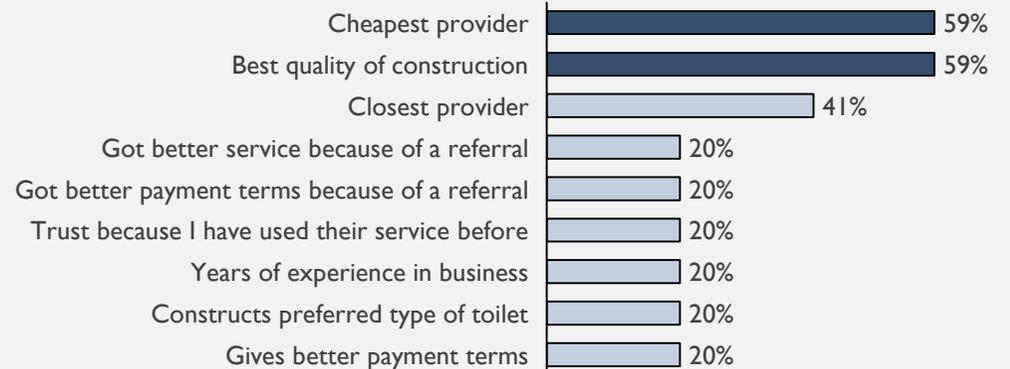
## Hired service provider to manage construction process<sup>1</sup>



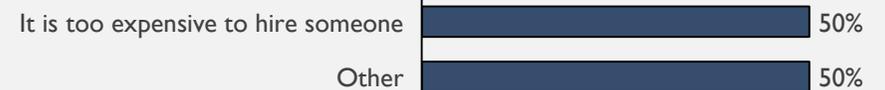
## Source for finding service provider



## Basis for selecting service provider



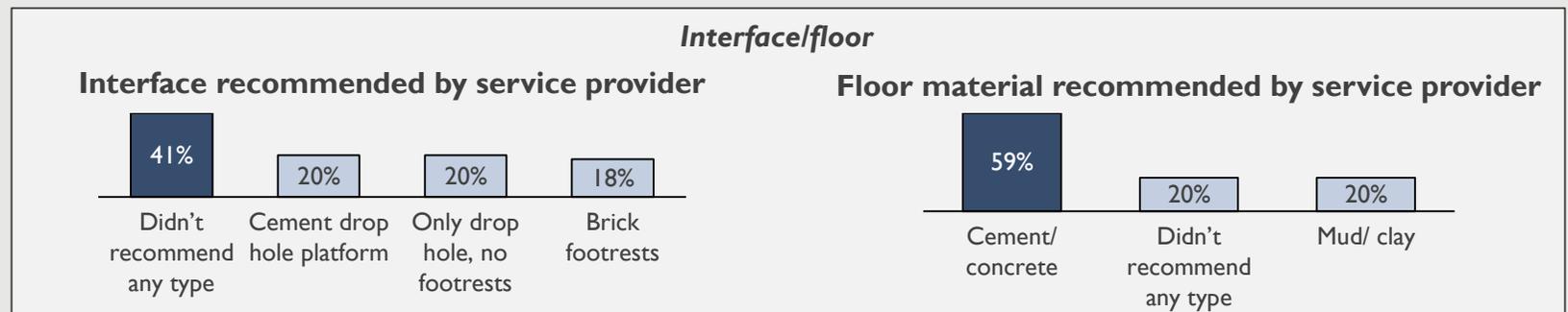
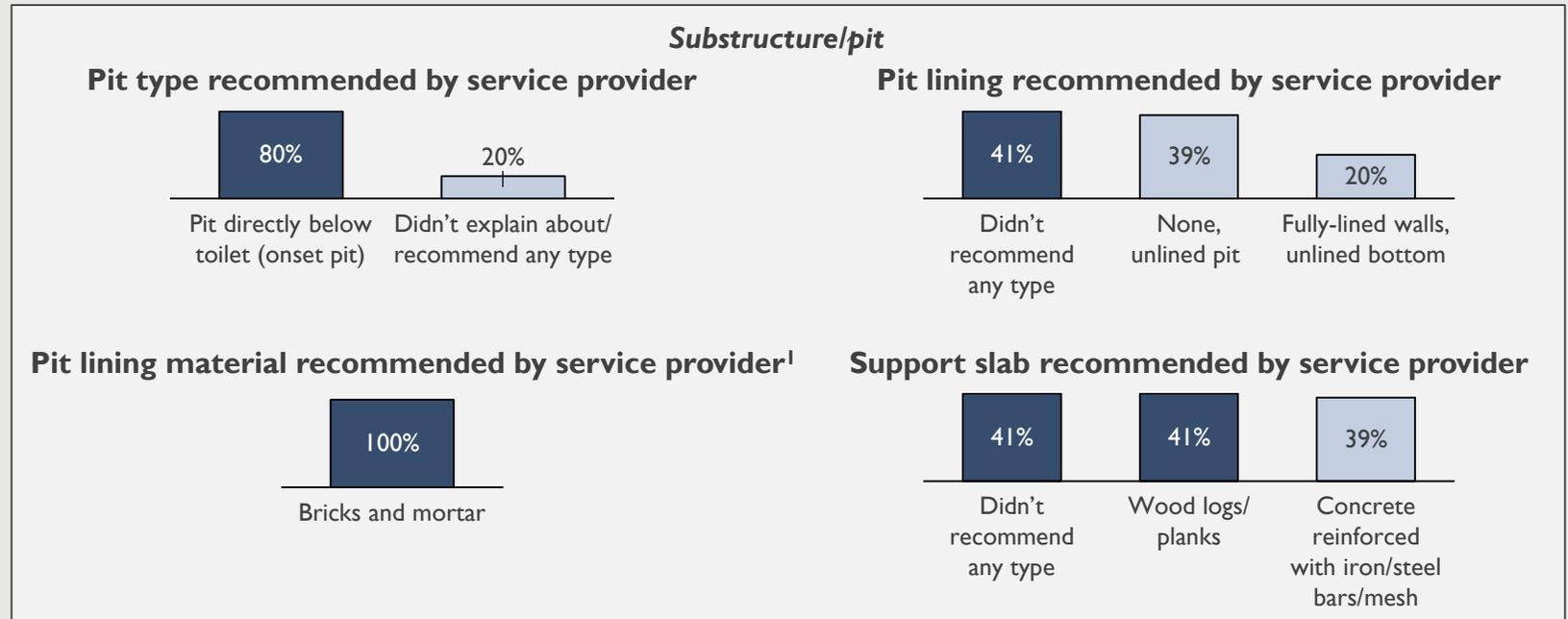
## Reasons for not hiring any service provider for toilet construction



1. Households that did not hire a service provider, oversaw the construction process themselves but had a friend, older son or nephew, or a sibling who was a mason or pit digger, assist them in the construction process

# Segment E | Buying process (6/9)

Masons often recommended an onset pit supported by wood logs and planks with a cemented floor, but did not recommend any pit lining or interface



1. Proportions are for those who were recommended a fully or partially-lined pit by the service provider

# Segment E | Buying process (7/9)

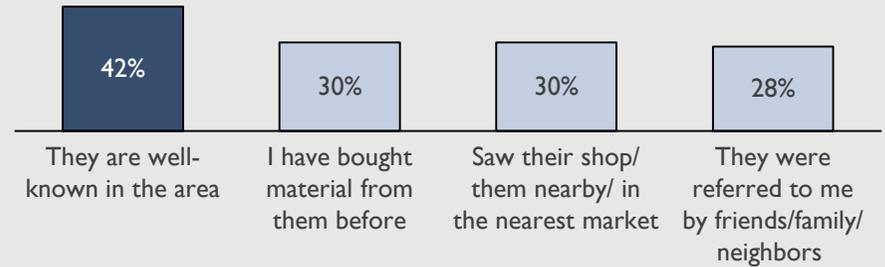
Households chose to source materials from hardware suppliers; certain suppliers were selected because they were well-known in the area, and provided affordable materials



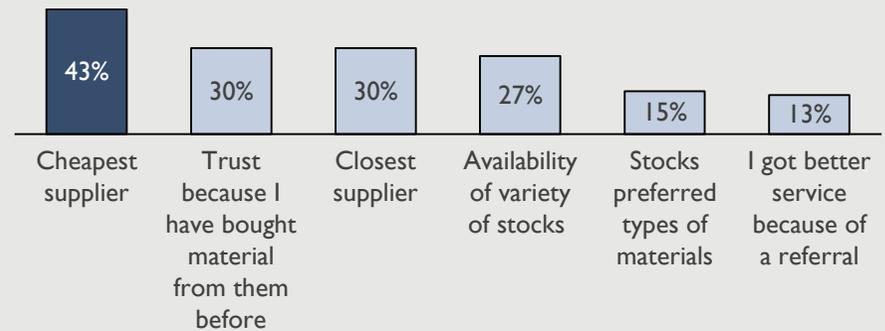
**Material suppliers opted for**



**Source for finding hardware store**

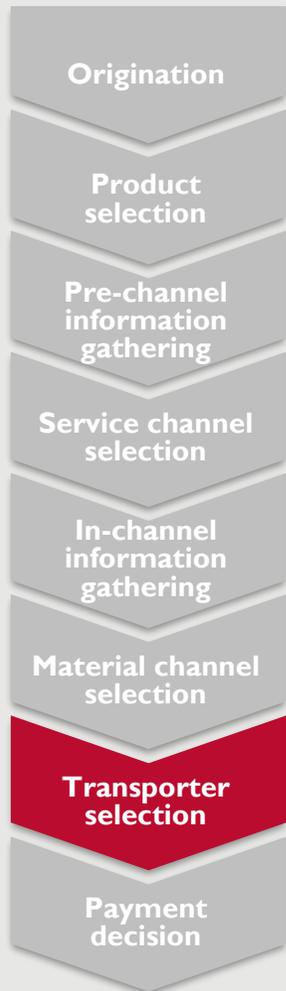


**Basis for selecting hardware store**

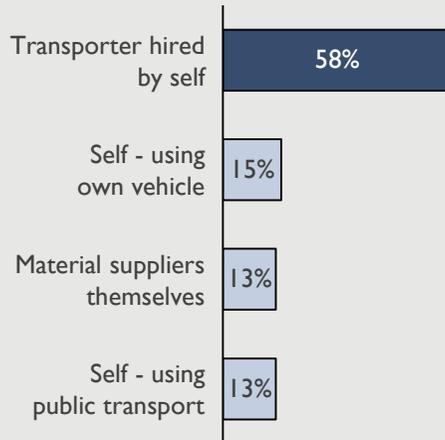


# Segment E | Buying process (8/9)

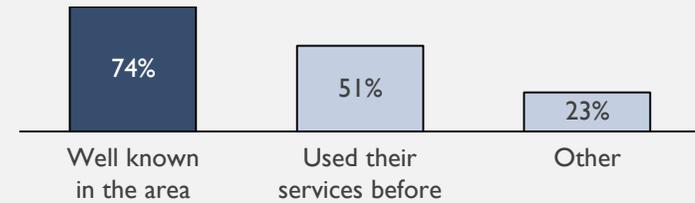
Households typically hired a transporter for their materials themselves; they chose transporters that were well known in the area, whom they could trust based on past experience



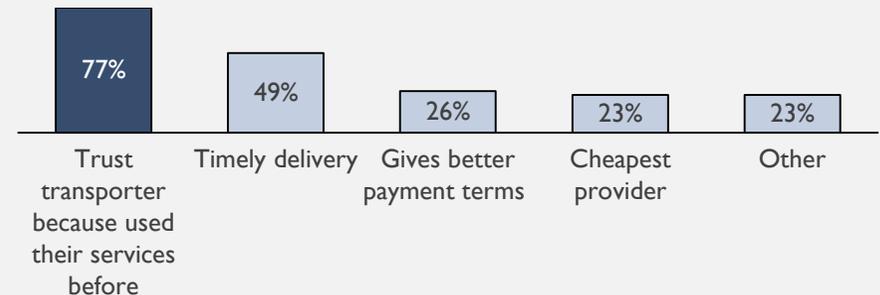
## Material transport option preferred



## Source for finding transporter hired by self<sup>1</sup>



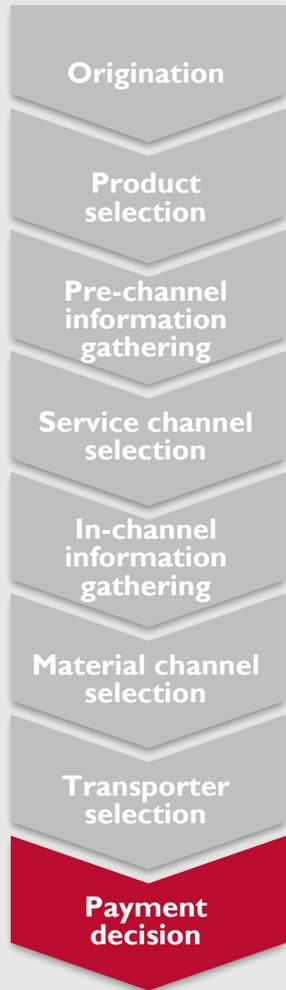
## Basis for selecting transporter hired by self<sup>2</sup>



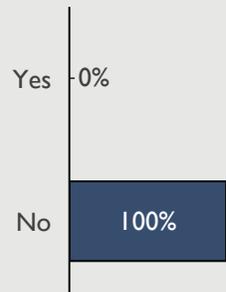
- Households that chose 'other' for source for finding transporter hired by self used motorbikes that are easily found in the area, the help of a family member, friend, or neighbor
- Households that chose 'other' for basis for selecting transporter hired by self mentioned reasons such as free service, lack of money, ease of availability, and ease of access through narrow roads

# Segment E | Buying process (9/9)

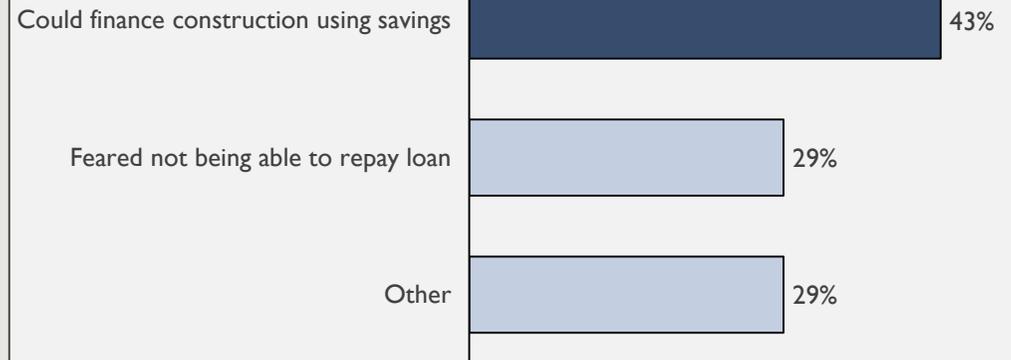
None of the households used a loan for toilet construction because they believed they could use their own savings; hardware stores and material suppliers were often paid in a lump-sums



**% HHs using loans to finance toilet construction**



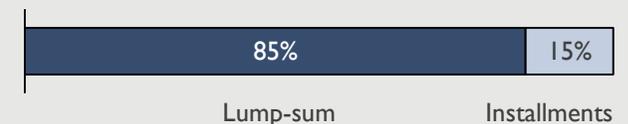
**Reasons for not using loan<sup>1</sup>**



**% split of HHs by payment to service provider**



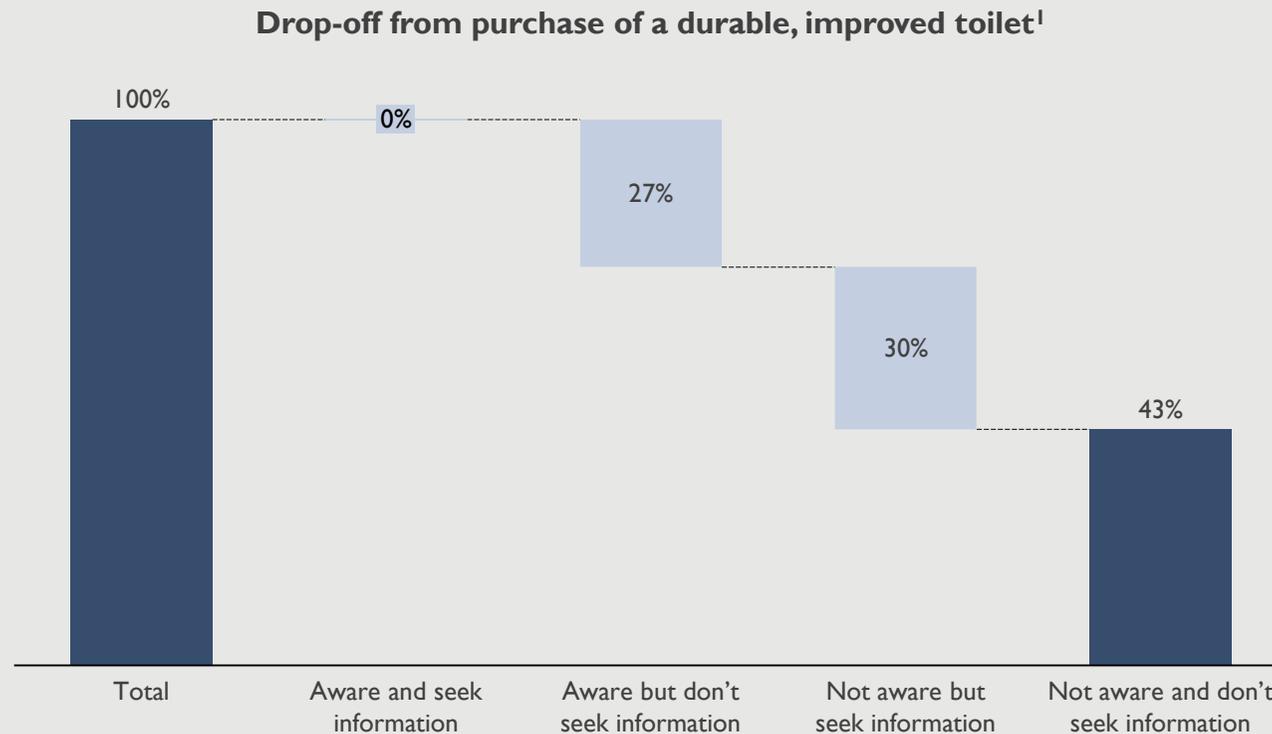
**% split of HHs by payment to hardware store**



1. Households that selected 'other' for not using loans mentioned varied reasons such as already having the finances, COVID related concerns, not being a member of savings group, etc.

## Segment E | Drop-offs from actual buying process

Many households do not purchase durable toilets as they are neither aware of durable components, nor do they seek information when considering construction of a toilet

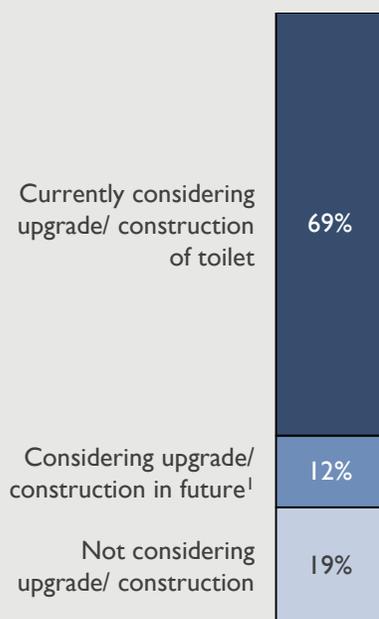


1. Households are considered to be aware if they know at least one durable component each for floor, interface, pit lining, and support structure of a toilet

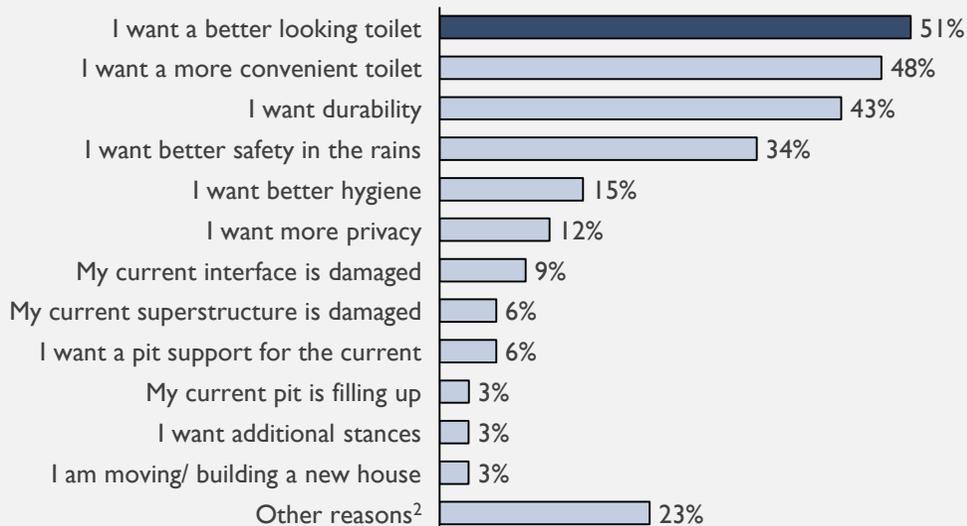
# Segment E | Future consideration

Most households are currently considering a toilet purchase because they want one that looks better, or will consider one in the future if there is better access to labor and finances, or if their existing structure is damaged

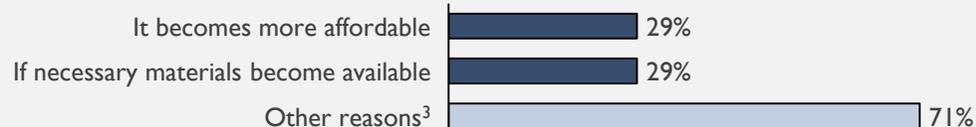
**% split of HHs without their own toilet by future preference for toilet purchase/upgrade**



**Reasons for currently considering toilet purchase/upgrade**



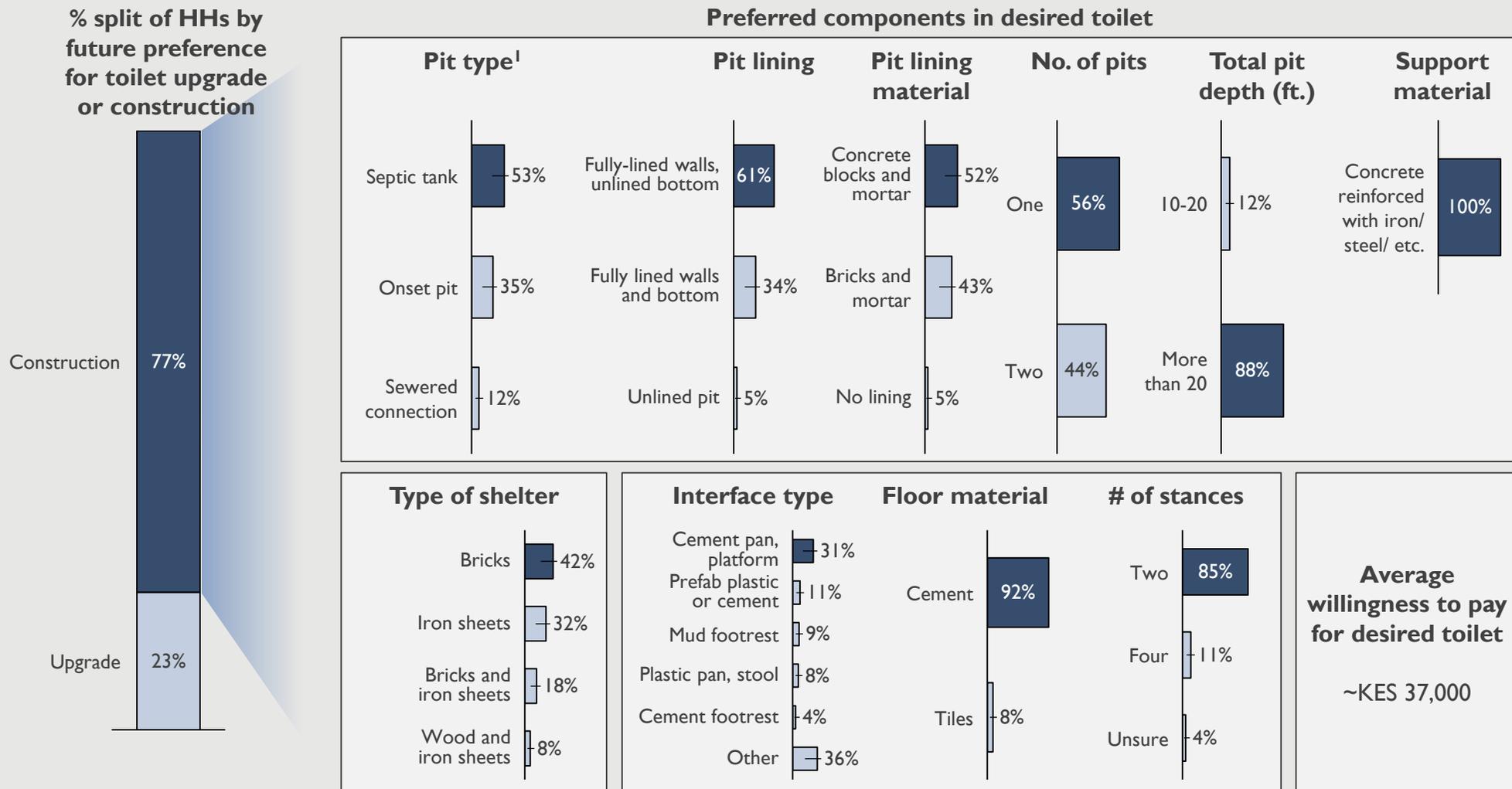
**Factors that could influence consideration in the future**



1. Those who were considering construction/ upgrade in the future were not asked for their reasons as their intent is unclear
2. Other reasons for currently considering a new toilet include needing more privacy from older members of the household or for visitors to use, and existing pit beginning to fill up
3. Other reasons that could influence future consideration include better access to assistance for labor and finances, existing pit filling up, and collapse of existing structure

# Segment E | Desired toilet

Segment E households desire a two-stance toilet with a septic tank over 20-feet deep, a cement floor with a cement pan, and a shelter made of bricks



1. If 'Pit type' chosen is sewer connection, further questions regarding pits are not asked to the respondents; proportions shown in all further charts on pits exclude respondents who chose sewer connection as their pit type

# Segment profiles | Segment F

Non-durable individual toilets  
**53.0%**

Non-durable shared toilets  
**44.2%**

OD  
**2.9%**

## Segment F households value sanitation and hygiene...

Source of drinking water		Surface		Well		Piped			
		Yes	No	Yes	No		Yes	No	
Bank account		Yes	No	Yes	Yes	No	Yes	Yes	No
Solar panel ownership					Yes	No		Yes	No
Gender of HH head	Elderly members in HH								
Female	No	A		E	F	G		I	
	Yes	B				H			
Male	Yes	B		E	F	G		I	
	No	C	D			H			

...but do not value durable toilets.  
Let's understand why

## Segment F | Customer story

*Mary lives with her two sons, mother, and sister. She is educated till secondary school. She currently works in agriculture, on her own farm.*

*Mary and her family live in their own house, which is built with temporary materials, and are not very affluent. Although they do not have access to electricity, they own a mobile phone and a solar panel, and possess agricultural land and their own farm animals. They typically obtain drinking water from a well. They have convenient access to a hardware store; they need to travel less than 15 minutes by a two-wheeler.*

*Mary strongly believes that it is important to keep the community clean, and is well-aware of the benefits of owning a toilet. She believes that owning a toilet reduces the possibility of disease, allows her family to relieve themselves at night, and provides privacy. She desires respect for her and her family from the community, but is okay with doing things differently from them sometimes. She will often refuse requests for sharing her toilet because she does not believe its hygienic. But she also values affordability over durability of her toilet since she has a limited amount to spend.*

*Mary and her family use an individual traditional toilet, which has a 10-foot deep unlined onset pit, and a shelter with an iron sheet roof and walls built with mud, bricks, and poles.*

*Mary desires a single-stance unlined pit latrine with a 15-foot deep pit, and a concrete floor. She would like her toilet to have a shelter made of iron sheets. She is willing to pay KES 30,000 for this toilet. She has never taken a loan for a toilet before, because she prefers to use her own savings to finance the construction.*

# Segment F | Customer persona

## Setting

- **Typical family size:** 5 people, with 1 child under the age of 10
- **Type of house:** Predominantly live in temporary material houses
- **Income and occupation:** Typically have seasonal income; agriculture (on their own farm) is the dominant occupation
- **Mobile phone:** Nearly all households have a mobile phone
- **Mobile money:** Nearly all households have access to mobile money transfer platforms
- **Total value of assets:** Households are moderately affluent; the average total asset value per household is KES 38,000<sup>1</sup>
- **Bank account and savings groups:** A third of the segment are members of a savings group<sup>2</sup>; most do not have a bank account
- **Loans:** Most of the segment have not taken a loan in the past

## Mental Model

- Believe that **building a toilet is a high priority** but **value affordability of the toilet** over durability
- Have an **aversion to sharing** and believe owning a toilet is a basic necessity, but **believe that it is a taboo to live near one**
- Show a **strong distrust towards service providers** like fundis, often referring to them as **conmen**
  - Recognize that toilets provide **safety at night** and a **greater degree of privacy** than open defecation; acknowledge that having your own toilet allows you to defecate **conveniently and comfortably**
  - **Strongly desire respect** from people in their community but do not always value conformity with actions of neighbors
  - **Community cleanliness is a significant priority**; all households believe that toilets reduce the possibility of disease in the family



- **Current product:** Non-durable individual toilets; two-fifths have non-durable shared toilets
- **Desired product:** A toilet that is durable, has no smell, easy to clean, and provides privacy, and has the following attributes:
  - **Substructure:** An unlined, 10-20 feet deep onset pit
  - **Interface:** Two stances, a concrete floor with a cement pan or platform
  - **Superstructure:** An iron sheets shelter
- **Willingness to pay:** ~KES 30,000<sup>1</sup>
- **Financing:** Do not take loans for toilet construction, because they feel they can finance it using savings; material providers are paid in lump-sums, while service providers are often paid in two installments

## The Ask

Source: FSG quantitative survey with 221 rural households across Busia, Kakamega and Homa Bay

1. Figure has been rounded off to the nearest 500

2. Savings groups include MFIs, SACCOs and informal self-help groups called chamas

# Segment F | Key demographic statistics

Segment size		Demographics		Income & occupation		Access indicators	
% of potential market	10.7%	Family size (avg.)	5	<b>Nature of income</b>		<b>Distance to nearest HW store<sup>1</sup></b>	
# of households	227K	<b>Gender of HH head</b>		Non-seasonal	41.6%	<15 minutes	54.1%
<b>Sanitation profile</b>		Male	52.1%	Seasonal	58.4%	15 to 30 minutes	37.8%
Non-durable individual toilets	53.0%	Female	47.9%	<b>Primary occupation</b>		> 30 minutes	8.1%
Non-durable shared toilets	44.2%	<b>Highest education in HH</b>		Works on own farm	80.1%	<b>Access to electricity</b>	19.4%
OD	2.9%	No education	0.0%	Works on other's farm	4.7%	<b>Drinking water source</b>	
		Primary	42.1%	Own business	5.0%	Well	74.1%
		Secondary	55.6%	Employed	3.2%	Piped or other	25.9%
		University	2.3%	Other	7.0%	Surface water <sup>2</sup>	0.0%

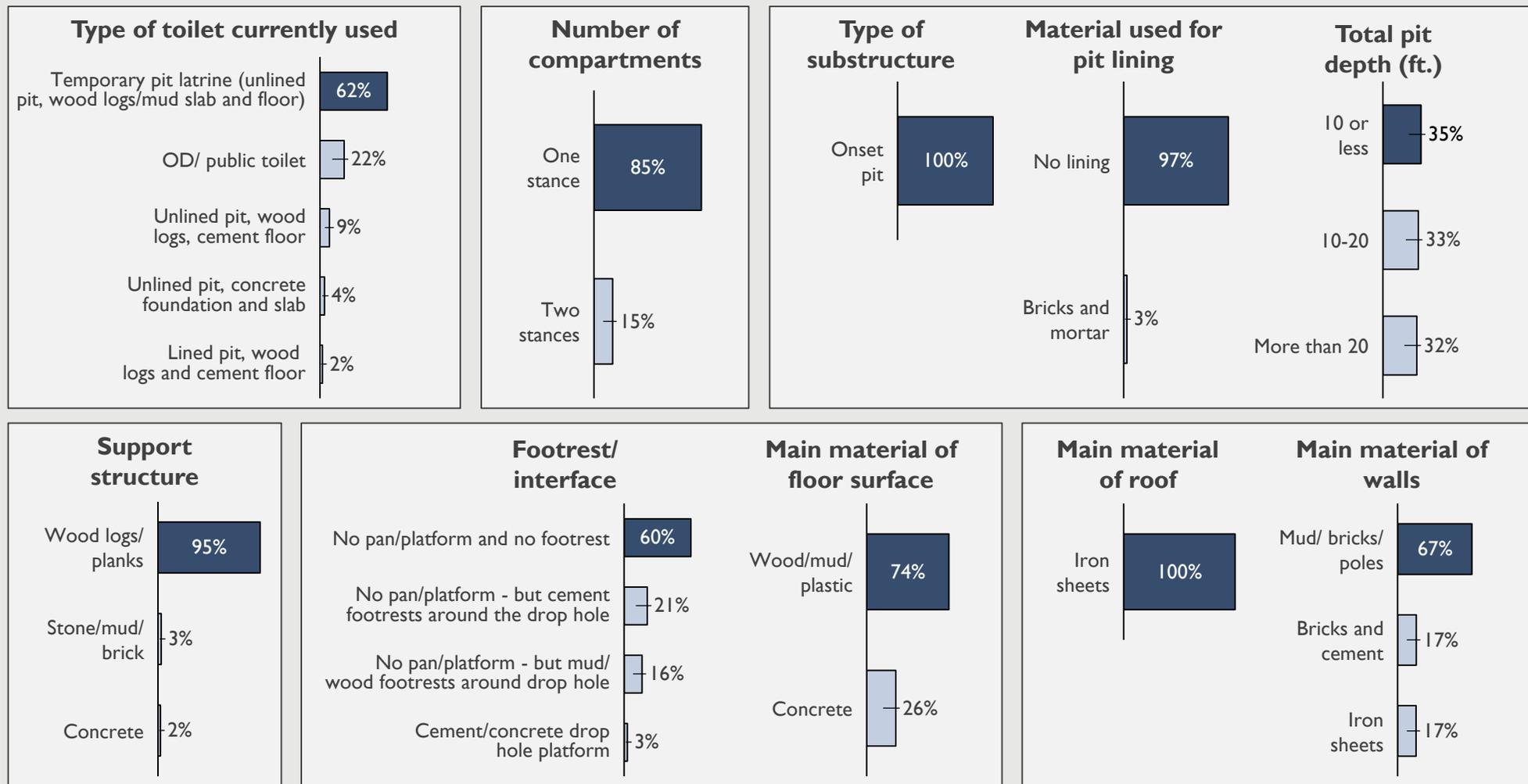
Affluence indicators		Assets and other indicators		Attitudes & beliefs		
<b>Total stated monthly expenditure</b>		<b>Assets and other indicators</b>		I would be willing to pay for products that are prestigious		77.8%
High (> KES 10K)	23.6%	Agriculture land	98.2%	It is embarrassing to be seen defecating in the open		100%
Medium (KES 5K-10K)	18.7%	Computer	3.2%	Cleanliness of my community is important to me		100%
Low (< KES 5K)	57.7%	Solar panel	80.6%	It is taboo to use or live near a toilet		63.4%
<b>Total asset value (avg.)</b>	38.1k	Refrigerator	0.0%			
<b>Total asset value (spread)</b>		Farm animals	75.6%			
High (> KES 20K)	16.6%	Bicycle	22.6%			
Medium (KES 15K-20K)	64.0%	Mobile	92.7%			
Low (< KES 15K)	19.4%	Television	20.8%			
		Car or truck	3.2%			
		Motorbike	5.5%			

1. Distance to nearest hardware store is calculated based on time taken to reach by bike/ two-wheeler

2. Surface water includes water from ponds, springs, rainwater harvesting, etc.

# Segment F | Current sanitation profile

Toilet users in this segment typically use a one-stance traditional pit latrine, with an unlined onset pit, less than 10-feet deep, a wood, mud or plastic floor with no footrests, iron sheets roof and mud and pole walls



**Note:** Questions related to the toilet components were not asked to HHs that resort to OD or use shared facilities

# Segment F | Typical month of construction

Households commonly construct toilets in the month of December, typically because they are able to save up then, or due to better weather conditions



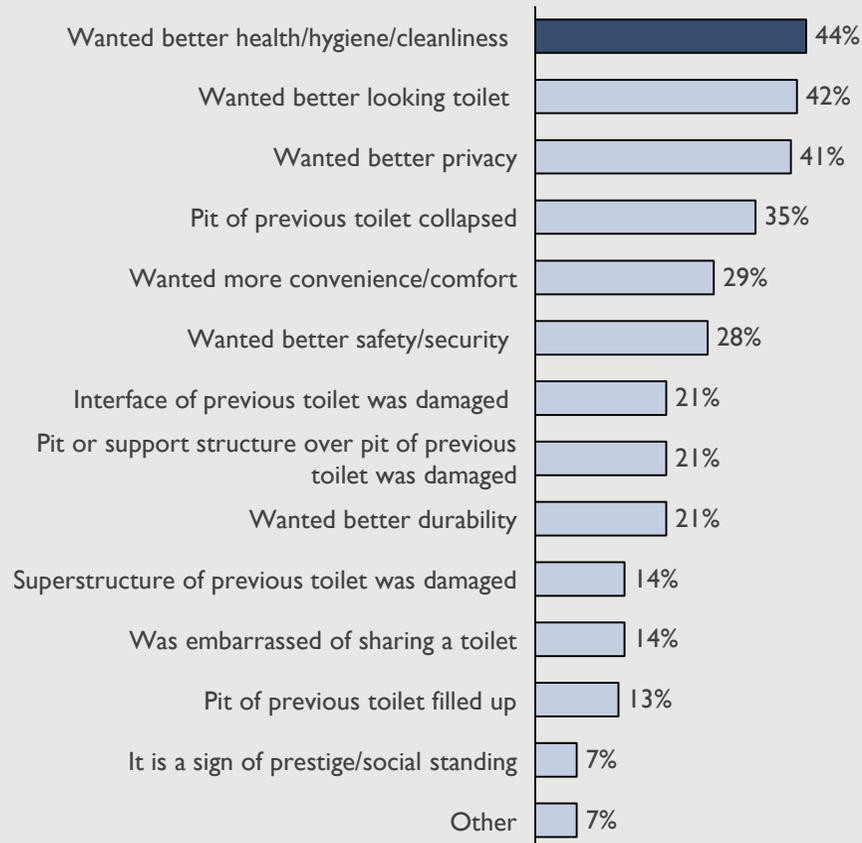
1. Households responding with other mentioned various reasons such as their existing pit filling up or collapsing, or they realized they no longer wanted to practice OD

# Segment F | Buying process (1/9)

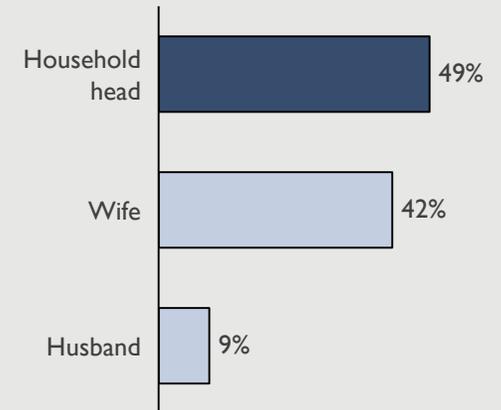
Many households wanted to construct a toilet because they wanted a more hygienic and clean defecation place; toilet construction discussions were initiated by the head of the household



## Origination of need for toilet

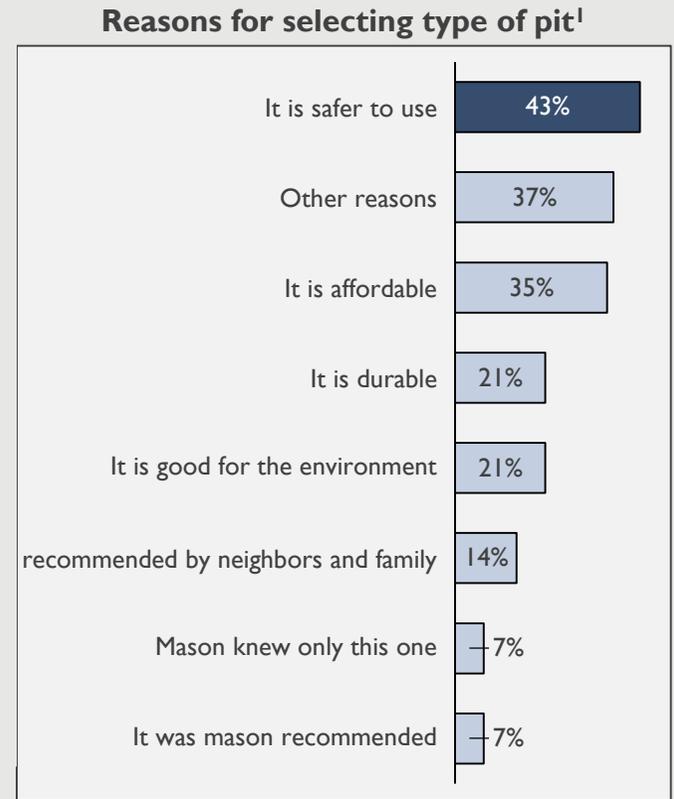
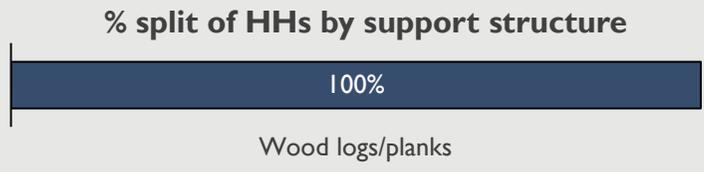
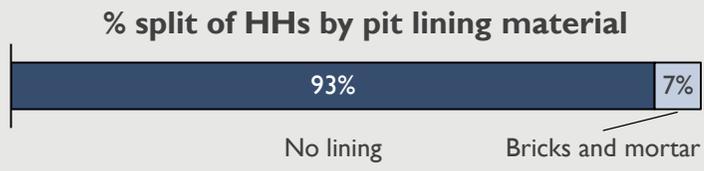
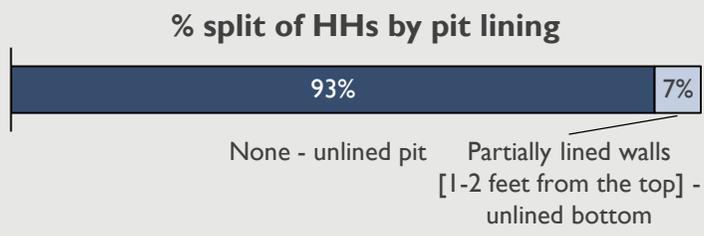
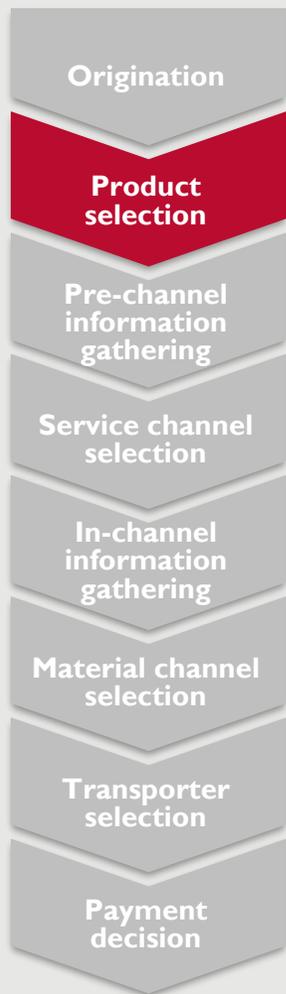


## Person who initiated discussion



# Segment F | Buying process (2/9)

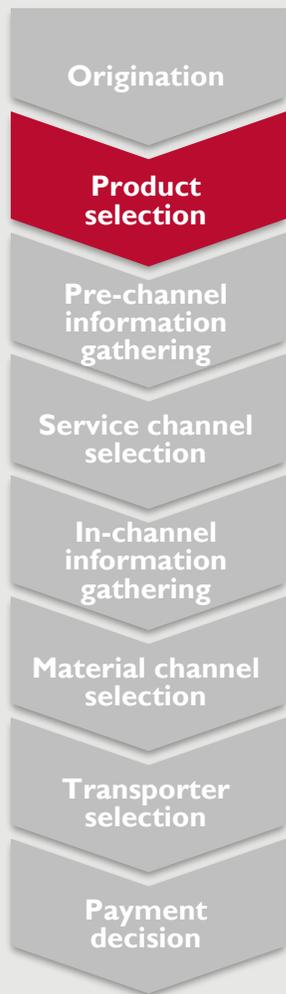
Households typically selected an unlined onset pit supported by wood logs/ planks...



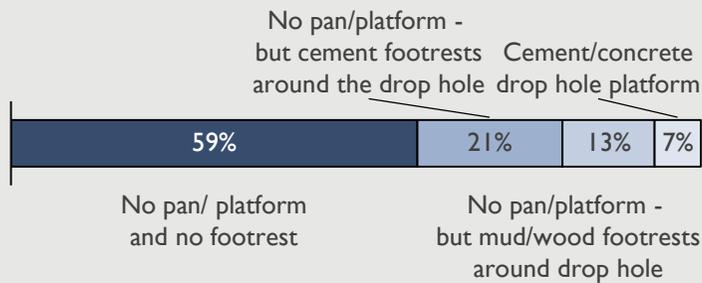
1. Other reasons for selecting this pit include safety for children, lack of capital, and easily accessible materials

# Segment F | Buying process (3/9)

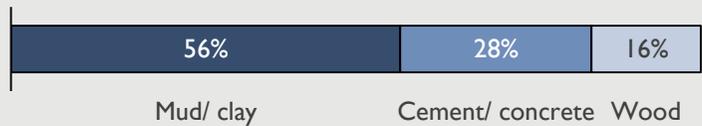
...with a mud or clay floor without a pan, platform or footrests, due to affordability



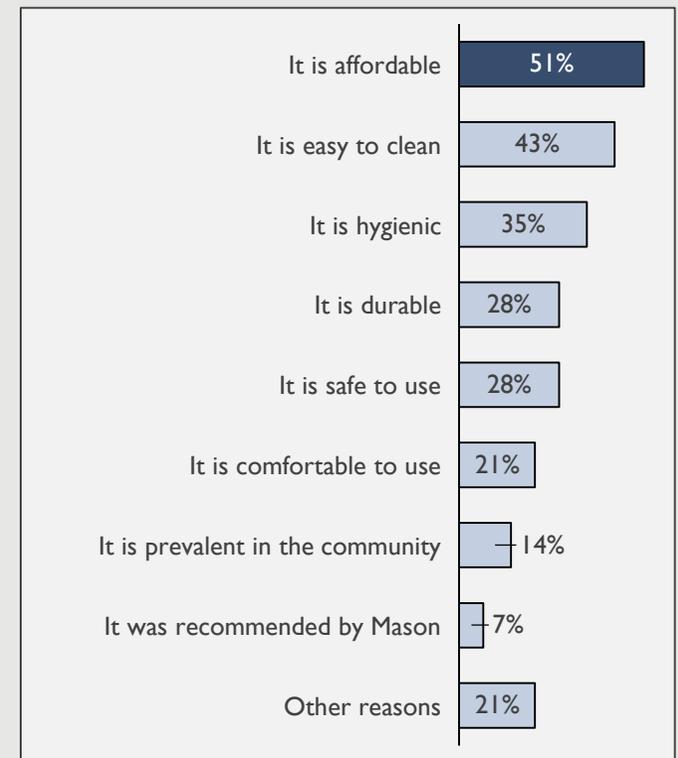
**% split of HHs by interface**



**% split of HHs by floor material**



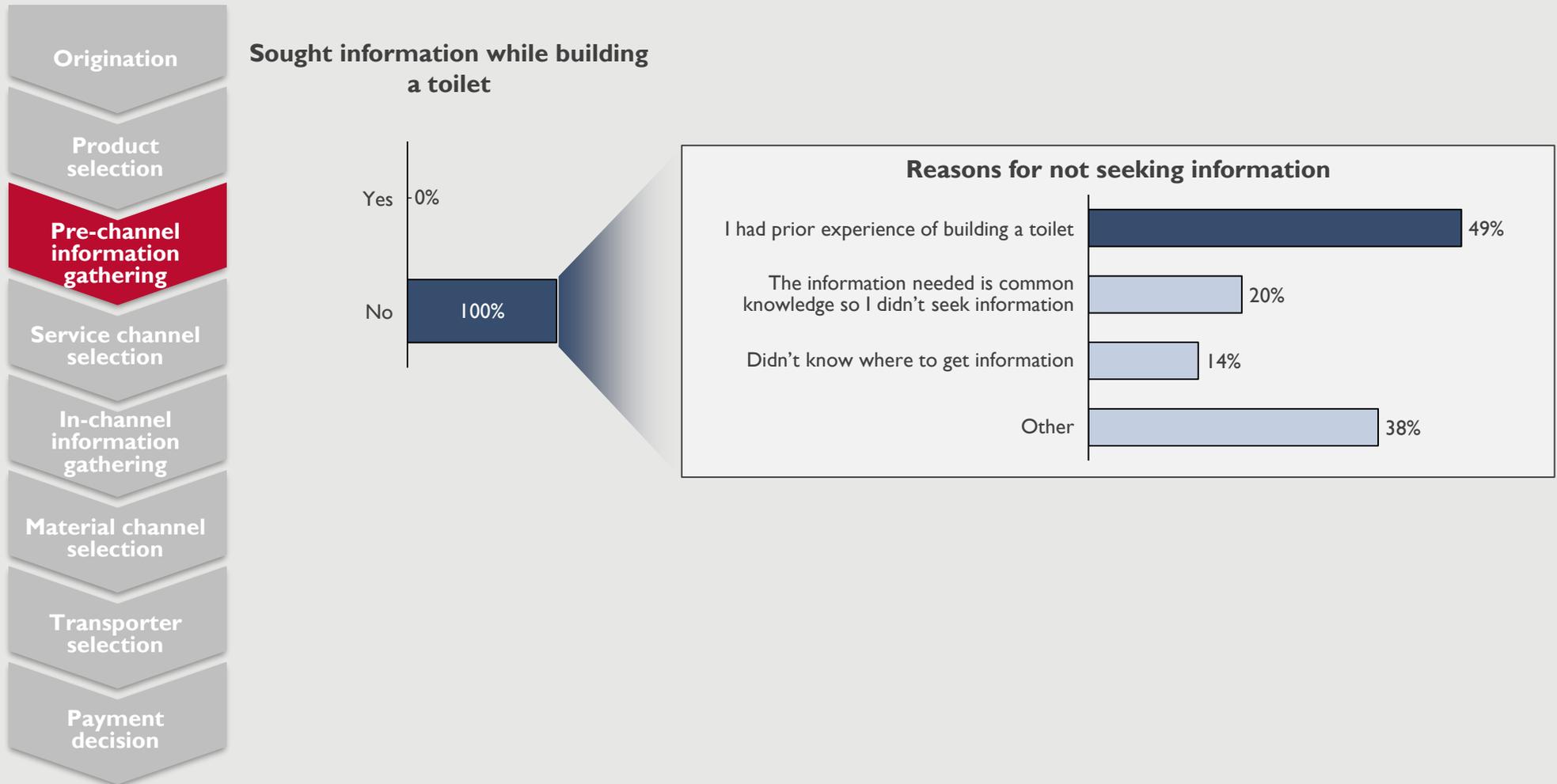
**Reasons for selecting type of floor and interface<sup>1</sup>**



1. Households that responded with 'other reasons' for selecting type of floor and interface mostly responded with lack of money

# Segment F | Buying process (4/9)

A majority of households did not seek information while constructing a toilet, primarily because they had prior experience in constructing a toilet



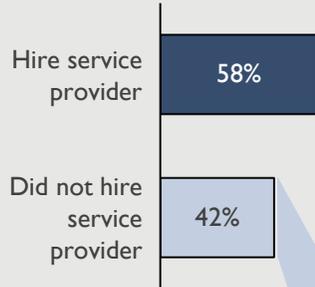
1. Households responding with 'Other' for reasons for not seeking information cited reasons such as it being an emergency case and hence not having the time to seek information, or because someone in the family already had the information that was needed

# Segment F | Buying process (5/9)

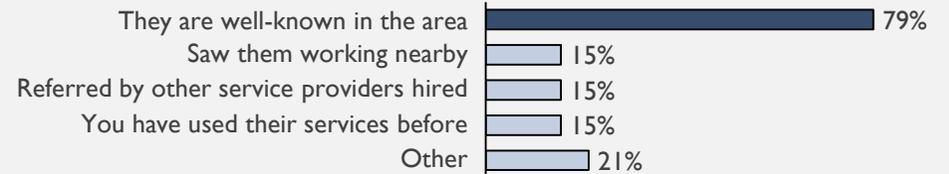
A majority of households hire a service provider who is close by or well known in their area to manage the construction process; those that manage the process themselves do so because they feel it is too expensive to hire someone



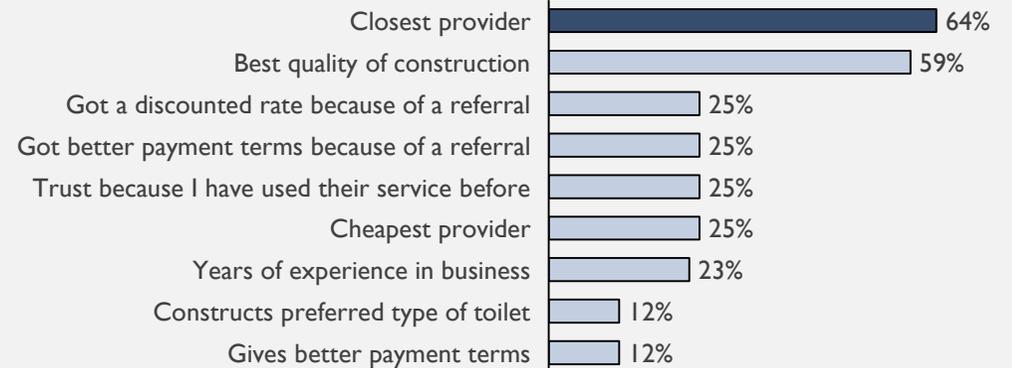
## Hired service provider to manage construction process<sup>1</sup>



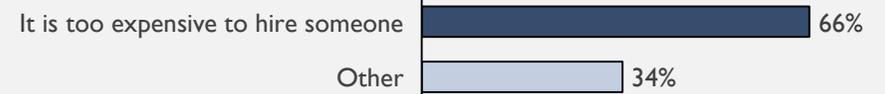
## Source for finding service provider



## Basis for selecting service provider



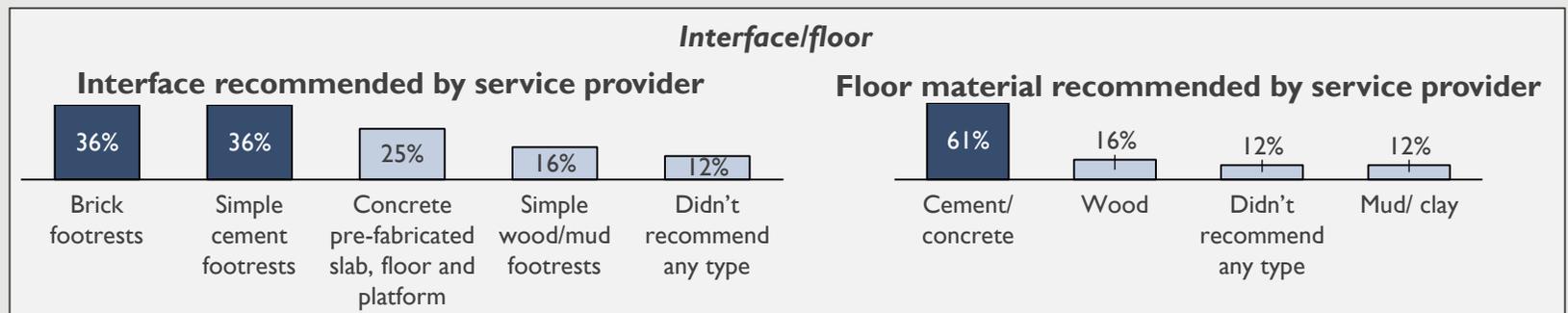
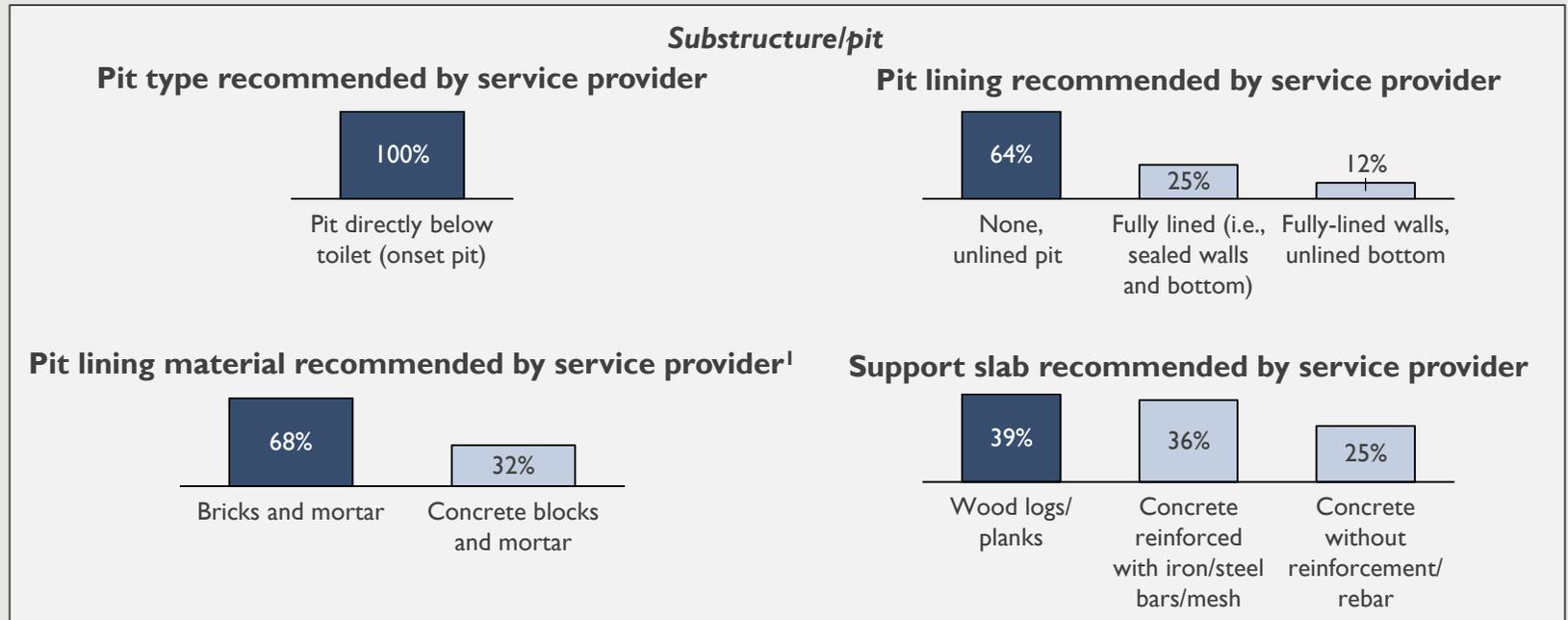
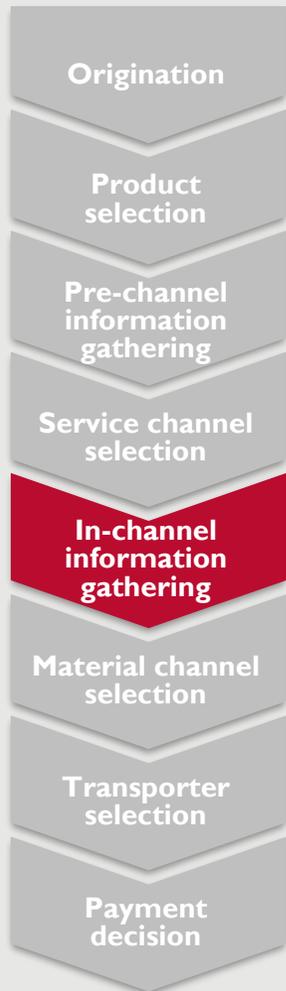
## Reasons for not hiring any service provider for toilet construction



1. Households that did not hire a service provider, oversaw the construction process themselves but had a friend, older son or nephew, or a sibling who was a mason or pit digger, assist them in the construction process

# Segment F | Buying process (6/9)

Masons often recommended onset unlined pits supported with wood logs/planks, and a cemented floor with cement or brick footrests; masons who suggested a lined pit typically suggested using bricks and mortar



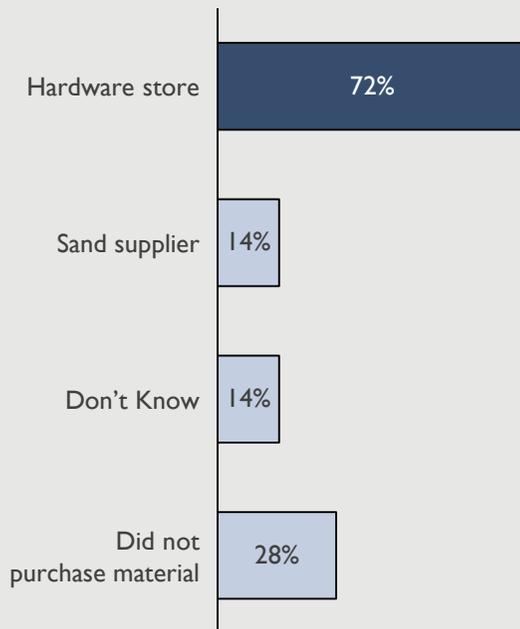
1. Proportions are for those who were recommended a fully or partially-lined pit by the service provider

# Segment F | Buying process (7/9)

Households typically chose to source materials from hardware suppliers; certain suppliers were selected because they were well known in the area, and had an availability of variety of stocks



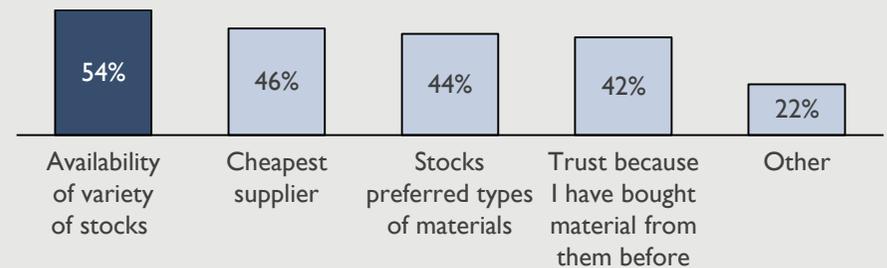
**Material suppliers opted for**



**Source for finding hardware store**

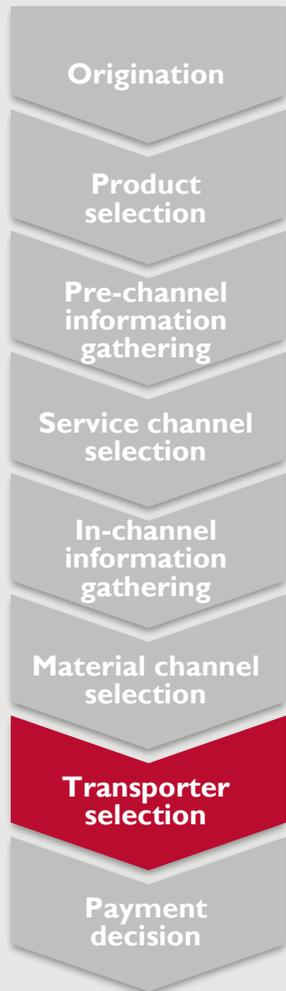


**Basis for selecting hardware store**

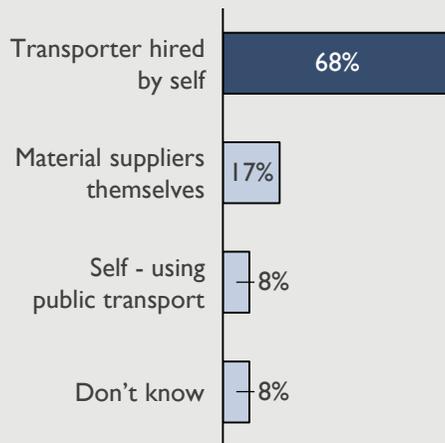


# Segment F | Buying process (8/9)

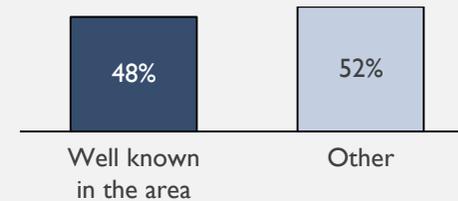
Households typically hired a transporter for their materials themselves; they chose transporters who were available close by and were well known in the area



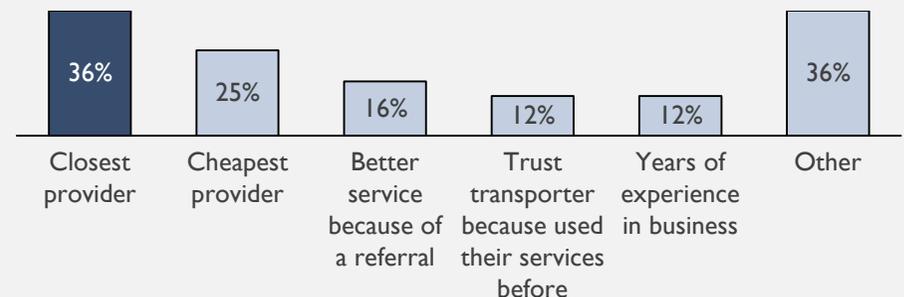
## Material transport option preferred



## Source for finding transporter hired by self<sup>1</sup>



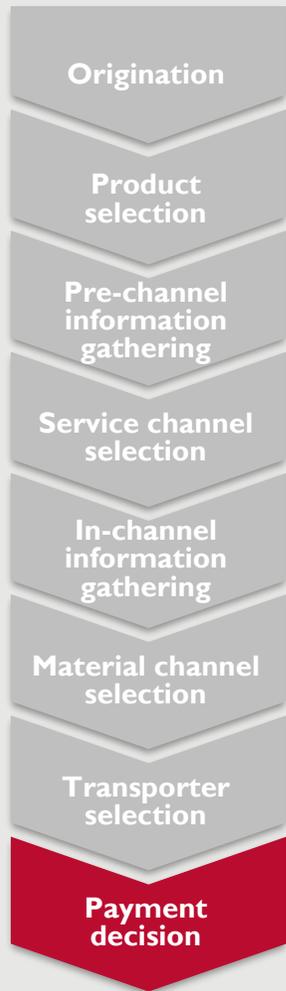
## Basis for selecting transporter hired by self<sup>2</sup>



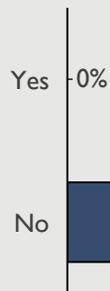
- Households that chose 'other' for source for finding transporter hired by self used motorbikes that are easily found in the area, the help of a family member, friend, or neighbor
- Households that chose 'other' for basis for selecting transporter hired by self mentioned reasons such as free service, lack of money, ease of availability, and ease of access through narrow roads

# Segment F | Buying process (9/9)

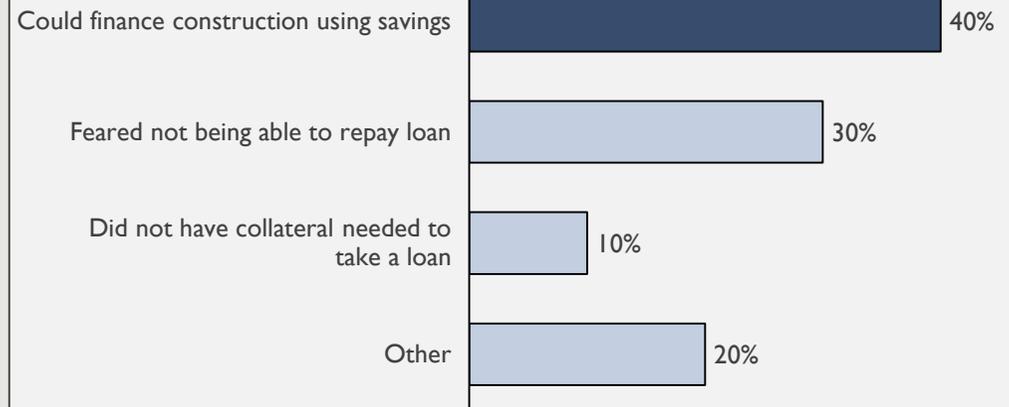
None of the households used a loan for toilet construction because they could use their own savings; hardware stores were often paid in a lump-sum, while service providers were paid in two installments



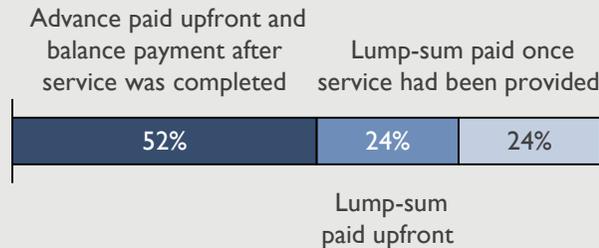
**% HHs using loans to finance toilet construction**



**Reasons for not using loan<sup>1</sup>**



**% split of HHs by payment to service provider**



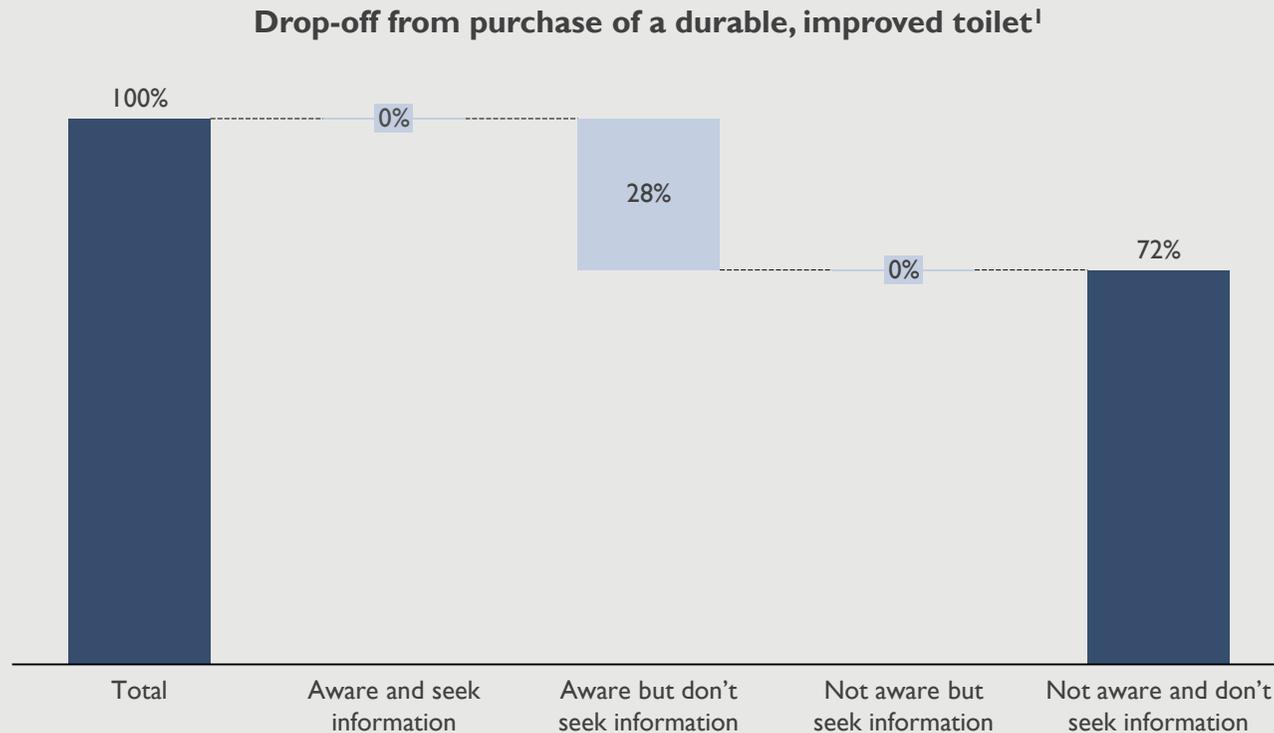
**% split of HHs by payment to hardware store**



1. Households that selected 'other' for not using loans mentioned varied reasons such as already having the finances, COVID related concerns, not being a member of savings group, etc.

# Segment F | Drop-offs from actual buying process

*Most households do not purchase durable toilets as they are neither aware of durable components, nor do they seek information when considering construction of a toilet*

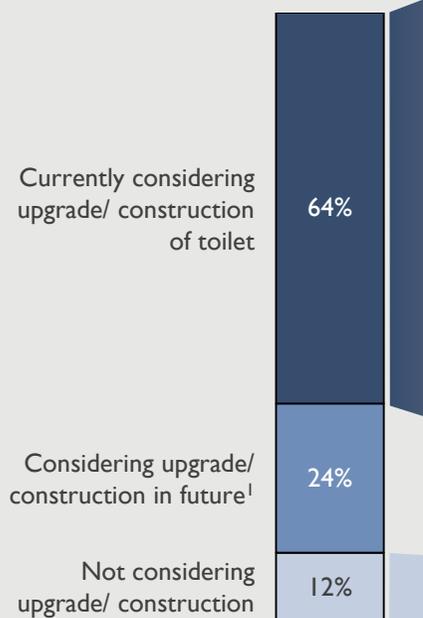


1. Households are considered to be aware if they know at least one durable component each for floor, interface, pit lining, and support structure of a toilet

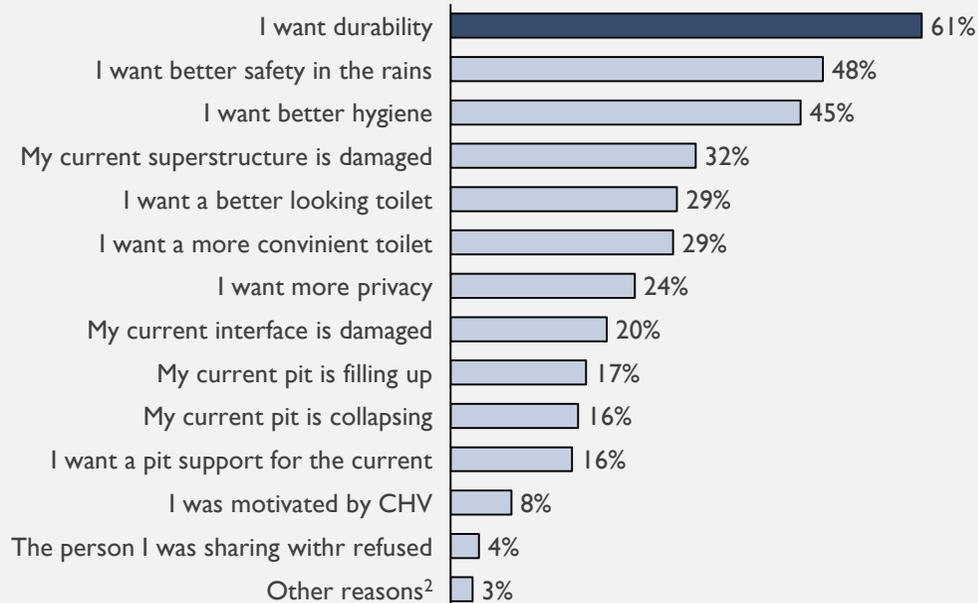
# Segment F | Future consideration

Most households are currently considering a toilet purchase because they want more durability, or will consider one in the future if they have enough money left over after other priorities

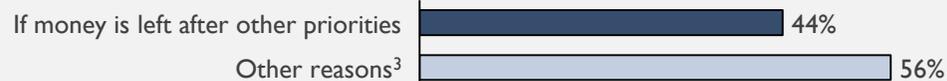
**% split of HHs without their own toilet by future preference for toilet purchase/upgrade**



**Reasons for currently considering toilet purchase/upgrade**



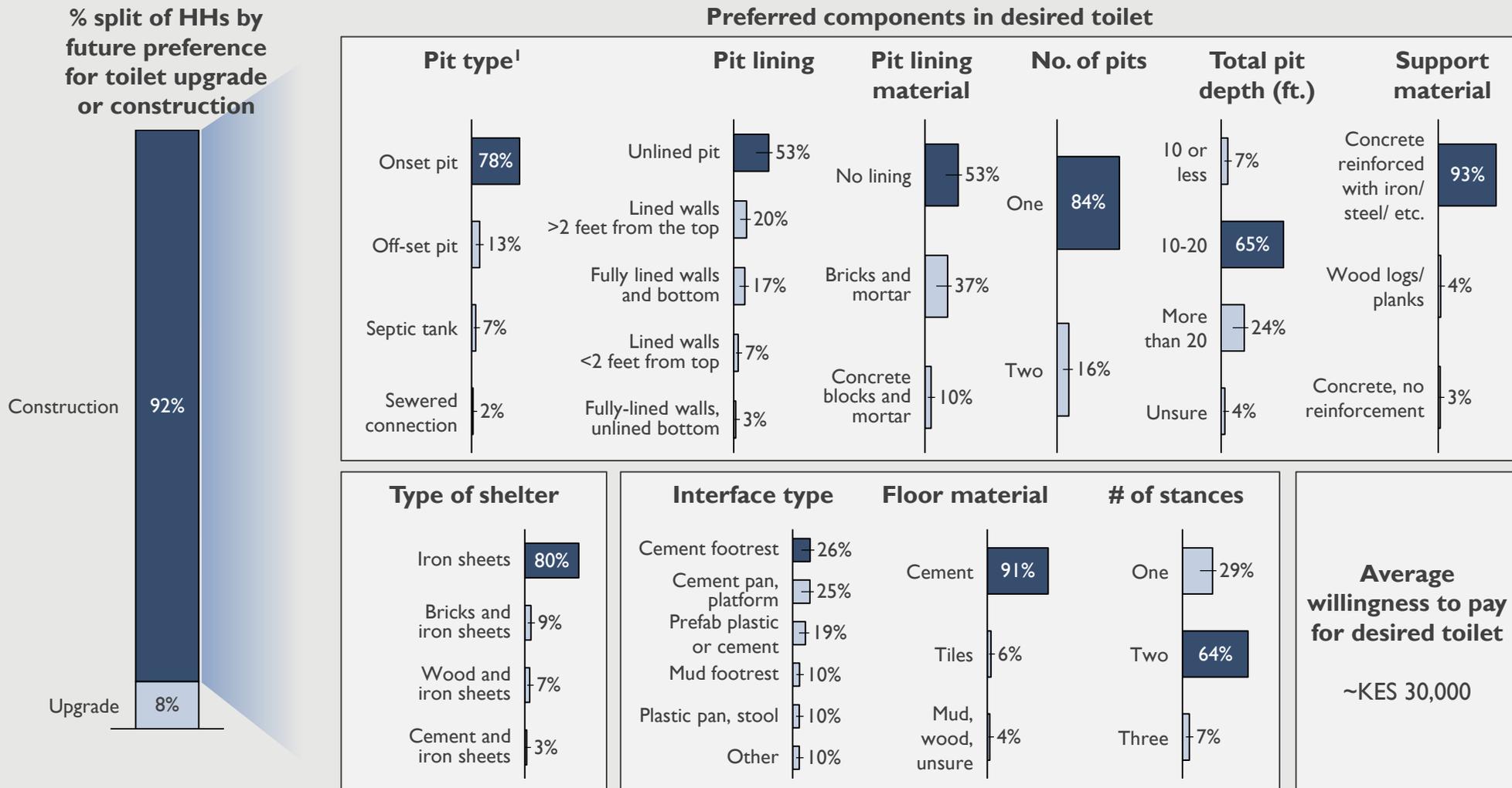
**Factors that could influence consideration in the future**



1. Those who were considering construction/ upgrade in the future were not asked for their reasons as their intent is unclear
2. Other reasons for currently considering a new toilet include needing more privacy from older members of the household or for visitors to use, and existing pit beginning to fill up
3. Other reasons that could influence future consideration include better access to assistance for labor and finances, existing pit filling up, and collapse of existing structure

# Segment F | Desired toilet

Segment F households desire a new toilet with two stances, an unlined onset pit, 10 - 20 feet deep, a cement floor with cement footrests, and a shelter made of iron sheets



1. If 'Pit type' chosen is sewer connection, further questions regarding pits are not asked to the respondents; proportions shown in all further charts on pits exclude respondents who chose sewer connection as their pit type

# Segment profiles | Segment G

## Segment G households invest in constructing toilets...

Source of drinking water		Surface		Well		Piped			
Bank account		Yes	No	Yes	No		Yes	No	
Solar panel ownership					Yes	No		Yes	No
Gender of HH head	Elderly members in HH								
Female	No	A		E	F	G		I	
	Yes	B							
Male	Yes	B		E	F	G		I	
	No	C	D						H

...but not in durable toilets.  
Let's understand why

Non-durable individual toilets  
**77.2%**

Non-durable shared toilets  
**22.8%**

## Segment G | Customer story

*Roselyne lives with her parents and two children. She is educated till secondary school. She currently works in agriculture, on her own farm.*

*Roselyne and her family live in their own house, which is built with temporary materials, and are quite poor. They do not have access to electricity or a solar panel, but own agricultural land and their own farm animals. They also own a mobile phone. They typically obtain piped drinking, and have access to a hardware store; they need to travel 15-30 minutes by a two-wheeler.*

*Roselyne strongly believes that it is important to keep the community clean, and is well-aware of the benefits of owning a toilet. She has invested in an individual toilet to avoid sharing toilets with other households. However, she prioritizes affordability over durability while considering her options, given her limited income.*

*Roselyne and her family have their own traditional toilet, which has a 15-foot deep unlined pit, and a shelter with an iron sheet roof and walls built with mud, bricks, and poles.*

*Roselyne desires a two-stance toilet with an unlined pit that is at least 20-feet, and with a concrete floor. She is willing to pay ~KES 5,000 for this toilet. She has never taken a loan for a toilet before, as she fears not being able to repay it.*

# Segment G | Customer persona

## Setting

- **Typical family size:** 5 people, with 2 children under the age of 10
- **Type of house:** Predominantly live in temporary material houses
- **Income and occupation:** Typically receive non-seasonal income; agriculture (on their own farm) is the dominant occupation
- **Mobile phone:** Nearly all households have a mobile phone
- **Mobile money:** Nearly all households have access to mobile money transfer platforms
- **Total value of assets:** Households are less affluent; the average total asset value per household is KES 19,000<sup>1</sup>
- **Bank account and savings groups:** Over half of the segment are members of a savings group<sup>2</sup>; most do not have a bank account
- **Loans:** Nearly three-quarters of the segment have not taken a loan in the past



## Mental Model

- Believe that **building a toilet is a high priority** and prefer not sharing the toilet with members outside the household
- Believe that having your **own toilet reduces the risk of diseases spreading**
- **Show an aversion to sharing** toilets but are not willing to invest a significant amount in a toilet
- Recognize that toilets provide **safety at night** and a **greater degree of privacy** than open defecation; acknowledge that having your own toilet allows you to defecate **conveniently and comfortably**
  - **Desire respect** from people in their community
  - **Conformity is important to many households**, with over half of the households suggesting that one should not do things differently from their community
    - **Community cleanliness is a priority**

- **Current product:** Non-durable individual toilets; a fourth have non-durable shared toilets
- **Desired product:** A toilet that is durable, easy to clean, and provides privacy, and has the following attributes:
  - **Substructure:** An onset pit, unlined or partially-lined with concrete blocks and mortar, over 20-feet deep
  - **Interface:** Two stances, a concrete floor with cement footrests
  - **Superstructure:** An iron sheets shelter
- **Willingness to pay:** ~KES 5,000<sup>1</sup>
- **Financing:** Do not take a loan for toilet construction, because they fear not being able to repay it; material providers and service providers are often paid in lump-sums

## The Ask

Source: FSG quantitative survey with 221 rural households across Busia, Kakamega and Homa Bay

1. Figure has been rounded off to the nearest 500

2. Savings groups include MFIs, SACCOs and informal self-help groups called chamas

# Segment G | Key demographic statistics

Segment size		Demographics		Income & occupation		Access indicators	
% of potential market	7.6%	Family size (avg.)	5	<b>Nature of income</b>		<b>Distance to nearest HW store<sup>1</sup></b>	
# of households	160K	<b>Gender of HH head</b>		Non-seasonal	59.2%	<15 minutes	42.1%
<b>Sanitation profile</b>		Male	0.0%	Seasonal	40.8%	15 to 30 minutes	51.2%
Non-durable individual toilets	77.2%	Female	100.0%	<b>Primary occupation</b>		> 30 minutes	6.7%
Non-durable shared toilets	22.8%	<b>Highest education in HH</b>		Works on own farm	60.5%	<b>Access to electricity</b>	16.3%
		No education	0.0%	Works on other's farm	7.9%	<b>Drinking water source</b>	
		Primary	44.9%	Own business	23.8%	Well	46.6%
		Secondary	50.6%	Employed	4.5%	Piped or other	53.4%
		University	4.5%	Other	3.3%	Surface water <sup>2</sup>	0.0%

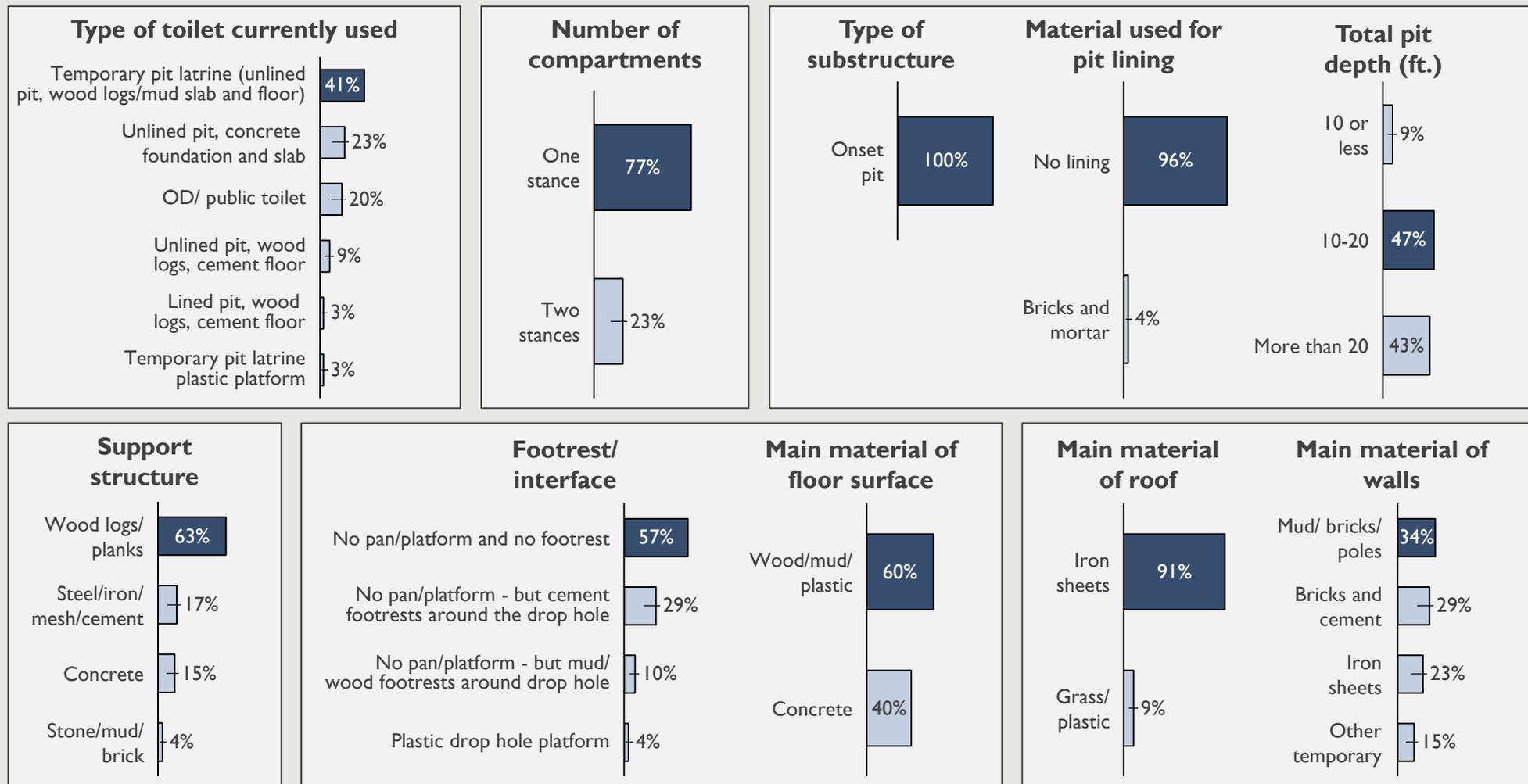
Affluence indicators		Assets and other indicators		Attitudes & beliefs	
<b>Total stated monthly expenditure</b>		<b>Assets and other indicators</b>		I would be willing to pay for products that are prestigious	
High (> KES 10K)	36.6%	Agriculture land	95.9%	55.3%	
Medium (KES 5K-10K)	14.0%	Computer	0.0%	It is embarrassing to be seen defecating in the open	
Low (< KES 5K)	49.3%	Solar panel	47.5%	95.9%	
<b>Total asset value (avg.)</b>	19.15k	Refrigerator	0.0%	Cleanliness of my community is important to me	
<b>Total asset value (spread)</b>		Farm animals	68.5%	100%	
High (> KES 20K)	31.0%	Bicycle	23.1%	It is taboo to use or live near a toilet	
Medium (KES 15K-20K)	8.6%	Mobile	100.0%	43.4%	
Low (< KES 15K)	60.4%	Television	15.8%		
		Car or truck	0.0%		
		Motorbike	4.5%		

1. Distance to nearest hardware store is calculated based on time taken to reach by bike/ two-wheeler

2. Surface water includes water from ponds, springs, rainwater harvesting, etc.

# Segment G | Current sanitation profile

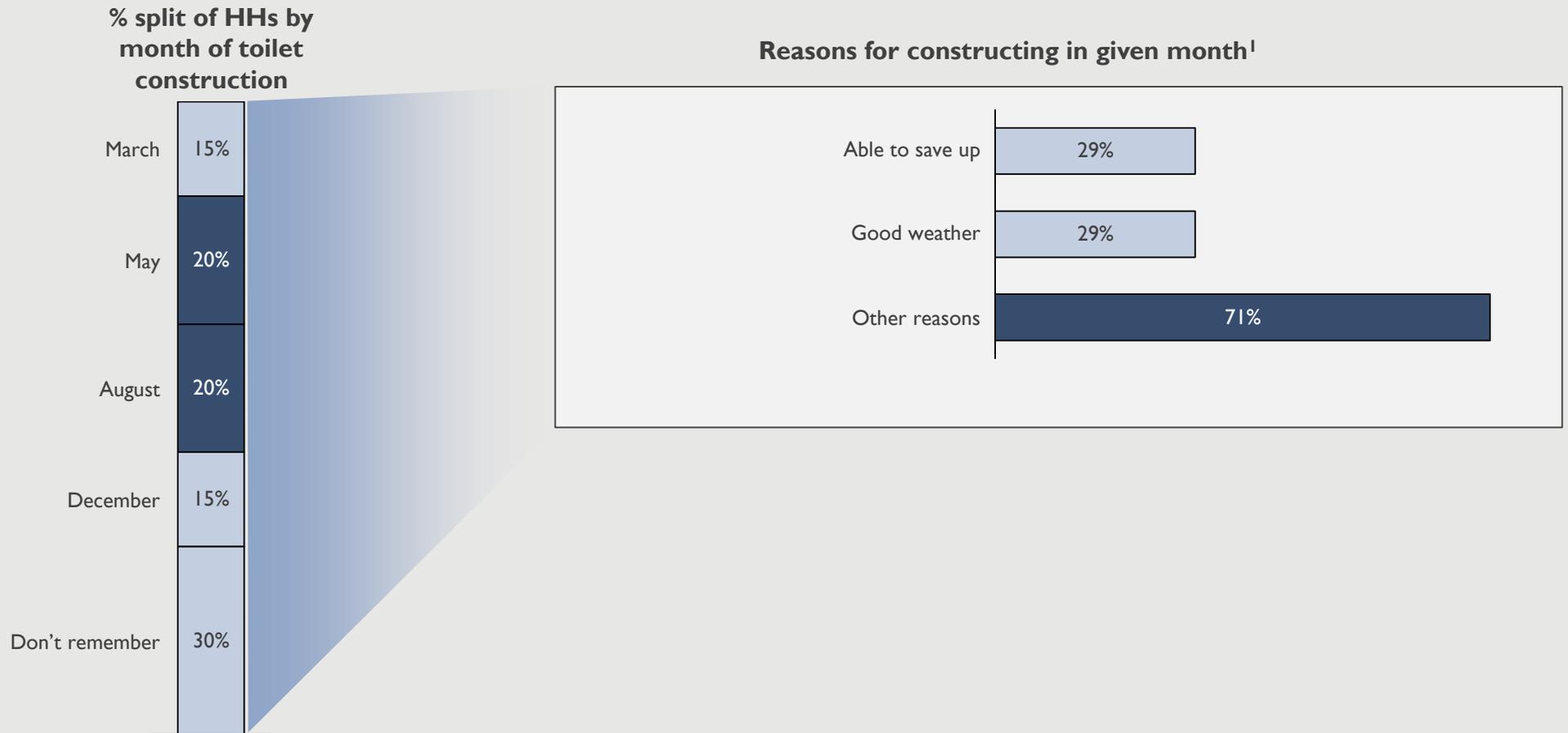
Toilet users in this segment typically use a one-stance traditional pit latrine, with a 10-20 feet unlined onset pit, a wood/mud/ plastic floor with no platform or footrests, iron sheets roof and mud/ bricks/ poles walls



**Note:** Questions related to the toilet components were not asked to HHs that resort to OD or use shared facilities

# Segment G | Typical month of construction

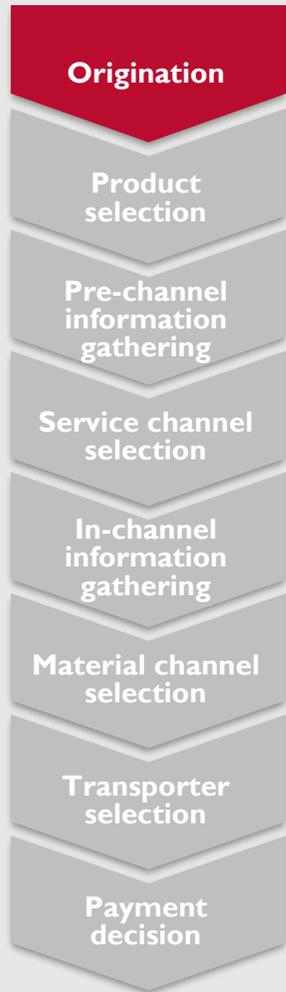
Households commonly construct toilets in the month of May or August, as it coincided with various reasons such as existing pit filling up or collapsing



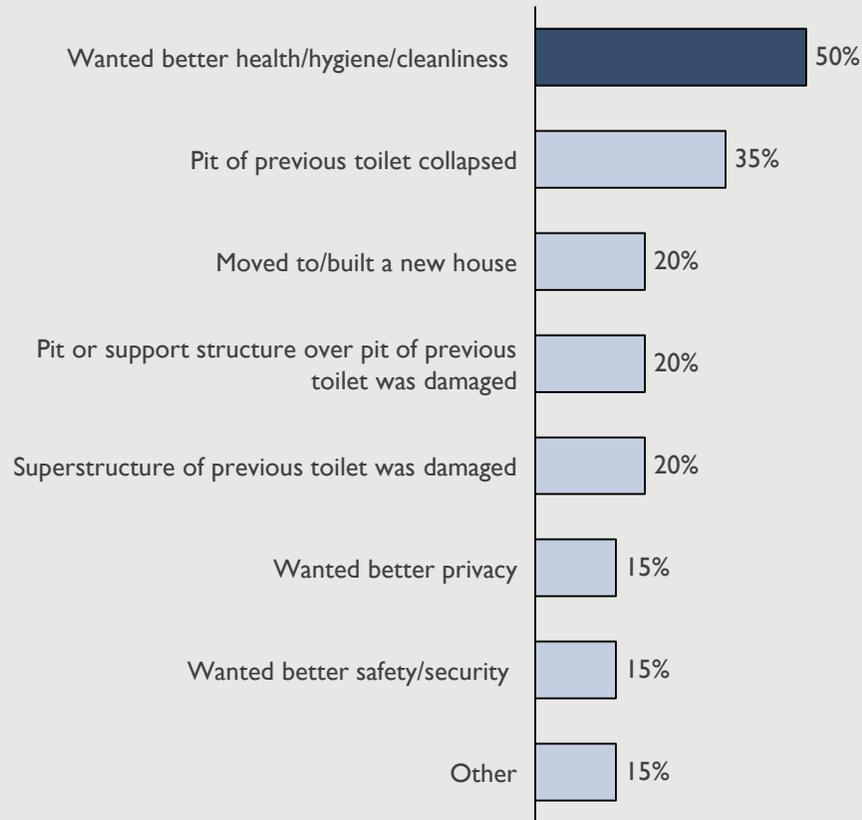
1. Households responding with other mentioned various reasons such as their existing pit filling up or collapsing, or they realized they no longer wanted to practice OD

# Segment G | Buying process (1/9)

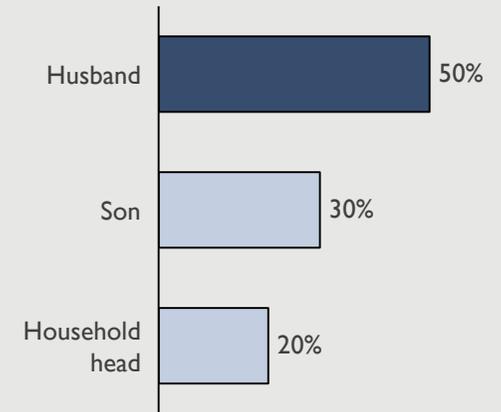
Many households wanted to construct a toilet because they wanted a more hygienic defecation place; toilet construction discussions were initiated by the husband



### Origination of need for toilet

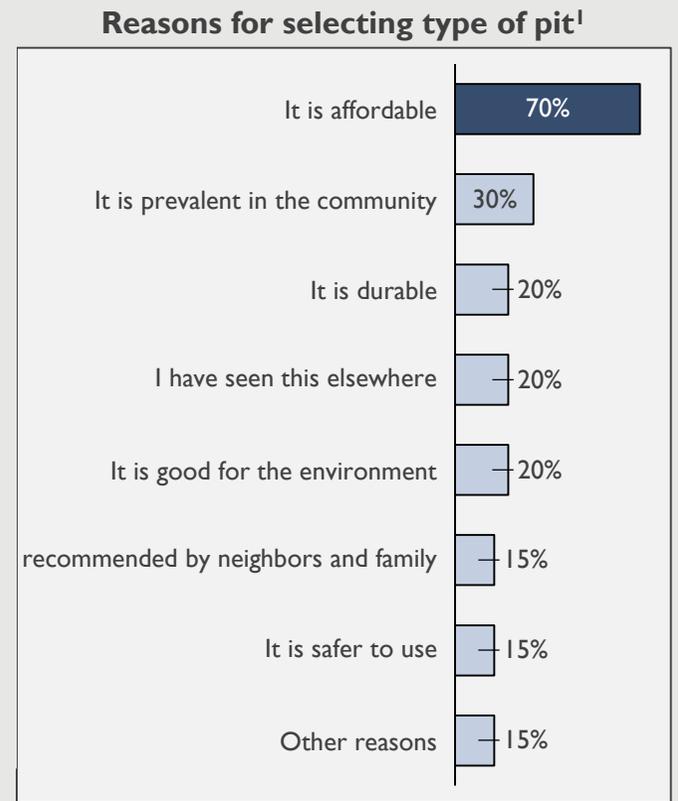
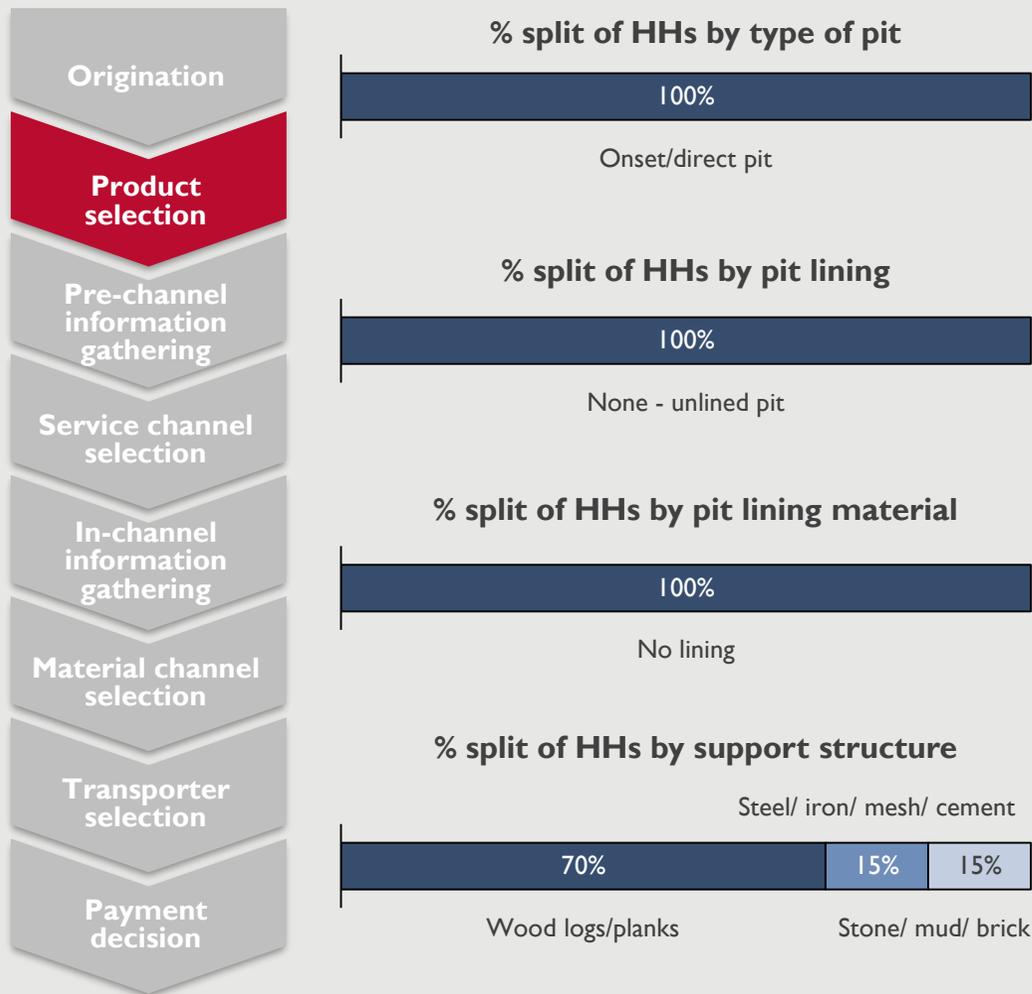


### Person who initiated discussion



# Segment G | Buying process (2/9)

Households typically selected an unlined onset pit supported by wood logs/ planks...



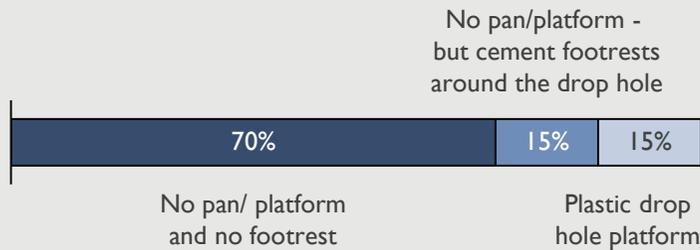
1. Other reasons for selecting this pit include safety for children, lack of capital, and easily accessible materials

# Segment G | Buying process (3/9)

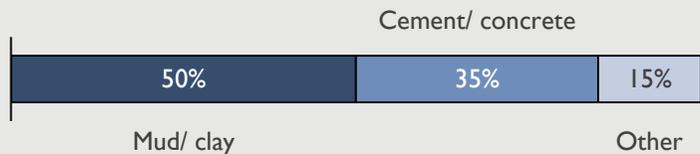
...with a mud/ clay floor and no platform or footrests, as they believed this was easy to keep clean



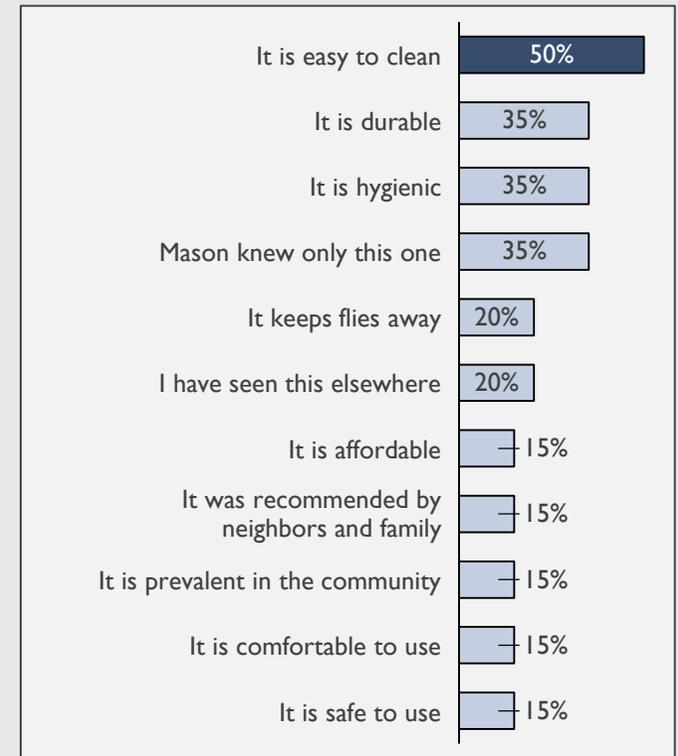
**% split of HHs by interface**



**% split of HHs by floor material**



**Reasons for selecting type of floor and interface**

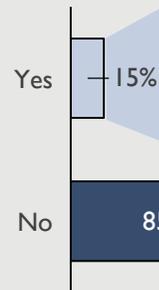


# Segment G | Buying process (4/9)

A majority of households did not seek information while constructing a toilet, primarily because they felt that information was common knowledge; information was typically easy to access from relatives and family members



## Sought information while building a toilet



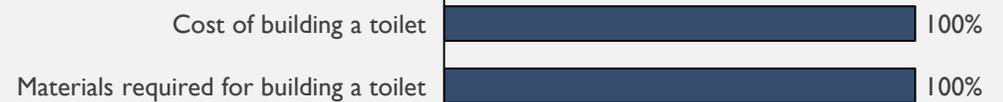
## Ease of access to information



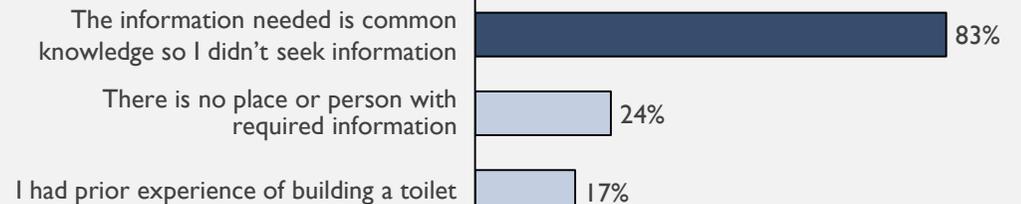
## Sources of information about toilets



## Nature of information sought



## Reasons for not seeking information

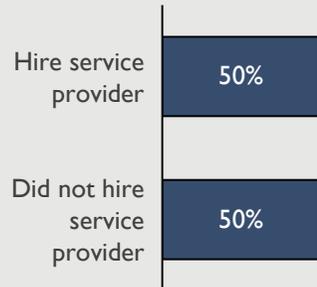


# Segment G | Buying process (5/9)

Households hire a service provider who has been seen working in the area and is affordable; those that manage the process themselves do so because they feel it is too expensive to hire someone



## Hired service provider to manage construction process<sup>1</sup>



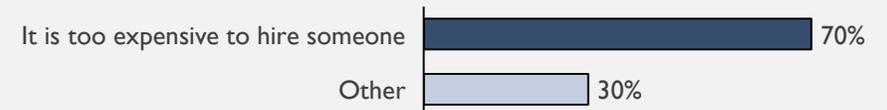
## Source for finding service provider



## Basis for selecting service provider



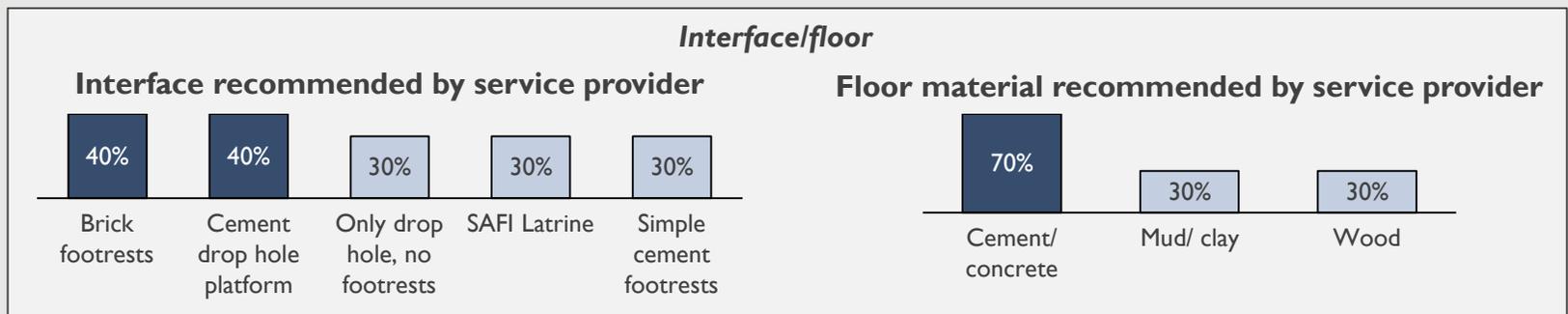
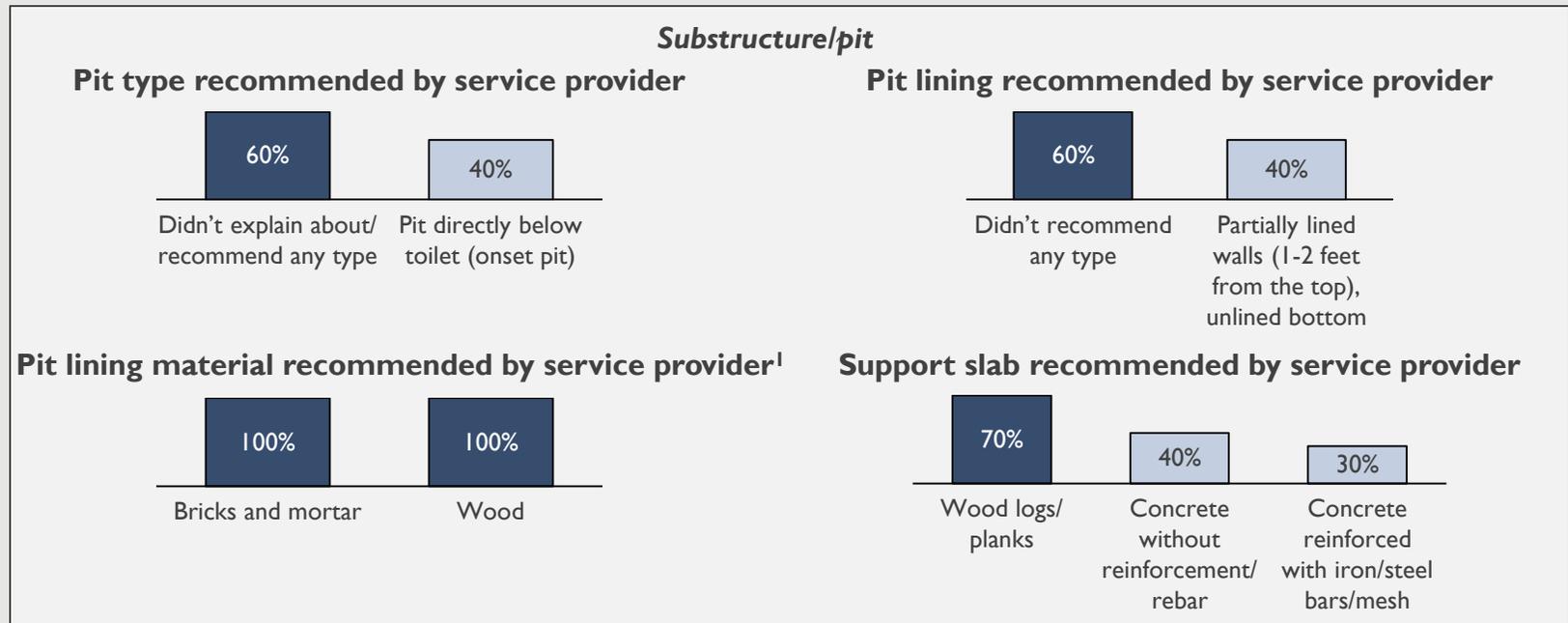
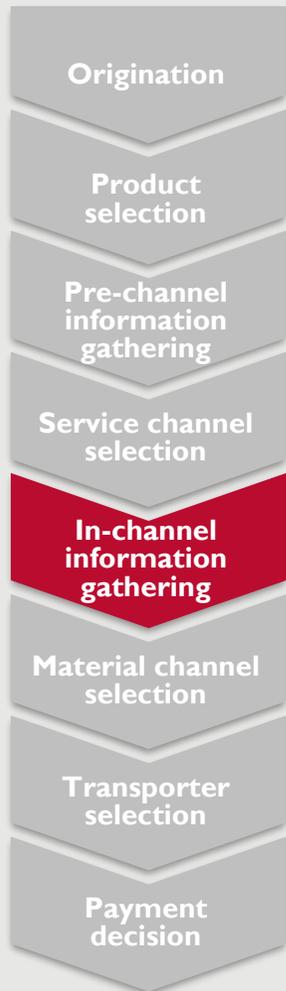
## Reasons for not hiring any service provider for toilet construction



1. Households that did not hire a service provider, oversaw the construction process themselves but had a friend, older son or nephew, or a sibling who was a mason or pit digger, assist them in the construction process

# Segment G | Buying process (6/9)

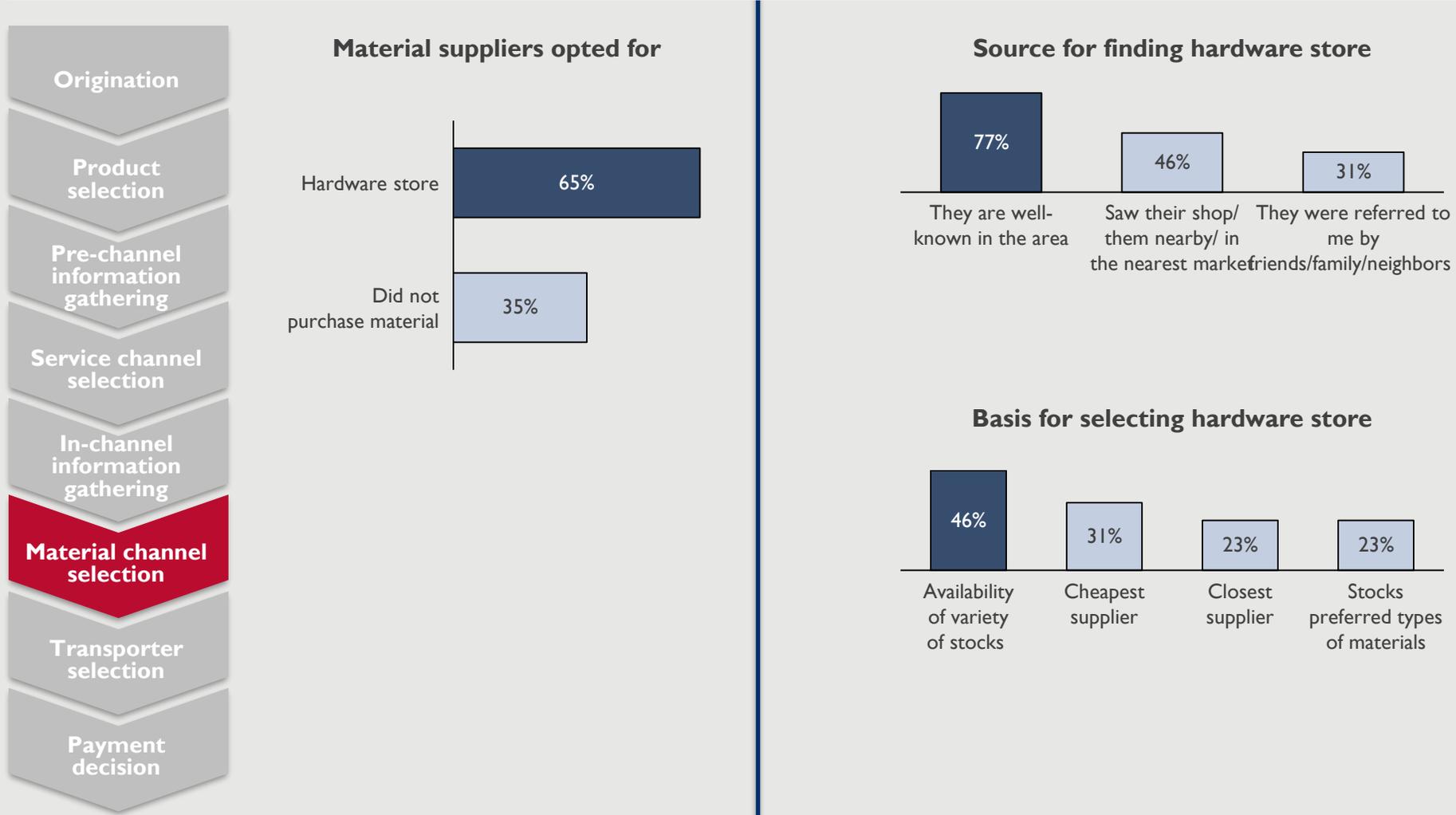
Masons did not always recommend components, but those that did recommended onset pits, partially-lined with wood or bricks and supported with wood logs/ planks, and a cement floor with brick footrests or a cement drop-hole



1. Proportions are for those who were recommended a fully or partially-lined pit by the service provider

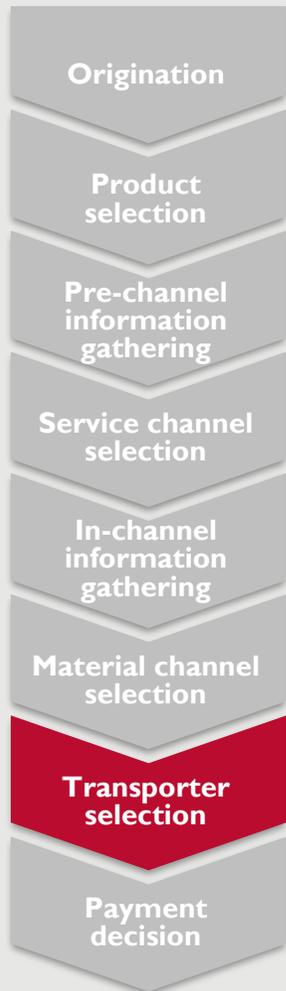
# Segment G | Buying process (7/9)

Households typically chose to source materials from hardware suppliers; certain suppliers were selected because they were well known in the area and had maintained a variety of stocks

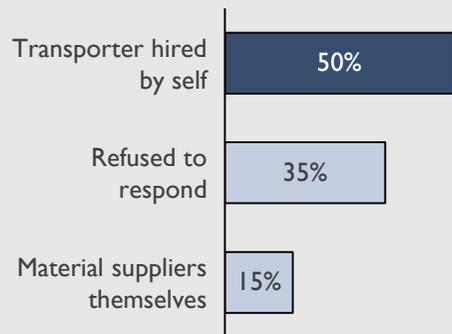


# Segment G | Buying process (8/9)

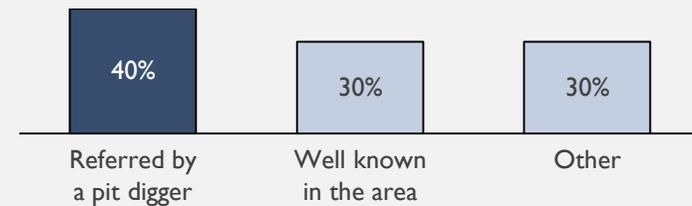
Households typically hired a transporter for their materials themselves; they chose transporters based on referrals from other service providers, and affordability



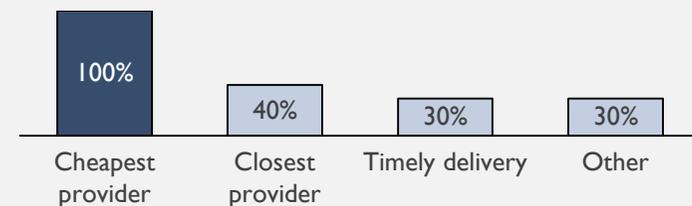
## Material transport option preferred



## Source for finding transporter hired by self<sup>1</sup>



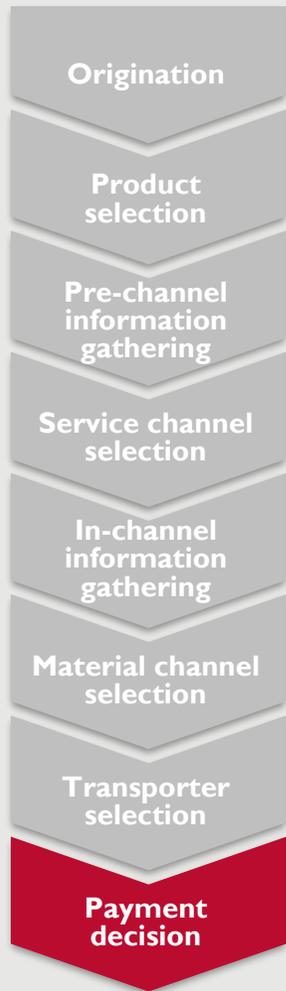
## Basis for selecting transporter hired by self<sup>2</sup>



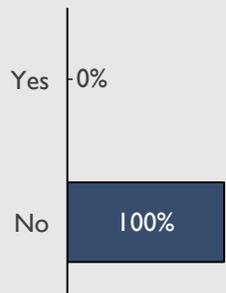
1. Households that chose 'other' for source for finding transporter hired by self used motorbikes that are easily found in the area, the help of a family member, friend, or neighbor
2. Households that chose 'other' for basis for selecting transporter hired by self mentioned reasons such as free service, lack of money, ease of availability, and ease of access through narrow roads

# Segment G | Buying process (9/9)

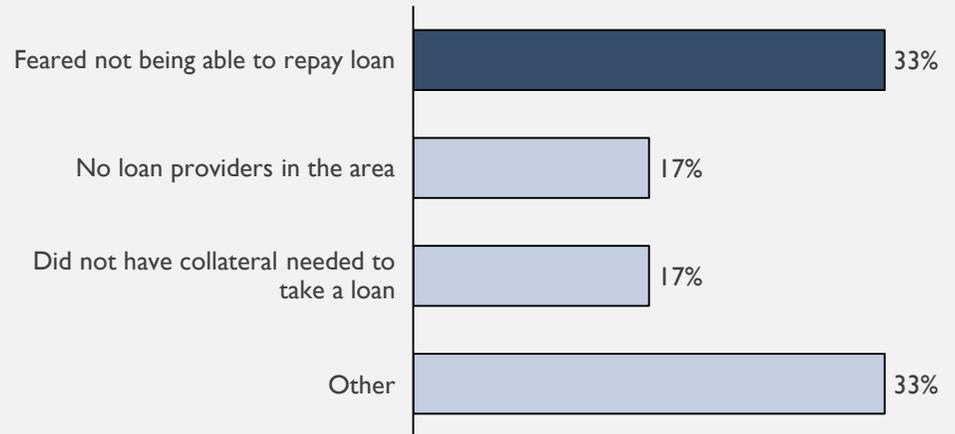
None of the households used a loan for toilet construction because they felt they were afraid of failure of repayment; hardware stores and material suppliers were often paid in a lump-sum



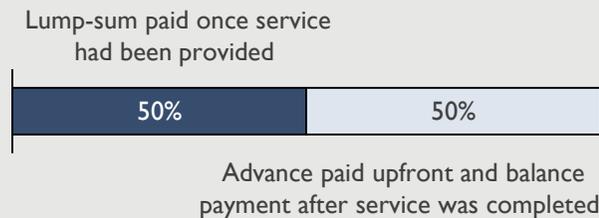
**% HHs using loans to finance toilet construction**



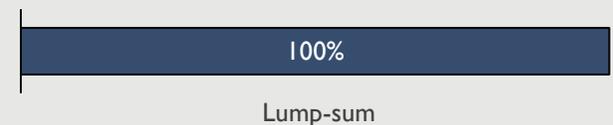
**Reasons for not using loan<sup>1</sup>**



**% split of HHs by payment to service provider**



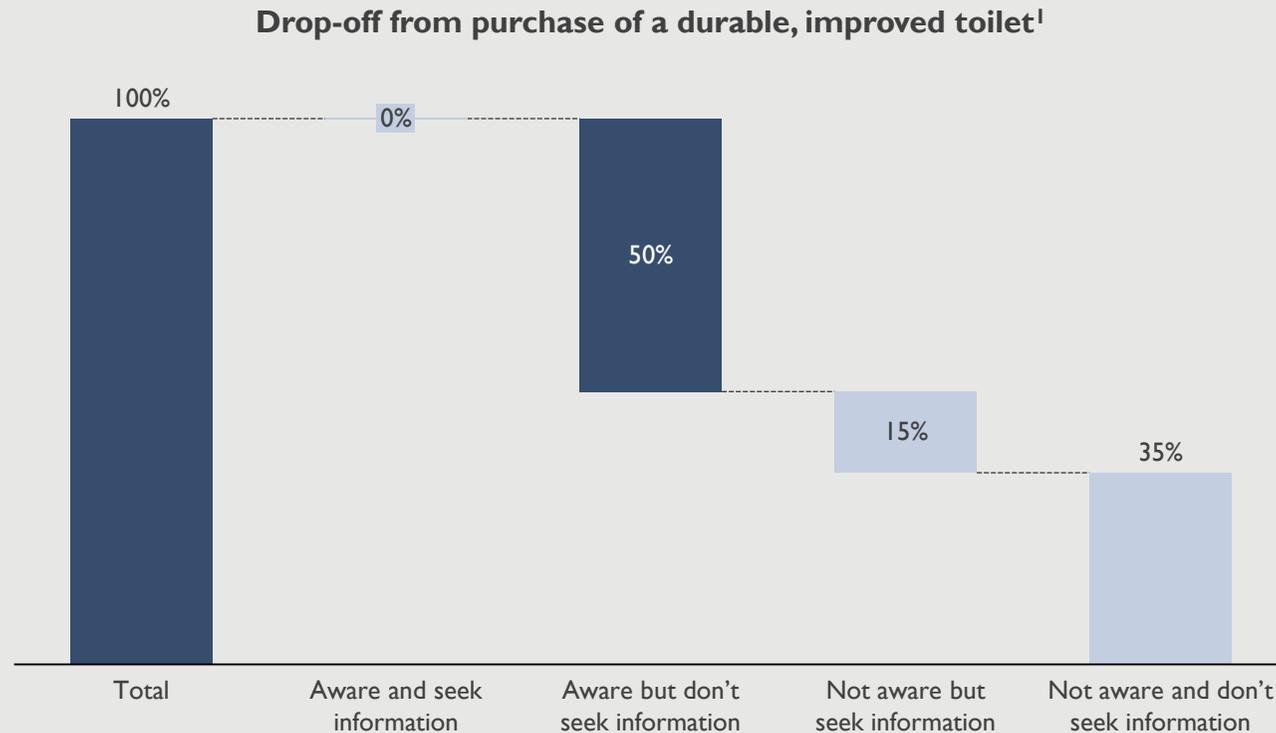
**% split of HHs by payment to hardware store**



1. Households that selected 'other' for not using loans mentioned varied reasons such as already having the finances, COVID related concerns, not being a member of savings group, etc.

# Segment G | Drop-offs from actual buying process

Most households do not purchase durable toilets as they do not seek information when considering building a toilet, despite being aware of durable components

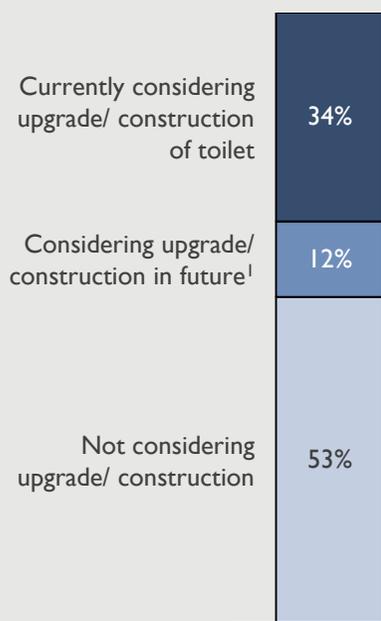


1. Households are considered to be aware if they know at least one durable component each for floor, interface, pit lining, and support structure of a toilet

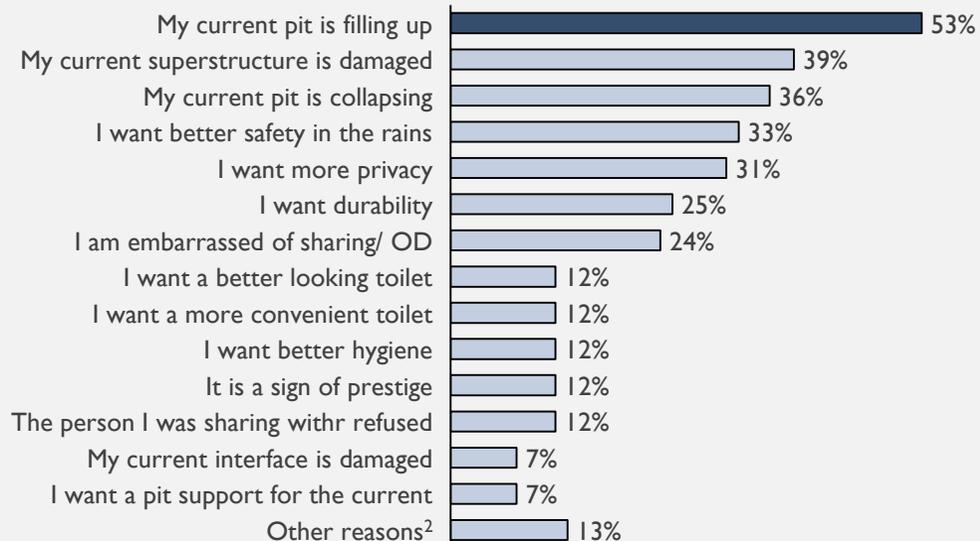
# Segment G | Future consideration

Most households will consider constructing or upgrading in the future if they have enough money left over after other priorities; those that are currently considering upgrading or constructing are doing so because their pits are filling up

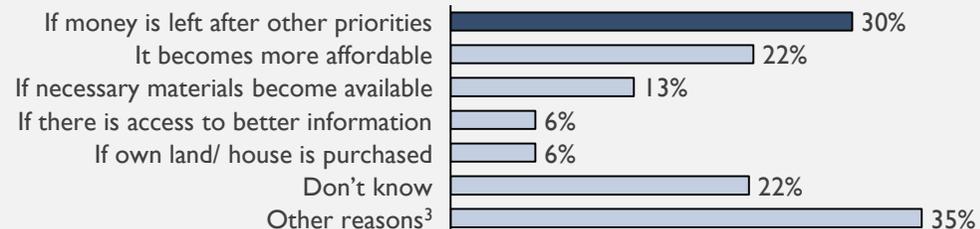
**% split of HHs without their own toilet by future preference for toilet purchase/upgrade**



**Reasons for currently considering toilet purchase/upgrade**



**Factors that could influence consideration in the future**



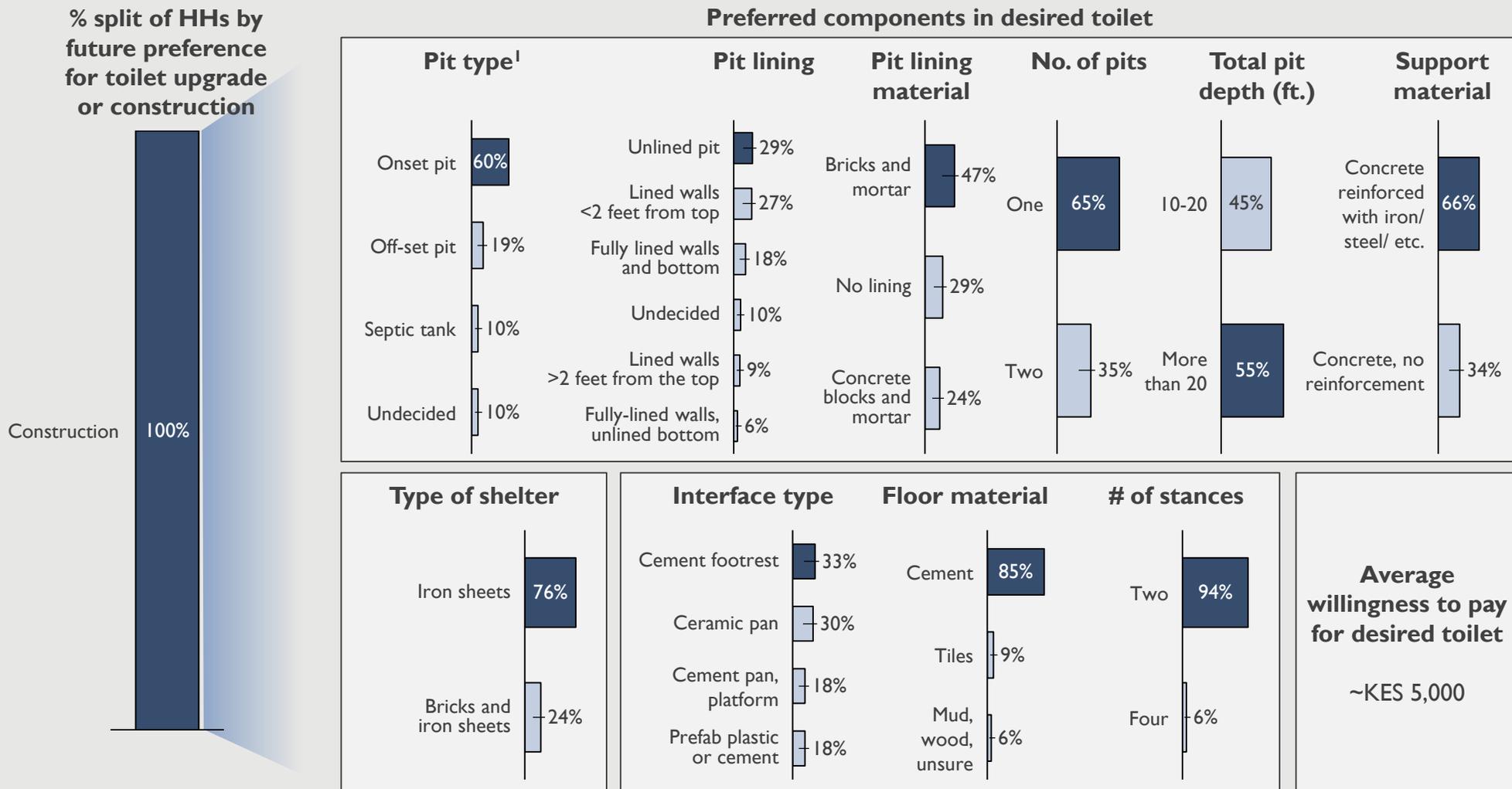
1. Those who were considering construction/ upgrade in the future were not asked for their reasons as their intent is unclear

2. Other reasons for currently considering a new toilet include needing more privacy from older members of the household or for visitors to use, and existing pit beginning to fill up

3. Other reasons that could influence future consideration include better access to assistance for labor and finances, existing pit filling up, and collapse of existing structure

# Segment G | Desired toilet

Segment G households desire a new construction with two stances, an unlined onset pit, over 20-feet deep, a cement floor, and an iron sheets shelter



1. If 'Pit type' chosen is sewer connection, further questions regarding pits are not asked to the respondents; proportions shown in all further charts on pits exclude respondents who chose sewer connection as their pit type

# Segment profiles | Segment H

Durable, improved shared

**2.0%**

Non-durable individual toilets

**53.7%**

Non-durable shared toilets

**39.8%**

OD

**4.4%**

**Segment H households have the desire and ability to pay for durable toilets...**

Source of drinking water		Surface		Well		Piped		
		Yes	No	Yes	No		Yes	No
Bank account		Yes	No	Yes	Yes	No	Yes	No
Solar panel ownership					Yes	No		
Gender of HH head	Elderly members in HH							
Female	No	A		E	F	G		I
	Yes	B						
Male	Yes	B		E	F	G		I
	No	C	D			H		

**...but they do not have one currently.  
Let's understand why**

## Segment H | Customer story

*Emmanuel lives with his wife, two children, and his brothers. He has completed education till secondary school. He currently works in agriculture, on his own farm.*

*Emmanuel and his family live in their own house, which is built with temporary materials, and are highly affluent. They don't have access to electricity, but use a solar panel. They own agricultural land and their own farm animals. They also own a mobile phone. They typically obtain drinking water from a well, and have access to a hardware store; they need to travel less than 15 minutes by a two-wheeler.*

*Emmanuel strongly believes that it is important to keep the community clean, and is well-aware of the benefits of owning a toilet. He desires respect from the community, but doesn't believe it's necessary to follow in the example of other community members. He invests a significant amount in constructing a toilet, but feels durability can be still improved. However, he worries that a truly durable toilet will be too expensive.*

*Emmanuel and his family have their own traditional toilet, which has a 30-foot deep unlined pit, and a shelter with iron sheet roof and walls.*

*Emmanuel desires a two-stance toilet with a fully-lined pit that is at least 20-foot deep, and with a concrete floor. Emmanuel is willing to pay ~ KES 27,000 for this toilet. He has never taken a loan for a toilet before, because he prefers to use his own savings to finance the construction.*

# Segment H | Customer persona

## Setting

- **Typical family size:** 6 people, with 2 children under the age of 10
- **Type of house:** Predominantly live in temporary material houses
- **Income and occupation:** Typically receive non-seasonal income; agriculture (on their own farm) is the dominant occupation
- **Mobile phone:** Nearly all households have a mobile phone
- **Mobile money:** Nearly all households have access to mobile money transfer platforms
- **Total value of assets:** Households are highly affluent; the average total asset value per household is KES 79,000<sup>1</sup>
- **Bank account and savings groups:** Over two-thirds of the segment are members of a savings group<sup>2</sup>; most do not have a bank account
- **Loans:** Nearly two-thirds of the segment have not taken a loan in the past

## Mental Model

- Believe that **building a toilet is a high priority**
- **Perceive durable toilets to be costly;** believe that higher prices for products and labor signal better quality
- **Community cleanliness is a significant priority;** show a willingness to share toilets to discourage OD
- Recognize that toilets provide **safety at night** and a **greater degree of privacy** than open defecation; acknowledge that having your own toilet allows you to defecate **conveniently and comfortably**
  - **Desire respect** from people in their community but **do not necessarily value conformity**
  - **Value products that make their life more convenient,** and that are **prestigious**



- **Current product:** Non-durable individual toilets; two-fifths of the segment have non-durable shared toilet
- **Desired product:** A toilet that is durable, provides privacy, can be used by visitors. and has the following attributes:
  - **Substructure:** An onset pit, fully-lined with bricks and mortar, over 20-feet deep
  - **Interface:** Two stances, a concrete floor with mud or cement footrests
  - **Superstructure:** An iron sheets shelter
- **Willingness to pay:** ~KES 27,000<sup>1</sup>
- **Financing:** Do not take a loan for toilet construction, because they believe they can pay using their own savings; material providers are often paid in lump-sums while service providers are paid in installments

## The Ask

Source: FSG quantitative survey with 221 rural households across Busia, Kakamega and Homa Bay

1. Figure has been rounded off to the nearest 500

2. Savings groups include MFIs, SACCOs and informal self-help groups called chamas

# Segment H | Key demographic statistics

Segment size		Demographics		Income & occupation		Access indicators	
% of potential market	12.2%	Family size (avg.)	6	<b>Nature of income</b>		<b>Distance to nearest HW store<sup>1</sup></b>	
# of households	258K	<b>Gender of HH head</b>		Non-seasonal	62.6%	<15 minutes	51.2%
<b>Sanitation profile</b>		Male	100.0%	Seasonal	37.4%	15 to 30 minutes	28.4%
Durable, improved shared	2.0%	Female	0.0%	<b>Primary occupation</b>		> 30 minutes	20.4%
Non-durable individual toilets	53.7%	<b>Highest education in HH</b>		Works on own farm	37.8%	<b>Access to electricity</b>	33.8%
Non-durable shared toilets	39.8%	No education	0.0%	Works on other's farm	13.2%	<b>Drinking water source</b>	
OD	4.4%	Primary	22.0%	Own business	13.2%	Well	60.4%
		Secondary	78.0%	Employed	10.8%	Piped or other	39.6%
		University	0.0%	Other	25.0%	Surface water <sup>2</sup>	0.0%

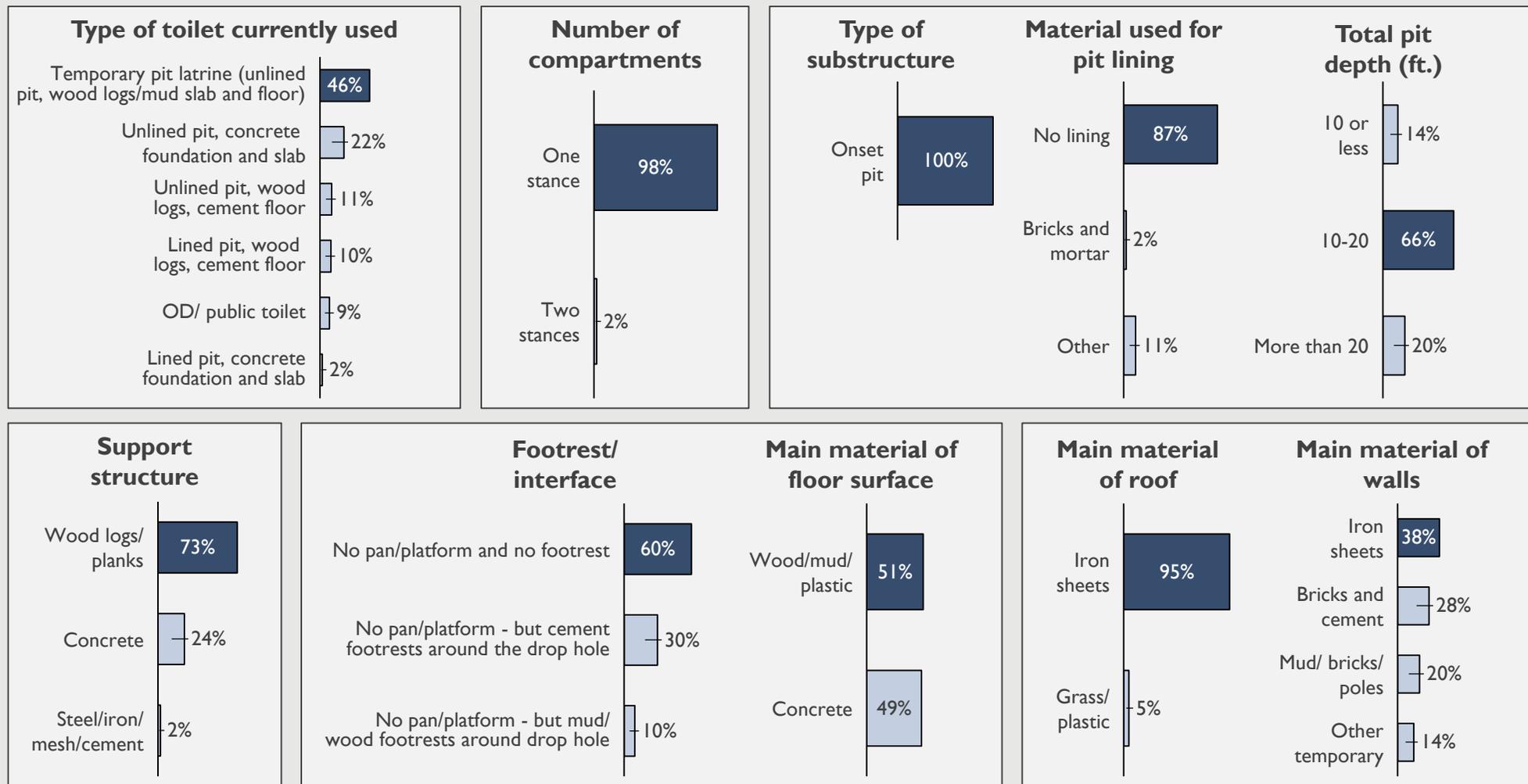
Affluence indicators		Assets and other indicators		Attitudes & beliefs	
<b>Total stated monthly expenditure</b>		<b>Assets and other indicators</b>		I would be willing to pay for products that are prestigious	
High (> KES 10K)	56.7%	Agriculture land	94.9%	70.3%	
Medium (KES 5K-10K)	16.6%	Computer	0.0%	It is embarrassing to be seen defecating in the open	
Low (< KES 5K)	26.8%	Solar panel	61.9%	95.6%	
<b>Total asset value (avg.)</b>	78.7k	Refrigerator	0.0%	Cleanliness of my community is important to me	
<b>Total asset value (spread)</b>		Farm animals	70.7%	95.6%	
High (> KES 20K)	51.4%	Bicycle	29.1%	It is taboo to use or live near a toilet	
Medium (KES 15K-20K)	19.3%	Mobile	100.0%	36.5%	
Low (< KES 15K)	29.3%	Television	47.7%		
		Car or truck	5.7%		
		Motorbike	30.3%		

1. Distance to nearest hardware store is calculated based on time taken to reach by bike/ two-wheeler

2. Surface water includes water from ponds, springs, rainwater harvesting, etc.

# Segment H | Current sanitation profile

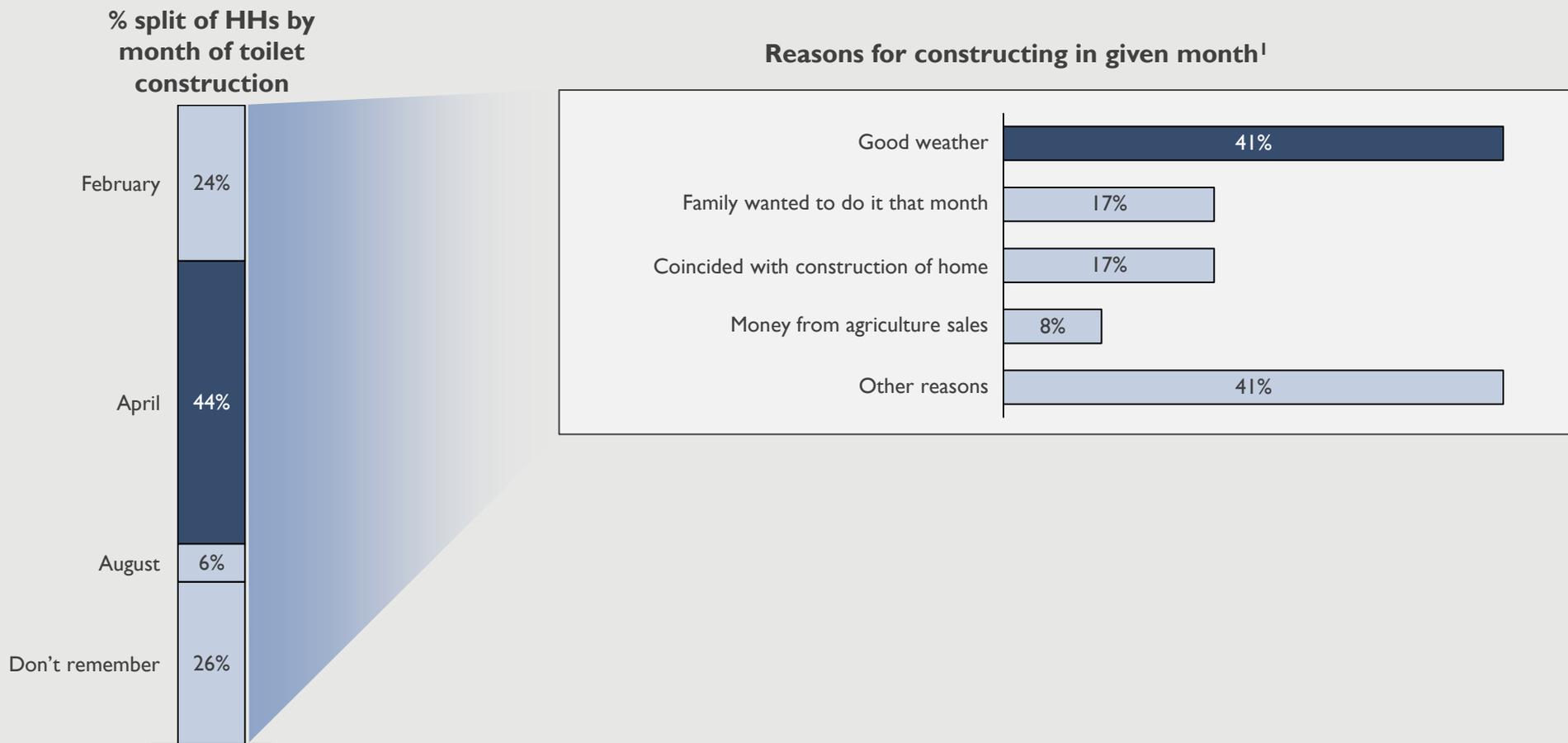
Toilet users in this segment typically use a one stance traditional pit latrine, with a 10-20 feet unlined onset pit, a wood/mud/ plastic floor with no platform or footrests, and iron sheets roof and walls



**Note:** Questions related to the toilet components were not asked to HHs that resort to OD or use shared facilities

# Segment H | Typical month of construction

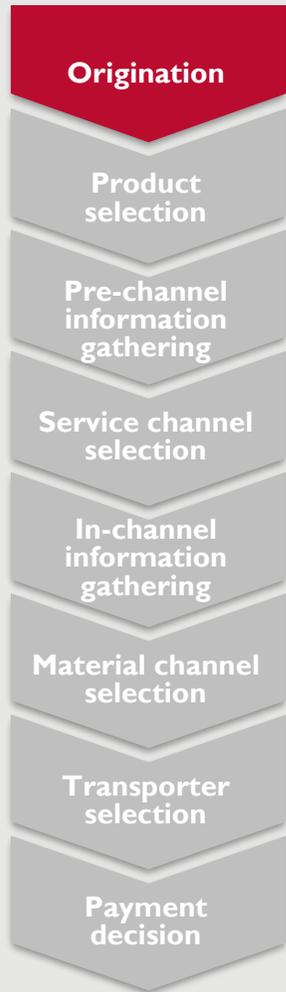
Households commonly construct toilets in the month of April, typically due to good weather or because of other reasons such as their existing pit filling up or due to collapse of the existing structure



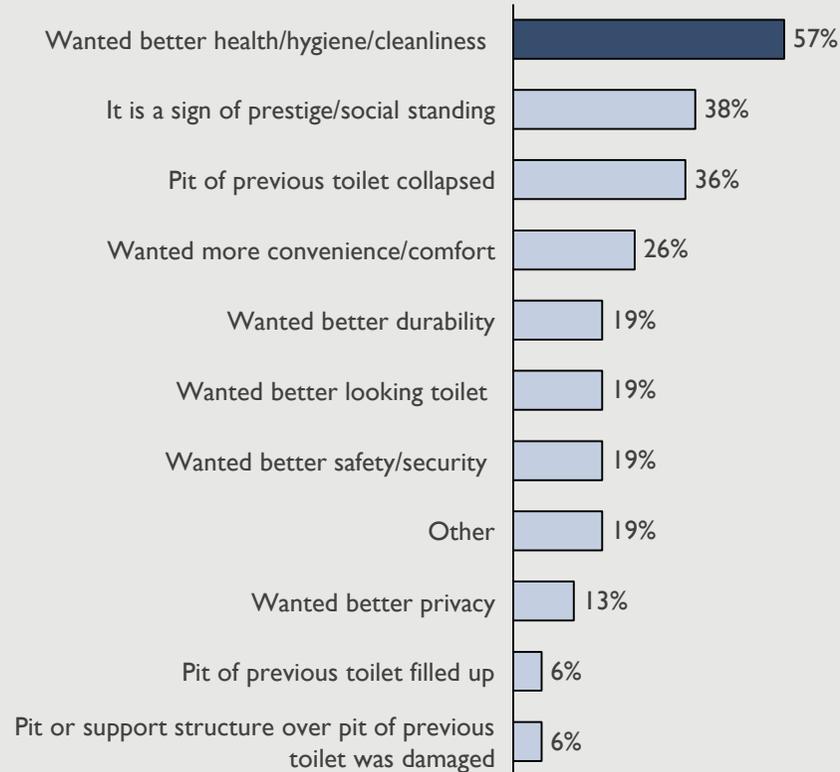
1. Households responding with other mentioned various reasons such as their existing pit filling up or collapsing, or they realized they no longer wanted to practice OD

# Segment H | Buying process (1/9)

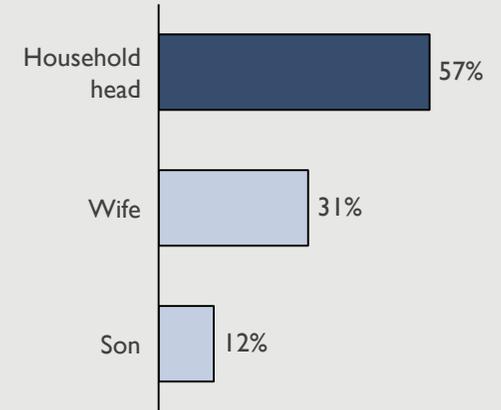
Most households wanted to construct a toilet because they wanted a more hygienic defecation place; toilet construction discussions were initiated by the household head



## Origination of need for toilet

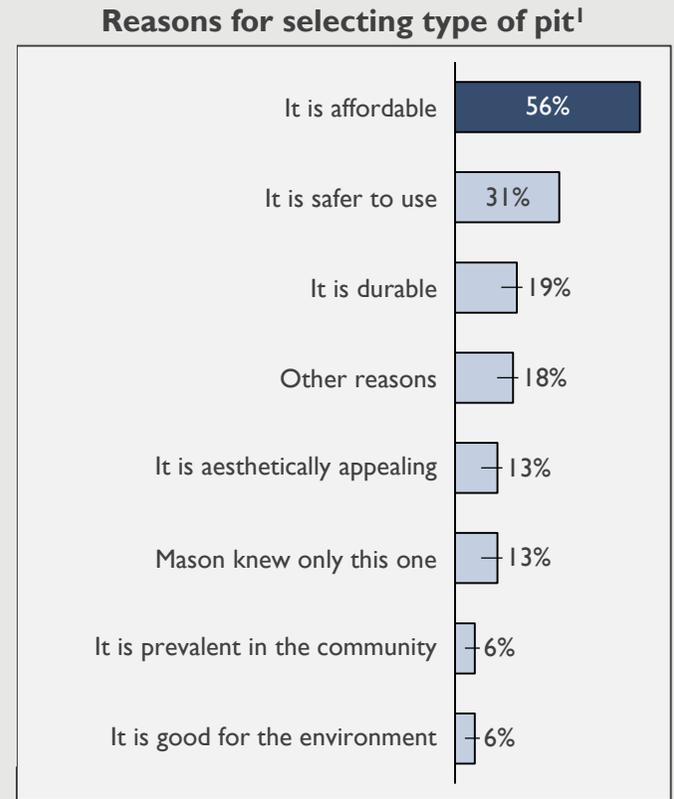
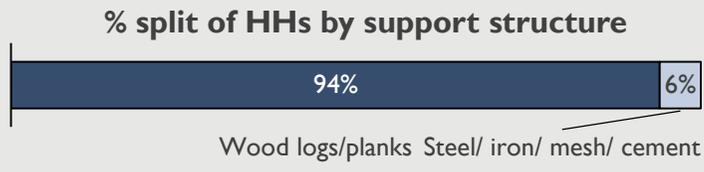
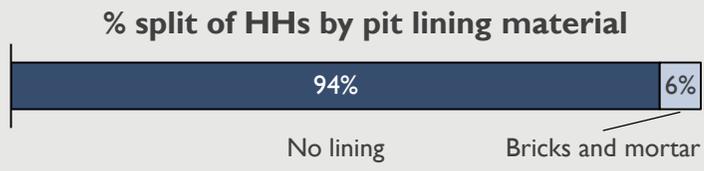
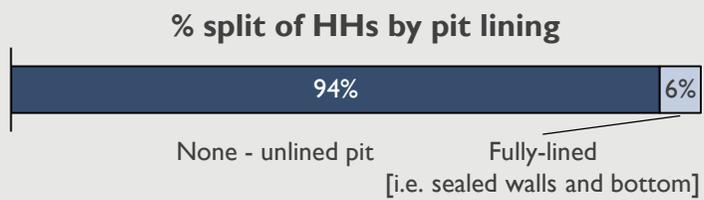
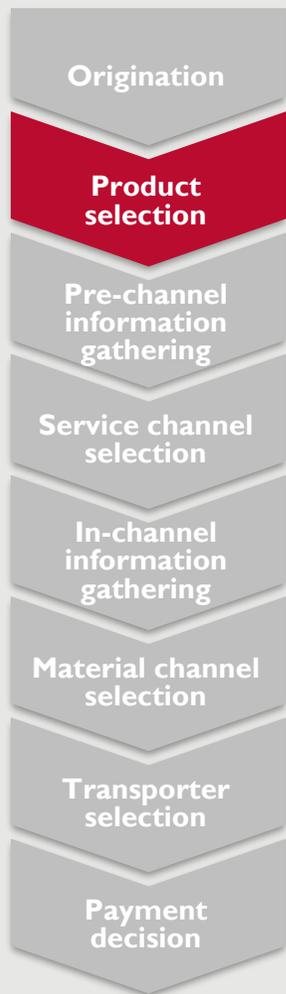


## Person who initiated discussion



# Segment H | Buying process (2/9)

Households typically selected an unlined onset pit supported by wood logs/ planks...



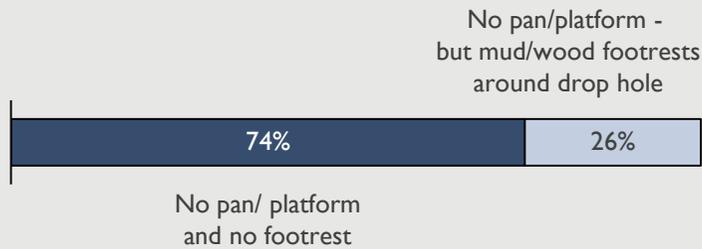
1. Other reasons for selecting this pit include safety for children, lack of capital, and easily accessible materials

# Segment H | Buying process (3/9)

...with a mud/ clay floor and no platform or footrests, due to affordability



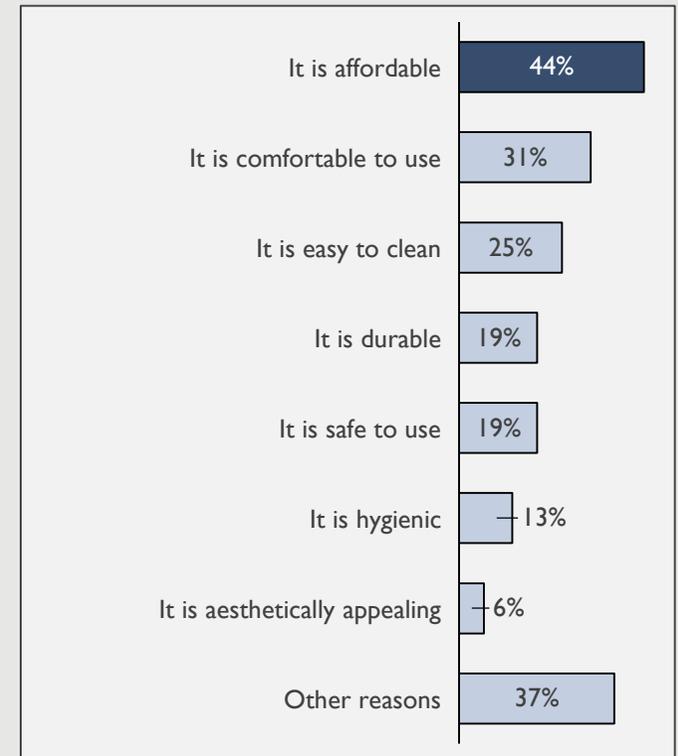
**% split of HHs by interface**



**% split of HHs by floor material**



**Reasons for selecting type of floor and interface<sup>1</sup>**



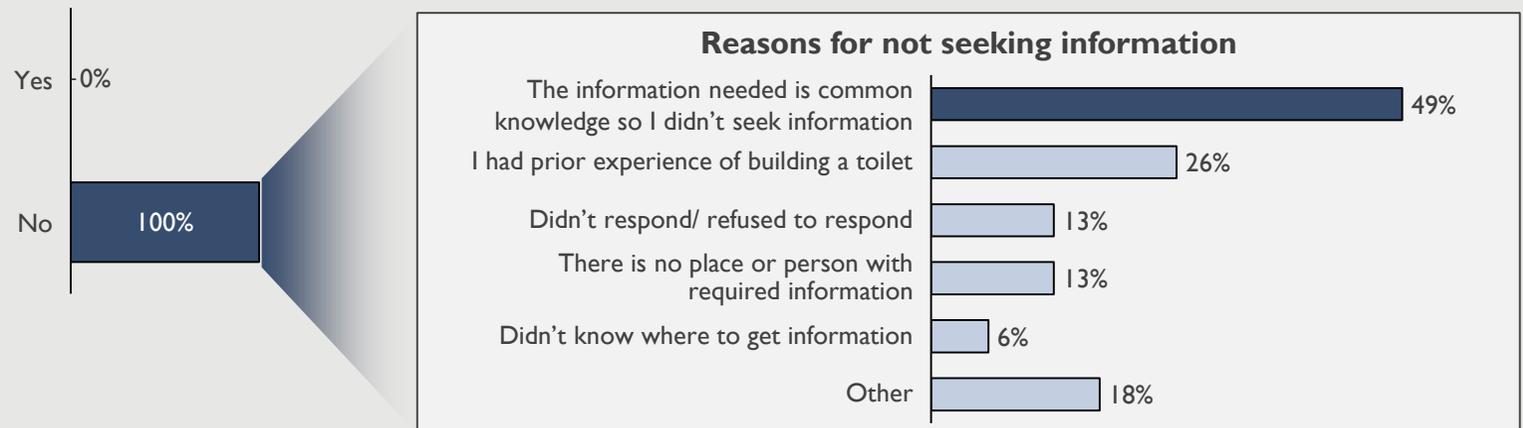
1. Households that responded with 'other reasons' for selecting type of floor and interface mostly responded with lack of money

# Segment H | Buying process (4/9)

Households did not seek information while constructing a toilet, primarily because they felt that information was common knowledge



## Sought information while building a toilet



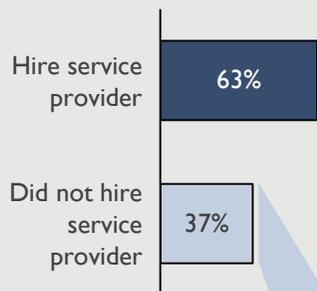
1. Households responding with 'Other' for reasons for not seeking information cited reasons such as it being an emergency case and hence not having the time to seek information, or because someone in the family already had the information that was needed

# Segment H | Buying process (5/9)

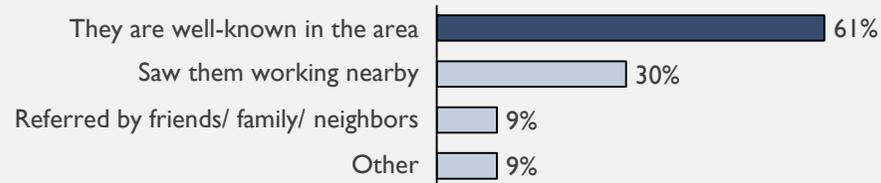
A majority of households hire a service provider who is well-known in the area and provides better payment terms; those that manage the process themselves do so because they feel it is too expensive to hire someone



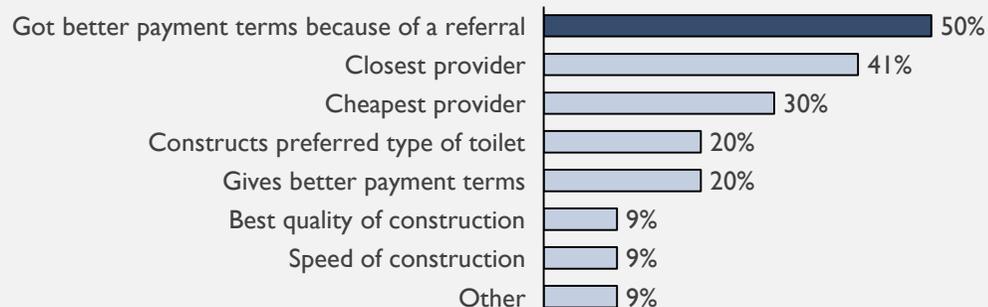
## Hired service provider to manage construction process<sup>1</sup>



## Source for finding service provider



## Basis for selecting service provider



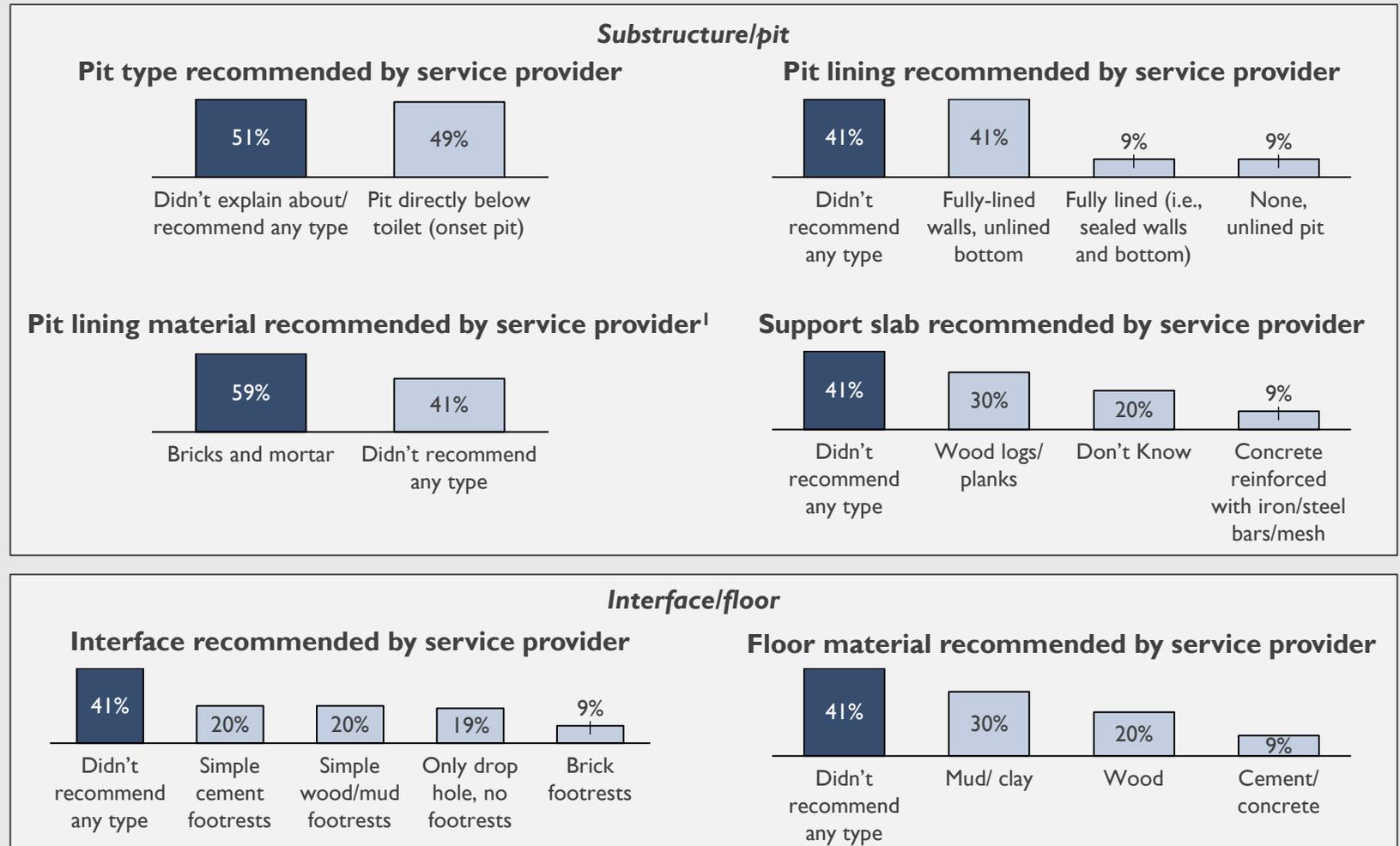
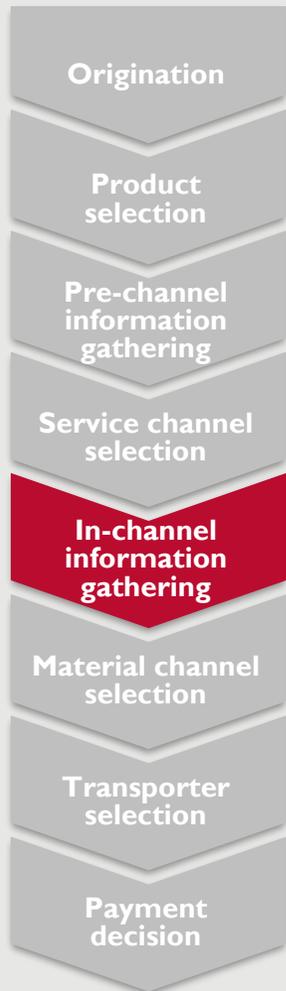
## Reasons for not hiring any service provider for toilet construction



1. Households that did not hire a service provider, oversaw the construction process themselves but had a friend, older son or nephew, or a sibling who was a mason or pit digger, assist them in the construction process

# Segment H | Buying process (6/9)

Masons often did not recommend any components, but those that did recommended that households construct onset pits lined with bricks and mortar, supported by wood planks, with a mud or clay floor



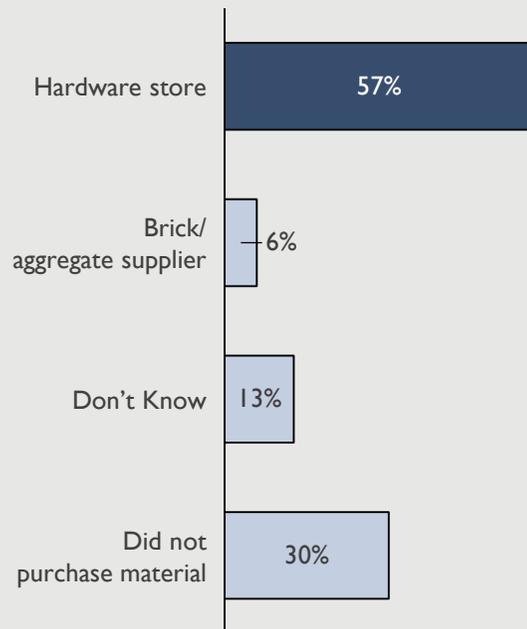
1. Proportions are for those who were recommended a fully or partially-lined pit by the service provider

# Segment H | Buying process (7/9)

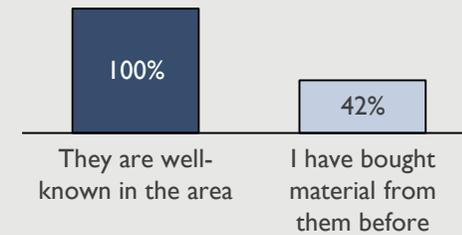
Households typically chose to source materials from hardware suppliers; certain suppliers were selected because they were well known in the area and maintained a variety of stocks



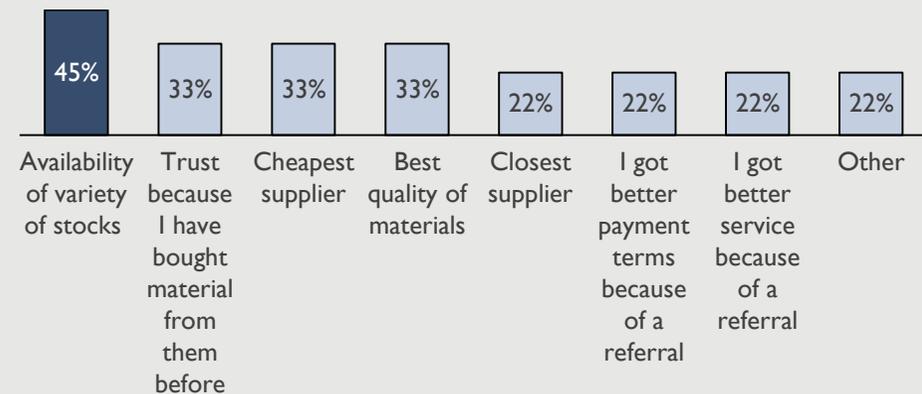
**Material suppliers opted for**



**Source for finding hardware store**

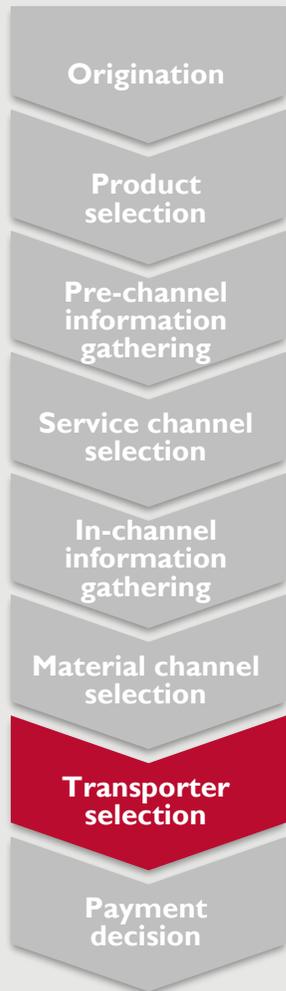


**Basis for selecting hardware store**

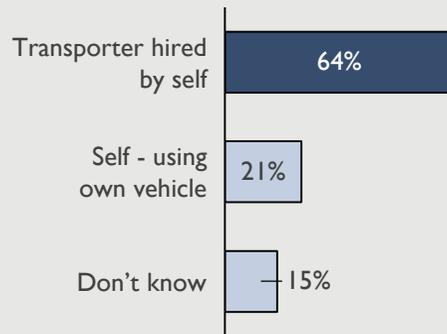


# Segment H | Buying process (8/9)

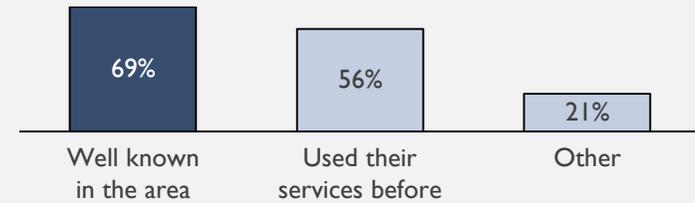
Households typically hired a transporter for their materials themselves; they chose transporters who are close by and are well known in the area



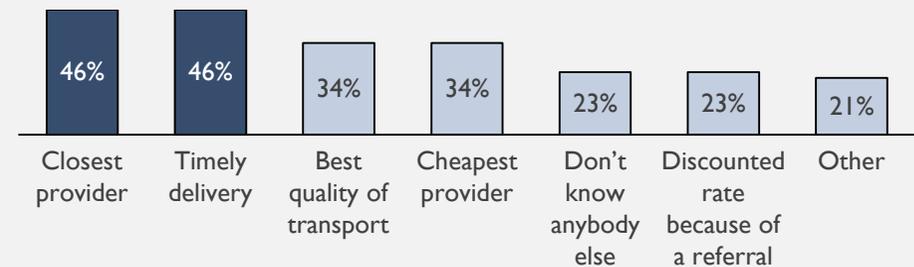
**Material transport option preferred**



**Source for finding transporter hired by self<sup>1</sup>**



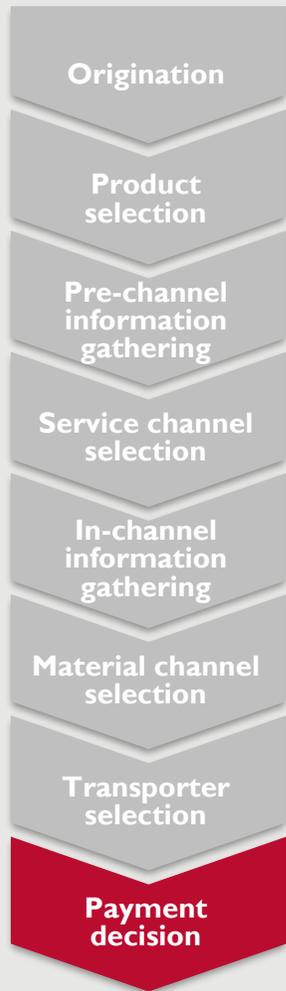
**Basis for selecting transporter hired by self<sup>2</sup>**



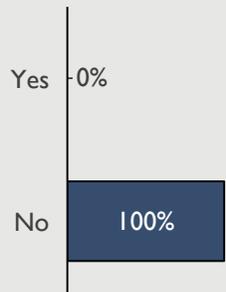
- Households that chose 'other' for source for finding transporter hired by self used motorbikes that are easily found in the area, the help of a family member, friend, or neighbor
- Households that chose 'other' for basis for selecting transporter hired by self mentioned reasons such as free service, lack of money, ease of availability, and ease of access through narrow roads

# Segment H | Buying process (9/9)

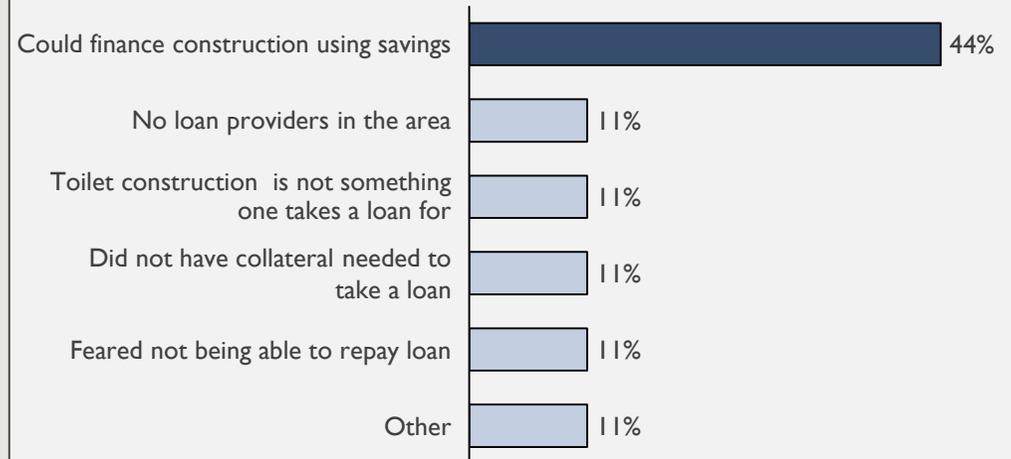
None of the households used a loan for toilet construction because they felt they could use their own savings; service providers were often paid in installments while hardware stores were paid in lump-sums



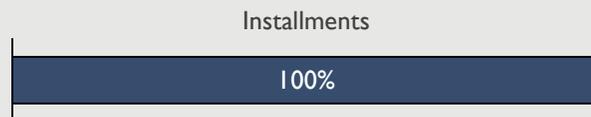
**% HHs using loans to finance toilet construction**



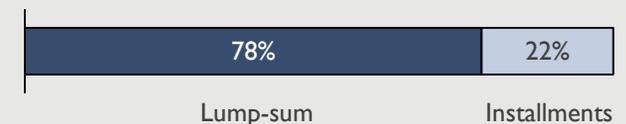
**Reasons for not using loan<sup>1</sup>**



**% split of HHs by payment to service provider**



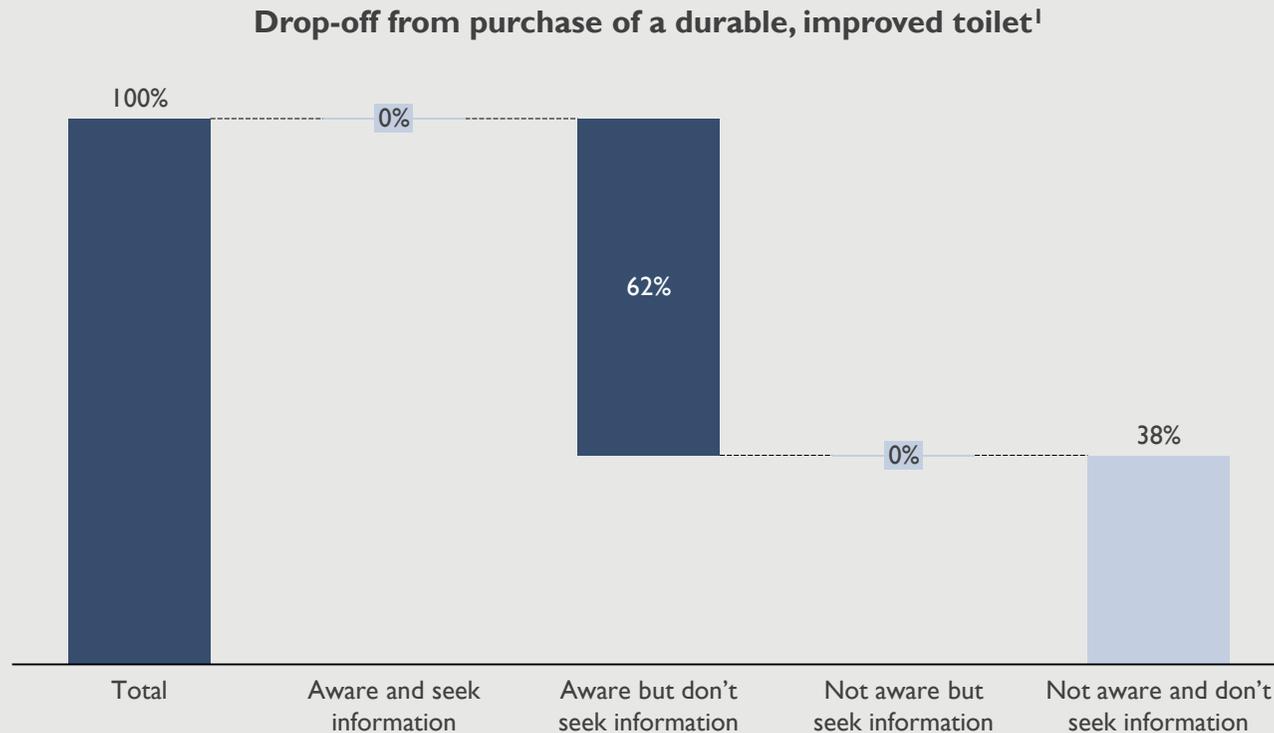
**% split of HHs by payment to hardware store**



1. Households that selected 'other' for not using loans mentioned varied reasons such as already having the finances, COVID related concerns, not being a member of savings group, etc.

# Segment H | Drop-offs from actual buying process

Most households do not purchase durable toilets as they do not seek information when considering building a toilet, despite being aware of durable components

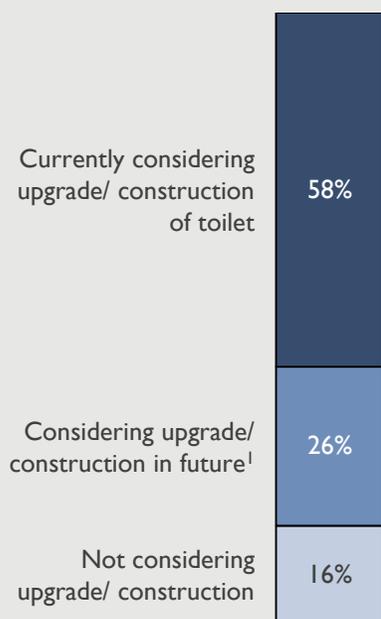


1. Households are considered to be aware if they know at least one durable component each for floor, interface, pit lining, and support structure of a toilet

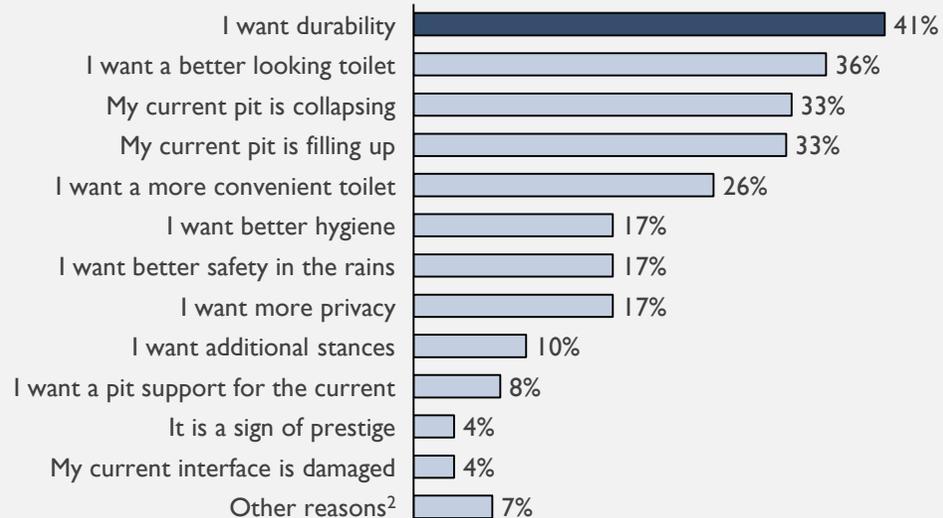
# Segment H | Future consideration

Most households are currently considering a toilet purchase because they want more durability, or will consider one in the future if more affordable options become available

**% split of HHs without their own toilet by future preference for toilet purchase/upgrade**



**Reasons for currently considering toilet purchase/upgrade**



**Factors that could influence consideration in the future**

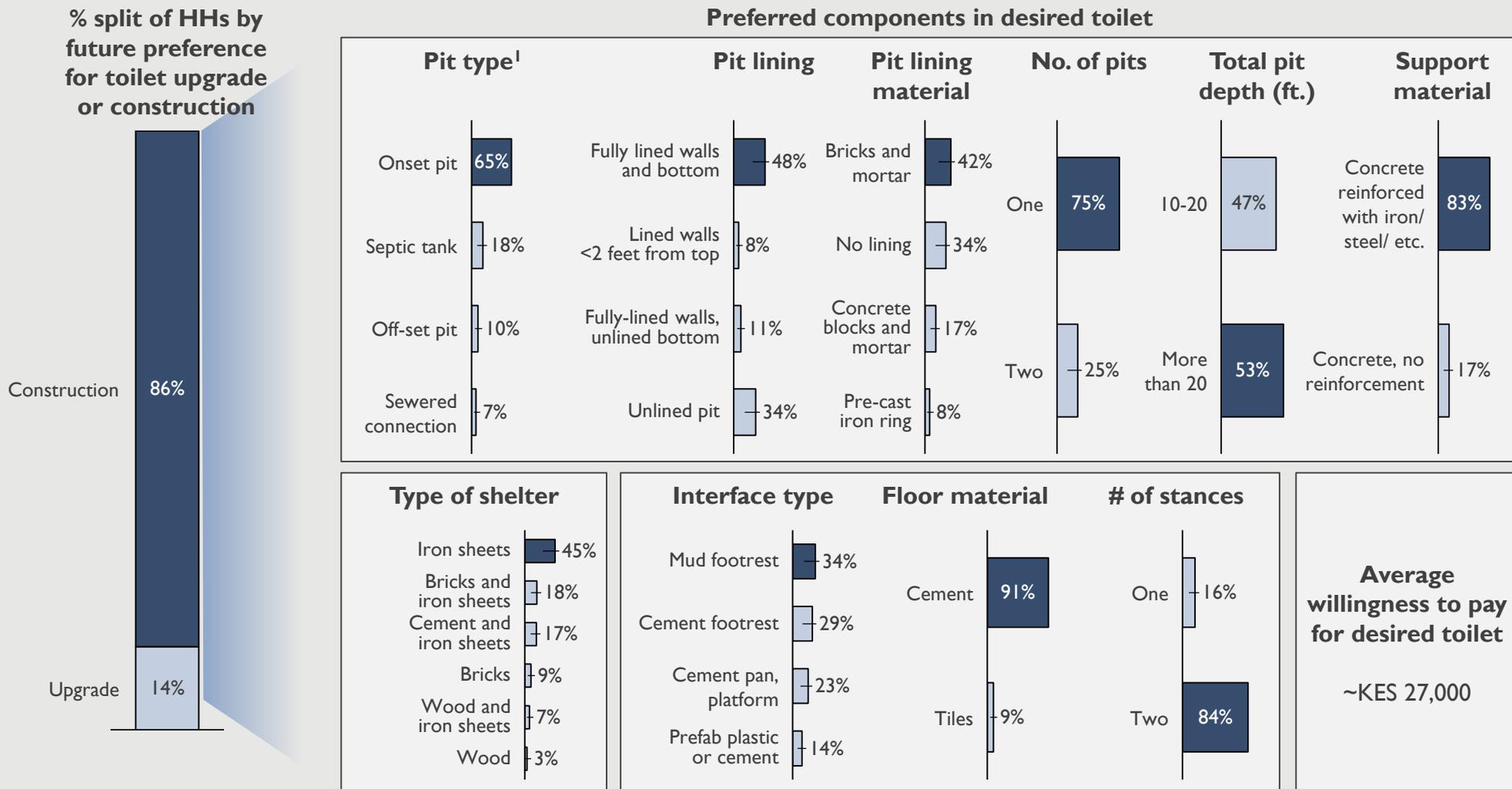


1. Those who were considering construction/ upgrade in the future were not asked for their reasons as their intent is unclear

2. Other reasons for currently considering a new toilet include needing more privacy from older members of the household or for visitors to use, and existing pit beginning to fill up

# Segment H | Desired toilet

Segment H households desire a new toilet with two stances, an onset pit, over 20-feet deep, fully-lined with bricks and mortar, a cement floor with mud footrests, and a shelter made of iron sheets



1. If 'Pit type' chosen is sewer connection, further questions regarding pits are not asked to the respondents; proportions shown in all further charts on pits exclude respondents who chose sewer connection as their pit type

# Segment profiles | Segment I

## Segment I households have limited ability to pay...

Source of drinking water		Surface		Well		Piped			
Bank account		Yes	No	Yes	No		Yes	No	
Solar panel ownership					Yes	No		Yes	No
Gender of HH head	Elderly members in HH								
Female	No	A		E	F	G		I	
	Yes	B				H			
Male	Yes	C		D		H			
	No	C		D		H			

...and do not plan to invest in sanitation.  
Let's understand why

Non-durable individual toilets

**69.4%**

Non-durable shared toilets

**30.6%**

## Segment I | Customer story

*Christine lives with her mother-in-law, nephew, and one child. She has completed education till secondary school. She currently works in agriculture, on her own farm near a peri-urban center.*

*Christine and her family live in their own house, which is built with temporary materials, and are very poor. They do not have access to electricity or a solar panel, do not own farm animals, but possess agricultural land. They own a mobile phone. They typically obtain piped drinking water, and have access to a hardware store; they need to travel less than 30 minutes by a two-wheeler.*

*Christine agrees that sanitation is important, but has limited knowledge of product options. She desires respect from the community and wants to follow in the example of other community members. However, she is often unable to do so because of limited ability to pay.*

*Christine and her family have their own traditional toilet, which has a 15-foot deep unlined pit, and a shelter with an iron sheet roof and walls built with mud, bricks, and poles.*

*Christine does not plan to construct a toilet in the near future because she cannot afford one. She may resort to defecating in the open or using a neighbor's toilet if her current toilet collapses. If she had the money, she would get a two-stance toilet with a pit that is at least 20-foot deep and is fully-lined with concrete blocks and mortar, with a concrete floor.*

# Segment I | Customer persona

## Setting

- **Typical family size:** 4 people, with 1 child under the age of 10
- **Type of house:** Predominantly live in temporary material houses
- **Income and occupation:** Typically receive non-seasonal income; agriculture (on their own farm) is the dominant occupation
- **Mobile phone:** Nearly all households have a mobile phone
- **Mobile money:** Nearly all households have access to mobile money transfer platforms
- **Total value of assets:** Households are not affluent; the average total asset value per household is KES 8,500<sup>1</sup>
- **Bank account and savings groups:** Most households neither have a bank account, nor membership in a savings group<sup>2</sup>
- **Loans:** Most of the segment have not taken a loan in the past

## Mental Model

- **Building a toilet is not a major priority;** would consider building one only if savings remain after spending on other priorities
- Recognize that toilets provide **safety at night** and a **greater degree of privacy** than open defecation; acknowledge that having your own toilet allows you to defecate **conveniently and comfortably**
- **Community cleanliness is a significant priority;** all households believe that toilets reduce the possibility of disease in your family
- **Desire respect** from people in their community
- **Conformity is heavily valued;** over two-thirds of the households believe that one should not do things differently from the community
  - **Do not particularly value products that make their life more convenient, or that are prestigious**



- **Current product:** Non-durable individual toilets; nearly a third have non-durable shared toilets
- **Desired product:** A toilet that is durable, has no smell, provides privacy, and has the following attributes:
  - **Substructure:** A 10-20 feet onset pit, fully-lined with concrete blocks and mortar
  - **Interface:** Two stances, a concrete floor with mud footrests
  - **Superstructure:** A wood and iron sheets shelter
- **Willingness to pay:** ~KES 10,000<sup>1</sup>
- **Financing:** Do not take a loan for toilet construction, because they fear not being able to repay it; material providers and service providers are often paid in lump-sums

## The Ask

Source: FSG quantitative survey with 221 rural households across Busia, Kakamega and Homa Bay

1. Figure has been rounded off to the nearest 500

2. Savings groups include MFIs, SACCOs and informal self-help groups called chamas

# Segment I | Key demographic statistics

Segment size		Demographics		Income & occupation		Access indicators	
% of potential market	10.5%	Family size (avg.)	4	<b>Nature of income</b>		<b>Distance to nearest HW store<sup>1</sup></b>	
# of households	221K	<b>Gender of HH head</b>		Non-seasonal	88.2%	<15 minutes	40.9%
<b>Sanitation profile</b>		Male	78.0%	Seasonal	11.8%	15 to 30 minutes	51.6%
Non-durable individual toilets	69.4%	Female	22.0%	<b>Primary occupation</b>		> 30 minutes	7.5%
Non-durable shared toilets	30.6%	<b>Highest education in HH</b>		Works on own farm	67.6%	<b>Access to electricity</b>	28.3%
		No education	0.0%	Works on other's farm	10.3%	<b>Drinking water source</b>	
		Primary	16.7%	Own business	0.0%	Well	0.0%
		Secondary	83.3%	Employed	6.7%	Piped or other	100%
		University	0.0%	Other	15.4%	Surface water <sup>2</sup>	0.0%

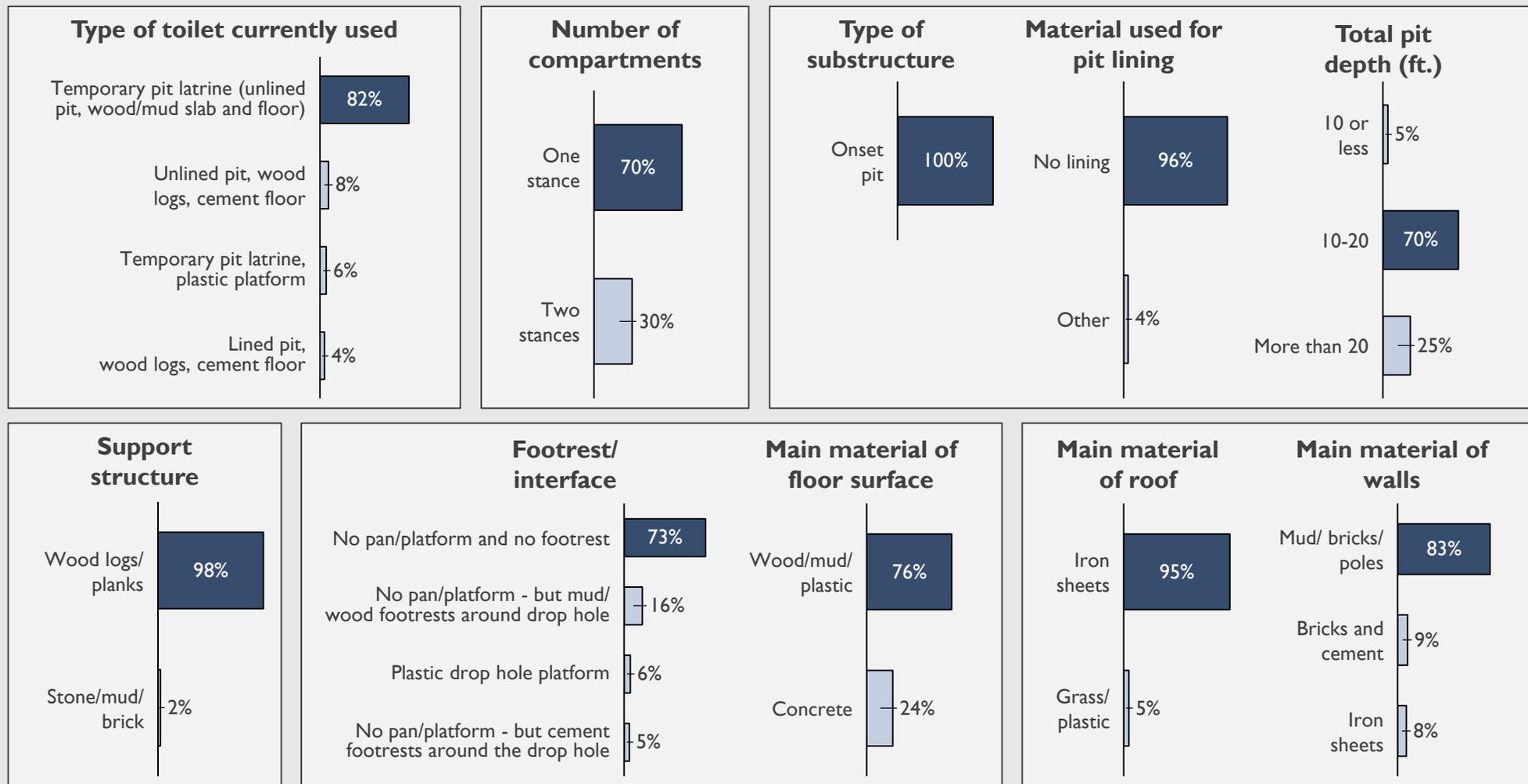
Affluence indicators		Assets and other indicators		Attitudes & beliefs		
<b>Total stated monthly expenditure</b>				I would be willing to pay for products that are prestigious		24.4%
High (> KES 10K)	30.3%	Agriculture land	72.0%	It is embarrassing to be seen defecating in the open		94.9%
Medium (KES 5K-10K)	8.4%	Computer	0.0%	Cleanliness of my community is important to me		100%
Low (< KES 5K)	61.3%	Solar panel	0.0%	It is taboo to use or live near a toilet		52.8%
<b>Total asset value (avg.)</b>	8.5k	Refrigerator	0.0%			
<b>Total asset value (spread)</b>		Farm animals	49.0%			
High (> KES 20K)	0.0%	Bicycle	37.8%			
Medium (KES 15K-20K)	16.5%	Mobile	78.7%			
Low (< KES 15K)	83.5%	Television	6.7%			
		Car or truck	0.0%			
		Motorbike	0.0%			

1. Distance to nearest hardware store is calculated based on time taken to reach by bike/ two-wheeler

2. Surface water includes water from ponds, springs, rainwater harvesting, etc.

# Segment I | Current sanitation profile

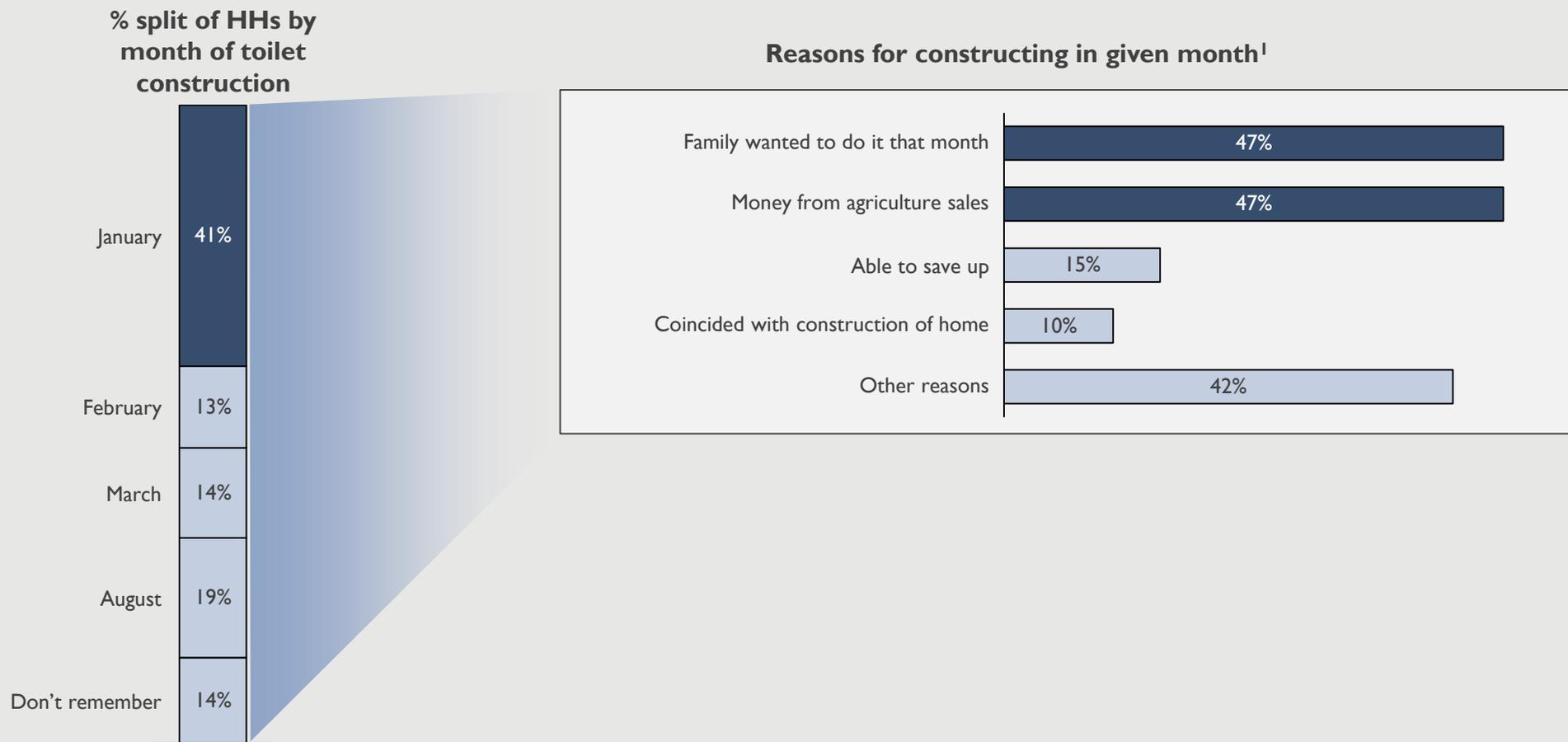
Toilet users in this segment typically use a one-stance traditional pit latrine, with a 10-20 feet unlined onset pit, a wood/mud/ plastic floor with no pan/platform or footrest, iron sheets roof and mud/bricks/poles walls



**Note:** Questions related to the toilet components were not asked to HHs that resort to OD or use shared facilities

# Segment I | Typical month of construction

*Households most commonly construct toilets in the month of January, due to increased sales from their agricultural harvests or because the family preferred that month*



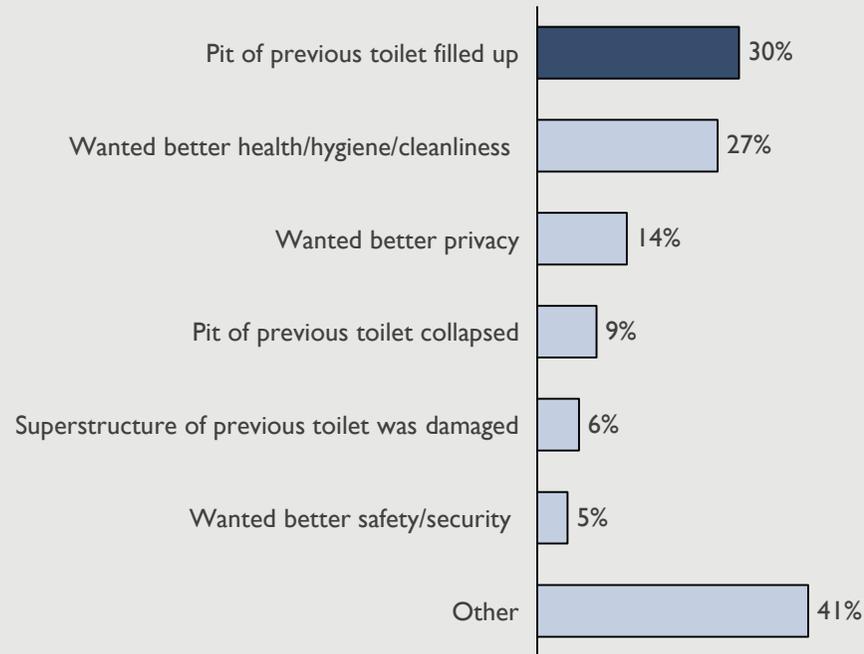
1. Households responding with other mentioned various reasons such as their existing pit filling up or collapsing, or they realized they no longer wanted to practice OD

# Segment I | Buying process (1/9)

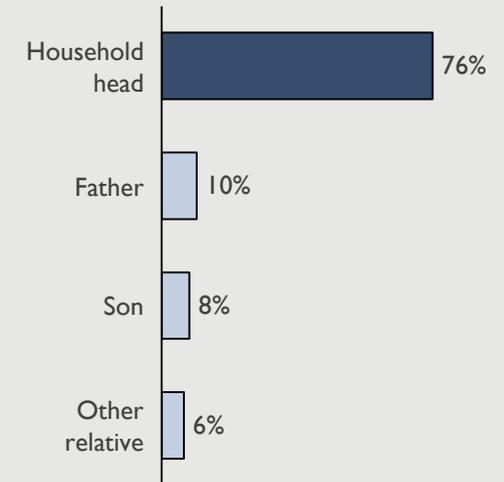
Many households wanted to construct a toilet because their previous pit filled up; toilet construction discussions were initiated by the household head



## Origination of need for toilet



## Person who initiated discussion<sup>1</sup>



1. Other relatives include members outside of the immediate family

# Segment I | Buying process (2/9)

Households typically selected an unlined onset pit supported by wood logs/ planks...



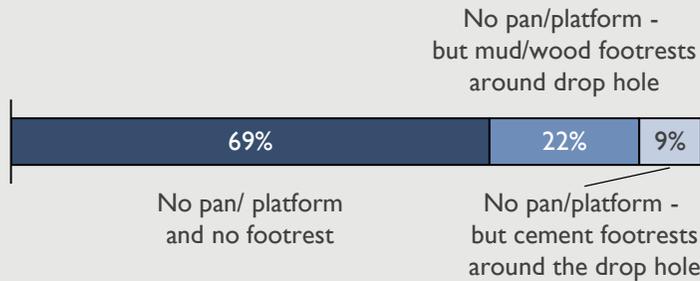
1. Other reasons for selecting this pit include safety for children, lack of capital, and easily accessible materials

# Segment I | Buying process (3/9)

...with a mud/clay floor without a pan/platform, due to affordability



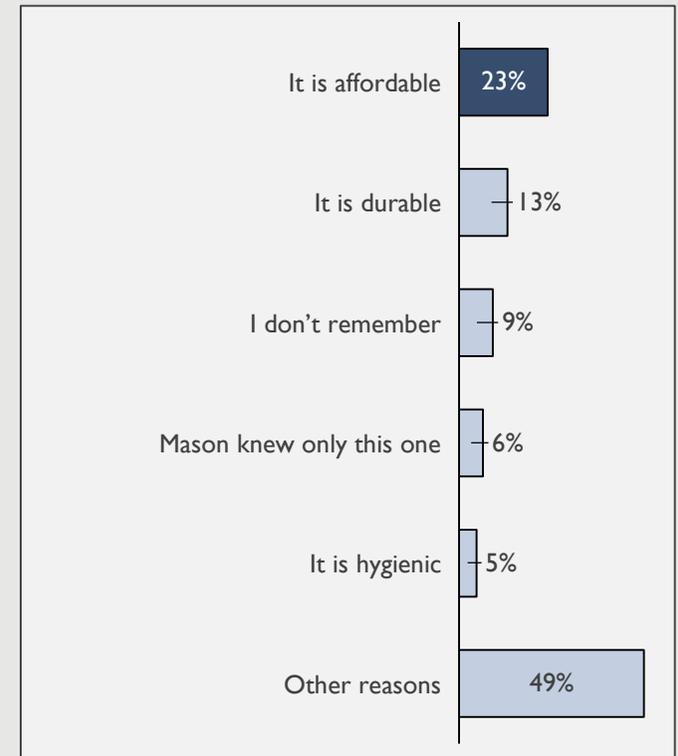
**% split of HHs by interface**



**% split of HHs by floor material**



**Reasons for selecting type of floor and interface<sup>1</sup>**



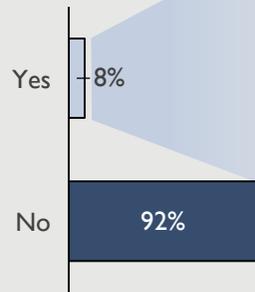
1. Households that responded with 'other reasons' for selecting type of floor and interface mostly responded with lack of money

# Segment I | Buying process (4/9)

A majority of households did not seek information while constructing a toilet, because they felt there was no one they could rely on for the information; information was typically easy to access



## Sought information while building a toilet



## Ease of access to information



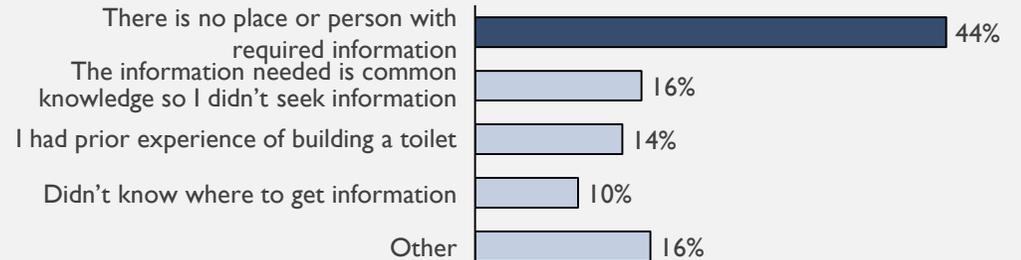
## Sources of information about toilets



## Nature of information sought



## Reasons for not seeking information



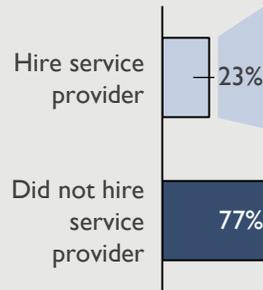
1. Households responding with 'Other' for reasons for not seeking information cited reasons such as it being an emergency case and hence not having the time to seek information, or because someone in the family already had the information that was needed

# Segment I | Buying process (5/9)

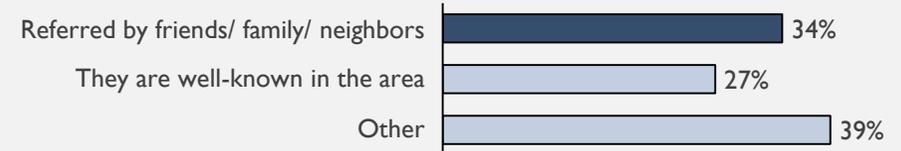
A majority of households did not hire a service provider as they felt it was too expensive to do so; those that did hire someone chose individuals based on affordability and referrals from friends and family



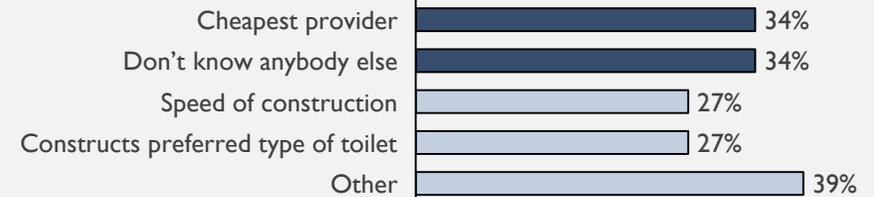
## Hired service provider to manage construction process<sup>1</sup>



## Source for finding service provider



## Basis for selecting service provider



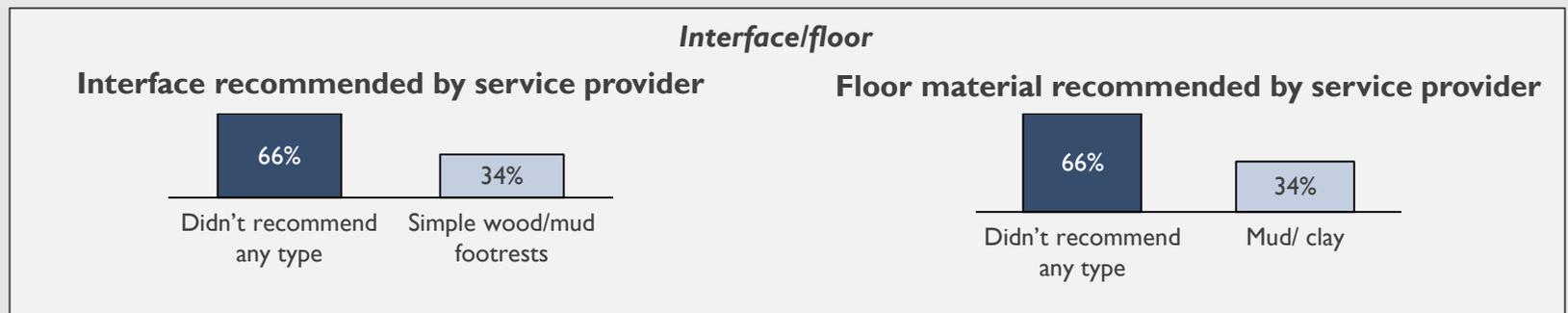
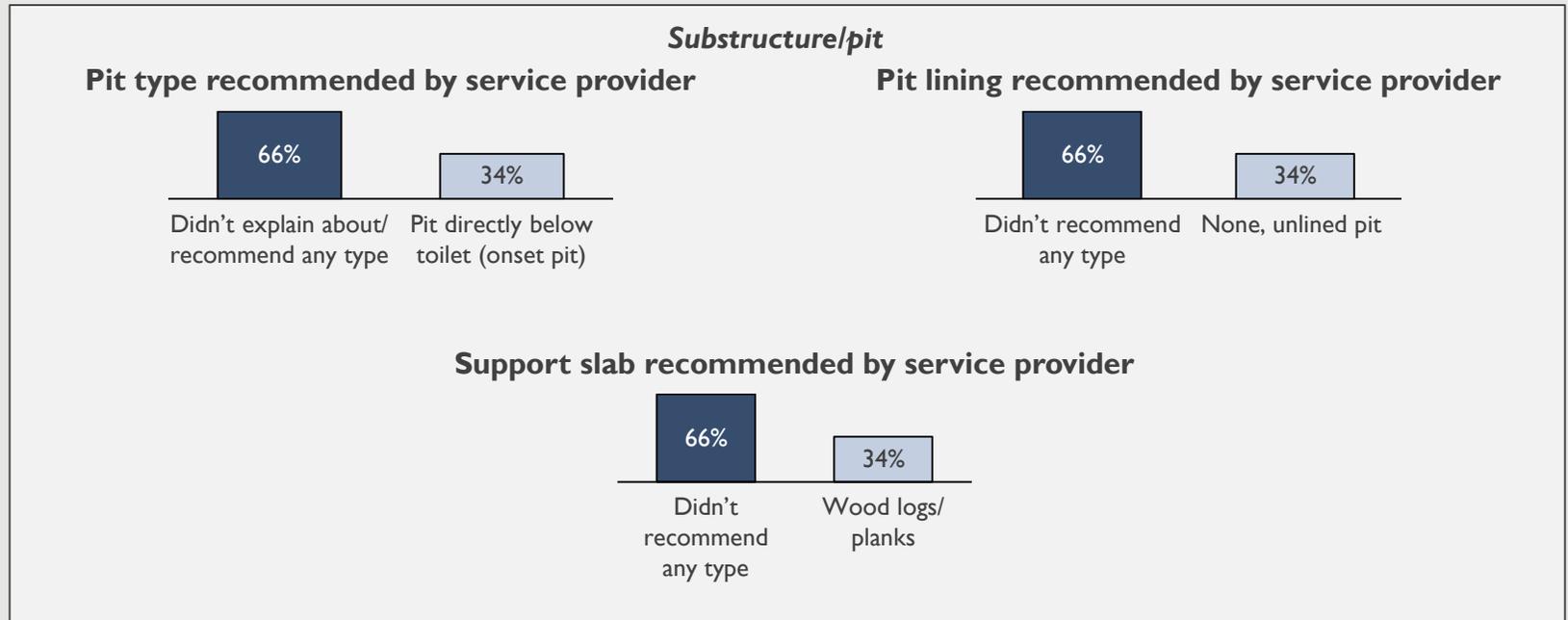
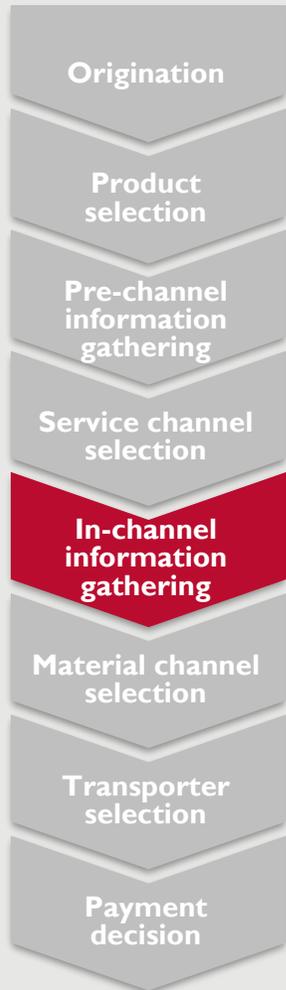
## Reasons for not hiring any service provider for toilet construction



1. Households that did not hire a service provider, oversaw the construction process themselves but had a friend, older son or nephew, or a sibling who was a mason or pit digger, assist them in the construction process

# Segment I | Buying process (6/9)

Masons often did not recommend any components, but those that did recommended that households construct unlined onset pits supported with wood logs/planks, and a mud/ clay floor with mud footrests

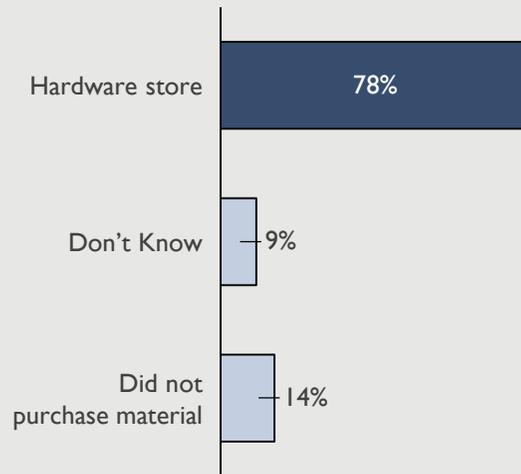


# Segment I | Buying process (7/9)

Households typically chose to source materials from hardware suppliers; certain suppliers were selected because of past interactions and better service due to referrals



## Material suppliers opted for



## Source for finding hardware store



## Basis for selecting hardware store

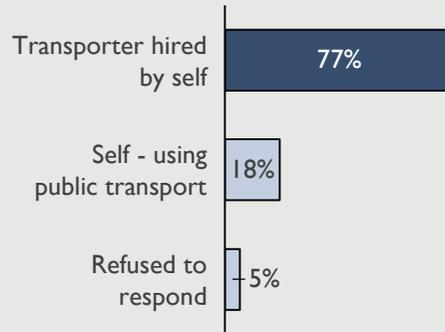


# Segment I | Buying process (8/9)

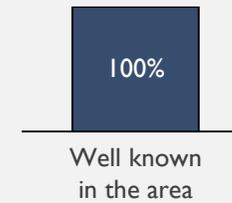
Households typically hired a transporter for their materials themselves; they chose transporters who were well known in the area and provided timely delivery of the materials



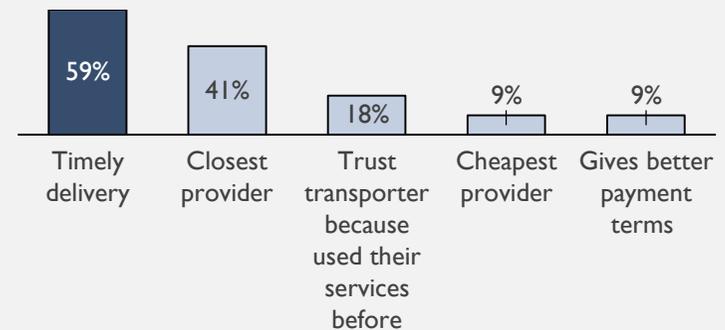
## Material transport option preferred



## Source for finding transporter hired by self

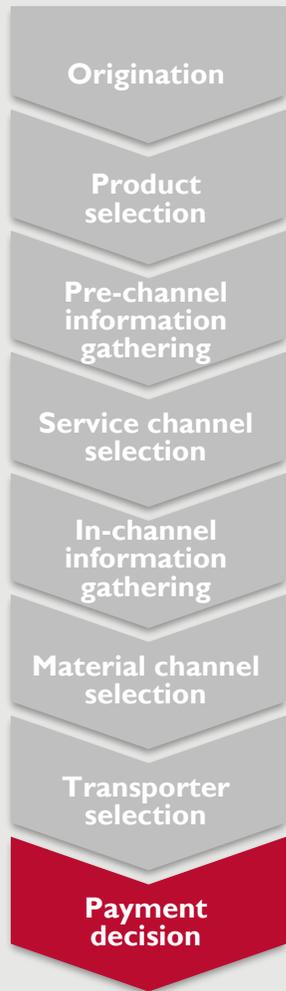


## Basis for selecting transporter hired by self



# Segment I | Buying process (9/9)

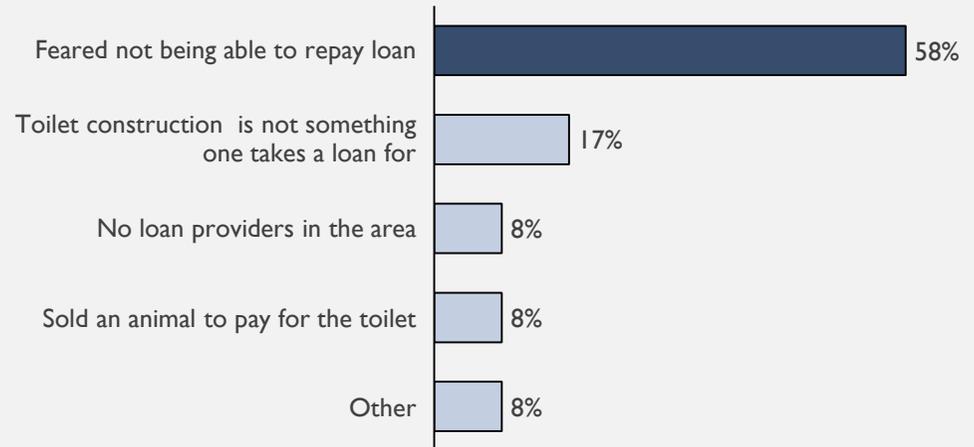
None of the households used a loan for toilet construction because they were afraid of failure of repayment; hardware stores and material suppliers were often paid in a lump-sum



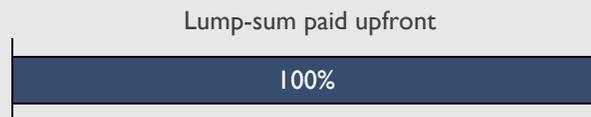
**% HHs using loans to finance toilet construction**



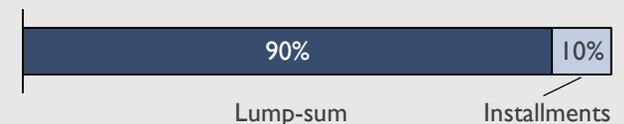
**Reasons for not using loan<sup>1</sup>**



**% split of HHs by payment to service provider**



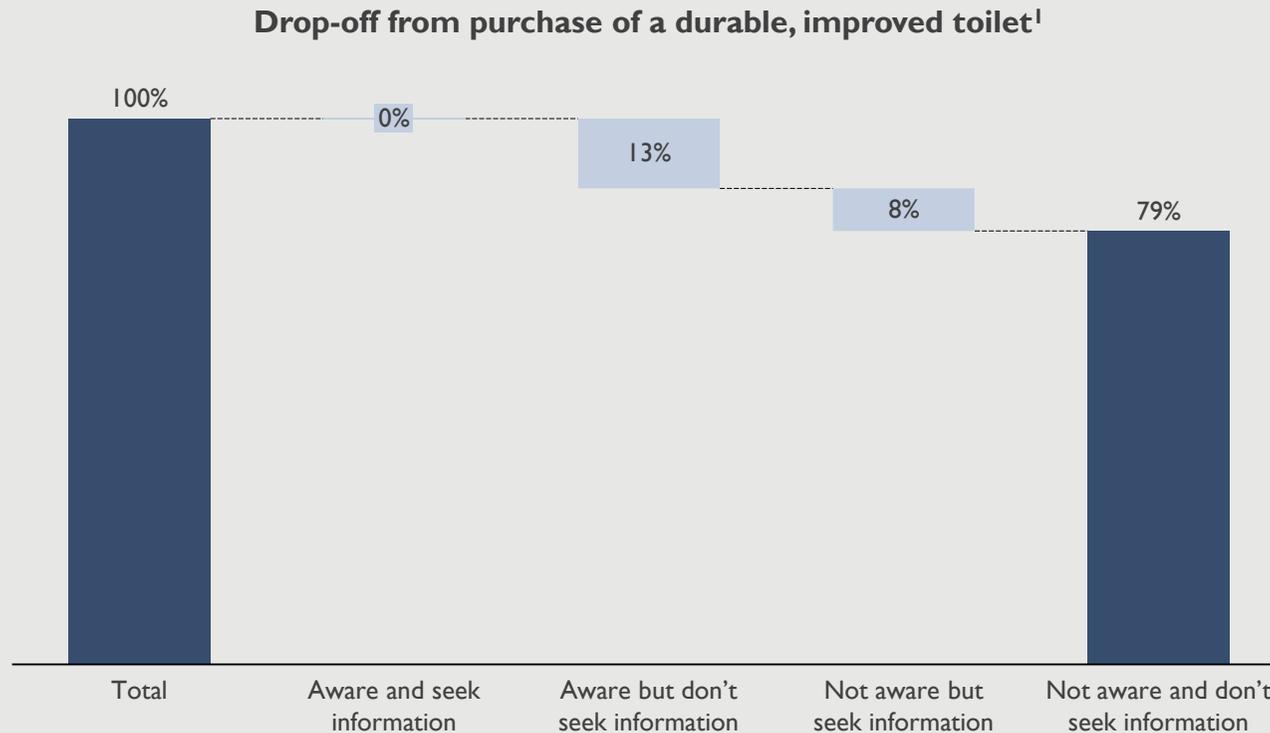
**% split of HHs by payment to hardware store**



1. Households that selected 'other' for not using loans mentioned varied reasons such as already having the finances, COVID related concerns, not being a member of savings group, etc.

# Segment I | Drop-offs from actual buying process

*Most households do not purchase durable toilets as they are neither aware of durable components, nor do they seek information when considering construction of a toilet*

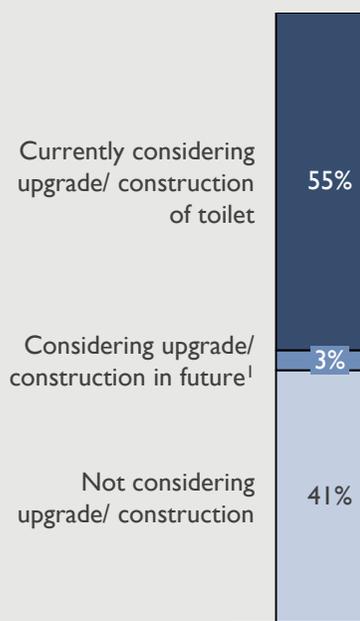


1. Households are considered to be aware if they know at least one durable component each for floor, interface, pit lining, and support structure of a toilet

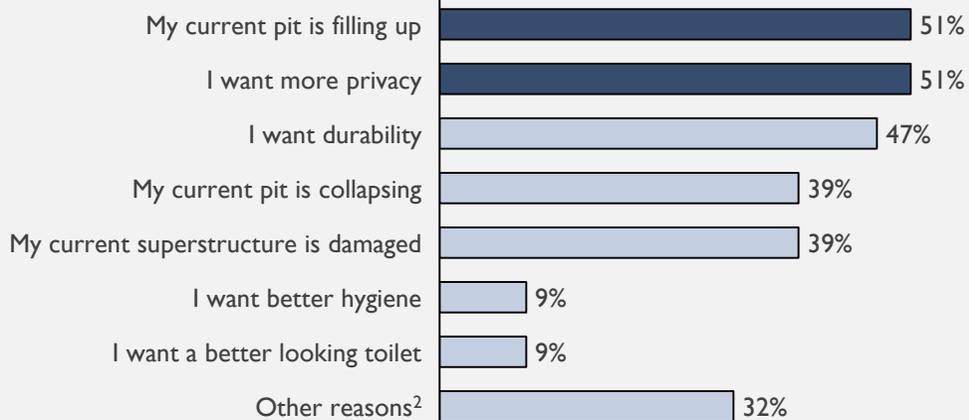
# Segment I | Future consideration

Most households are currently considering a toilet purchase because their current pit is filling up or they want more privacy, or will consider one in the future if they have enough money left over after other priorities

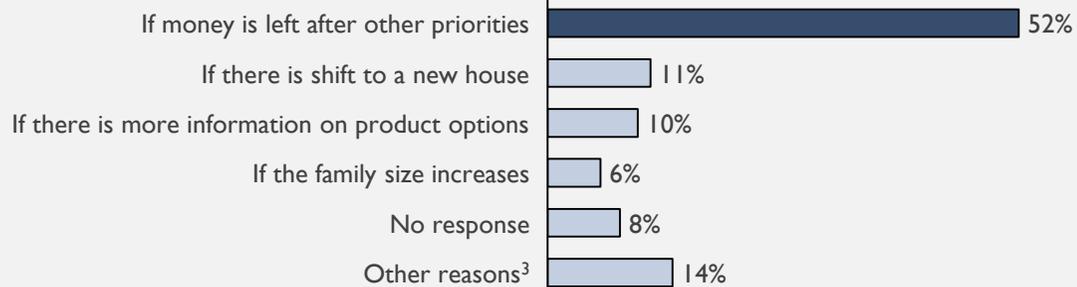
**% split of HHs without their own toilet by future preference for toilet purchase/upgrade**



**Reasons for currently considering toilet purchase/upgrade**



**Factors that could influence consideration in the future**



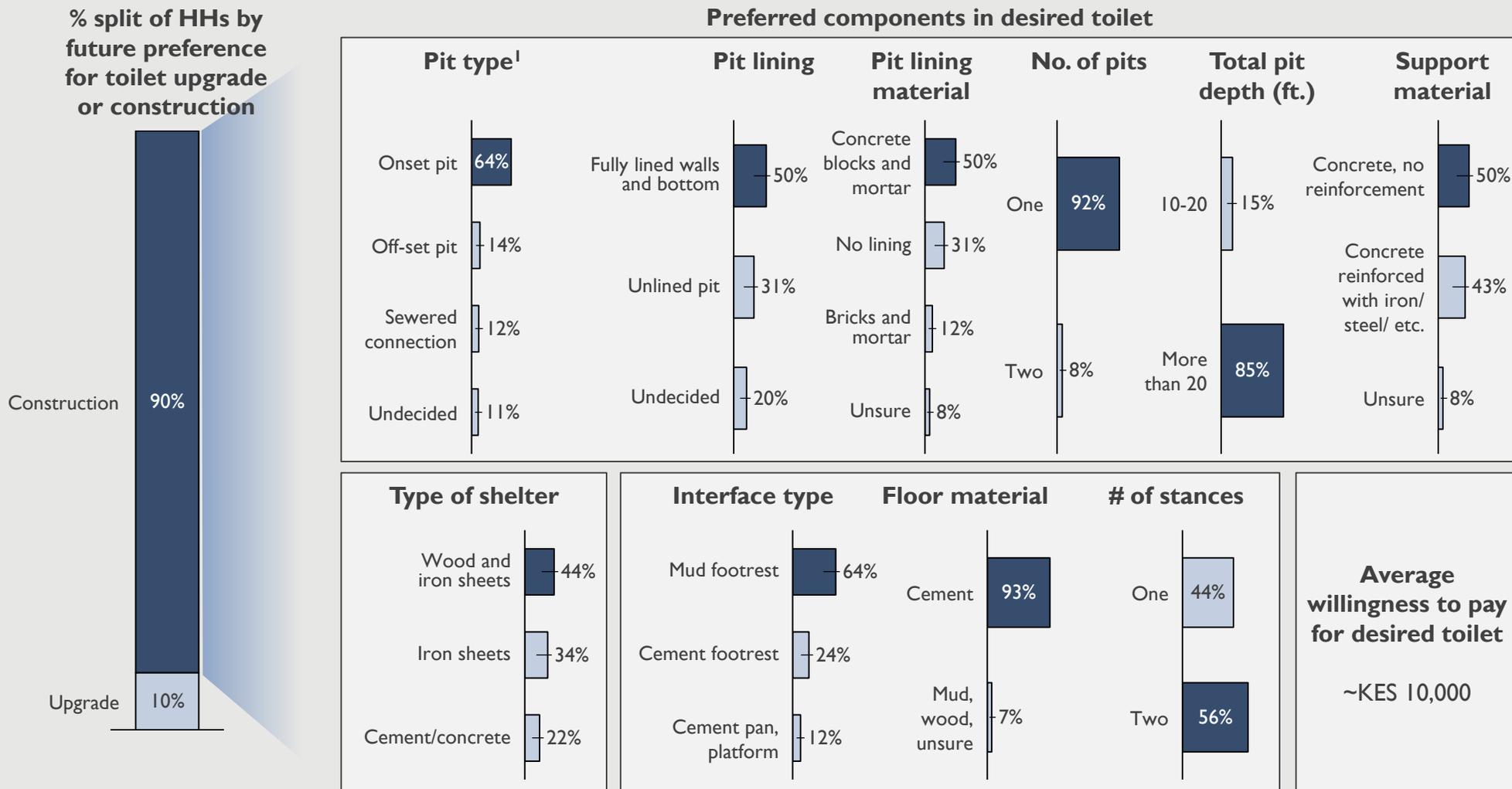
1. Those who were considering construction/ upgrade in the future were not asked for their reasons as their intent is unclear

2. Other reasons for currently considering a new toilet include needing more privacy from older members of the household or for visitors to use, and existing pit beginning to fill up

3. Other reasons that could influence future consideration include better access to assistance for labor and finances, existing pit filling up, and collapse of existing structure

# Segment I | Desired toilet

Segment I households desire a new construction with two stances, an onset pit, over 20-feet deep, fully-lined with concrete and mortar, a cement floor with mud footrests, and a wood and iron sheets shelter



1. If 'Pit type' chosen is sewer connection, further questions regarding pits are not asked to the respondents; proportions shown in all further charts on pits exclude respondents who chose sewer connection as their pit type

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- Compendium of findings for urban Marsabit

# Product economics | Summary of prevalent toilet options

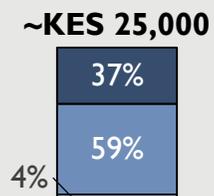
The most prevalent option in each toilet category cumulatively comprise 83%<sup>1</sup> of the toilets observed in rural western Kenya, and range from ~KES 8,200 to ~KES 37,000<sup>2</sup>

## Unimproved toilet (60% of current market)



**“Temporary” latrine, with unlined pit and wood logs/mud support and floor, and mud/poles/sticks shelter**

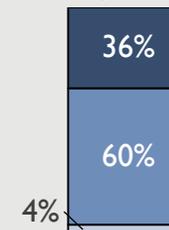
## Non-durable, improved toilet (17% of current market)



**Unlined pit latrine with concrete foundation and slab, and shelter made of iron sheets**

## Durable, improved toilet (6% of current market)

~KES 32,000-37,000<sup>3</sup>



**Fully- or partially-lined pit latrine with concrete foundation and slab, and shelter made of brick and mortar or iron sheets<sup>4</sup>**

■ Material ■ Labor ■ Transportation

Source for photographs: FSG, 2021

1. Prevalence has been calculated for a sample of 804 households (excludes 127 respondents who either practice open defecation or share toilets not constructed by them and 9 respondents with incomplete information on toilet components); source: FSG quantitative listing survey with rural households across Busia, Kakamega and Homa Bay, 2021 (n=940)
2. FSG analysis based on qualitative interviews with households, and value chain players
3. Price range represents the estimated price variation between partially- and fully-lined pit variants
4. The second door in the picture is for the bath area, and not a second toilet

# Product economics | Unimproved toilet (1/3)

The total cost of a typical “temporary” toilet (i.e., unlined pit, wood logs/mud floor, and mud/poles/sticks shelter) comes to ~KES 8,200; materials account for only ~30% of this cost

## Pit

Photo not available

- Rectangular onset pit
- Unlined
- 15-feet deep
- No ventilation pipe

## Support structure and interface



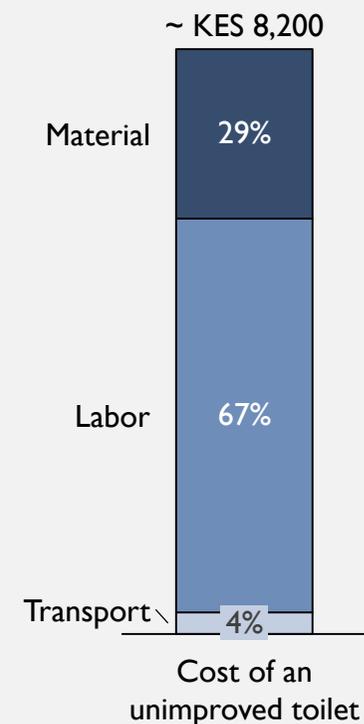
- Wood logs/mud floor without a pan or platform

## Shelter



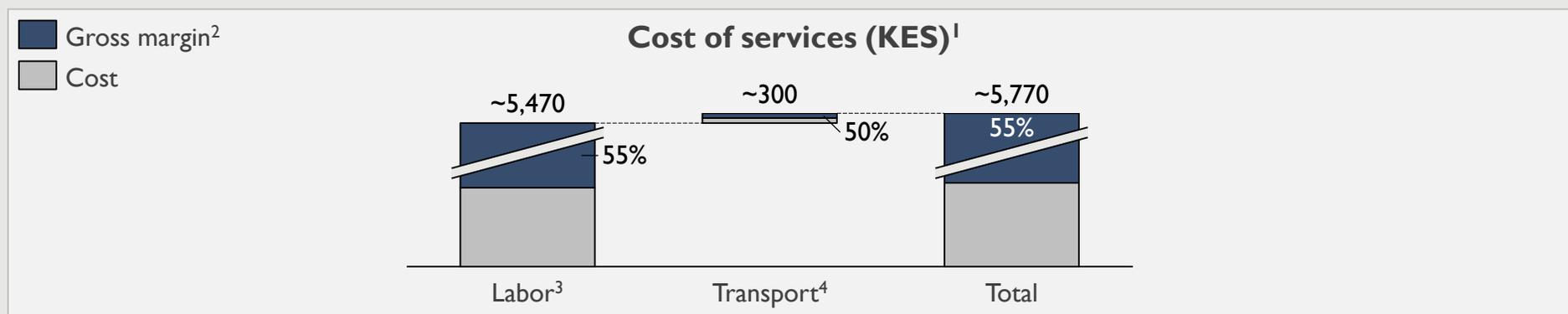
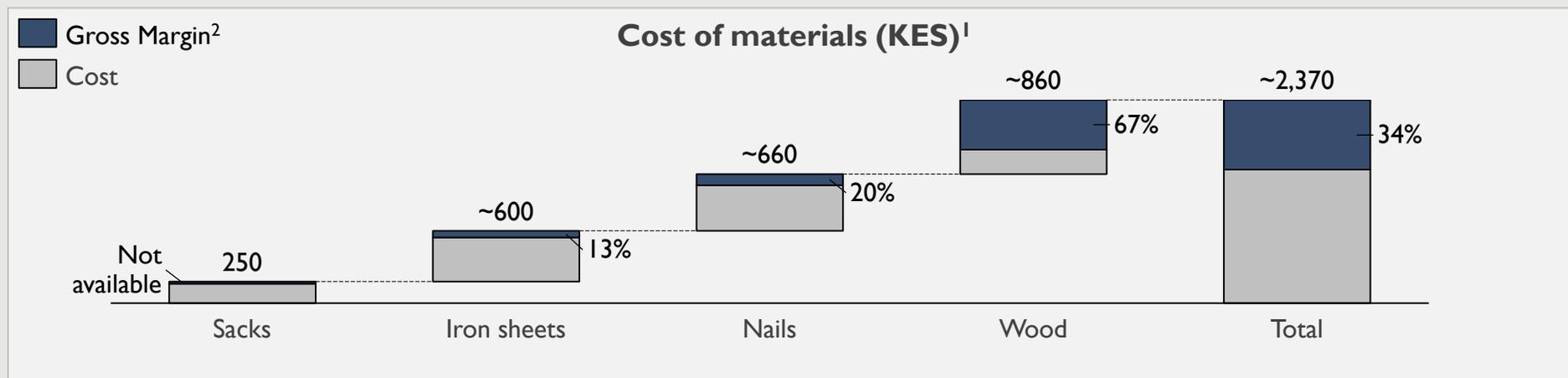
- Walls made of mud and poles/ sticks
- Missing roof/iron sheet roof

## Total cost to customer<sup>1</sup>



# Product economics | Unimproved toilet (2/3)

Of the total material cost to customer, 34% is retained as gross margin by the retailers/suppliers involved; service providers retain ~55% of the total cost of services to customer



1. FSG analysis based on qualitative interviews with households and value chain players in Busia, Kakamega and Homa Bay, 2021
2. Gross margin for materials equals price charged to customer less cost of material to retailer; gross margin for labor equals price charged to customer less cost of hired labor and transport; gross margin for transport equals price charged to customer less total cost of fuel attributed to the trips
3. Labor cost represents the price charged by a fundi, excluding his transport cost but including the cost of laborers sub-contracted by the fundi (e.g., pit diggers)
4. Transport cost includes cost of transport for both, materials and labor

# Product economics | Unimproved toilet (3/3)

Materials for the support structure and interface, typically just wood logs, nails, and sacks, comprise ~70% of total material costs

## Cost of materials (KES)<sup>1</sup>



1. FSG analysis based on qualitative interviews with households and value chain players in Busia, Kakamega and Homa Bay, 2021

2. Households typically procure mud/poles/sticks from nearby surroundings and are not required to pay for these materials

# Product economics | Non-durable, improved toilet (1/3)

The most prevalent improved, non-durable toilet is an unlined pit latrine with concrete support slab and floor and iron sheets shelter, and costs an estimated ~KES 25,000; ~60% of this is cost of labor

## Pit

Photo not available

- Rectangular onset pit
- Unlined
- 20-feet deep
- May or may not have a ventilation pipe

## Support structure and interface



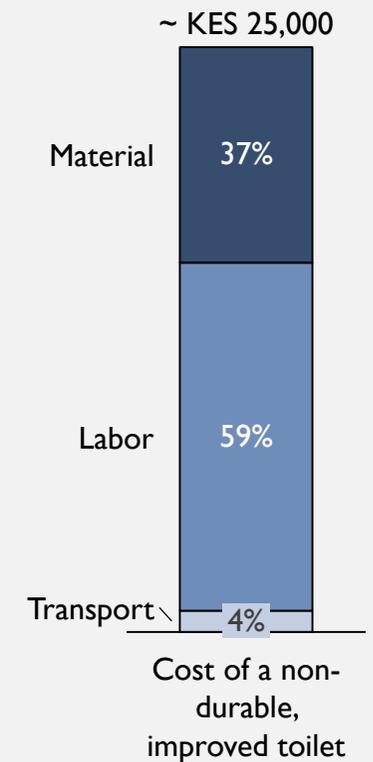
- Concrete foundation and slab

## Shelter



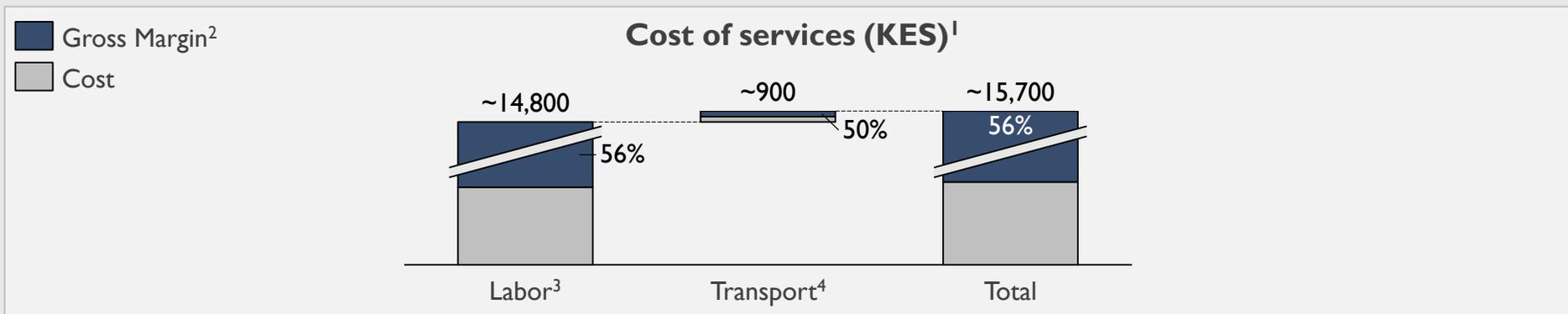
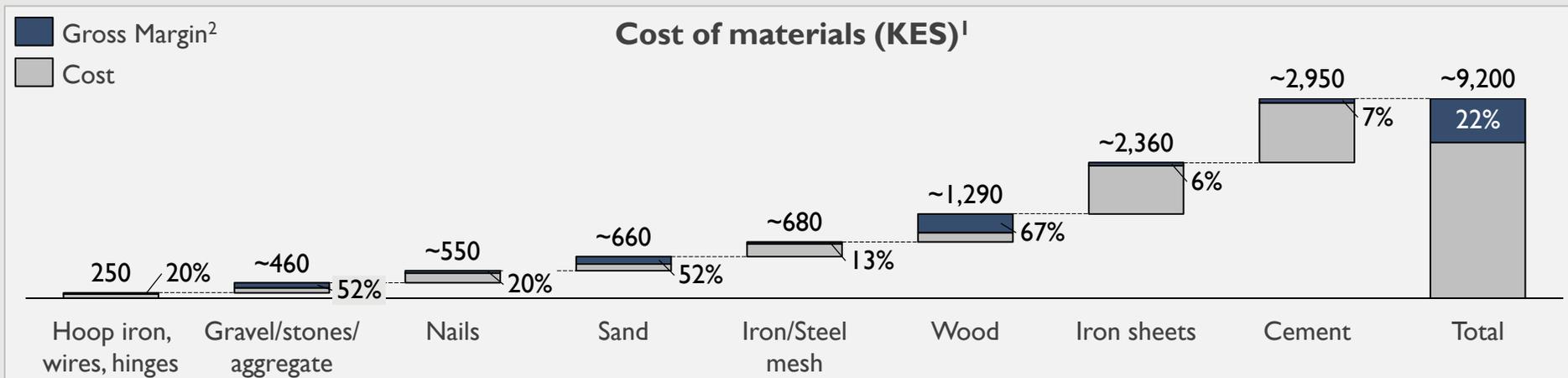
- Walls and roof made of iron sheets

## Total cost to customer<sup>1</sup>



# Product economics | Non-durable, improved toilet (2/3)

Of the total material cost to customer, 22% is retained as gross margin by the retailers/suppliers involved; service providers retain ~56% of the total cost of services to customer

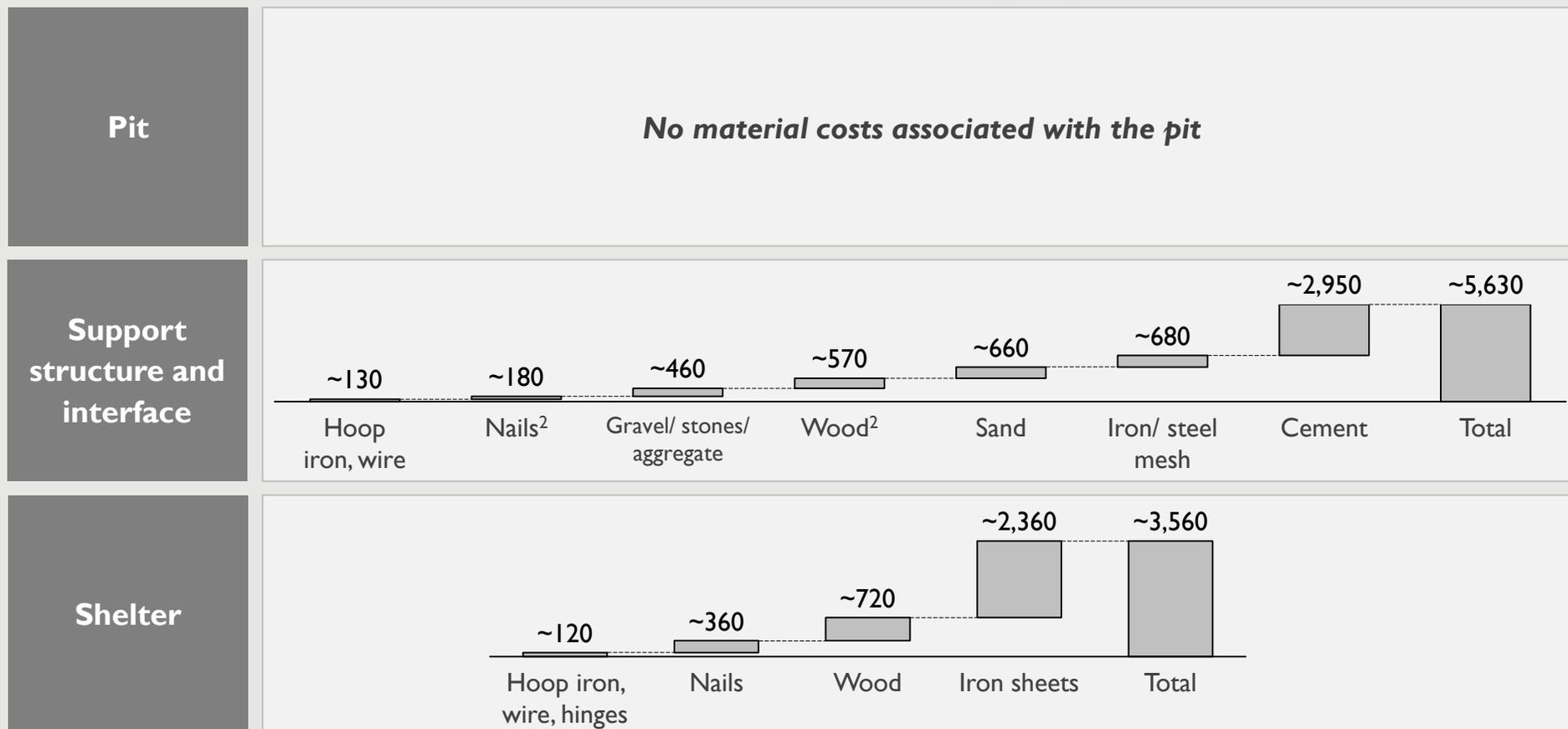


1. FSG analysis based on qualitative interviews with households and value chain players in Busia, Kakamega and Homa Bay, 2021
2. Gross margin for materials equals price charged to customer less cost of material to retailer; gross margin for labor equals price charged to customer less cost of hired labor and transport; gross margin for transport equals price charged to customer less total cost of fuel attributed to the trips
3. Labor cost represents the price charged by a fundi, excluding his transport cost but including the cost of laborers sub-contracted by the fundi (e.g., pit diggers)
4. Transport cost includes cost of transport for both, materials and labor

# Product economics | Non-durable, improved toilet (3/3)

The materials required for the support structure and interface comprise more than 60% of the total cost of materials, more than 50% of which is the cost of cement

## Cost of materials (KES)<sup>1</sup>



1. FSG analysis based on qualitative interviews with households and value chain players in Busia, Kakamega and Homa Bay, 2021

2. Wood logs and nails are used to build the frame required for on-site construction of the concrete foundation and slab

# Product economics | Durable, improved toilet (1/3)

The total cost of a typical<sup>1</sup> durable, improved toilet comes to ~KES 37,000; ~60% of this is attributed to costs associated with labor

## Pit



- Rectangular onset pit
- Partially or fully-lined with cement or brick and mortar
- 20-feet deep on average
- May or may not have ventilation pipe

## Support structure and interface



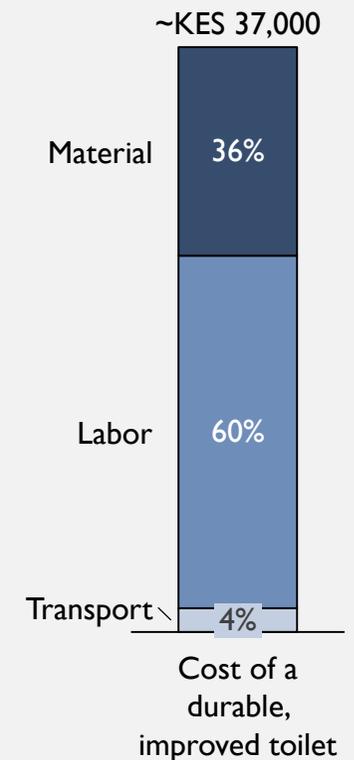
- Concrete foundation and slab with butterfly-design footrests

## Shelter



- Walls and roof of iron sheets, or brick and mortar

## Total cost to customer<sup>2</sup>

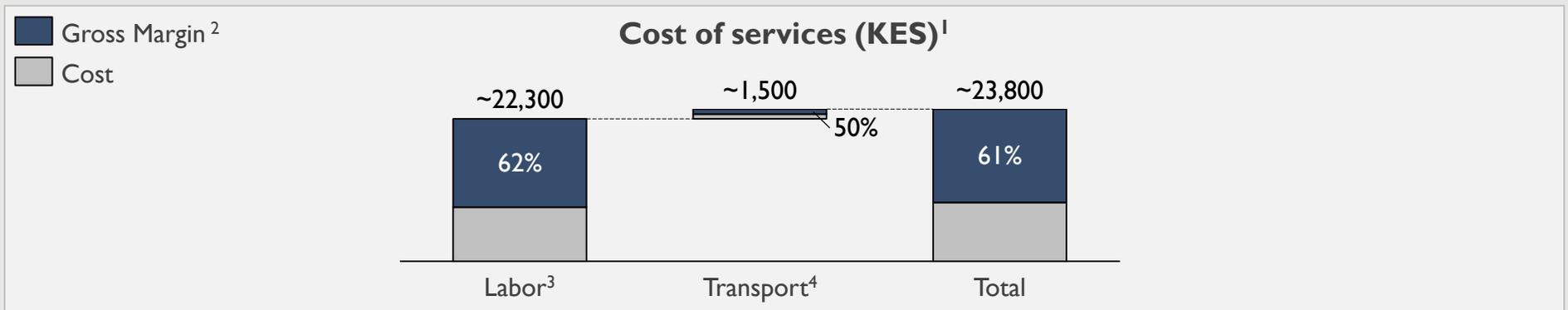


Source for photographs: FSG, 2021

1. The most prevalent durable, improved toilet has a partially-lined pit, a concrete foundation and cement floor, and has an estimated cost of ~KES 32,000; we have shown the second most prevalent durable, improved toilet in this document because we were unable to conduct a value chain traceback for the most prevalent one
2. FSG analysis based on qualitative interviews with households and value chain players in Busia, Kakamega and Homa Bay, 2021

# Product economics | Durable, improved toilet (2/3)

Of the total material cost to customer, 24% is retained as gross margin by the retailers/suppliers involved; service providers retain ~61% of the total cost of services to customer

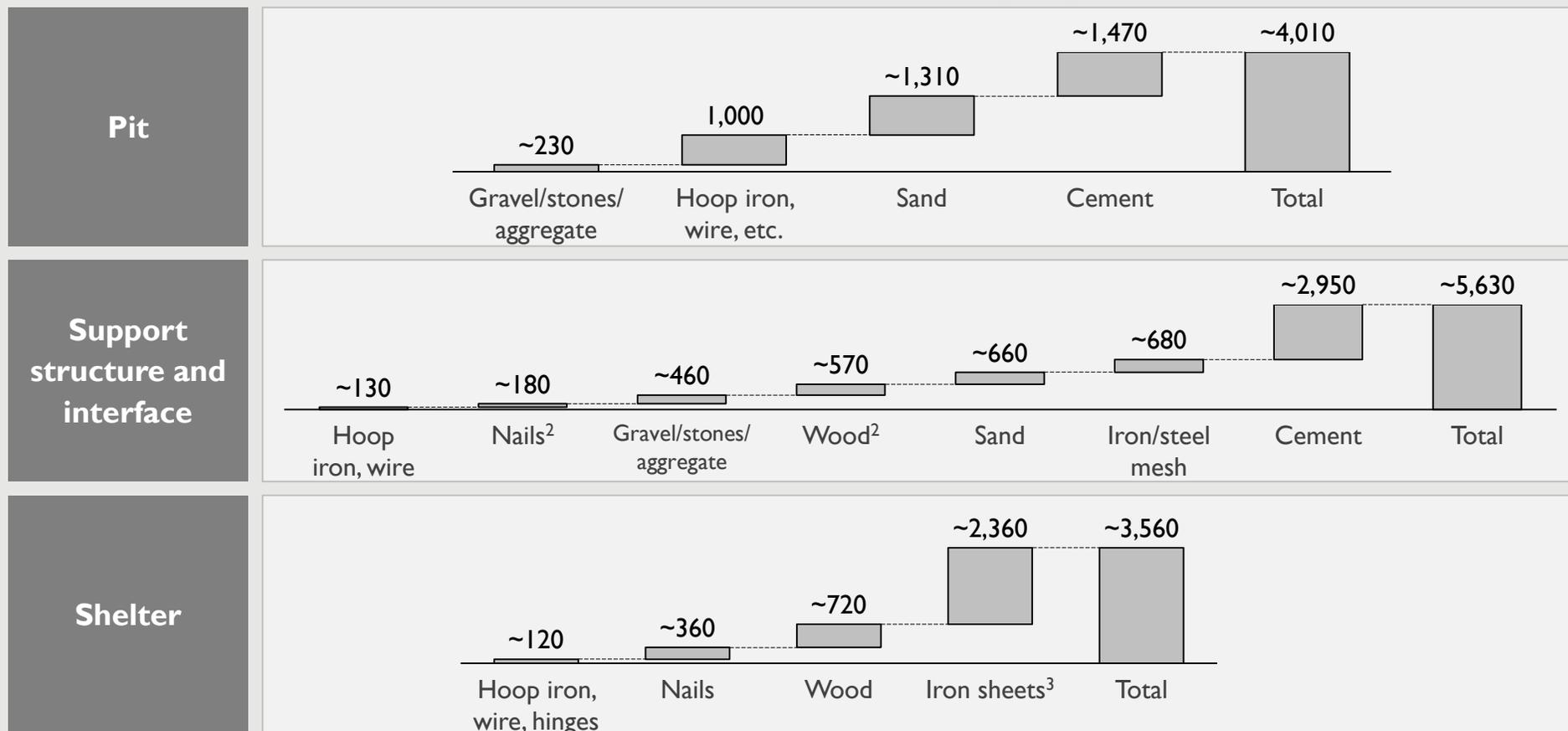


1. FSG analysis based on qualitative interviews with households and value chain players in Busia, Kakamega and Homa Bay, 2021
2. Gross margin for materials equals price charged to customer less cost of material to retailer; gross margin for labor equals price charged to customer less cost of hired labor and transport; gross margin for transport equals price charged to customer less total cost of fuel attributed to the trips
3. Labor cost represents the price charged by a fundi, excluding his transport cost but including the cost of laborers sub-contracted by the fundi (e.g., pit diggers)
4. Transport cost includes cost of transport for both, materials and labor

# Product economics | Durable, improved toilet (3/3)

The materials required for pit lining, support structure, and interface comprise bulk of the material costs, at ~30% and ~42% respectively

Cost of materials (KES)<sup>1</sup>



1. FSG analysis based on qualitative interviews with households and value chain players in Busia, Kakamega and Homa Bay, 2021

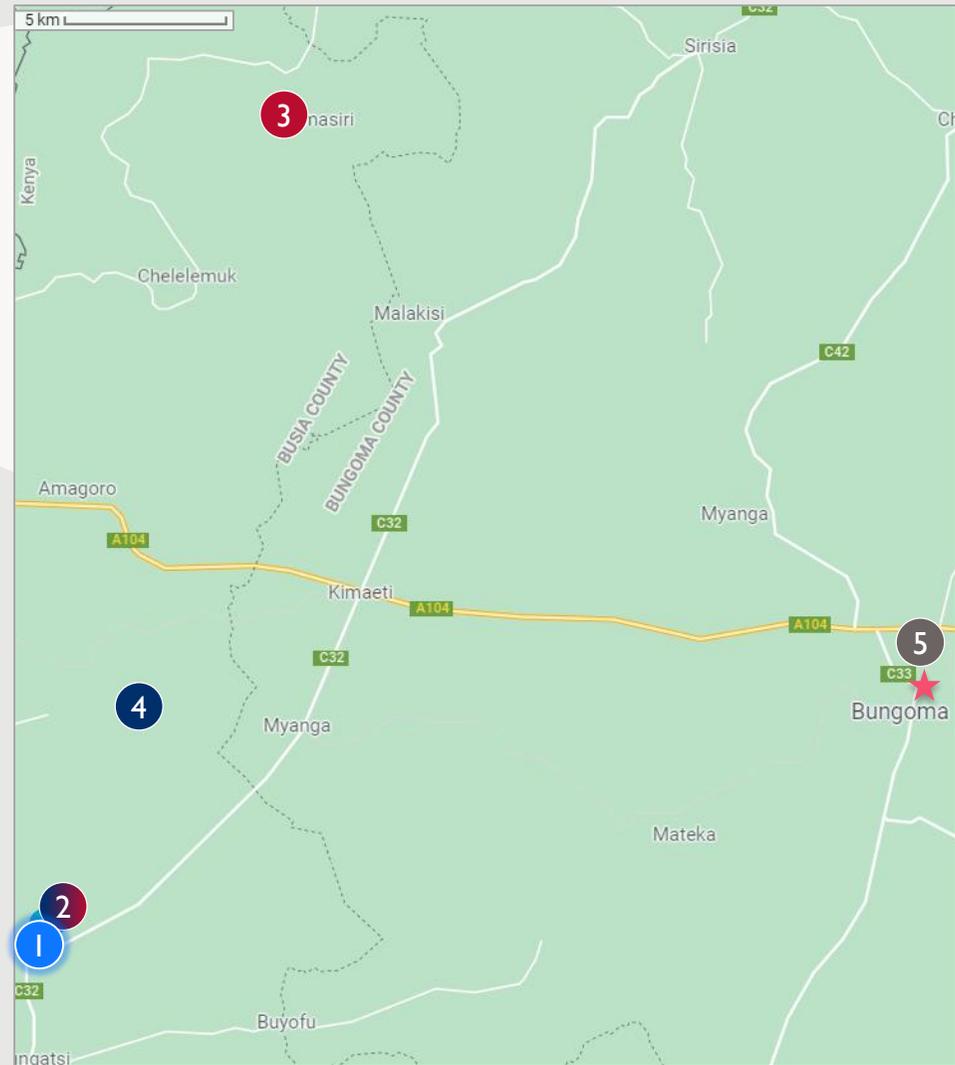
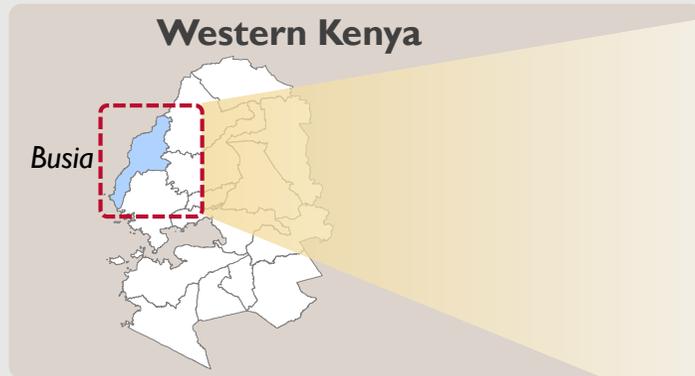
2. Wood logs and nails are used to build the frame required for on-site construction of the concrete foundation and slab

3. Mud/concrete bricks and mortar may be used instead of iron sheets, and would cost an estimated ~KES 2,340-2,740 (~400 bricks at KES 4-5 per brick, and a 50kg bag of cement at ~KES 740)

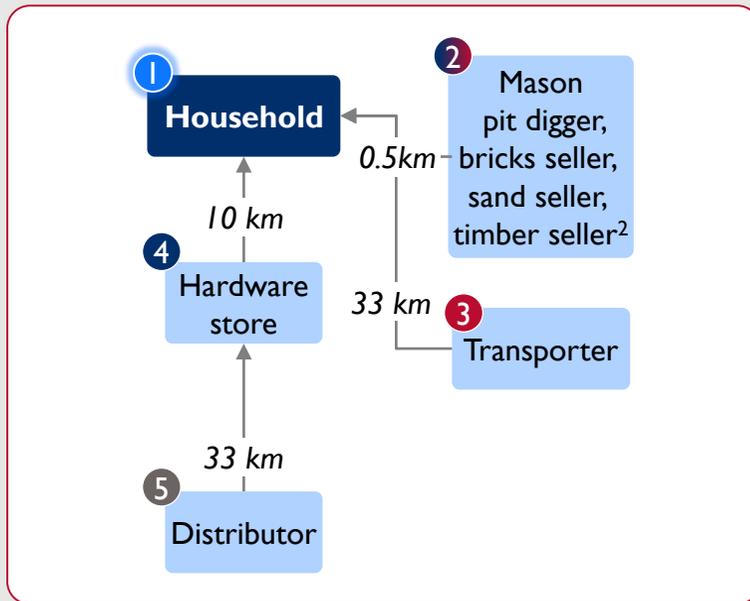
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# Value chain trace-back<sup>1</sup> | Non-durable toilet in rural Busia

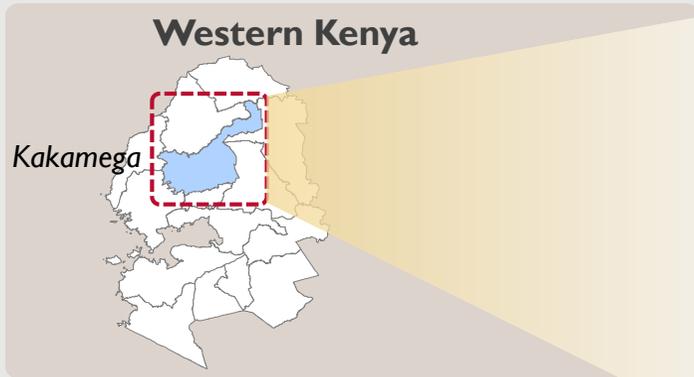


## Trace-back value chain<sup>1</sup>

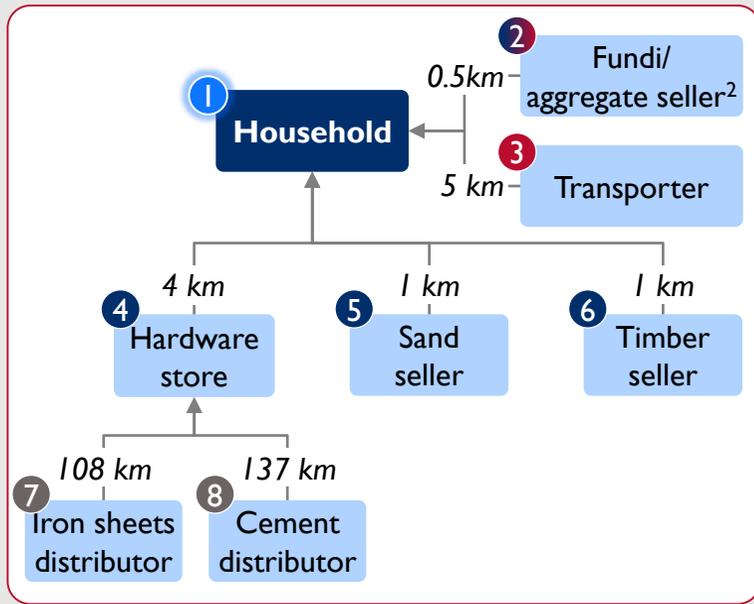


1. A value-chain trace-back identifies who and where customers and their suppliers procure materials and services from, using a snowball sampling approach
2. The fundi sub-contracts the pit digger and other labor, and sells bricks, sand and timber, which reduces the number of service and material providers that the customer has to engage with

# Value chain trace-back<sup>1</sup> | Durable toilet in rural Kakamega



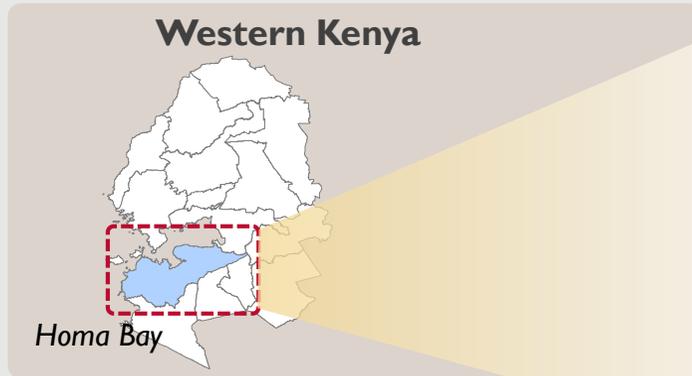
**Trace-back value chain<sup>1</sup>**



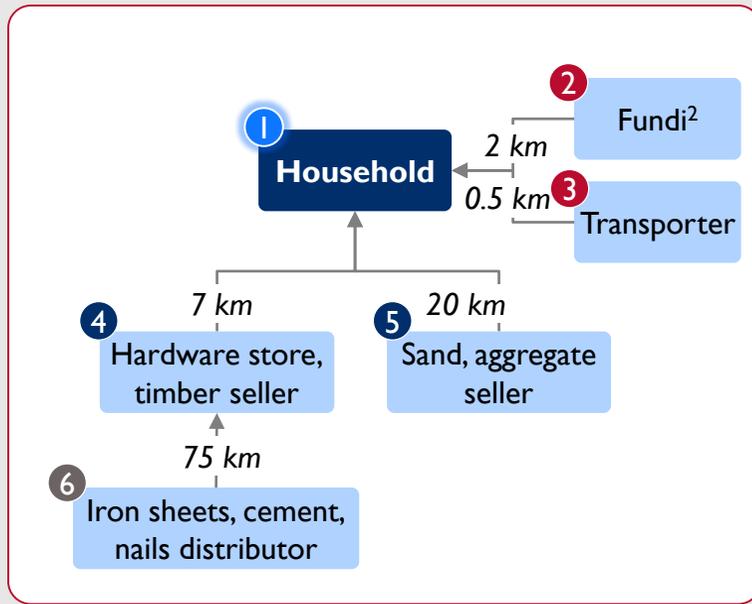
- Household
- Material Supplier
- Service provider
- Distributors
- ★ Town center

1. A value-chain trace-back identifies who and where customers and their suppliers procure materials and services from, using a snowball sampling approach  
 2. The fundi sub-contracts the pit digger and other labor, and also sells aggregate, which reduces the number of service and material providers that the customer has to engage with

# Value chain trace-back<sup>1</sup> | Durable toilet in rural Homa Bay



**Trace-back value chain<sup>1</sup>**



- Household
- Material Supplier
- Service provider
- Distributors
- ★ Town center

1. A value-chain trace-back identifies who and where customers and their suppliers procure materials and services from, using a snowball sampling approach
2. The fundi aggregates toilet construction services by sub-contracting the pit digger and other labor, which reduces the number of service providers that the customer has to engage with

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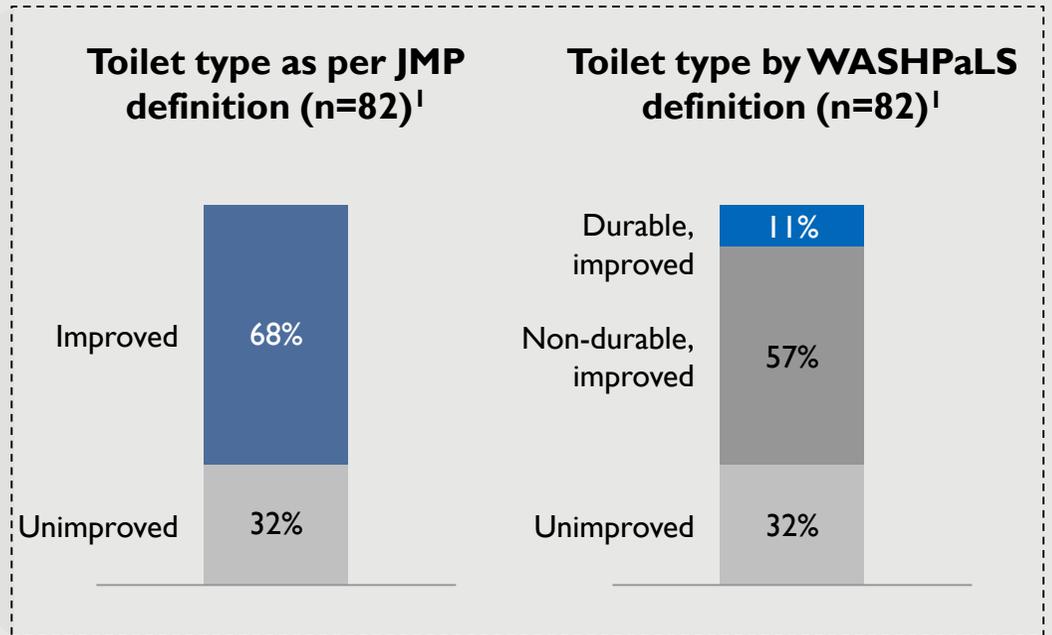
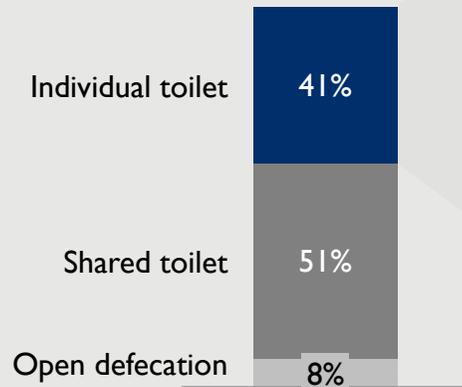
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# Sanitation context | Overview

Urban Marsabit is characterized by high rates of toilet sharing and improved toilets, but a low prevalence of durable toilets

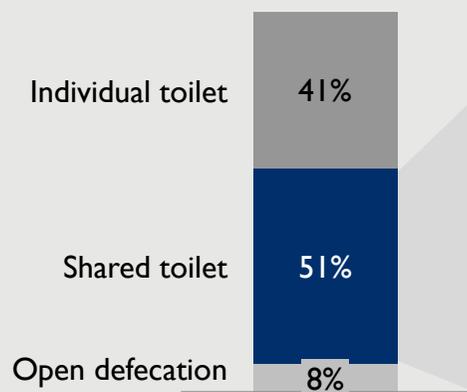
Type of sanitation facility (n=200) (2021)<sup>1</sup>



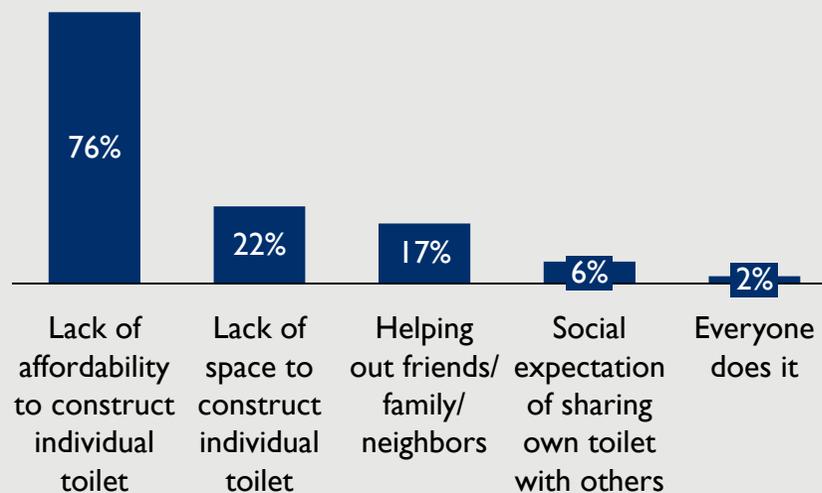
# Sanitation context | Overview

Sharing is very common because most households cannot afford constructing their own toilets

Type of sanitation facility (n=200) (2021)<sup>1</sup>



Reasons for sharing stated by households who use shared toilets (n=37) (2021)<sup>1,2</sup>



*“There are some toilets that were built by the community coming together so maybe one offered to dig the pit and another offered to put the slab.”*

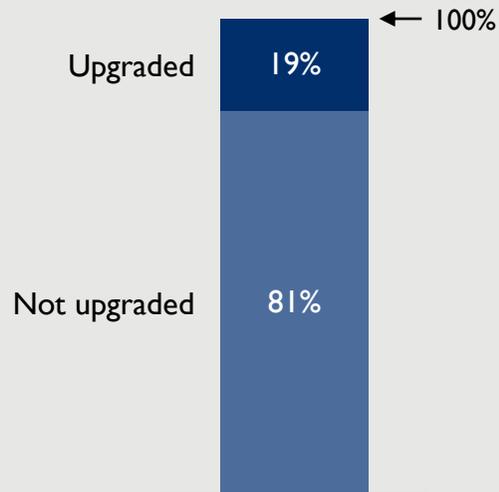
- Urban household, Merille

1. FSG quantitative interviews in urban Marsabit
2. The percentages on the bars don't add up to 100% since respondents could select multiple responses; the number of respondents is lower than 51% of 200 (the chart on the left-hand side) because reasons for sharing were only asked in the detailed interviews

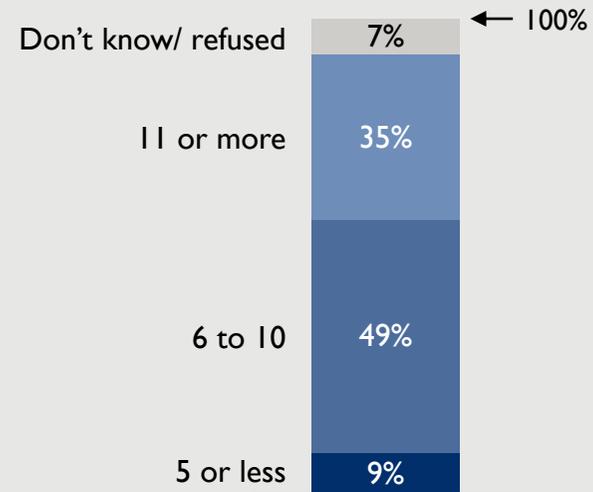
# Sanitation context | Overview

Upgrades are rare and while toilet collapse is less common than western Kenya, it remains an issue due to low durability of toilets

Share of households who have upgraded or repaired their current toilet (n=120) (2021)<sup>1</sup>



Number of years toilets last before collapsing as per households (n=95) (2021)<sup>1</sup>



1. FSG quantitative interviews in urban Marsabit

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# Barriers and Drivers | Definitions



**Barrier**

## *For customers*

A barrier is any factor that **inhibits a customer from paying for and constructing a toilet**

## *For value chain actors*

A barrier is any factor that **restricts a value chain (VC) actor's participation** in the sanitation market, thereby making it more difficult for customers to purchase toilets



**Driver**

A driver is any factor that **enables a customer to pay for and construct a toilet**

A driver is any factor that **enhances a VC actor's participation** in the sanitation market, thereby making it easier for customers to purchase toilets

# Barriers and Drivers | Framework for Market Based Sanitation

## What is the framework for MBS?

- The framework for market-based sanitation (MBS) helps funders and implementers to design, analyze, and improve MBS interventions by specifying the types of barriers that may need to be addressed to bring about systems change at scale
- The framework identifies three distinct domains: (1) the core **sanitation market**, comprising customers, enterprises, and entrepreneurs, that large-scale interventions can address (2) the **business environment**, shaped by government policy or the availability of raw materials and financial services, which governments, donors and funders, and large interventions can potentially influence, depending on the complexity and resources available; (3) **context**, such as social norms, economic environment, and geographic conditions, which interveners should understand but typically cannot influence in the short-term

### *The Sanitation Market System – Framework for MBS<sup>1</sup>*



1. **Source:** USAID, 2018. Scaling Market Based Sanitation: Desk review on market-based rural sanitation development programs. Washington, DC., USAID Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability (WASHPaLS) Project

# Barriers and Drivers | Overall summary

## Customer

- High awareness of the benefits of sanitation
- Knowledge of durable toilet options
- Low willingness to invest in durable toilets
- Significant proportion of households with a low ability to pay market prices for durable toilets
- Reluctance to take loans for fear of inability to pay back

## Entrepreneur

- Availability of full-time and part-time fundis
- Part-time fundis' limited skill in durable products
- Viability of sanitation business line for all entrepreneurs
- Limited viability of sanitation as a stand-alone business
- Reluctance of full-time fundis to stock materials
- Working capital challenges
- Reluctance to take loans



## Enterprise

- Households engaging with 5-7 players to construct toilets
- Information-seeking behavior by households
- Low affordability of durable toilets
- High costs for constructing durable toilets
- Challenges in introducing new products
- Near-absence of sales and marketing by market players

## Business environment and broader context

- Dispersed supply chains for construction materials
- High costs of construction materials
- Well-established network of transporters improving accessibility to construction materials
- Adequate choice of suppliers for households

# Barriers and Drivers | Customer

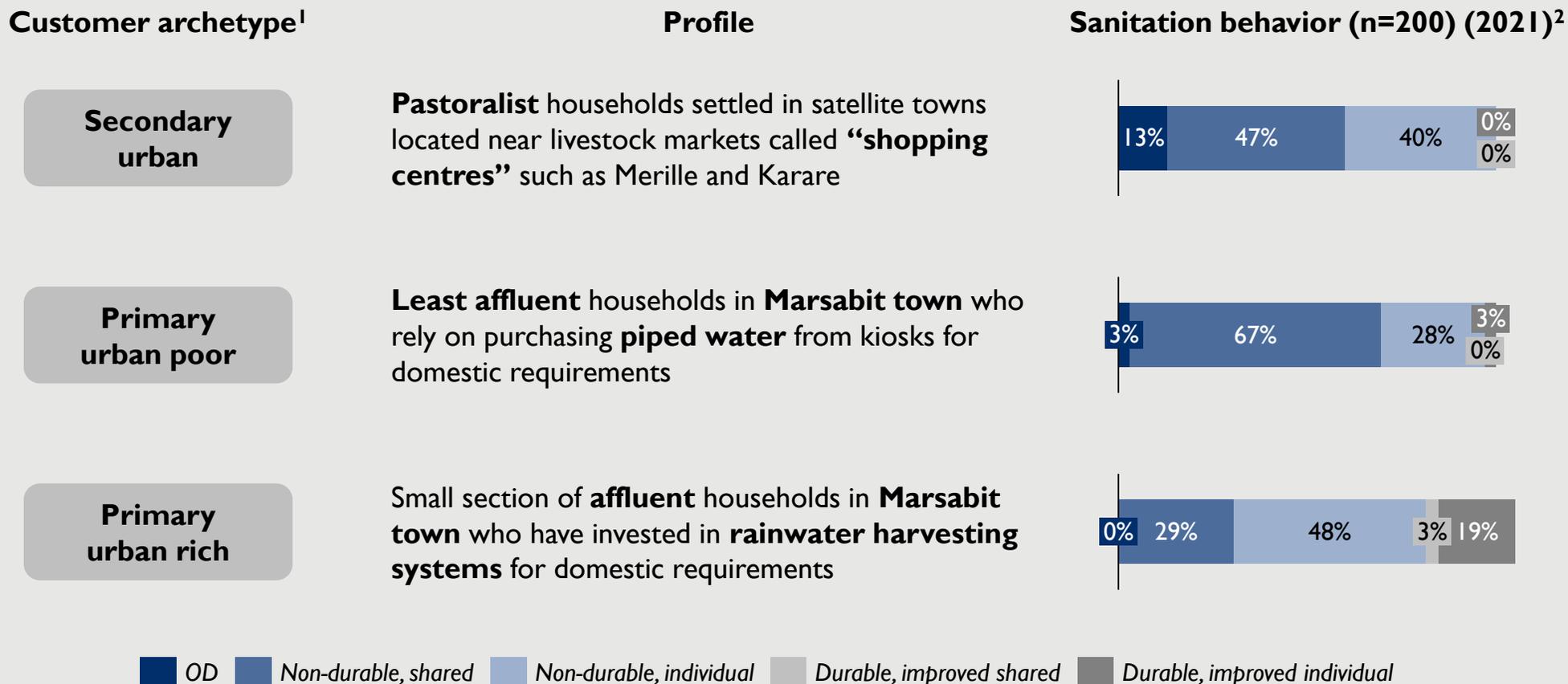
## Customer

- High awareness of the benefits of sanitation
- Knowledge of durable toilet options
- Low willingness to invest in durable toilets
- Significant proportion of households with a low ability to pay market prices for durable toilets
- Reluctance to take loans for fear of inability to pay back



# Customer | Segmentation overview

We identified three broad customer archetypes in urban Marsabit to develop a nuanced understanding of households and their sanitation behavior

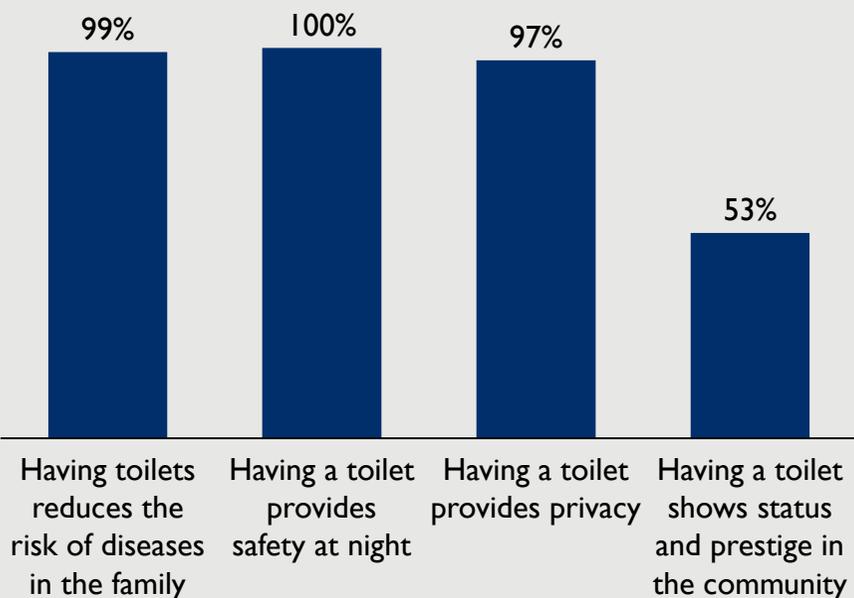


1. We were unable to quantitatively size the population of these archetypes due to data limitations. However, based on our research, we postulate that “primary urban poor” and “secondary urban” households are more prevalent than the “primary urban rich”

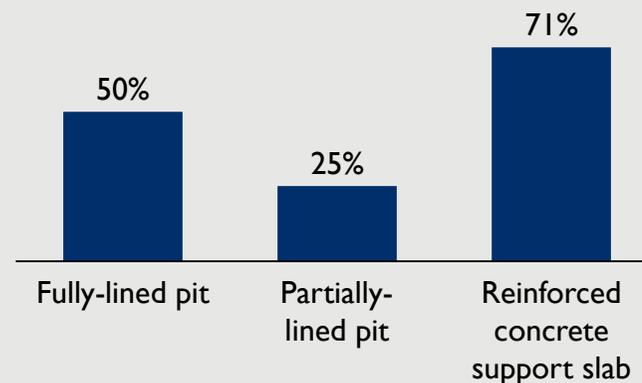
2. FSG quantitative interviews in urban Marsabit; the percentages on the bars don’t add up to 100% due to rounding off

Households value sanitation and appear to have some awareness of durable toilet options

Share of households that agree with the benefits of using toilets (n=95) (2021)<sup>1</sup>



Household's awareness of durable components (n=95) (2021)<sup>1</sup>



*“When we talk about durable toilets you must put concrete on the walls [of the pit] for it not to sink...if you just dig and put concrete on top, that is already a poor foundation.”*

- Urban household, Marsabit town

**Households have a low willingness to invest in durable toilets and prioritize other expenditures such as children's education**

**Households prefer to spend their limited funds on education over toilet construction...**

*"I would give priority to school fees...I can request a good neighbor to allow me to use their toilet while I organize my finances or maybe I'll go to the bush and then once am done with paying school fees, then I can build a toilet."*

- Urban household, Marsabit town

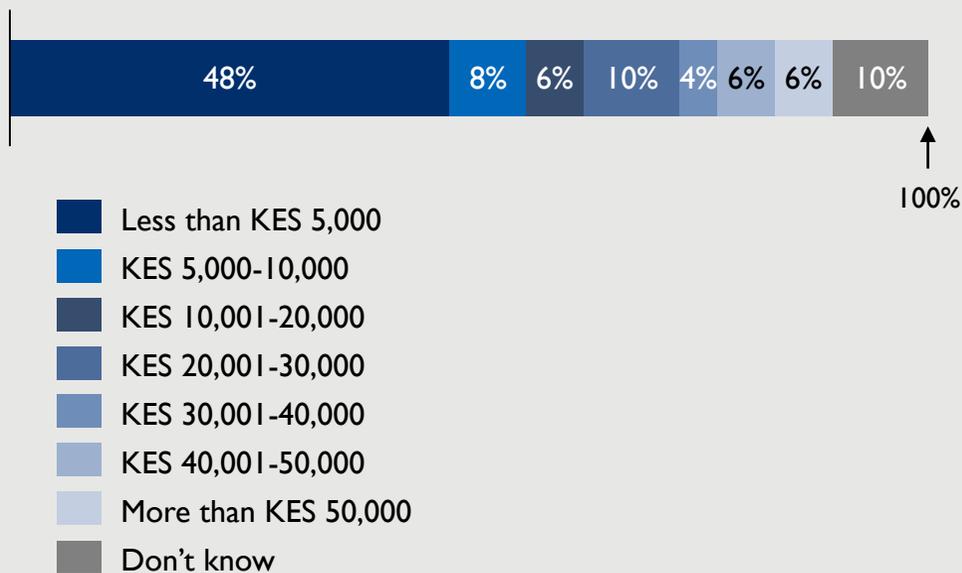
**...and prioritize affordability over durability while making their construction decision...**

*"You have to look at your finances and how much you can afford and that is how you decide which toilet to construct"*

- Urban household, Merille

**...which results in a low willingness-to-pay for sanitation**

**Households' willingness to pay for their desired future toilet in urban Marsabit (n=48) (2021)<sup>1</sup>**



1. FSG quantitative interviews in urban Marsabit; the percentages on the bar don't add up to 100% due to rounding off

**Most households lack the ability to pay for durable toilets or even individual toilets, and are unwilling to take loans to bridge the gap**

**a**

**Most households cannot afford durable, improved toilets or even an individual toilet**

**b**

**Most households are unwilling to take loans for sanitation to bridge the gap because they do not believe they will be able to pay it back**

a

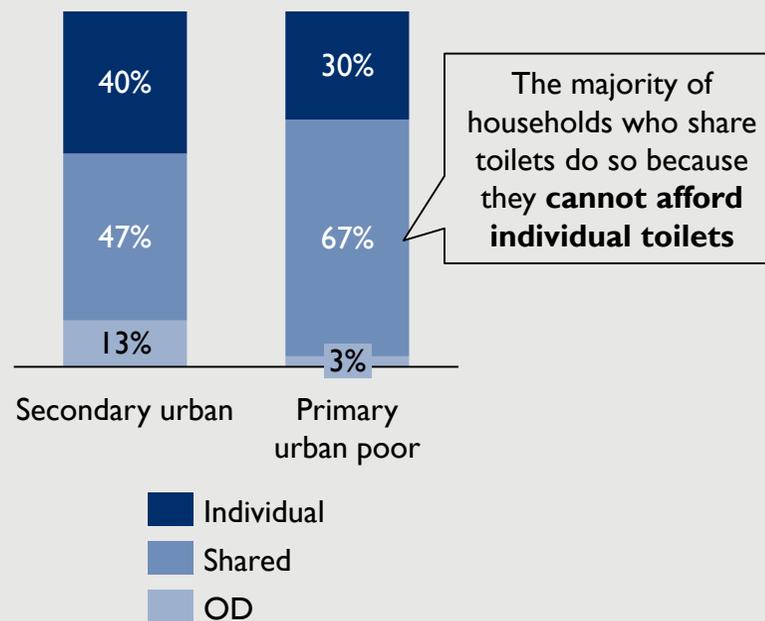
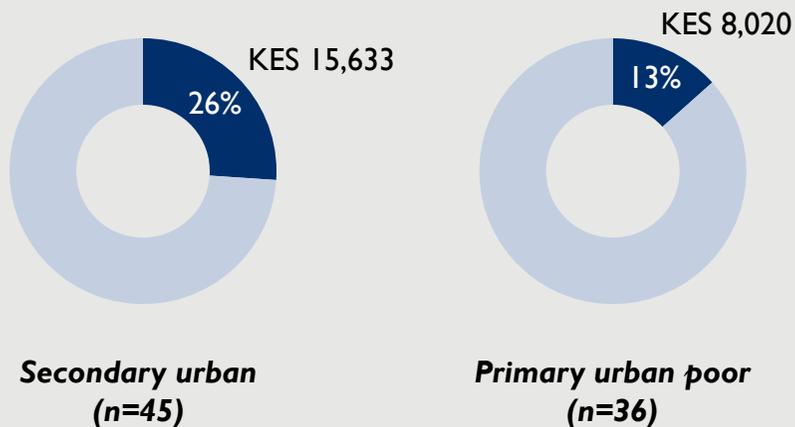
Most households cannot afford durable, improved toilets or even an individual toilet

The two most prevalent segments cannot afford durable toilets...

...and most are unable to afford even individual toilets

Average value of assets owned as a % of the estimated cost of the cheapest durable, improved toilet (2021)<sup>1</sup>

Type of toilet facility by customer archetype (n=81) (2021)<sup>1</sup>



Estimated cost of the cheapest durable, improved toilet in urban Marsabit = ~KES 60,000

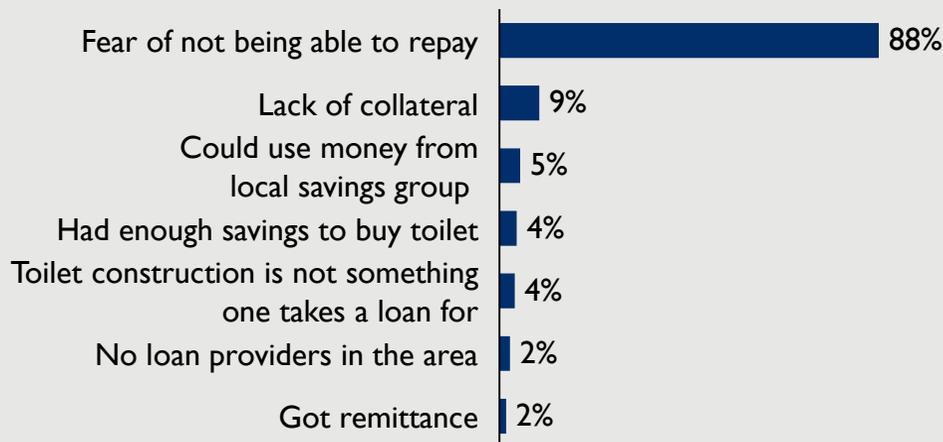
b

Most households are unwilling to take loans for sanitation to bridge the gap because they do not believe they will be able to pay it back

Share of households who are willing to take a loan for future toilet construction (n=54) (2021)<sup>1</sup>



Reason or not taking loan (n=50) (2021)<sup>1,2</sup>



*“Instead of taking a loan to build a toilet, I would use that money to start a business and then use that income to build a toilet. But if I use it to build a toilet, I might not have a place to get the income to repay the loan.”*

- Urban household, Marsabit town

1. FSG quantitative interviews in urban Marsabit  
2. The percentages on the bars don't add up to 100% since respondents could select multiple responses

# Barriers and Drivers | Entrepreneur

- Driver
- Barrier

## Entrepreneur

- Availability of full-time and part-time fundis
- Part-time fundis' limited skill in durable products
- Viability of sanitation business line for all entrepreneurs
- Limited viability of sanitation as a stand-alone business
- Reluctance of full-time fundis to stock materials
- Working capital challenges
- Reluctance to take loans



The market has formally trained, full-time fundis who typically construct durable toilets and part-time fundis who can only construct temporary toilets due to inadequate knowledge of durable toilets



## Full-time fundis



## Part-time fundis

Sources of information on masonry and sanitation

Polytechnic college, NGO contracts; are **knowledgeable** about durable toilet construction

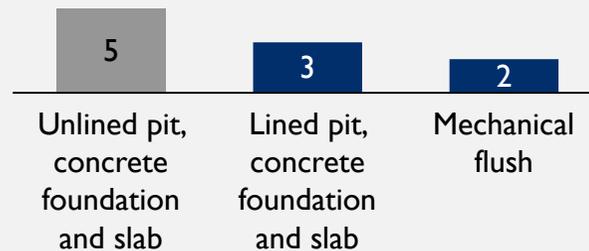
On-the-job; have **limited knowledge** of durable toilet construction

Months worked as a fundi per annum<sup>1</sup>

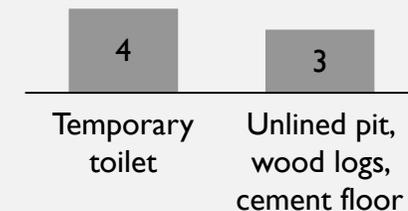
8-10 months

2-6 months

Typical number and types of toilets constructed per annum<sup>1</sup>



■ Non-durable ■ Durable improved



■ Non-durable

1. FSG analysis based on qualitative interviews with 2 “full-time” fundis in urban Marsabit

**Both full-time and part-time fundis view sanitation as a viable business line with healthy margins, but even full-time fundis don't consider it as a stand-alone business with scope for further expansion**

**a**

**Sanitation is viable for both types of fundis, but they don't consider it as a standalone business with potential for further expansion**

**b**

**Full-time fundis only earn a supplemental income from sanitation because most jobs are general masonry jobs, including high-value house construction jobs**

a

Sanitation is viable for both types of fundis, but they don't consider it as a standalone business with potential for further expansion



### Full-time fundis



### Part-time fundis

Typical split of annual revenue from all sources<sup>1,2</sup>



Typical gross margin per sanitation job<sup>1,2</sup>

55-56%

40-45%

■ Other sources ■ General masonry ■ Sanitation

*"I have no time for stocking and selling materials."*

—Full-time fundi, Marsabit

*"I have enough work. I don't want to mix it with other businesses. I prefer that the hardware does this business."*

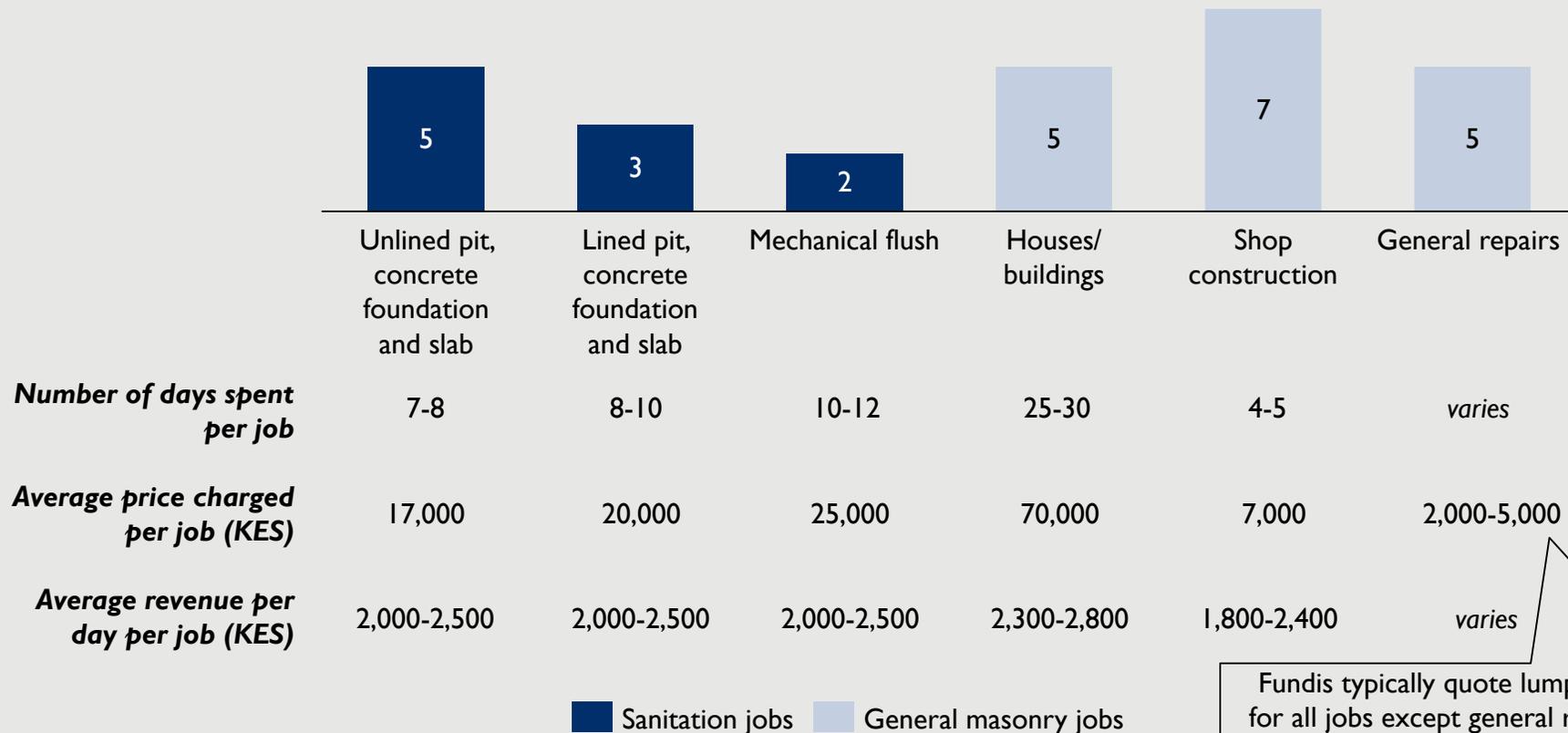
—Full-time fundi, Marsabit

1. FSG analysis based on qualitative interviews with 2 "full time" fundis and 2 "part-time" fundis in urban Marsabit, 2021  
2. We have been unable to estimate income split between sanitation and general masonry, and the typical gross margin per general masonry job due to data limitations

b

Full-time fundis only earn a supplemental income from sanitation because most jobs are general masonry jobs, including high-value house construction jobs

Typical number of masonry jobs per year for a “full-time” fundi, split by type (2021)<sup>1</sup>



1. FSG analysis based on qualitative interviews with 2 “full-time” fundis in urban Marsabit

**Sanitation is a viable business for other entrepreneurs, especially pit diggers, but not as a stand-alone business**

**a**

**Unit margins from sanitation are attractive for each value chain player**

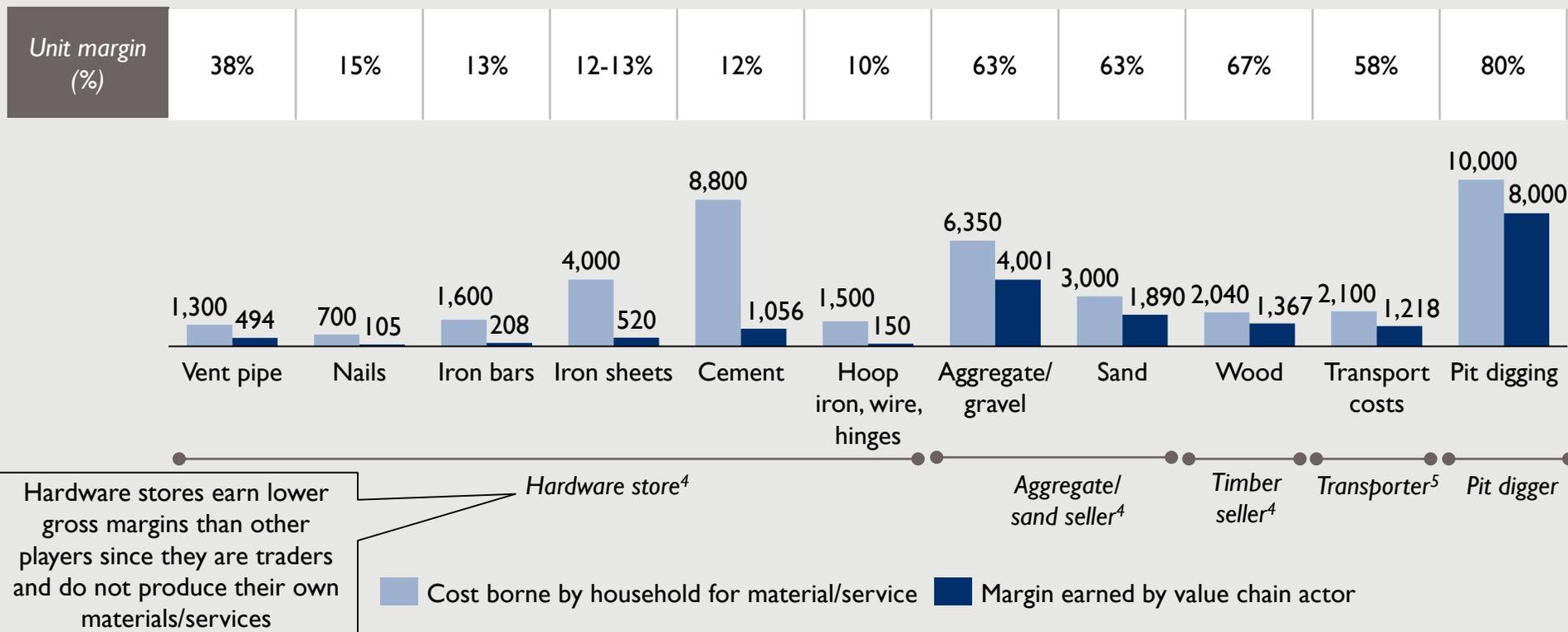
**b**

**However, sanitation is unviable as a standalone business for all of them**

a

## Unit margins from sanitation are attractive for value chain player

Margins earned by value chain actors (other than fundis) on the construction of a typical “durable, improved toilet” in urban Marsabit (in KES '000) (2021)<sup>1,2,3</sup>

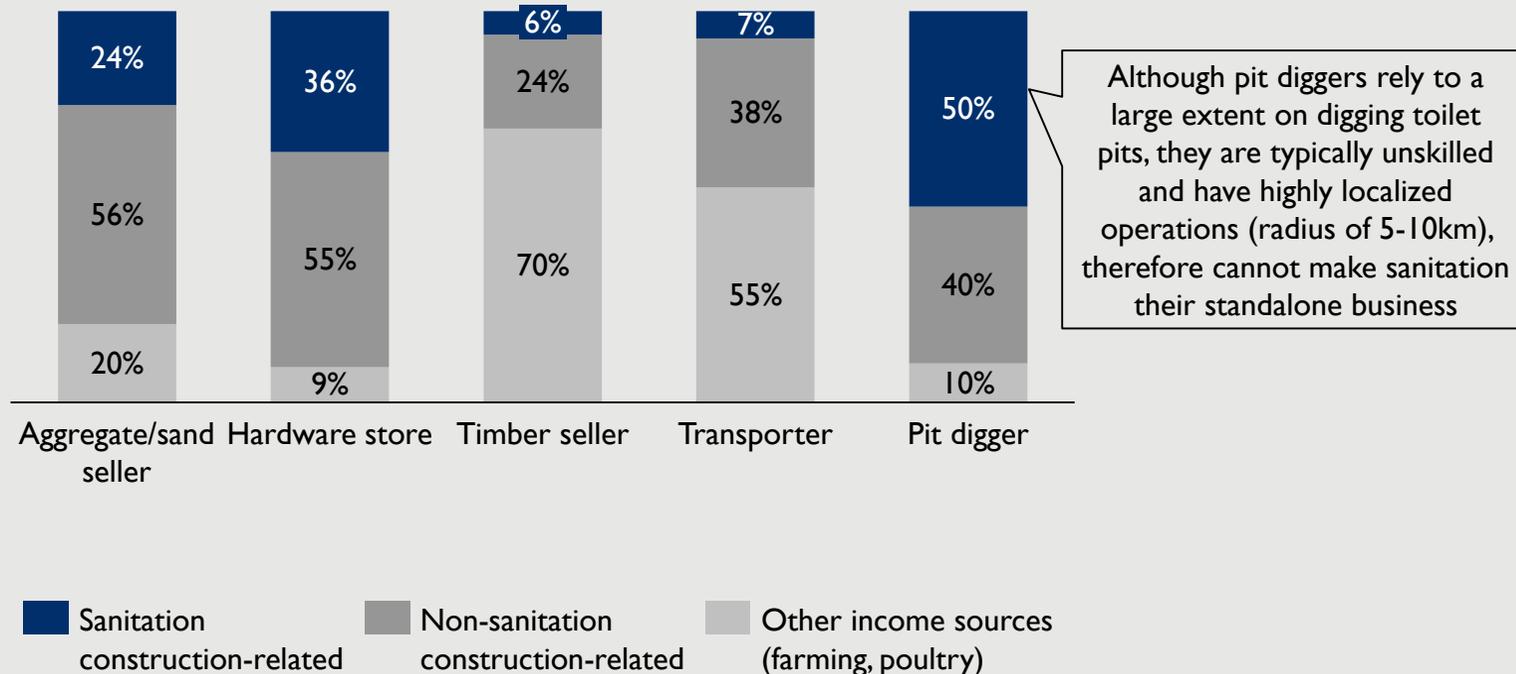


- The costs and margins depicted here are for construction of a durable, improved toilet (fully-lined pit with a concrete foundation and slab with an iron sheet shelter); source: FSG analysis based on qualitative interviews with value chain actors in urban Marsabit
- Margin for materials are generally higher in Marsabit than in western Kenya because suppliers have higher transport costs and working capital requirements
- Unit margins exclude costs that are shared with other business lines, such as assets, rent, taxes, etc.
- Unit margin (%) for aggregate/sand/timber sellers and hardware store owners = (selling price per unit - cost of material to the seller/retailer) / (selling price per unit)
- Unit margin (%) for transporter = (price charged per km - cost of fuel per km) / (price charged per km); transport costs includes cost of transporting both materials and service providers

b

However, sanitation is unviable as a standalone business for all of them

% split of total annual revenue, by value chain player (2021)<sup>1</sup>



1. FSG analysis based on qualitative interviews with value chain actors in urban Marsabit

**All entrepreneurs face working capital challenges, and are unwilling to take loans**

**Fundis face delayed payments from customers, but have to pay their hired labor immediately**

*“Sometimes customers don’t pay us for 7 months also. Then we are stuck.”*

– Fundi, Marsabit town

**However, these players are unwilling to access loans due to prevailing social norms**

*“We don’t take loans as it’s not allowed in our Islamic religion.”*

– Hardware store, Marsabit town

**Hardware stores do not receive trade credit, and require capital to make bulk purchases**

*“No, no! They will not sell on credit. I have to arrange my transport as well, and they don’t care where I get the money from.”*

– Hardware store, Marsabit town

*“I don’t like these SACCOs and Chamas.”*

– Hardware store, Marsabit town

*“I am afraid of taking a loan.”*

– Fundi, Marsabit town

# Barriers and Drivers | Enterprise

- Driver
- Barrier



## Enterprise

- Households engaging with 5-7 players to construct toilets
- Information-seeking behavior by households
- Low affordability of durable toilets
- High costs for constructing durable toilets
- Challenges in introducing new products
- Near-absence of sales and marketing by market players

# Enterprise | Barrier | Delivery model (1/3)

The current construction process can be improved since households have to interact with 5-7 players, but they proactively seek information

a

Households interact with 5-7 value chain players to construct toilets who are accessible but often located far away

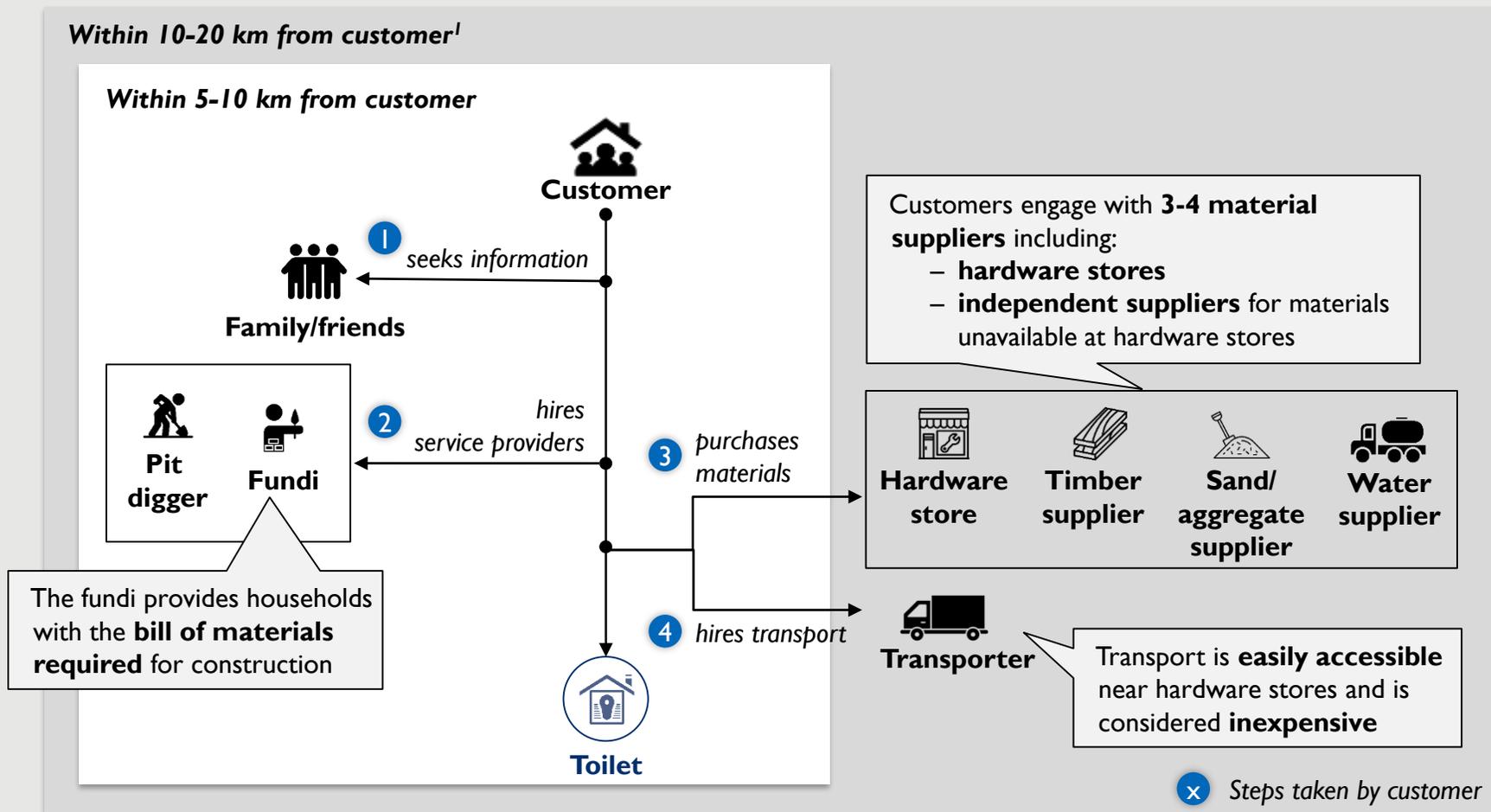
b

Households proactively seek information on toilet costs and materials before approaching service providers

# Enterprise | Driver | Delivery model (2/3)

**a** Households interact with 5-7 value chain players to construct toilets who are accessible but often located far away

### Illustrative diagram of the process to construct a toilet in Urban Marsabit

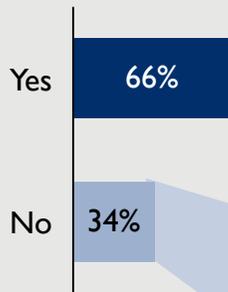


1. Distance to material suppliers is greater for households in secondary urban towns (~20 km) as compared to households in primary urban towns (~10 km)

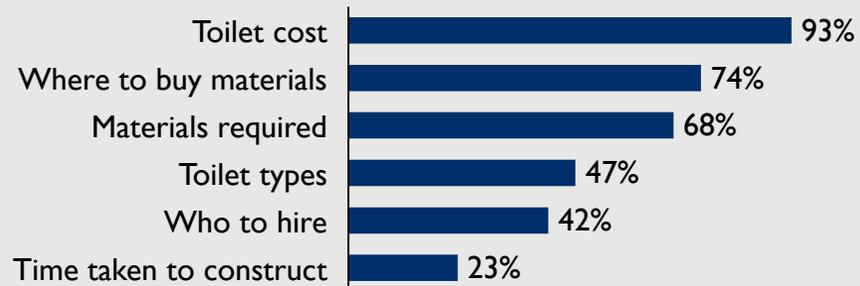
b

## Households proactively seek information on toilet costs and materials before approaching service providers

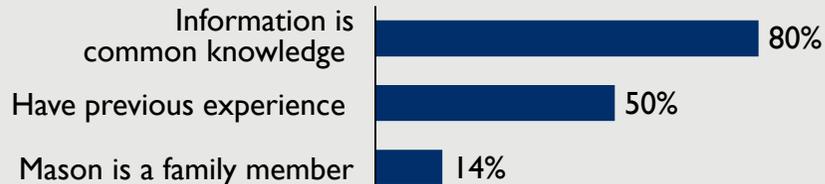
% split of households that sought information before reaching out to fundis (n=20) (2021)<sup>1</sup>



### Type of information sought (n=13) (2021)<sup>1,2</sup>



### Reason for not seeking information (n=7) (2021)<sup>1,2</sup>



*“I went to the place where the NGO was teaching. It helped me to understand the process of building a toilet and then contract a mason to actually build it.”*

- Urban household, Merille

1. FSG quantitative interviews in urban Marsabit  
2. Chart percentages do not equal to 100% as this was a multiple-choice question

**The market has a range of product options, but durable toilet designs are expensive, driven by high material and labor costs**

**a**

**The market has a range of product options, but there is a trade-off between durability and affordability**

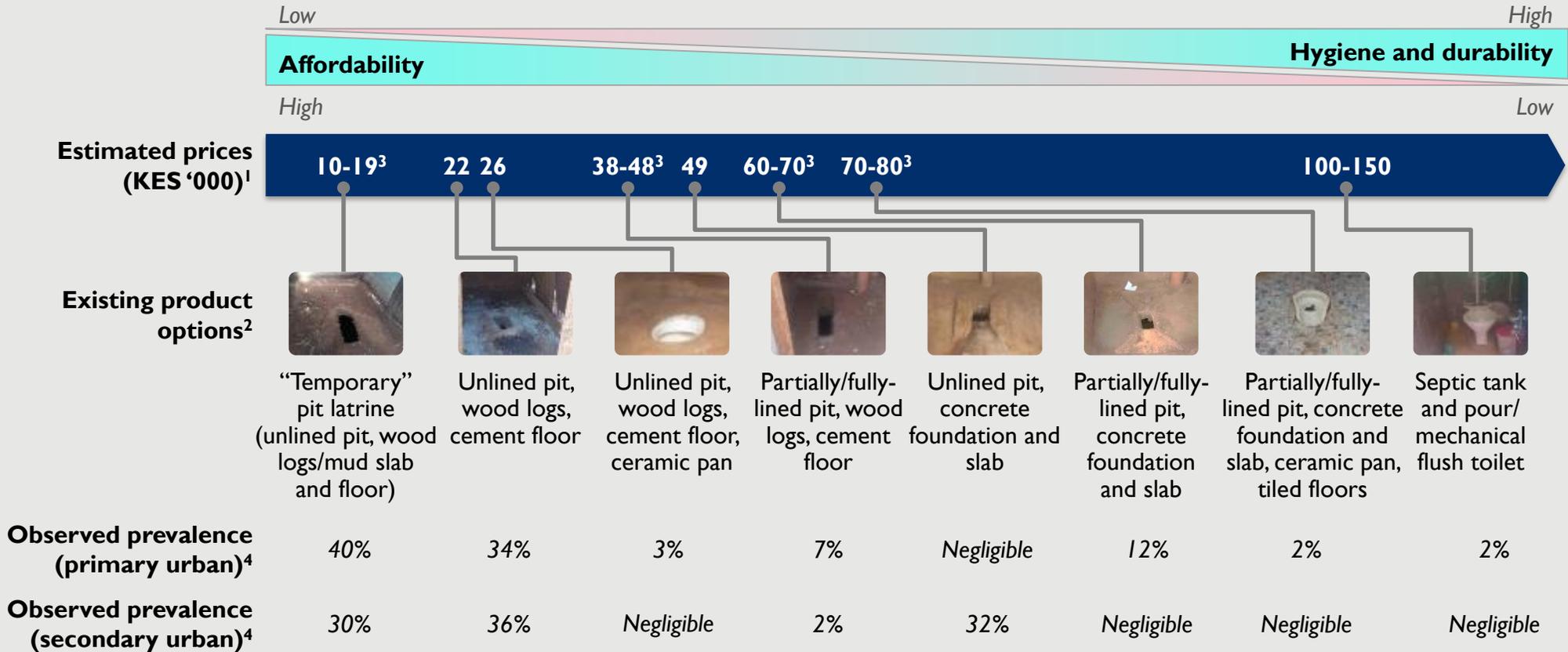
**b**

**Durable toilets are more expensive in urban Marsabit as compared to a more established market like rural western Kenya due to higher material and labor costs**

# Enterprise | Barrier | Product system (2/4)

a

The market has a range of product options, but there is a trade-off between durability and affordability

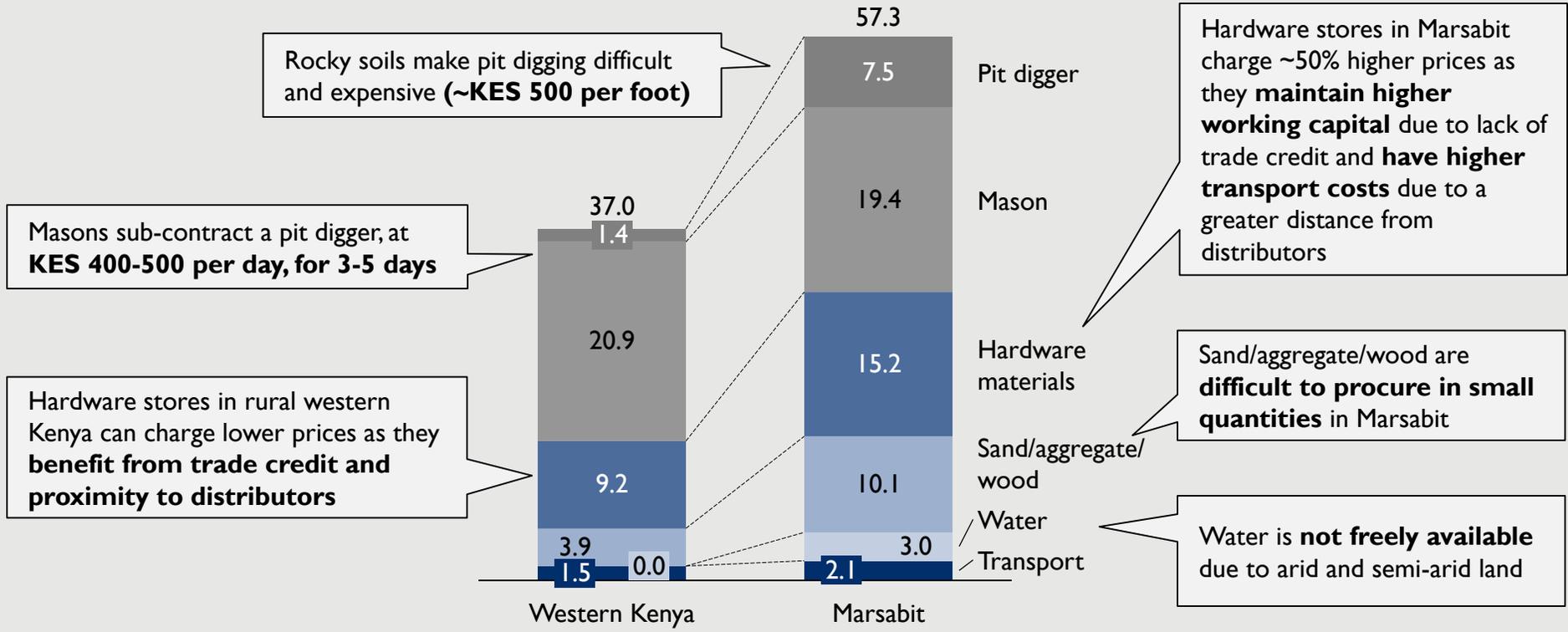


1. Estimated price represents the rounded-off consolidated price of substructure, interface, and shelter; estimated based on quantitative and qualitative interviews with households, value chain players, county government officials, and local program staff
2. Iron sheets are the most commonly used material for the toilet shelter (93% have iron sheet walls and 96% have iron sheet roof), across toilet options; most toilets (93%) have rectangular pits
3. Price range for a temporary toilet denotes the difference between a mud shelter and iron sheet walls/roof; price ranges for lined pits denote the difference between partially and fully-lined pits
4. Prevalence has been calculated based on an observation of 67 households in Marsabit town and 53 households in secondary urban centers in Marsabit (excludes 80 respondents who either practice open defecation or share toilets no source: FSG quantitative interviews in urban Marsabit, 2021 (n=200)

b

Durable toilets are more expensive in urban Marsabit as compared to a more established market like rural western Kenya due to higher material and labor costs

Comparison of total estimated cost of a comparable durable, improved toilet in rural western Kenya and urban Marsabit (KES '000) (2021)<sup>1,2</sup>



1. Toilet specifications for western Kenya: 15-feet deep, fully-lined onset pit with a concrete foundation and 5x3 feet slab of 4 inch thickness, iron sheet walls and roof  
 2. Toilet specifications for Marsabit: 15-feet deep, fully-lined onset pit with a concrete foundation and 5x3 feet slab with 5 inch thickness, iron sheet walls and roof; we excluded the cost of vent pipe (KES 1,300) to make it comparable to rural Western Kenya where vent pipes are not as common in durable toilets

Sanitation-specific products, such as pans or platforms, must be either fast-moving or earn high margins to compete with existing stocks of hardware stores

Inventory days and average margins for a typical hardware store, by type of products (2021)<sup>1</sup>

	Fast-moving stocks (e.g., cement, nails, wire mesh, iron sheets)	Slow-moving stocks (e.g., emulsion paint, vent pipe)
 Inventory days <sup>2</sup>	1 month	2-6 months
 Average margins	12% - 20%	35% - 40%

“Every thing depends on sales. If it sells, I will stock.”

– Hardware store owner, Marsabit town<sup>1</sup>

1. FSG analysis based on qualitative interviews with 5 hardware stores in urban Marsabit

2. Inventory days represents the average time taken to convert existing inventory into sales and to replenish/ re-order stocks

None of the value chain players differentiate among customers or engage in active sales and marketing



**CHVs lack adequate training, information, and capacity to effectively activate demand, and are not considered an important information source by households**

**a**

**CHVs are ubiquitous, but households do not see them as a source for sanitation information**

**b**

**CHVs allocate limited time to their role as it is not their primary income source, and prioritize their non-sanitation responsibilities**

**c**

**CHVs lack adequate training and information on durable sanitation products and typically recommend self-construction**

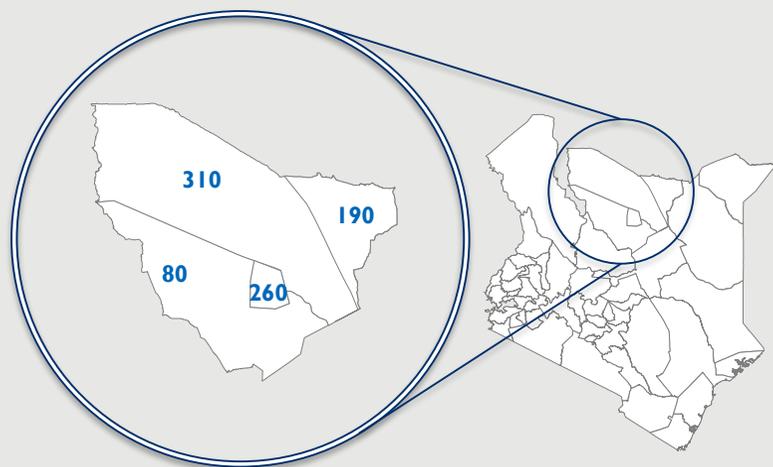
a

**CHVs are ubiquitous, but households do not see them as a source for sanitation information**

**A network of ~840 CHVs operate across Marsabit**

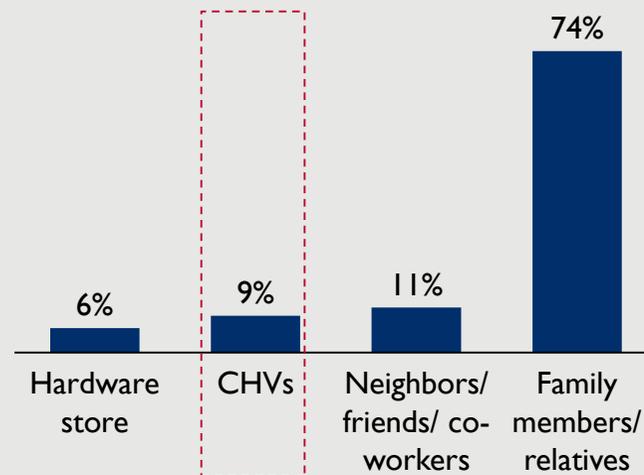
**However, most households do not see them as a source of information on sanitation**

**Estimated number of CHVs by constituency<sup>1</sup>**



**Average number of HHs per CHV ~130<sup>2,3</sup>**

**% split of households who sought sanitation information, by source (n=13) (2021)<sup>4</sup>**



1. Number of CHVs per constituency estimated using the formula: number of functioning community health units (CHUs) by constituency (source: Ministry of Health, Government of Kenya ([Link](#))) multiplied by 10 CHVs per functional CHU (Source: [Link](#))
2. Number of households estimated using 2019 Kenya Population and Housing Survey (Source: [Link](#))
3. Average number of households per CHV estimated using the formula: households in each constituency divided by number of CHVs in each constituency
4. FSG quantitative interviews in urban Marsabit

b

**CHVs allocate limited time to their role as it is not their primary income source, and prioritize their non-sanitation responsibilities**

**CHVs dedicate limited time to their role as they depend on other sources of income**

*“I work as a CHV for 12 days in a month. On other days I am a casual laborer for the county work”*

- CHV, Marsabit town

*“I work as a CHV for 3 days a month. Other than CHV work, I also work on construction sites and help with activities like laying down of pipes.”*

- CHV, Karare

*“I get about 50% of my monthly income from CHV activities, the remaining 50% I get from doing casual labor in the community”*

- CHV, Karare

**The limited time they dedicate is primarily spent on activities that are not sanitation-related**

*“We spread awareness about diseases. At the start of COVID, we visited the communities and asked them to install water points.”*

- CHV, Karare

*“We discuss the importance of having a clean environment. For example, we teach them about trees that are important and should not be cut”*

- CHV, Karare

*“As a CHV, I educate the community about nutrition. I conduct tracing of HIV, tuberculosis, and also track immunization defaulters.”*

- CHV, Marsabit town

C

**CHVs lack adequate training and information on durable sanitation products and typically recommend self-construction**



## Lack of training and information

- Receive training on the **benefits of hygiene** but not on types or specifics of durable toilets
- **Lack access to training manuals** or material on toilet types

*“I have not received any training in the types of household toilets...in sanitation promotion training we are told about washing hands after using the toilet”*

- CHV, Marsabit town

*“I was told about toilet types by nurses in the hospital, through a project...there are some manuals on this but it is not very accessible and I cannot recall the articles”*

- CHV, Karare



## Incomplete recommendations

- **Focus on eliminating open defecation**, and recommend self-construction
- **Do not recommend components critical to hygiene and durability**

*“I recommend that households construct the toilets themselves since it is cheaper... or I sometimes gather the community to construct for them.”*

- CHV, Marsabit town

*“We just tell them the importance of toilets...we would ask them to build temporary toilets by just cutting down a tree and putting a door...now we tell them to use some iron sheets also.”*

- CHV, Karare

# Barriers and Drivers | Business environment

- Driver
- Barrier

## Business environment and broader context

- Dispersed supply chains for construction materials
- High costs of construction materials
- Well-established network of transporters improving accessibility to construction materials
- Adequate choice of suppliers for households



Despite a challenging geographical context, improved road infrastructure has enabled a thriving market of construction material suppliers and transporters, providing accessibility and choice to households

**a**

Households have to engage with 3-4 material suppliers for their toilets, often located up to 20 kilometres away

**b**

Hardware store owners have to travel long distances, often as far as Nairobi, at their own cost to purchase materials; they cover this additional cost by charging higher prices

**c**

However, the Isiolo-Marsabit-Moyale road has enabled a competitive transporter landscape, making transport inexpensive and easily accessible for households

**d**

Additionally, households have a choice of suppliers, indicating a thriving market for construction materials

# Business environment | Driver | Associated supply chain (2/5)



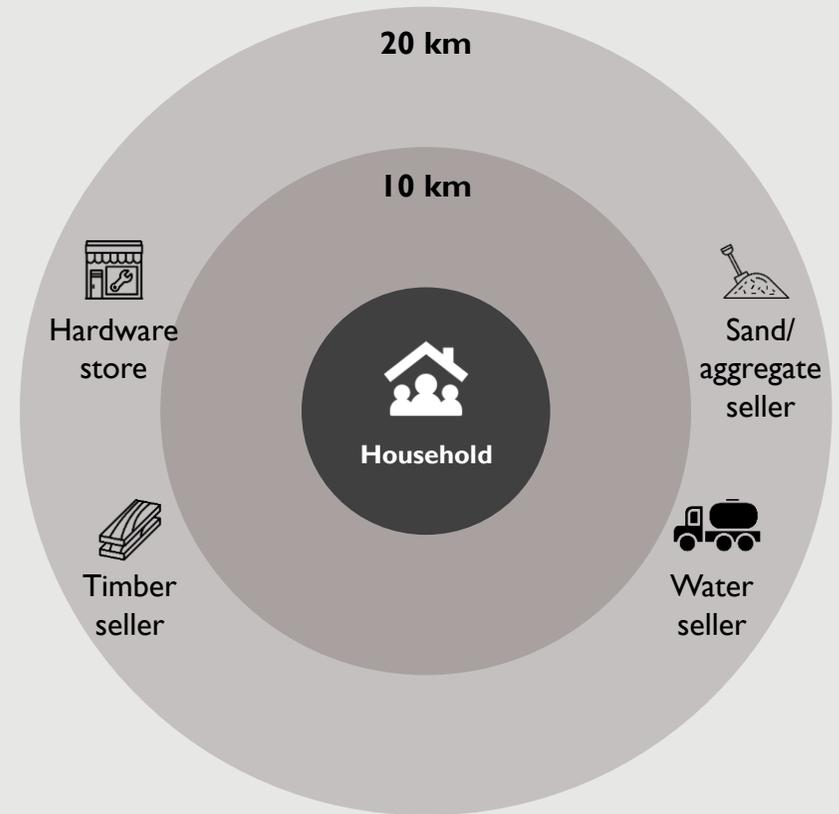
a

Households have to engage with 3-4 material suppliers for their toilets, often located up to 20 kilometers away

## Primary urban centers in Marsabit



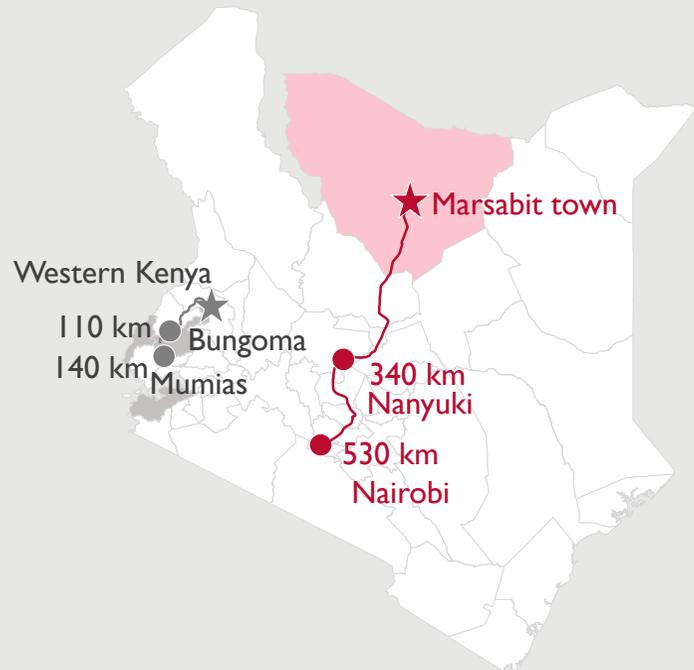
## Secondary urban centers in Marsabit



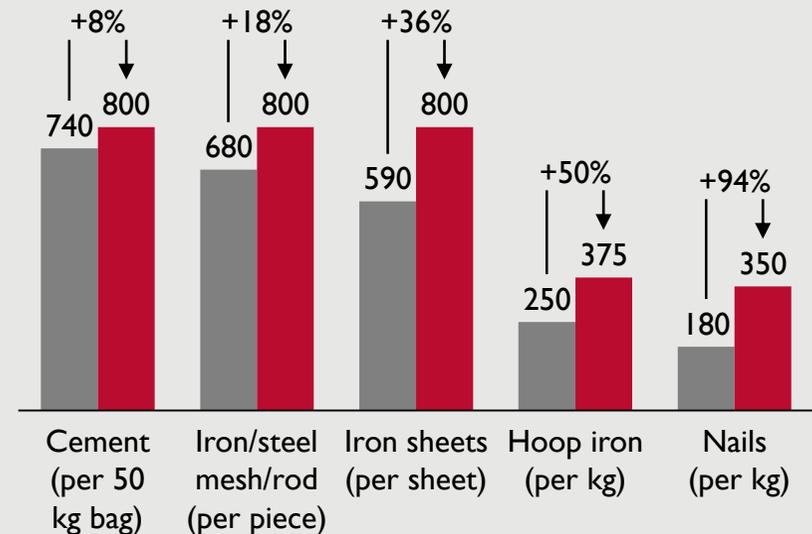
**b**

Hardware store owners have to travel long distances, often as far as Nairobi, at their own cost to purchase materials; they cover this additional cost by charging higher prices

Illustration of distance between hardware stores and distributors (2021)



Cost comparison of hardware materials in rural western Kenya and urban Marsabit (2021)<sup>1</sup>



1. FSG analysis based on qualitative interviews with value chain players and local program staff in rural western Kenya and urban Marsabit

C

However, the Isiolo-Marsabit-Moyale road has enabled a competitive transporter landscape, making transport inexpensive and easily accessible for households

Map of Marsabit county



Source: Google Maps

— Isiolo-Marsabit-Moyale road

Several ‘matatus’ (buses) ply daily, carrying both passengers and goods

Matatu



Source: UN Environment

"We transport passengers daily on this highway...transporting material on regular basis also adds to our profit."

— Matatu transporter, Merille

Smaller ‘tuk-tuks’ are easily available near hardware stores, and considered affordable

"I found a tuk-tuk outside the hardware store. He charged me very reasonably and quickly bought materials to my place in two trips."

— Urban household, Marsabit town

Transportation by Matatu costs KES 1,000-1,500<sup>1</sup>, even for a ~150 kilometer trip, which amounts to only **10%-15%**<sup>1</sup> of the total cost of the cheapest and most prevalent toilet

d

Additionally, households have a choice of suppliers, indicating a thriving market for construction materials

Hardware stores believe they have multiple competitors in their area of operation

Households state they have a choice of suppliers for materials

Typical number of competitors perceived by hardware stores in Merille and Marsabit town (n=5) (2021)<sup>1</sup>



*“There are about 50 hardware stores in Marsabit town. I go to different hardware stores to compare material prices before making my decision”*

– Urban household, Marsabit town

*“There are many options for getting sand. You can get it at the river yourself, or a hardware store or there are people who sell sand”*

– Urban household, Merille

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- Compendium of findings for rural western Kenya
- **Compendium of findings for urban Marsabit**
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  - Barriers and drivers for MBS
  - Customer segmentation
    - Overview
    - Archetype profiles
  - Product economics
  - Value-chain trace-back maps

# Overview | Key concepts

Secondary urban

Primary urban rich

Primary urban poor

**Customer segmentation** is a method of classifying customers into distinct and identifiable groups based on **statistically significant** differences in their attitudes, beliefs, preferences, and behavior. It helps in identifying customer groups, or segments, that are **more likely to exhibit a desired behavior** (in this case, owning an individual durable, improved toilet). This allows for more targeted and actionable market strategies and efficient resource allocation.



**The buying process** is a tool that breaks down a customer's **journey towards achieving a desired behavior** (typically purchasing and using a specific product or service) into distinct stages, each ending with a key customer decision.

# Overview | Sample size

*We listed 200 households and conducted in-depth quantitative interviews with 95 households in urban Marsabit, through an external research agency<sup>1</sup>*

Region	Number of households listed	Number of in-depth interviews
Marsabit town	100	49
Marsabit town outskirts	28	3
Merille	41	22
Karare	31	21
<b>Total</b>	<b>200</b>	<b>95</b>

1. These numbers refer to the useable number of interviews – i.e., after data cleaning to remove for errors made by enumerators and the survey software

# Overview | Approach

We followed a three-step approach to identify archetypes for the target market; i.e., households who do not own an individual durable, improved toilet

## Define segmentation parameters

- Identify segmentation variables that may influence sanitation preferences and could potentially **predict the largest differences in behaviors** between customer groups (e.g., family profile, financial indicators)
- Identify key drivers (attitudes, preferences, behaviors) that **predict customer likelihood to engage in the desired behavior**
- Identify **segmentation variables that are appropriate**, i.e., demonstrate differences between key drivers of desired behavior
- Assess **which segmentation variables are executable**, i.e., they can be used to actionably identify different groups (or segments)

## Apply parameters to arrive at final archetypes

- Select the most **appropriate and executable variables**; due to the small size of the population in urban Marsabit, we selected only two segmentation variables (location and source of domestic water) to create three customer “archetypes”
- Use focus group discussions (FGDs)<sup>1</sup> to arrive at a final set of archetypes that are **internally homogenous** and **externally heterogeneous**

## Create customer profiles for each archetype

- Use quantitative and qualitative research to **develop archetype profiles** that detail the attitudes, beliefs, preferences, buying process, and barriers to purchase faced by each archetype

1. We conducted FGDs with all 3 archetypes in urban Marsabit

# Overview | Archetypes

## Customer archetype

## Profile

**Secondary  
urban**

**Pastoralist** households settled in satellite towns located near livestock markets called “**shopping centres**” such as Merille and Karare

**Primary  
urban poor**

**Least affluent** households in **Marsabit town** who rely on purchasing **piped water** from kiosks for domestic requirements

**Primary  
urban rich**

Small section of **affluent** households in **Marsabit town** who have invested in **rainwater harvesting systems** for domestic requirements

We were unable to quantitatively size the population of these archetypes due to data limitations. However, based on our research, we postulate that “primary urban poor” and “secondary urban” households are more prevalent than the “primary urban rich” households

# Overview | Archetypes | Descriptors

*There is significant variation between the archetypes on variables predicting propensity to purchase a durable, improved toilet, signifying that they are externally heterogeneous*

	Awareness of durable, improved toilets	Involvement in sanitation category <sup>1</sup>	Ability to pay for a toilet	Willingness to pay for a toilet
Secondary urban	H	L	M	H
Primary urban poor	H	H	L	L
Primary urban rich	M	H	M	L

**Note:** Responses to multiple questions in a quantitative survey, and qualitative assessments from the FGDs were combined in order to develop a definition of each of these categories; these figures do not correspond to any single question

1. Involvement in category measures households' degree of product preferences for sanitation



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    - Archetype profiles
  - Product economics
  - Value-chain trace-back maps

# Archetype profile | Secondary urban

Non-durable individual toilets  
**40.0%**

Non-durable shared toilets  
**47.0%**

OD  
**13.0%**

## Customer archetype

**Secondary urban**

Primary urban poor

Primary urban rich

## Profile

**Pastoralist** households settled in satellite towns located near livestock markets called “**shopping centres**” such as Merille and Karare

Secondary urban households value sanitation but typically resort to sharing toilets.

Let's understand why

## Secondary urban | Customer story

*Ibrahim lives with his two children, wife, brother, niece, and nephew. He is educated till secondary school. He earns his income from owning his own small business.*

*Ibrahim and his family live in their own house, which is built with temporary materials, and are relatively affluent. Although they do not have access to electricity, they own a mobile phone and a solar panel. They typically obtain drinking water from a public pipe, or from vendors who transport water in tankers. They have convenient access to a hardware store; they only need to travel 15 to 30 minutes by a two-wheeler. They also own livestock in Ibrahim's village.*

*Ibrahim believes that it is important for his family to get respect from the community. He does not value products that would bring him prestige. He strongly believes that it is important to keep the community clean, and is aware of the benefits of owning a toilet.*

*He agrees that owning a toilet reduces the possibility of disease, and the dangers of defecating in the open. However, Ibrahim currently resorts to using a shared toilet, a public toilet, or open defecation. He would consider investing in construction of a toilet if the product options became more affordable.*

*Ibrahim desires a one-stance toilet with an unlined pit that is 10-feet deep, a concrete floor with footrests, and an iron sheets shelter. He is willing to pay ~KES 25,000 for this toilet.*

# Secondary urban | Customer persona

## Setting

- **Typical family size:** 7 people, with 2 children under the age of 10
- **Type of house:** Predominantly live in temporary material houses
- **Income and occupation:** Typically have non-seasonal income; typically own their own small shop or businesses
- **Mobile phone:** Nearly all households have a mobile phone
- **Mobile money:** Nearly all households have access to mobile money transfer platforms
- **Total value of assets:** Households are relatively affluent; the average total asset value per household is ~KES 15,600<sup>1</sup>
- **Bank account and savings groups:** Most households do not have a bank account and are not members of a savings group<sup>2</sup>
- **Loans:** Only a tenth of the households have taken a loan in the past

## Mental Model

- **Building a toilet is high priority;** believe it eliminates the dangers of defecating in the bush
- **Strongly believe that toilets provide convenience** during the rainy seasons and safety at night
- Understand the benefits of owning a toilet but would **prioritize other expenditures such as school fees**
- **Community cleanliness is a significant priority;** nearly all households believe that toilets reduce the possibility of diseases
- **Desire respect** from people in their community; **do not particularly value products that bring them prestige**
  - **Conformity is not important to households;** nearly three-fourths believe one should not do things differently from neighbors



- **Current product:** Most resort to shared community toilets or OD
- **Desired product:** Desire toilets that are durable, provide privacy and can easily be used by children, and has the following attributes:
  - **Substructure:** A single 10-feet deep onset unlined pit
  - **Interface:** One stance, a concrete floor with cement footrests
  - **Superstructure:** An iron sheets shelter
- **Willingness to pay:** ~KES 25,000<sup>1</sup>
- **Financing:** Typically do not take a loan for toilet construction, because they are afraid of failure of repayment; material providers are typically paid in a lump-sum, while service providers are typically paid in two installments

## The Ask

Source: FSG quantitative survey with 95 households in Merille, Karare and Marsabit Town

1. Figure has been rounded off to the nearest 500

2. Savings groups include MFIs, SACCOs and informal self-help groups called chamas

# Secondary urban | Key demographic statistics

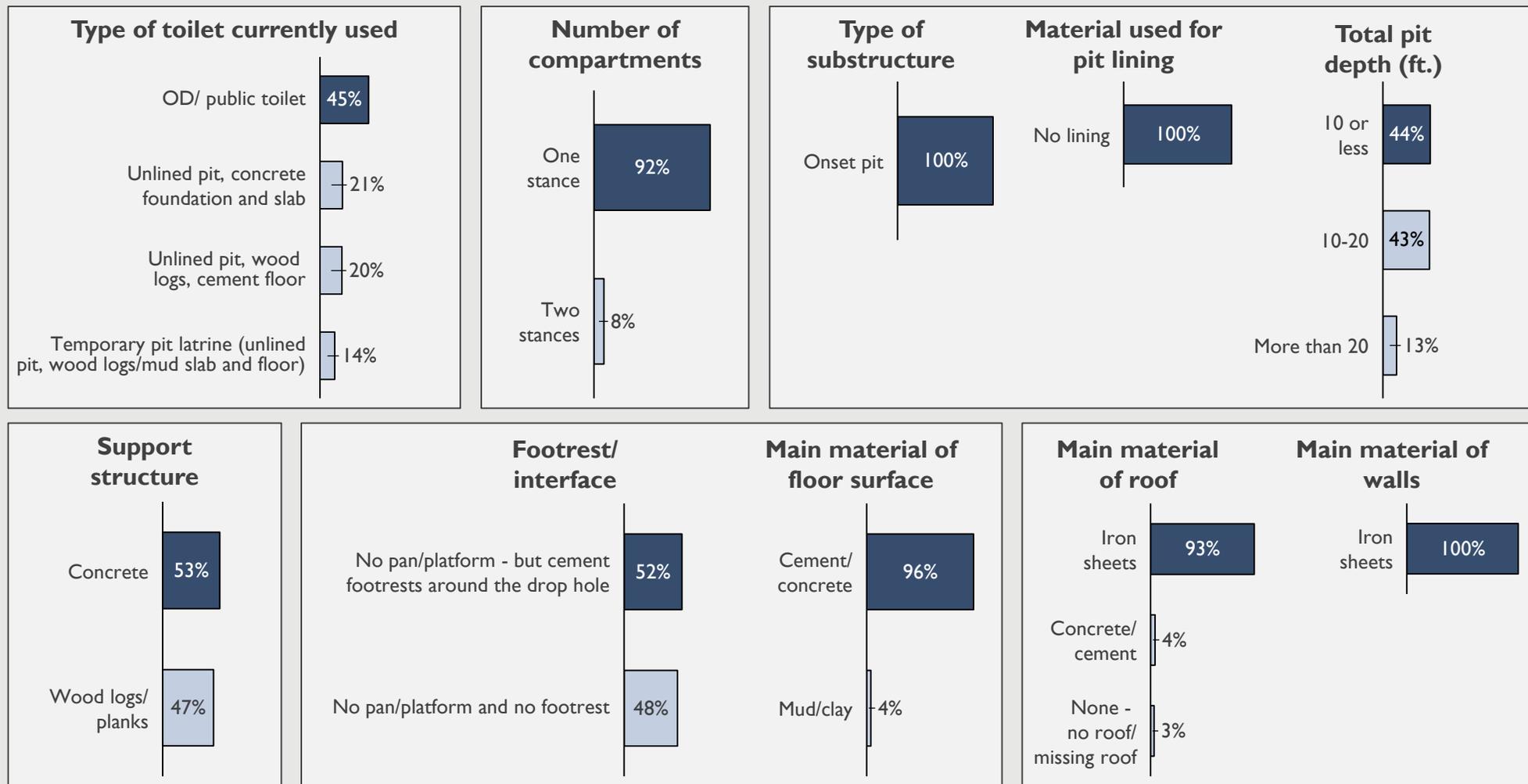
Segment size		Demographics		Income		Access indicators	
Prevalence in Marsabit county	High	Family size (avg.)	7	<b>Nature of income</b>		<b>Distance to nearest HW store<sup>1</sup></b>	
<b>Sanitation profile</b>		<b>Gender of HH Head</b>		Non-seasonal	89.9%	<15 minutes	31.4%
Unimproved individual toilets	40.0%	Male	4.8%	Seasonal	10.1%	15 to 30 minutes	54.1%
Unimproved shared toilets	47.0%	Female	95.2%	<b>Main source of income</b>		> 30 minutes	14.4%
OD	13.0%	<b>Highest education in HH</b>		Small shop or business		<b>Access to electricity</b>	15.9%
		Primary	32.2%			<b>Drinking water source</b>	
		Secondary	49.1%			Well	14.2%
		University	18.7%			Piped or other	85.8%
						Surface water <sup>2</sup>	0.0%
Affluence indicators				Attitudes & beliefs			
<b>Total stated monthly expenditure</b>		<b>Assets and other indicators</b>		I would be willing to pay for products that are prestigious		14.8%	
High (> KES 10K)	71.7%	Agriculture land	40.6%	It is embarrassing to be seen defecating in the open		79.3%	
Medium (KES 5K-10K)	19.7%	Computer	3.3%	Cleanliness of my community is important to me		100.0%	
Low (< KES 5K)	8.6%	Solar panel	54.8%	It is taboo to use or live near a toilet		1.7%	
<b>Total asset value (avg.)</b>	15.6K	Refrigerator	1.7%				
<b>Total asset value (spread)</b>		Farm animals	49.9%				
High (> KES 20K)	21.5%	Bicycle	0.0%				
Medium (KES 15K-20K)	22.6%	Mobile	90.3%				
Low (< KES 15K)	55.9%	Television	27.4%				
		Car or truck	0.0%				
		Motorbike	5.0%				

1. Distance to nearest hardware store is calculated based on time taken to reach by bike/ two-wheeler

2. Surface water includes water from ponds, springs, rainwater harvesting, etc.

# Secondary urban | Current sanitation profile

Toilet users in this segment typically resort to OD, while those with a toilet typically have a one-stance, unlined, onset, 10-foot deep pit, with a cemented floor and cement footrests, and an iron sheets shelter

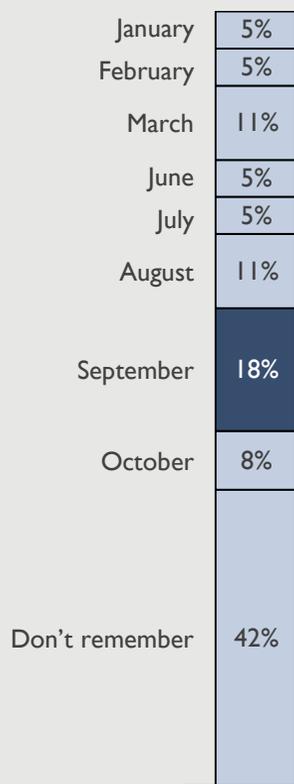


**Note:** Questions related to the toilet components were not asked to HHs that resort to OD or use shared facilities

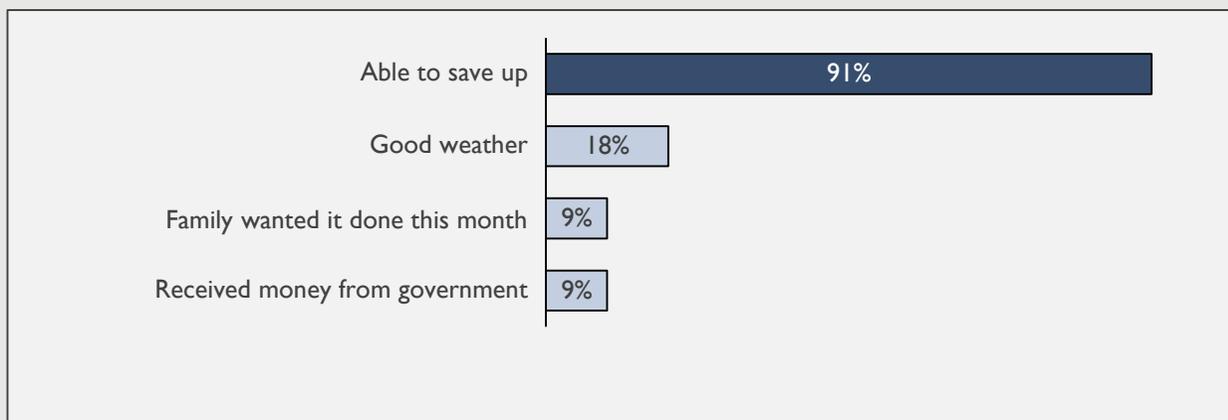
# Secondary urban | Typical month of construction

Households commonly construct toilets in the months of September as they are able to save up during that month

**% split of HHs by month of toilet construction**

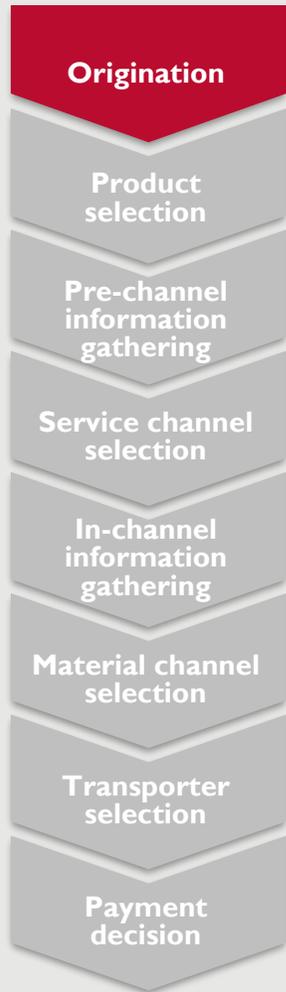


**Reasons for constructing in given month<sup>1</sup>**

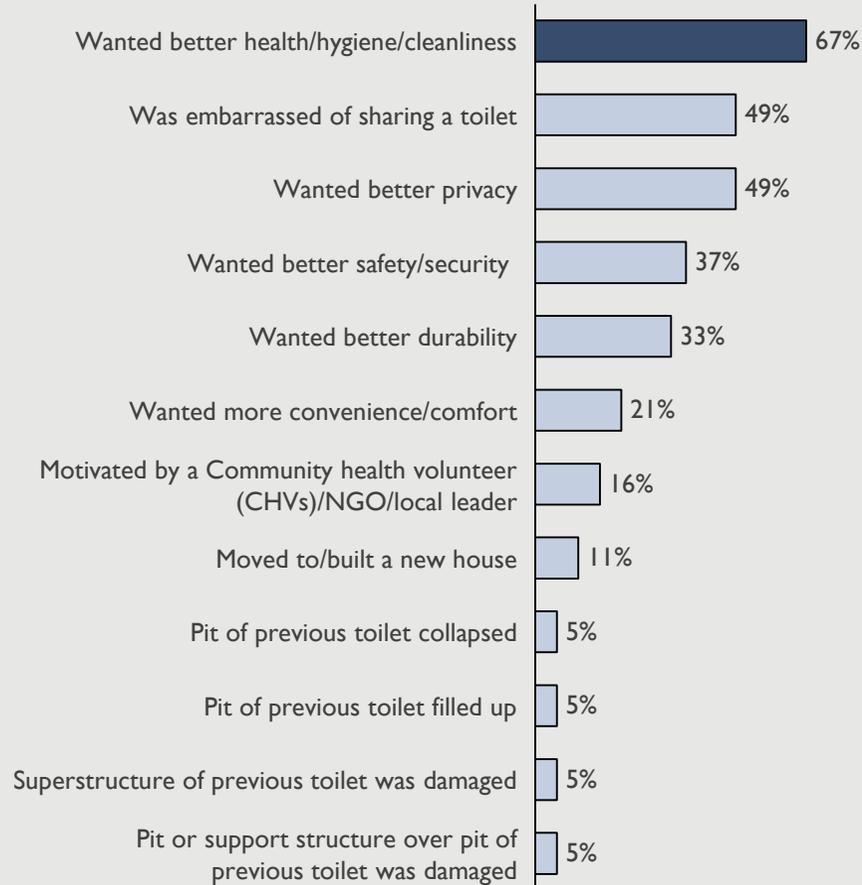


# Secondary urban | Buying process (1/9)

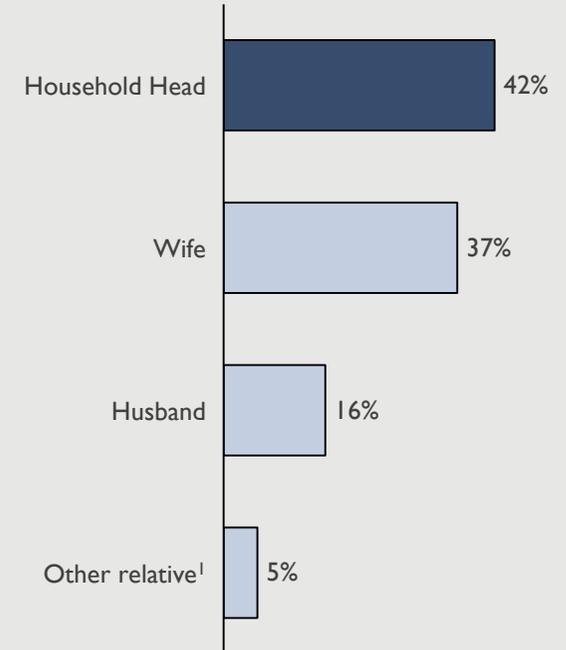
Most households wanted to construct a toilet because they wanted a more hygienic one; toilet construction discussions were initiated by the head of household



## Origination of need for toilet



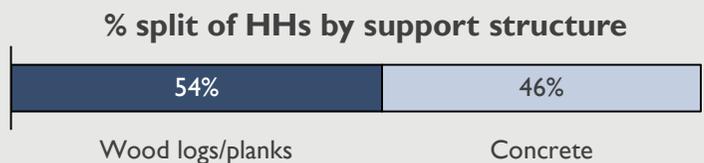
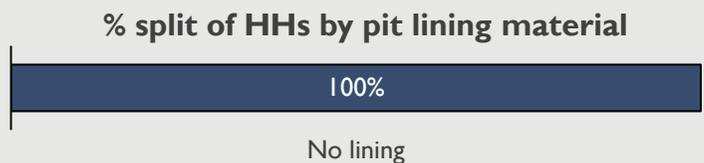
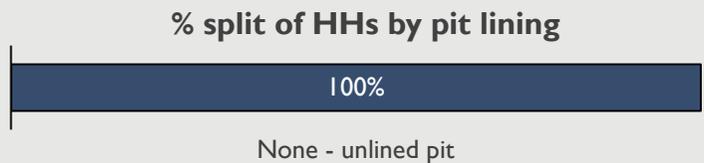
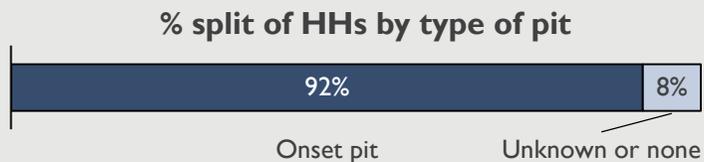
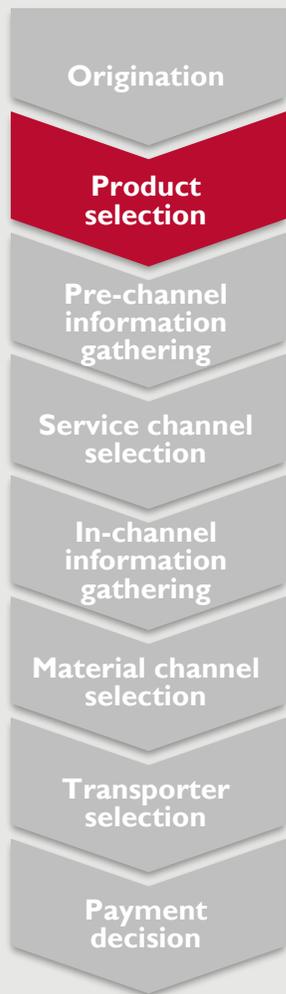
## Person who initiated discussion



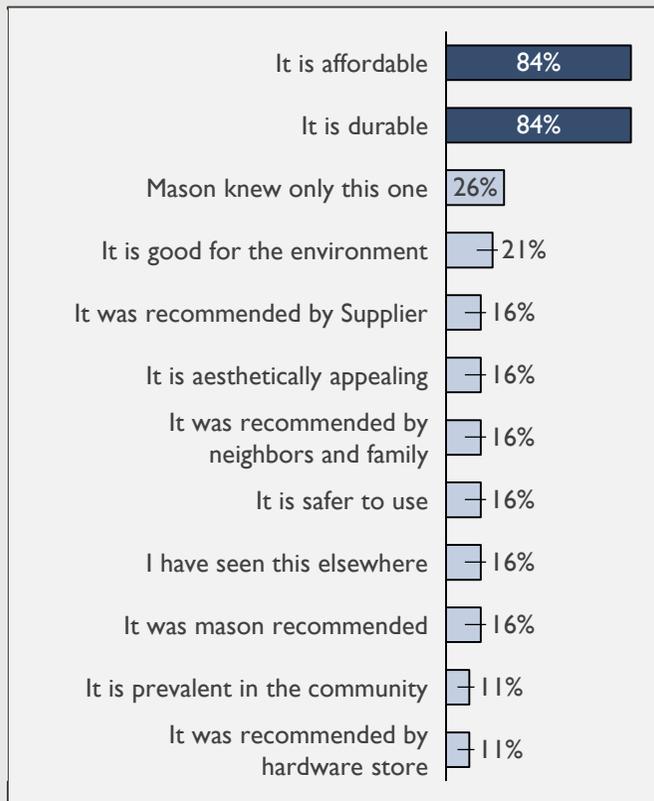
1. Other relatives include members outside of the immediate family

# Secondary urban | Buying process (2/9)

Households typically selected an unlined onset pit supported by wood logs/ planks,...



## Reasons for selecting type of pit

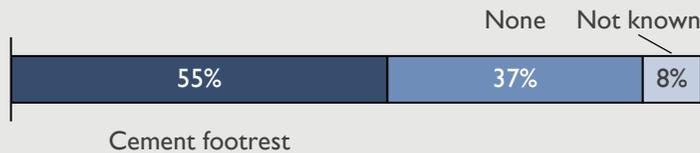


# Secondary urban | Buying process (3/9)

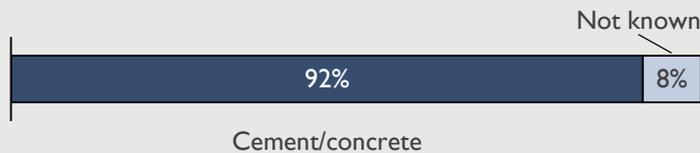
...with a cement/concrete floor and cement footrests around the drop hole, as they believed this was affordable and durable



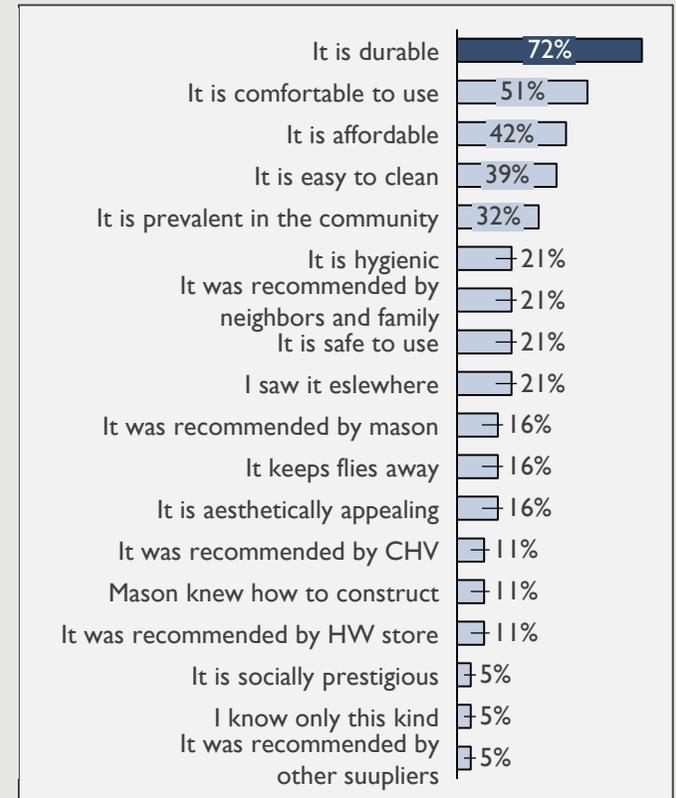
**% split of HHs by interface**



**% split of HHs by floor material**



**Reasons for selecting type of pit**

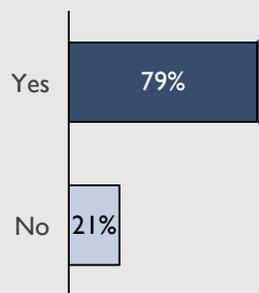


# Secondary urban | Buying process (4/9)

Most households sought information from family members and relatives regarding the cost of constructing a toilet; information was typically easy to access



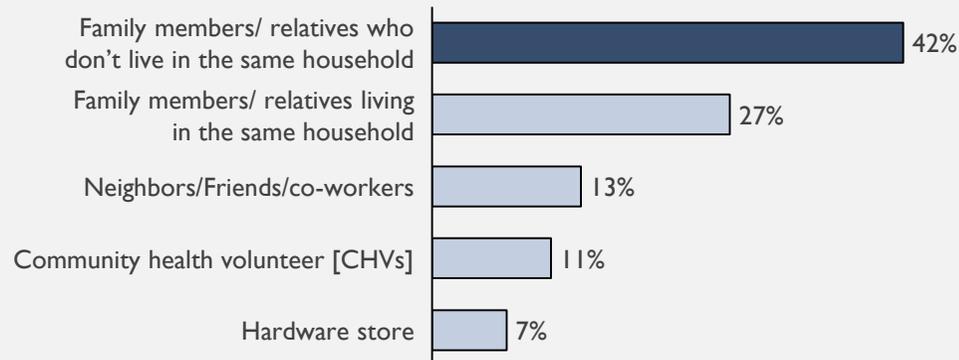
## Sought information while building a toilet



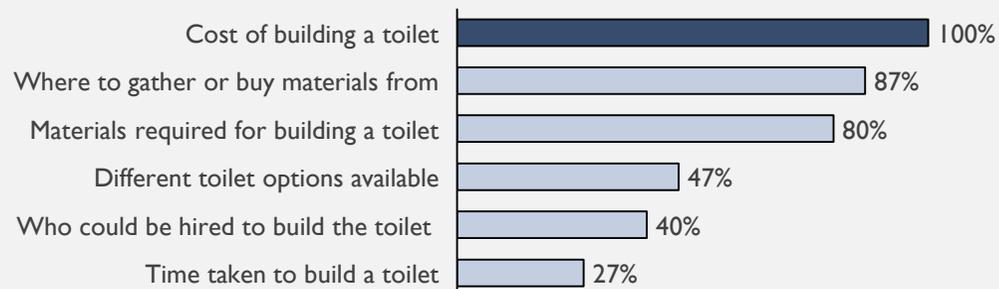
## Ease of access to information



## Sources of information about toilets

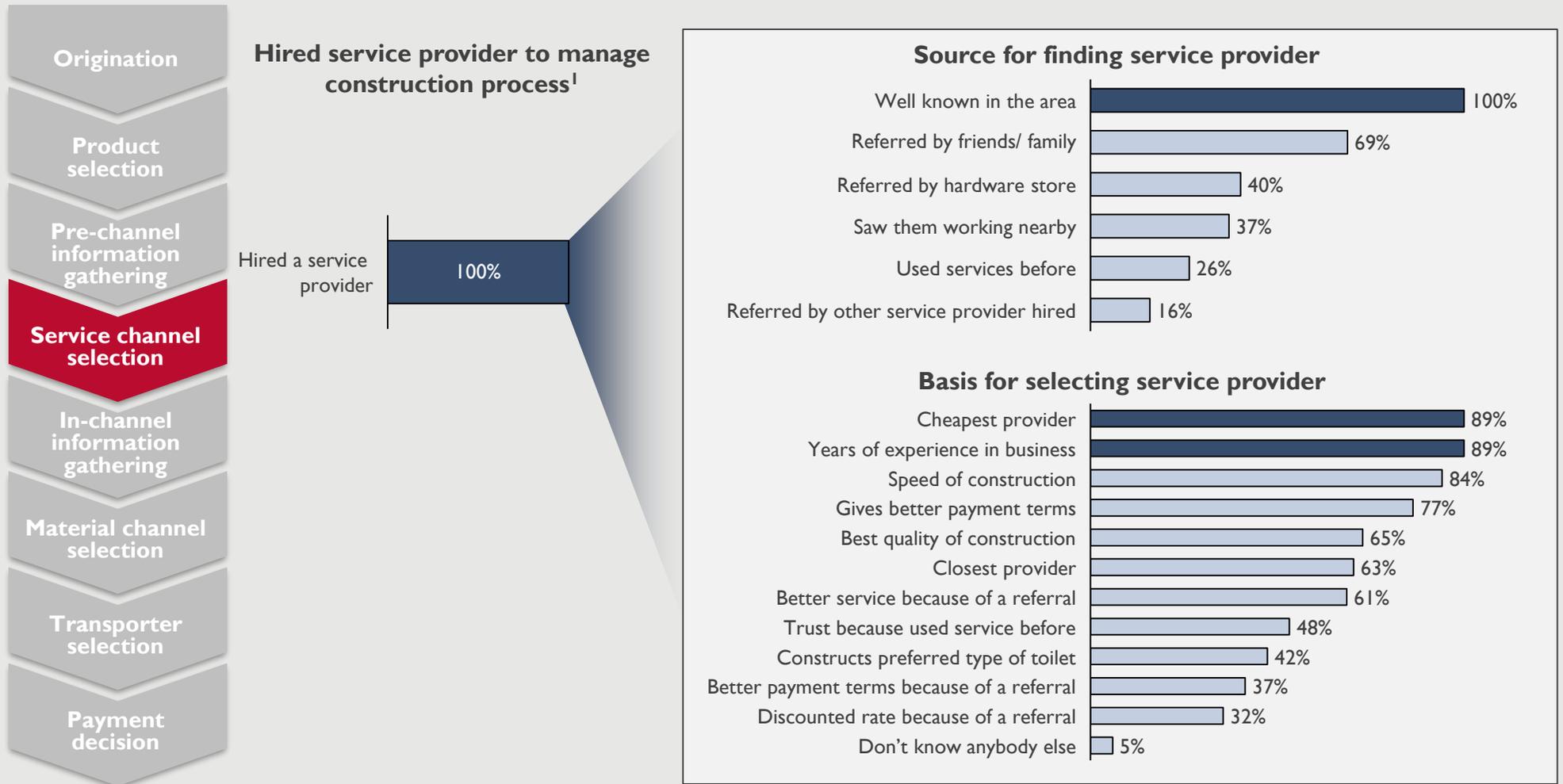


## Nature of information sought



# Secondary urban | Buying process (5/9)

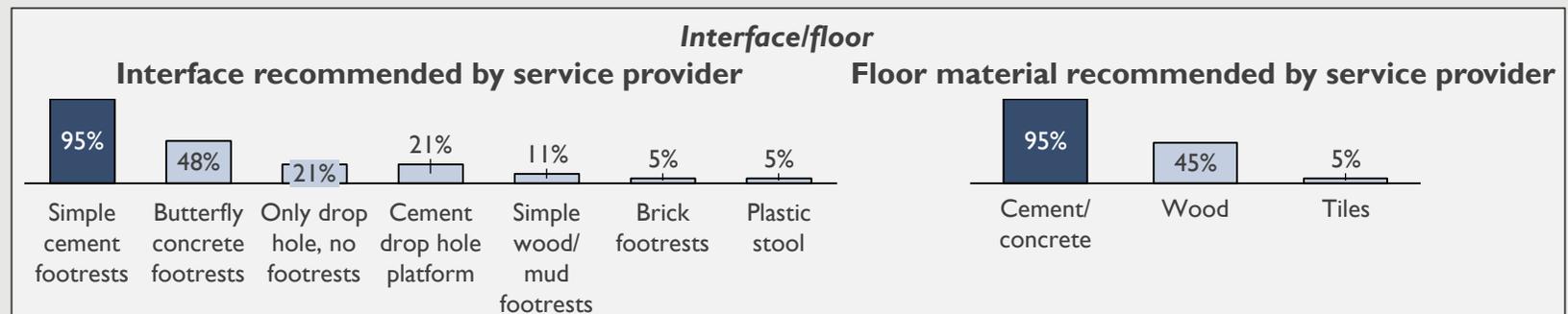
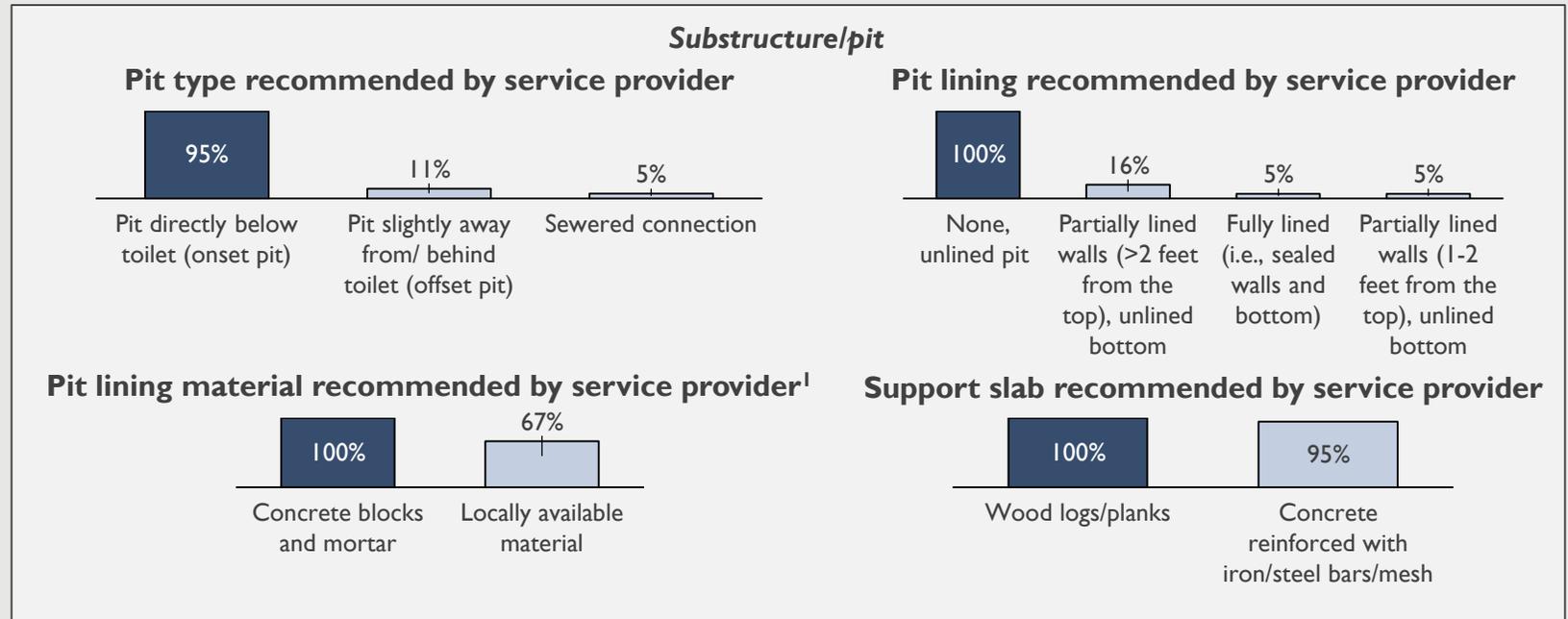
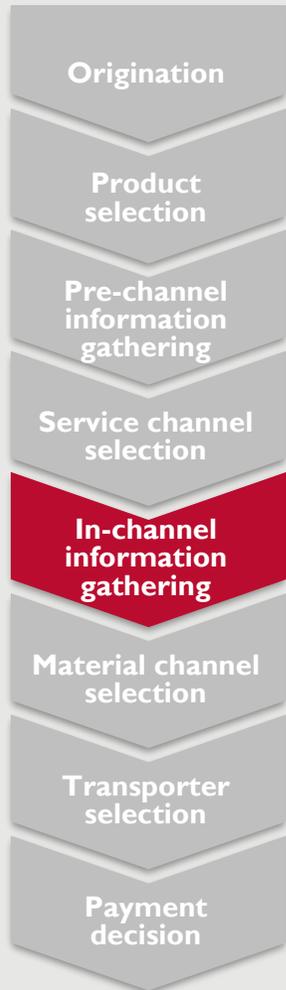
Most households hired a pit digger and a mason for toilet construction, based on affordability, level of experience, and how well known they were in the area



1. Majority households that hire a service provider, hire both, a pit digger and a mason

# Secondary urban | Buying process (6/9)

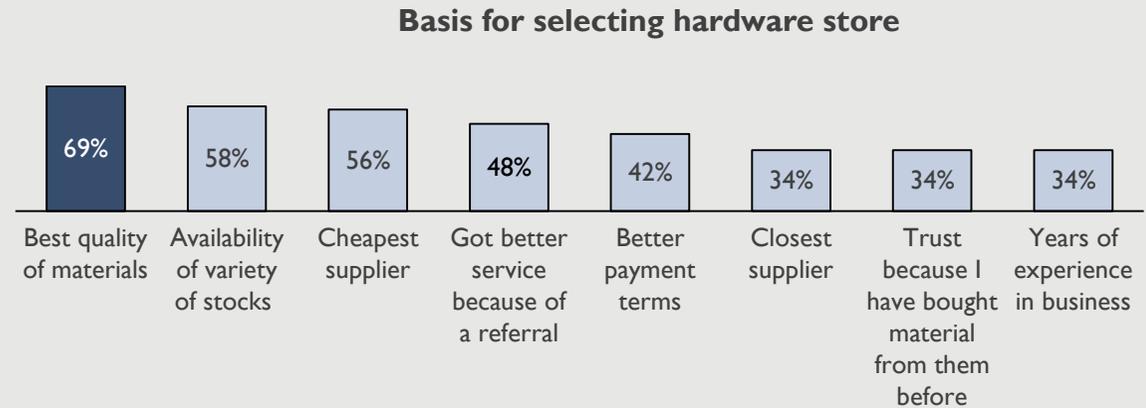
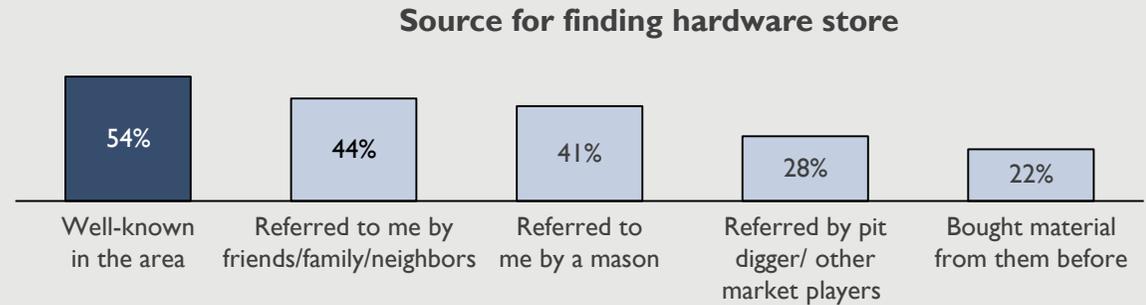
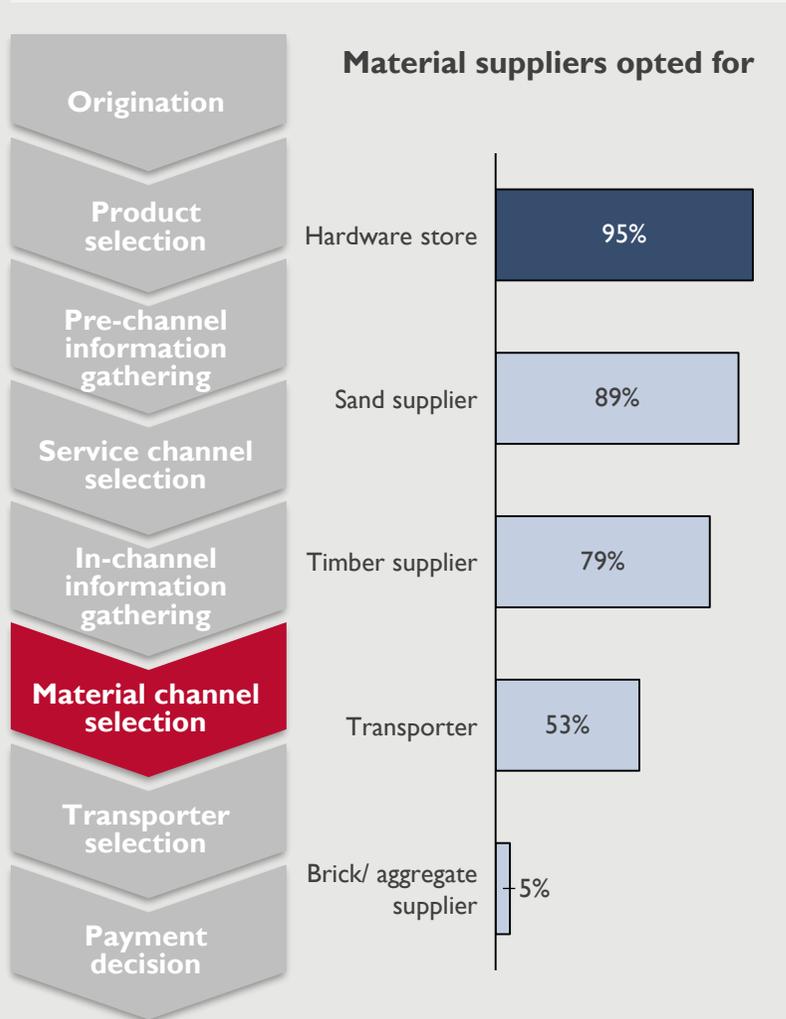
Masons often recommended that households construct unlined onset pits supported with wood logs/ planks, and a cement floor with simple cement footrests



1. Proportions are for those who were recommended a fully or partially-lined pit by the service provider

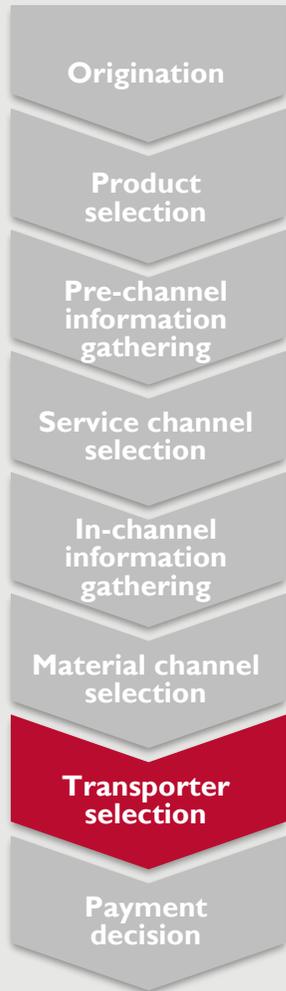
# Secondary urban | Buying process (7/9)

Households typically chose to source materials from hardware suppliers; certain suppliers were selected because they were well-known in the area, and had the best quality of materials

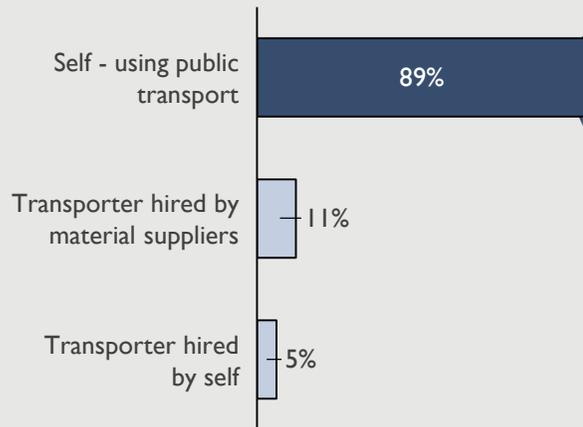


# Secondary urban | Buying process (8/9)

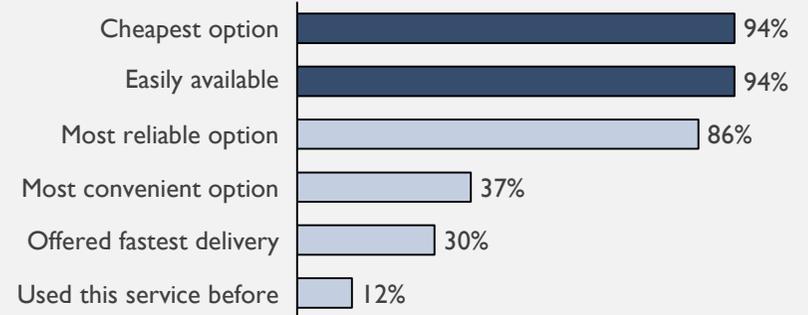
Households typically transported materials themselves using public transport because of affordability and ease of access



**Material transport option preferred**

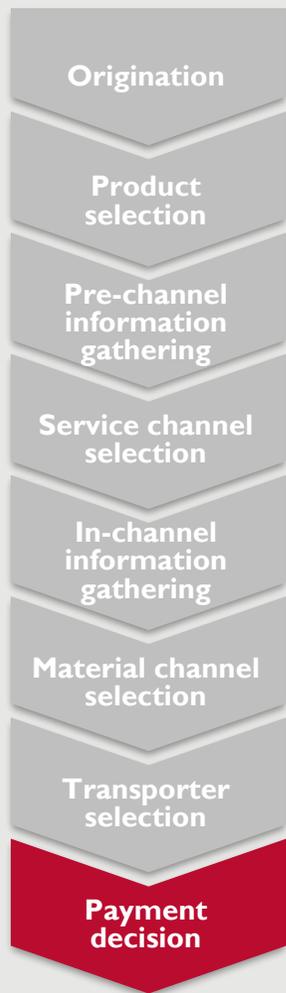


**Reason for choosing transport option**

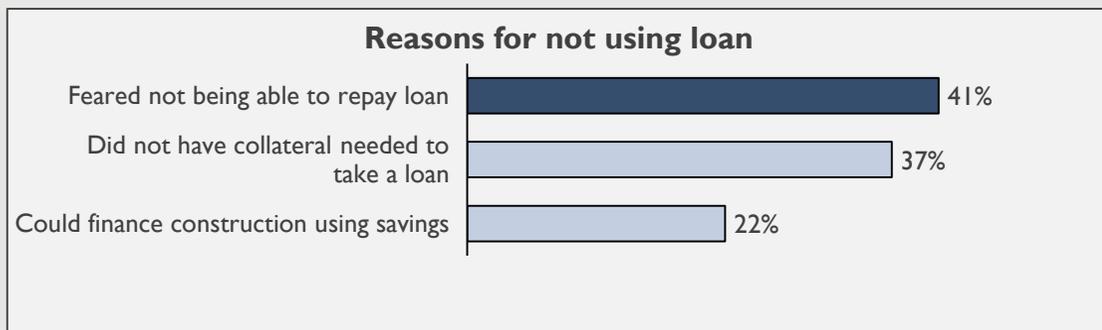
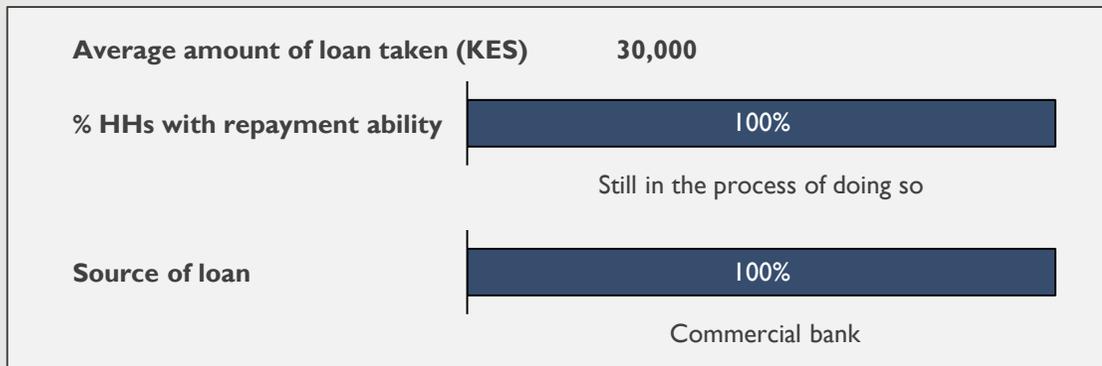
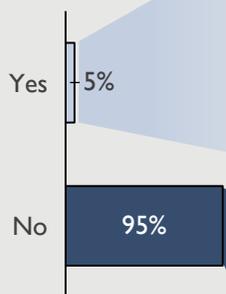


# Secondary urban | Buying process (9/9)

Most households did not use a loan for toilet construction because they were afraid of failure of repayment; service providers were paid in two installments, while hardware stores were paid in a lump-sum



**% HHs using loans to finance toilet construction**



**% split of HHs by payment to service provider**

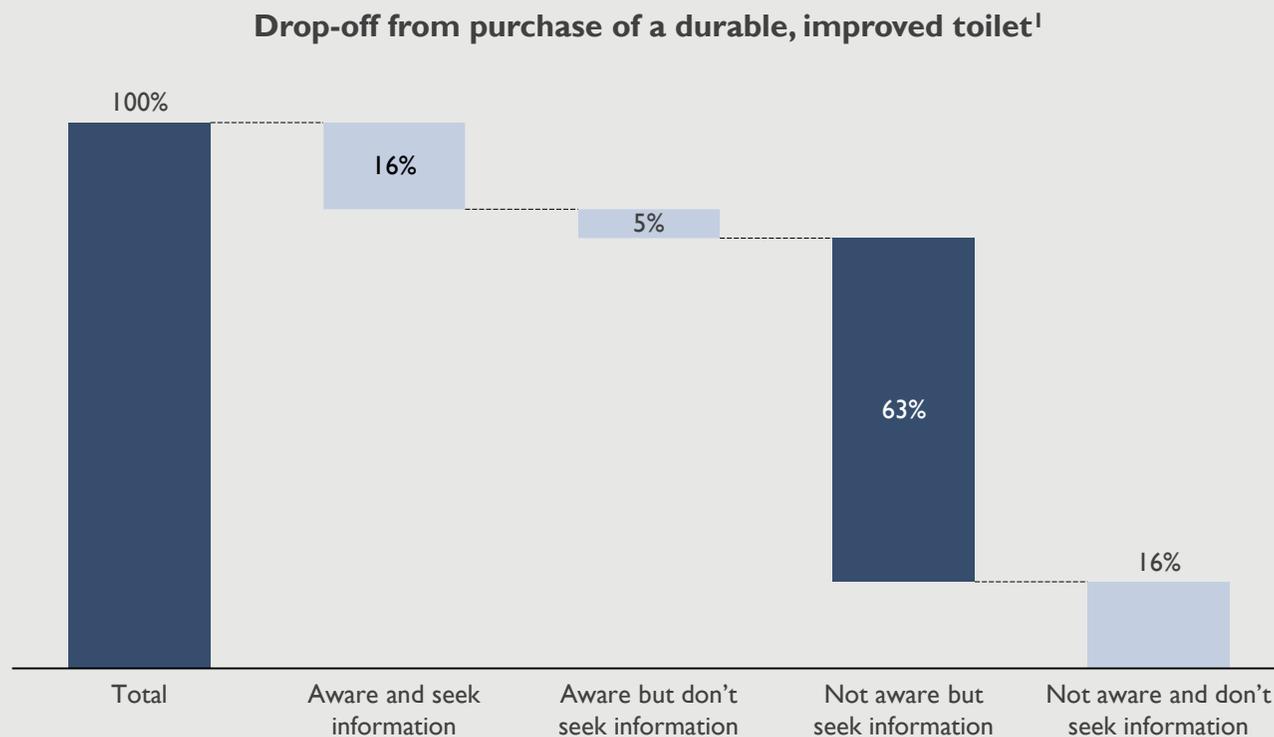


**% split of HHs by payment to hardware store**



# Secondary urban | Drop-offs from actual buying process

*Households without a durable toilet are typically unaware of durable components; they do, however, seek information when considering construction of a toilet*

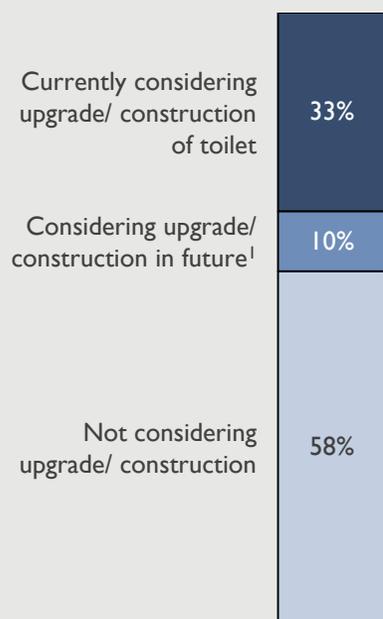


1. Households are considered to be aware if they know at least one durable component each for floor, interface, pit lining, and support structure of a toilet

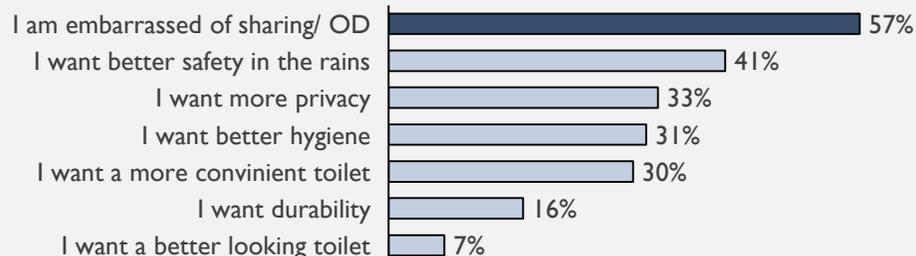
# Secondary urban | Future consideration

Most households would consider upgrading or constructing a toilet if it becomes more affordable to do so; households that are currently considering one are doing so because they are embarrassed of sharing or practicing OD

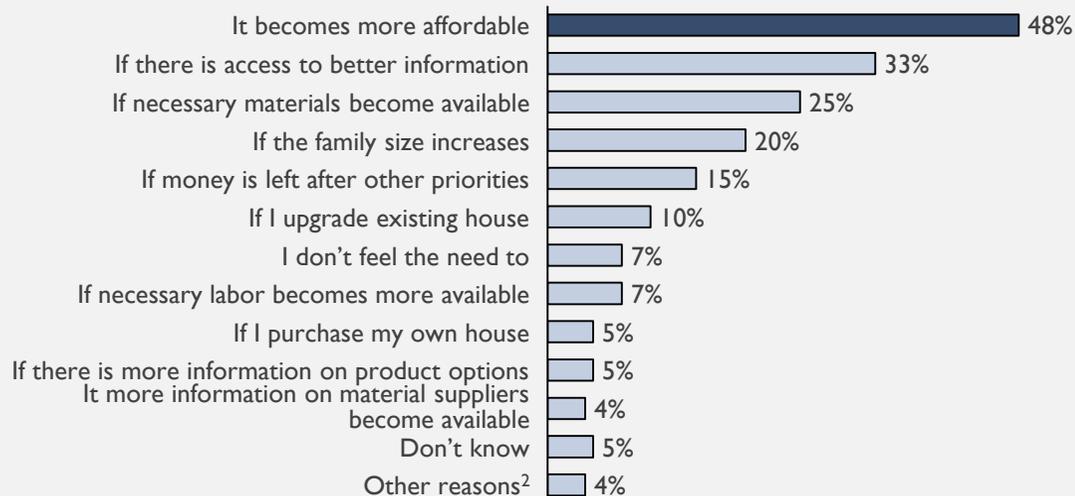
**% split of HHs without their own toilet by future preference for toilet purchase/upgrade**



**Reasons for currently considering toilet purchase/upgrade**



**Factors that could influence consideration in the future**

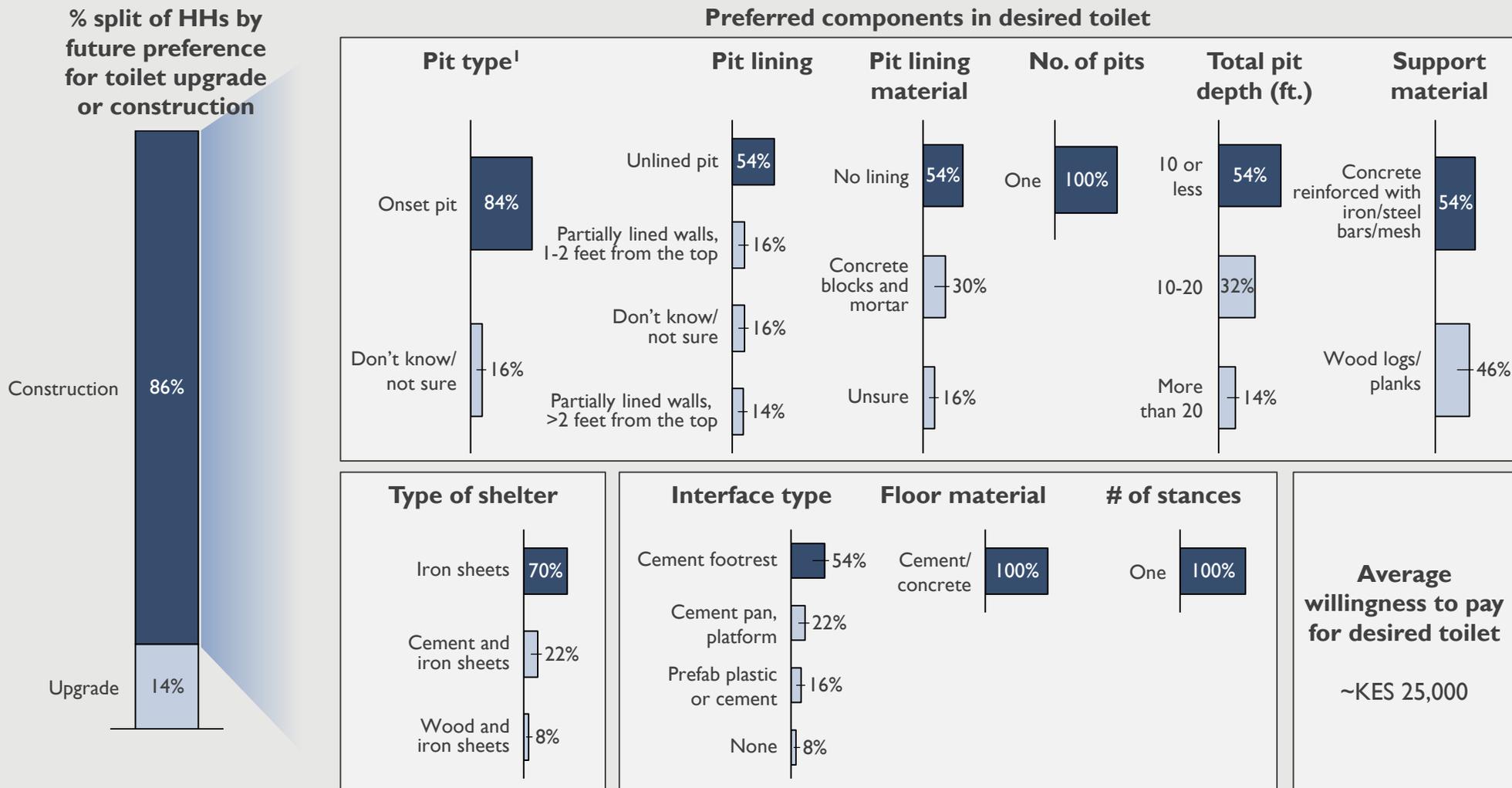


1. Those who were considering construction/ upgrade in the future were not asked for their reasons as their intent is unclear

2. Other reasons that could influence future consideration include better access to assistance for labor and finances, existing pit filling up, and collapse of existing structure

# Secondary urban | Desired toilet

Secondary urban households desire a new construction with one stance, an unlined onset pit, 10-foot deep, a cement floor with cement footrests, and an iron sheets shelter



1. If 'Pit type' chosen is sewer connection, further questions regarding pits are not asked to the respondents; proportions shown in all further charts on pits exclude respondents who chose sewer connection as their pit type

# Archetype profile | Primary urban poor

Non-durable individual toilets  
**28.4%**

Non-durable shared toilets  
**68.7%**

OD  
**3.0%**

## Customer archetype

Secondary urban

**Primary urban poor**

Primary urban rich

## Profile

**Least affluent** households settled in **Marsabit town** who rely on purchasing **piped domestic water** from kiosks

Primary urban poor households value the prestige and modernity of having a toilet but do not own one.

Let's understand why

## Primary urban poor | Customer story

*Mohamed lives with his child, mother, wife, sister and nephews. He has studied till secondary school. He is self-employed.*

*Mohamed and his family live in their own house, which is built with permanent materials but are not affluent. They have access to electricity and own a mobile phone. They typically obtain drinking water from a public pipe, or from vendors who transport water in tankers. They have convenient access to a hardware store; they only need to travel less than 15 minutes by a two-wheeler.*

*Mohamed strongly believes that it is important for his family to get respect from the community, and prefers to follow in the footsteps of his neighbors. He believes that it is important to keep the community clean, and is aware of the benefits of owning a toilet.*

*Mohamed agrees that owning a toilet reduces the possibility of disease and the dangers of defecating in the open. He believes that owning a toilet is a sign of modernity and prestige. Mohamed currently does not own a toilet because he cannot afford it, and uses a neighborhood shared facility.*

*He desires a new toilet with two stances, an onset pit, that is at least 20-feet deep and fully-lined. He would like it to have a concrete floor, a cement pan interface, and a shelter made of iron sheets. Mohamed is willing to pay ~KES 9,000 for this toilet.*

# Primary urban poor | Customer persona

## Setting

- **Typical family size:** 7 people, with 2 children under the age of 10
- **Type of house:** Predominantly live in permanent material houses
- **Income and occupation:** Typically have non-seasonal income; typically own their own small shop or businesses
- **Mobile phone:** Most households have a mobile phone
- **Mobile money:** Nearly all households have access to mobile money transfer platforms
- **Total value of assets:** Households are relatively affluent; the average total asset value per household is ~KES 50,000<sup>1</sup>
- **Bank account and savings groups:** Half the households have a bank account; most are not members of a savings group<sup>2</sup>
- **Loans:** Only a fourth of the households have taken a loan in the past

## Mental Model

- Understand the benefits of owning a toilet but would **prioritize other expenditures such as school fees**
- **Strongly believe that owning a toilet is a sign of modernity**
- **Desire respect** from people in their community and **value products that bring them prestige**
- **Conformity is not always important to households;** two-thirds believe that one should do things differently from their neighbors
  - **Community cleanliness is a significant priority;** all households believe that toilets reduce the possibility of diseases



- **Current product:** Use or own non-durable shared toilets; over a fourth use non-durable individual toilets
- **Desired product:** Desire toilets that are durable, easy to clean and can easily be used by children, and has the following attributes:
  - **Substructure:** A single onset pit, at least 20-feet deep, fully-lined
  - **Interface:** Two stances, a concrete floor with a cement pan
  - **Superstructure:** An iron sheets shelter
- **Willingness to pay:** ~KES 9,000<sup>1</sup>

- **Financing:** Typically do not take loans for toilet construction, because they are afraid of failure of repayment; material and service providers are typically paid in lump-sums

## The Ask

Source: FSG quantitative survey with 95 households in Merille, Karare and Marsabit Town

1. Figure has been rounded off to the nearest 500

2. Savings groups include MFIs, SACCOs and informal self-help groups called chamas

# Primary urban poor | Key demographic statistics

## Segment size

Prevalence in Marsabit county	Medium
-------------------------------	--------

## Sanitation profile

Unimproved individual toilets	28.4%
Unimproved shared toilets	68.7%
OD	3.0%

## Demographics

Family size (avg.)	7
<b>Gender of HH Head</b>	
Male	8.9%
Female	91.1%
<b>Highest education in HH</b>	
Primary	36.1%
Secondary	37.0%
University	26.9%

## Income

<b>Nature of income</b>	
Non-seasonal	90.5%
Seasonal	9.5%

<b>Main source of income</b>	
Self - employment	

## Access indicators

<b>Distance to nearest HW store<sup>1</sup></b>	
<15 minutes	70.7%
15 to 30 minutes	19.2%
> 30 minutes	10.0%
<b>Access to electricity</b>	91.1%
<b>Drinking water source</b>	
Well	0.0%
Piped or other	94.5%
Surface water <sup>2</sup>	5.5%

## Affluence indicators

<b>Total stated monthly expenditure</b>		<b>Assets and other indicators</b>	
High (> KES 10K)	45.1%	Agriculture land	2.8%
Medium (KES 5K-10K)	4.9%	Computer	2.8%
Low (< KES 5K)	50.0%	Solar panel	2.8%
<b>Total asset value (avg.)</b>	8.0K	Refrigerator	8.3%
<b>Total asset value (spread)</b>		Farm animals	0.0%
High (> KES 20K)	8.2%	Bicycle	2.8%
Medium (KES 15K-20K)	5.5%	Mobile	58.4%
Low (< KES 15K)	86.2%	Television	34.6%
		Car or truck	0.0%
		Motorbike	5.5%

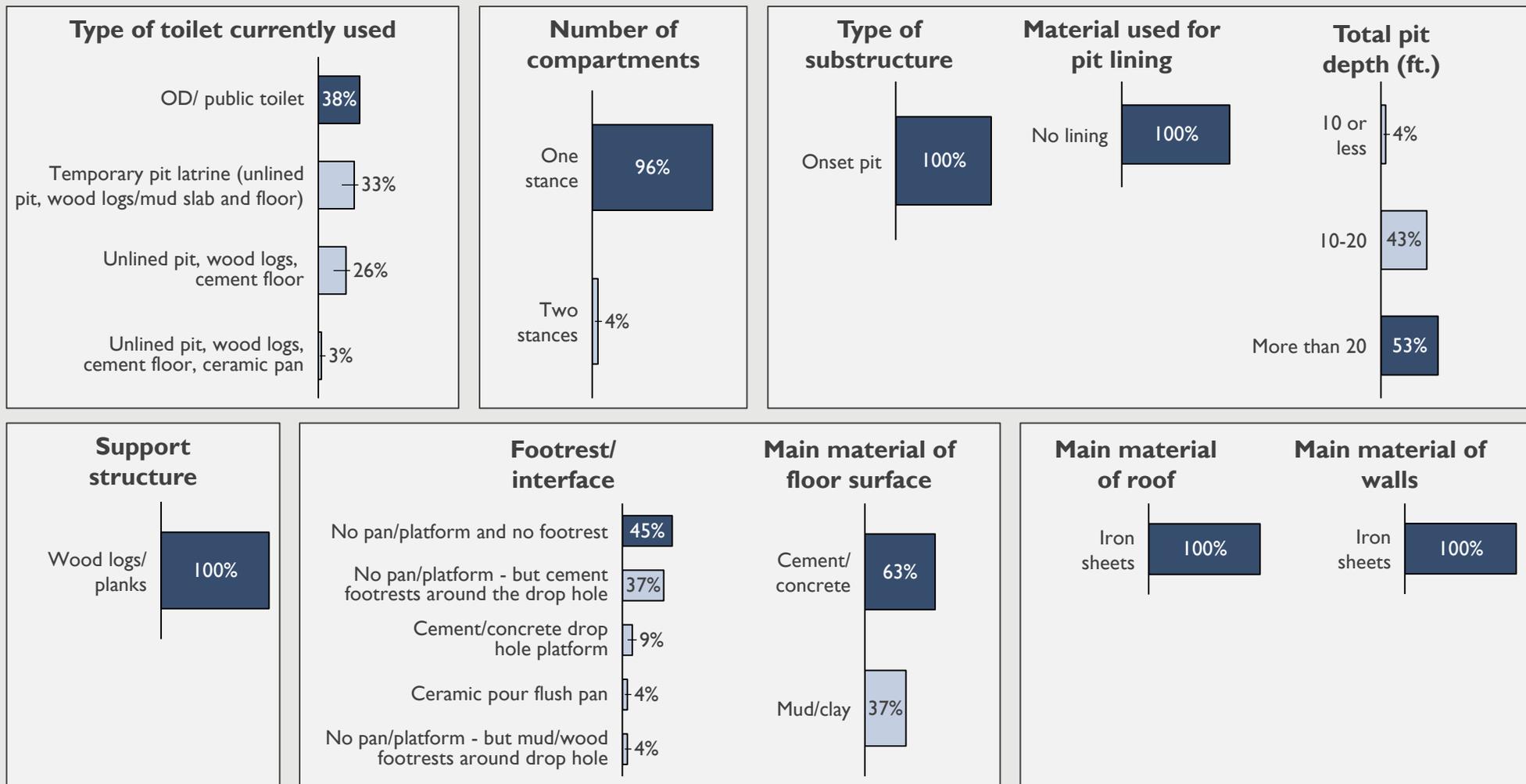
## Attitudes & beliefs

I would be willing to pay for products that are prestigious	38.8%
It is embarrassing to be seen defecating in the open	88.3%
Cleanliness of my community is important to me	97.2%
It is taboo to use or live near a toilet	43.8%

1. Distance to nearest hardware store is calculated based on time taken to reach by bike/ two-wheeler
2. Surface water includes water from ponds, springs, rainwater harvesting, etc.

# Primary urban poor | Current sanitation profile

Toilet users in this segment typically practice OD; those who have a toilet have a one-stance, unlined onset pit, over 20-feet deep, with a cement floor, no footrests, and an iron sheets roof and wall



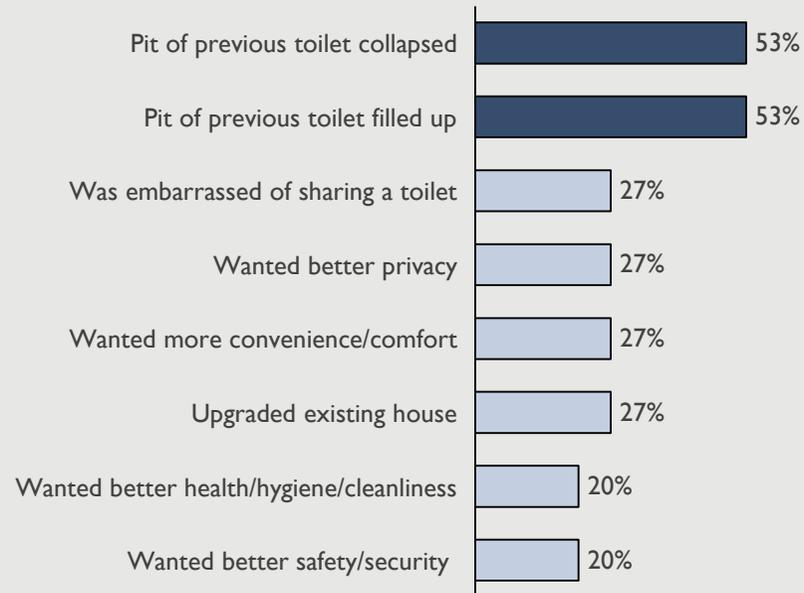
**Note:** Questions related to the toilet components were not asked to HHs that resort to OD or use shared facilities

# Primary urban poor | Buying process (1/9)

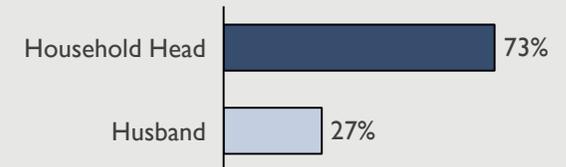
Most households wanted to construct a toilet because the pit of their previous toilet either collapsed or filled up; toilet construction discussions were initiated by the household head



## Origination of need for toilet

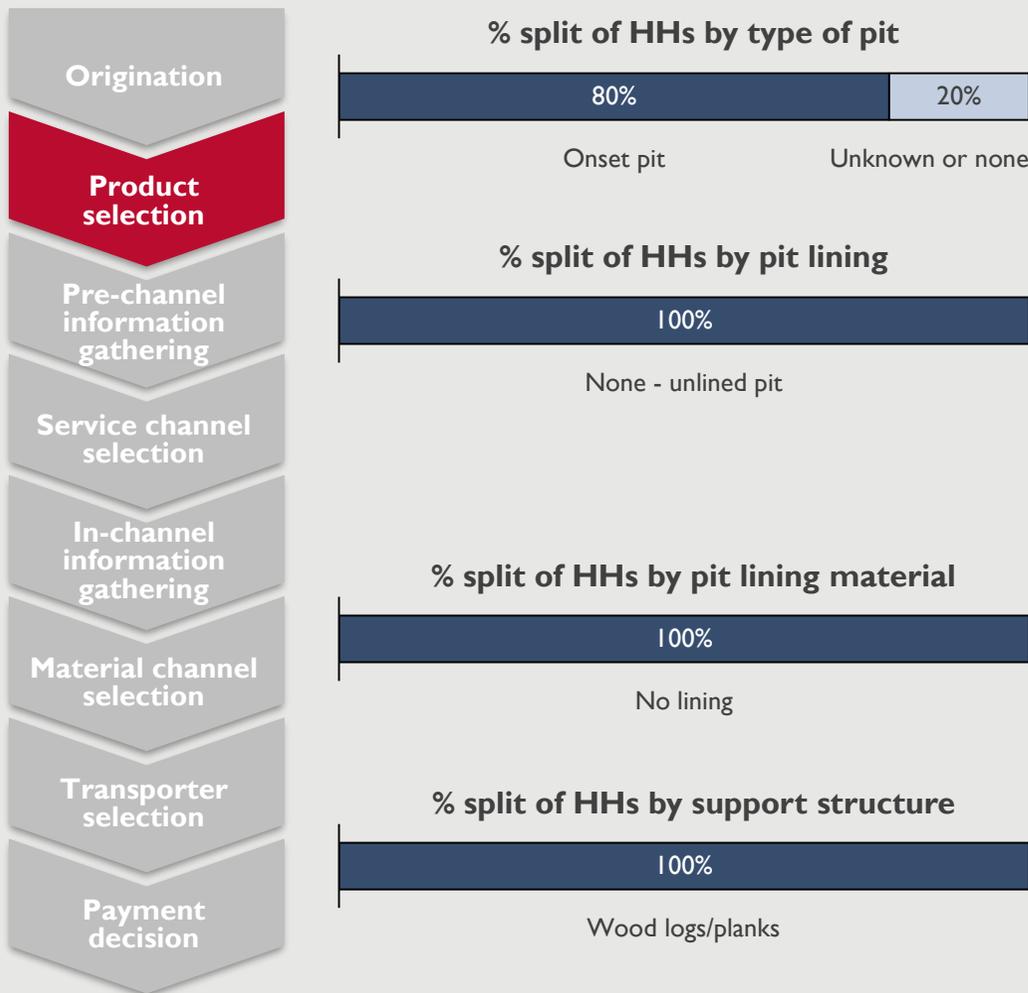


## Person who initiated discussion

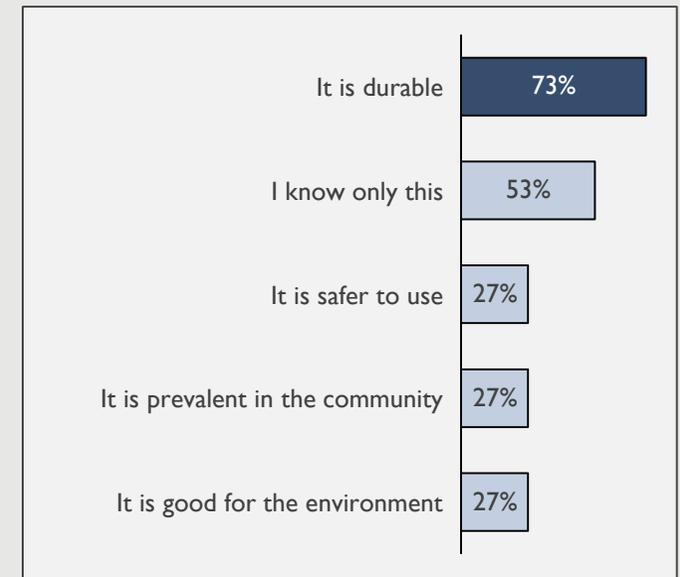


# Primary urban poor | Buying process (2/9)

Households typically selected an unlined onset pit supported by wood logs/ planks,...



## Reasons for selecting type of pit

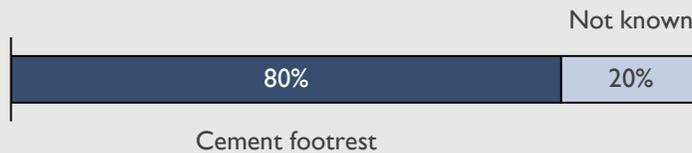


# Primary urban poor | Buying process (3/9)

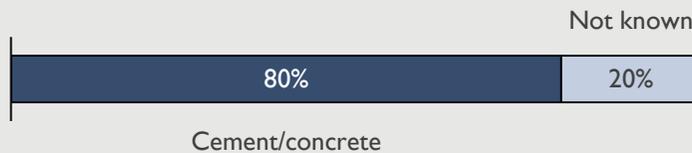
...with a cement/concrete floor and cement footrests around the drop hole due to affordability, durability, hygiene and comfort



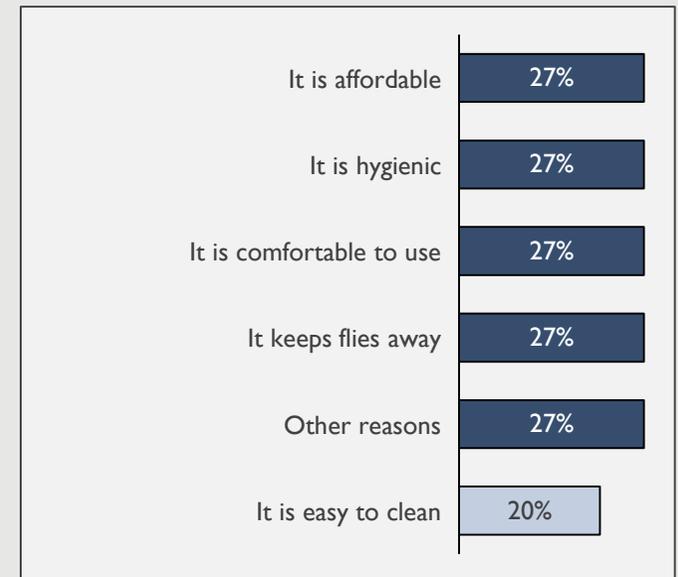
**% split of HHs by interface**



**% split of HHs by floor material**



**Reasons for selecting type of floor and interface<sup>1</sup>**



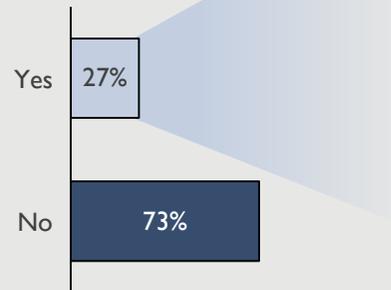
1. Households that responded with 'other reasons' for selecting type of floor and interface mostly responded with lack of money

# Primary urban poor | Buying process (4/9)

Most households did not seek information while constructing a toilet; those who did, sought information on the cost and options available from family members and relatives; information was easy to access



## Sought information while building a toilet



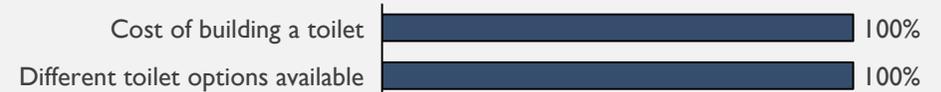
## Ease of access to information



## Sources of information about toilets

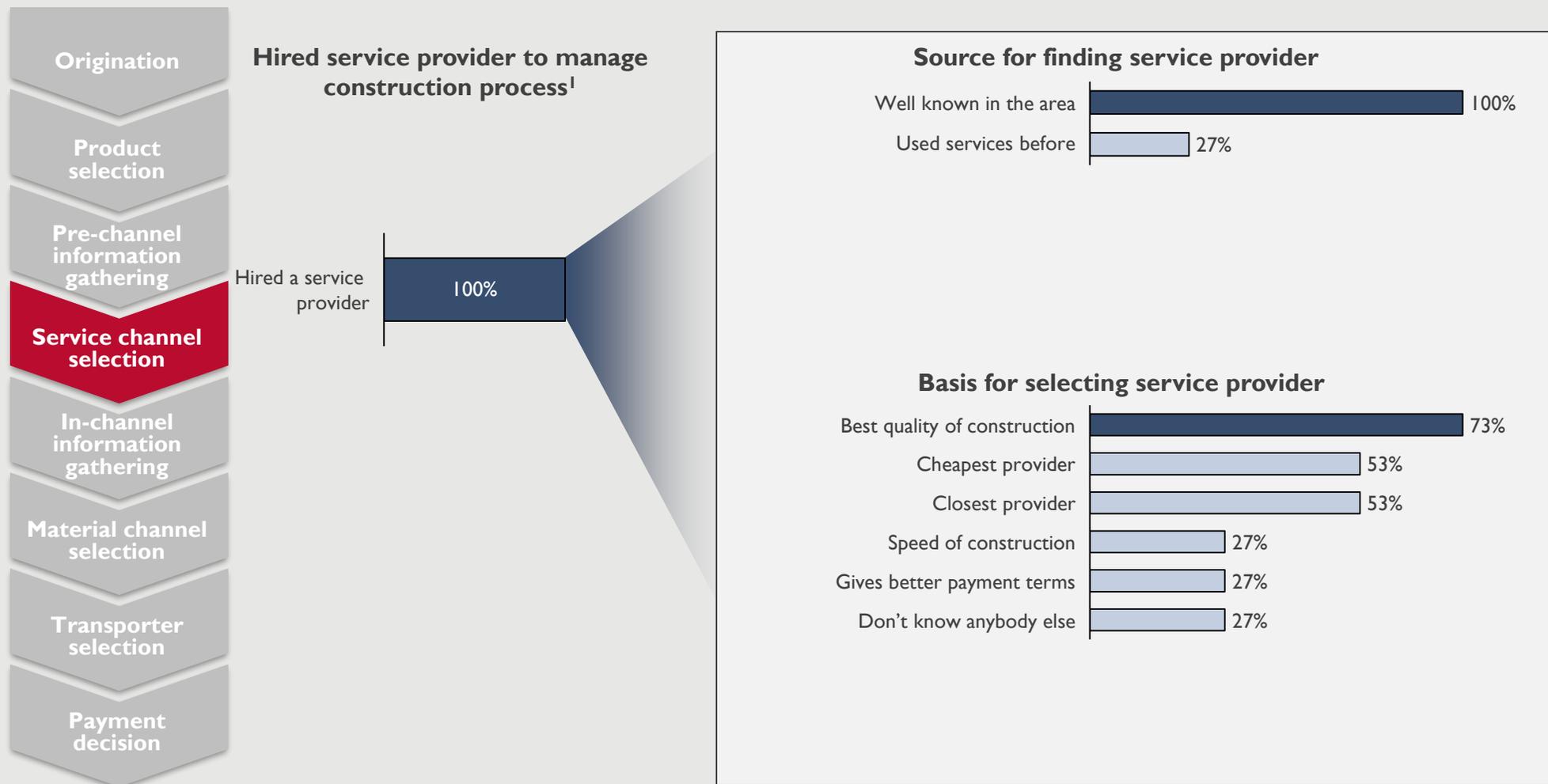


## Nature of information sought



# Primary urban poor | Buying process (5/9)

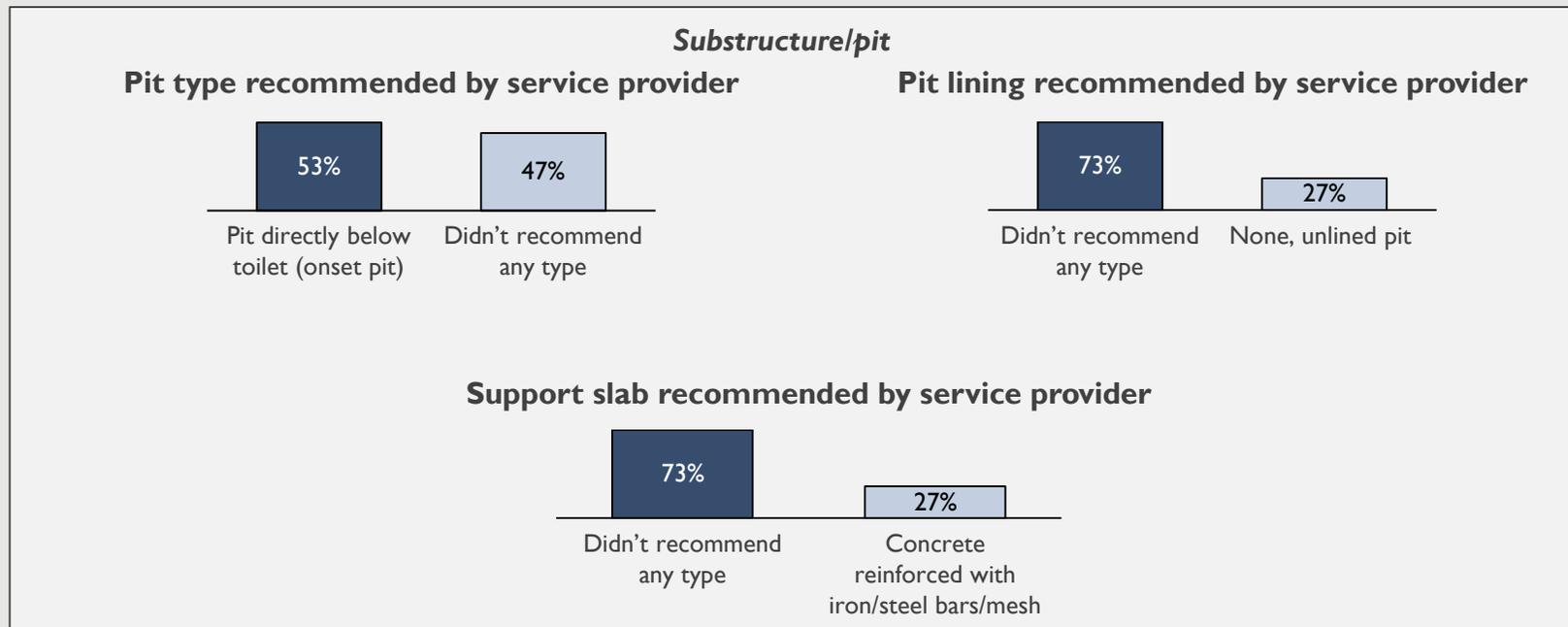
Most households hired a service provider for toilet construction, based on individuals who were well known locally, and their quality of construction



1. Majority households that hire a service provider, hire both, a pit digger and a mason

# Primary urban poor | Buying process (6/9)

Masons often did not recommend any components for the toilet, except construction of an onset pit

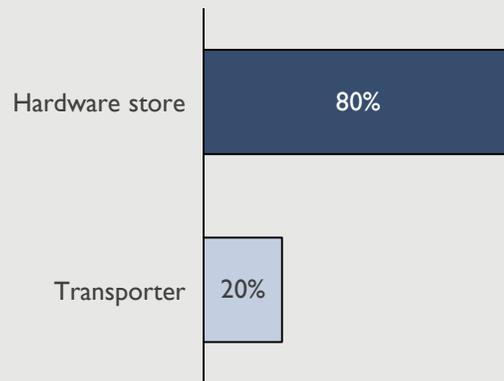


# Primary urban poor | Buying process (7/9)

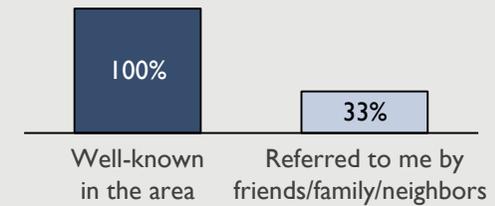
Households typically chose to source materials from hardware suppliers; certain suppliers were selected because they were well-known in the area, and located close by



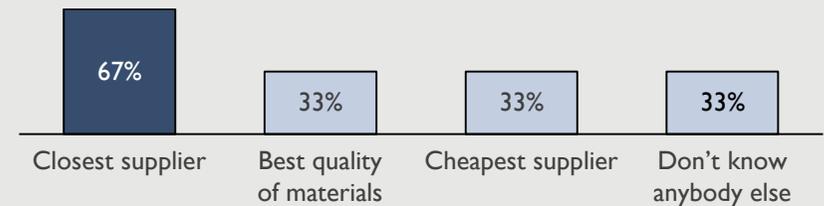
### Material suppliers opted for



### Source for finding hardware store



### Basis for selecting hardware store

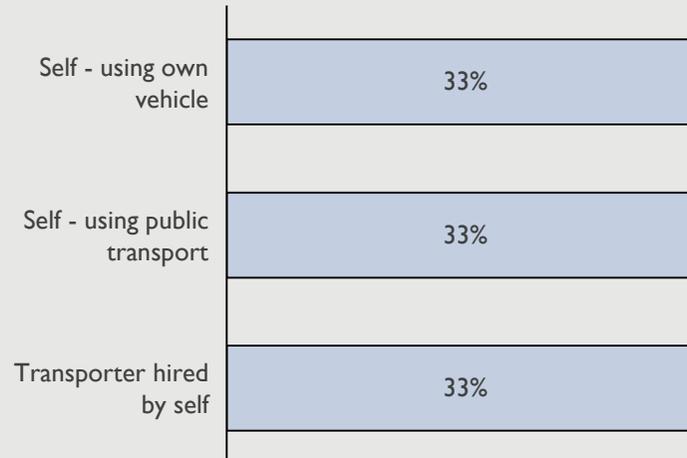


# Primary urban poor | Buying process (8/9)

*Households chose varied methods of transporting materials*



**Material transport option preferred**



# Primary urban poor | Buying process (9/9)

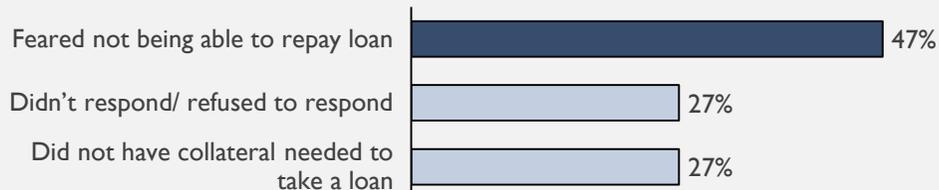
Most households did not use a loan for toilet construction because they were afraid of failure of repayment; hardware stores and service providers were often paid in a lump-sum



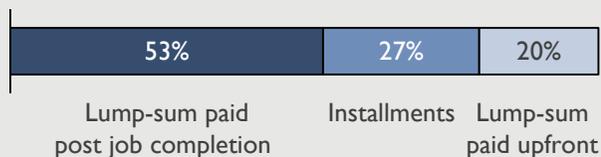
**% HHs using loans to finance toilet construction**



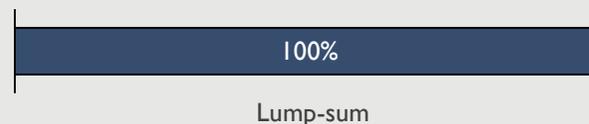
**Reasons for not using loan**



**% split of HHs by payment to service provider**

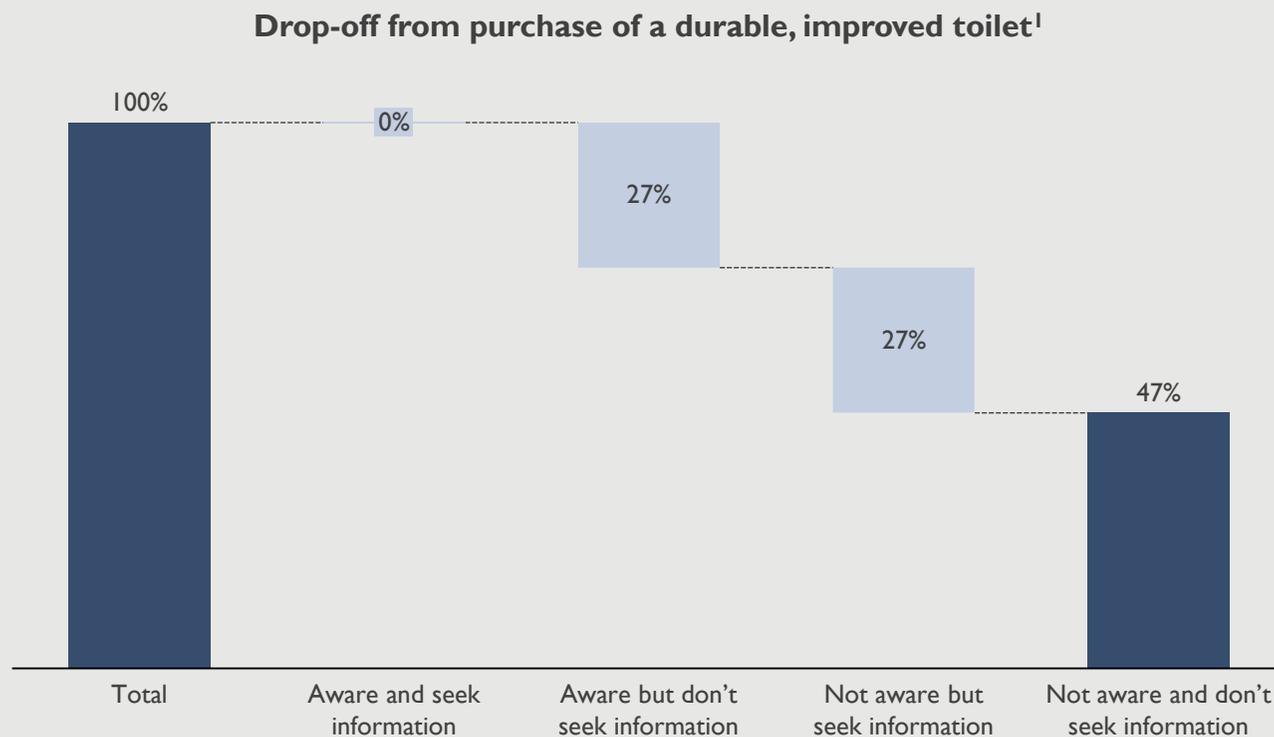


**% split of HHs by payment to hardware store**



# Primary urban poor | Drop-offs from actual buying process

Households without a durable toilet are typically unaware of durable components; they also do not seek information when considering construction of a toilet

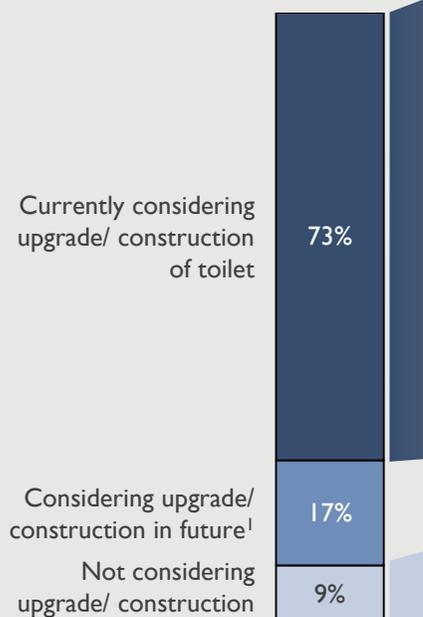


1. Households are considered to be aware if they know at least one durable component each for floor, interface, pit lining, and support structure of a toilet

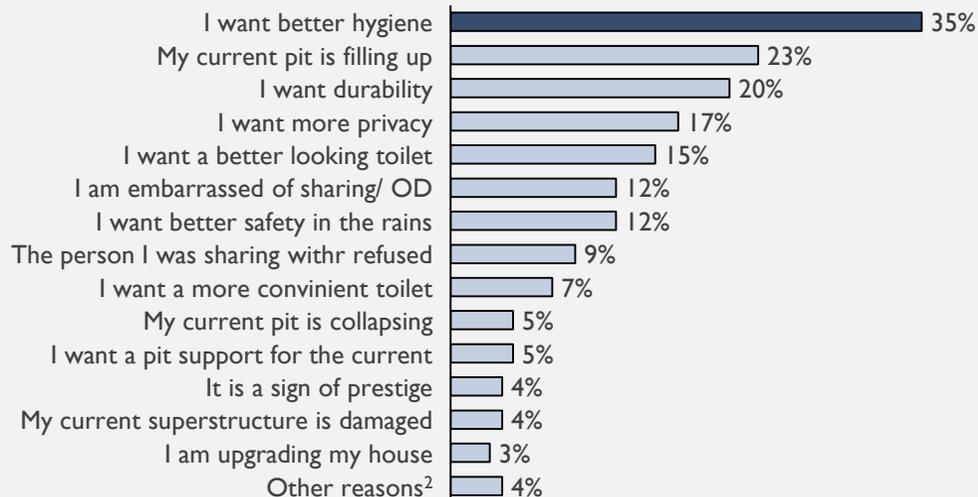
# Primary urban poor | Future consideration

Most households are currently considering a toilet purchase because they want more better hygiene, or will consider one in the future if their family size increases or savings remain after spending on other priorities

**% split of HHs without their own toilet by future preference for toilet purchase/upgrade**



**Reasons for currently considering toilet purchase/upgrade**



**Factors that could influence consideration in the future**

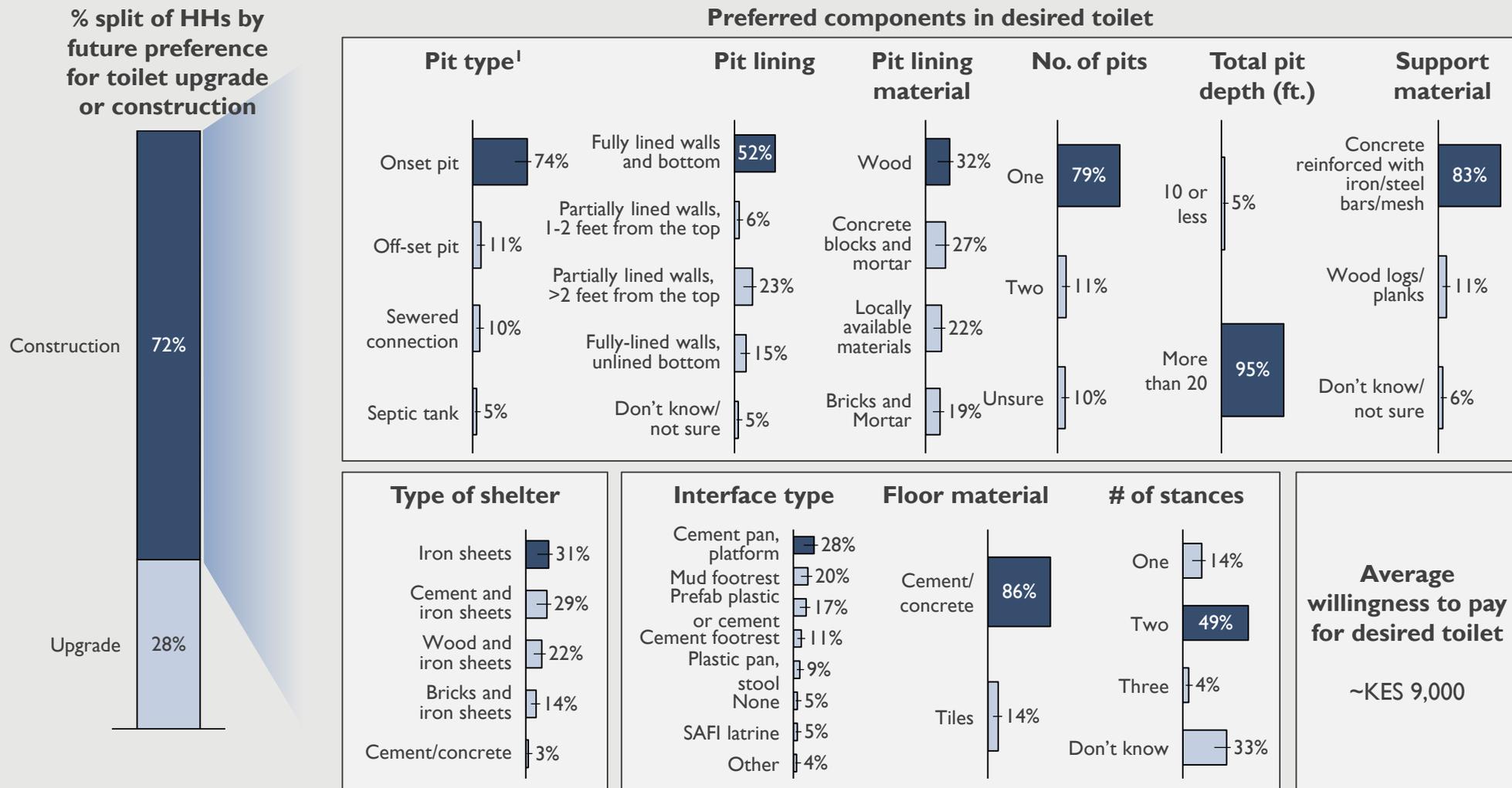


1. Those who were considering construction/ upgrade in the future were not asked for their reasons as their intent is unclear

2. Other reasons for currently considering a new toilet include needing more privacy from older members of the household or for visitors to use, and existing pit beginning to fill up

# Primary urban poor | Desired toilet

Primary urban poor households desire a new construction with two stances, an onset pit, at least 20-feet deep, fully-lined with wood, a cement floor with a cement pan, and an iron sheets shelter



1. If 'Pit type' chosen is sewer connection, further questions regarding pits are not asked to the respondents; proportions shown in all further charts on pits exclude respondents who chose sewer connection as their pit type

# Archetype profile | Primary urban rich

Durable, improved shared

**4.0%**

Non-durable individual toilets

**60.0%**

Non-durable shared toilets

**36.0%**

Customer archetype

Secondary urban

Primary urban poor

**Primary urban rich**

Profile

Small section of **affluent** households settled in **Marsabit town** who have invested in **rainwater harvesting systems** for domestic requirements

**Primary urban rich households can pay for durable toilets but do not have one currently.**

Let's understand why

## Primary urban rich | Customer story

*Guyo lives with his wife, two children, mother, sisters, and nephews. He has attended university. He earns his income from owning a small business, but also receives aid from the government.*

*Guyo and his family live in their own house, which is built with permanent materials and are relatively affluent. They have access to electricity, and own a mobile phone and a television. They typically obtain water from vendors who transport water in tankers or through harvesting rainwater. They have convenient access to a hardware store; they only need to travel 15 to 30 minutes by a two-wheeler.*

*Guyo believes that it is important for his family to get respect from the community, and values products that would bring him prestige. He believes that it is important to keep the community clean, and is aware of the benefits of owning a toilet.*

*Guyo agrees that owning a toilet reduces the possibility of disease, and the dangers of defecating in the open. He also believes that owning a toilet makes one more modern. He currently uses a temporary toilet with an unlined pit, with a support structure made of wood logs.*

*Guyo desires a one-stance toilet with an onset pit, fully-lined with concrete blocks and mortar, that is at least 20-feet deep, a concrete floor with a cement pan, and a shelter made of cement and iron sheets. He is willing to pay ~KES 12,000 for this toilet.*

# Primary urban rich | Customer persona

## Setting

- **Typical family size:** 7 people, with 1 child under the age of 10
- **Type of house:** Predominantly live in permanent material houses
- **Income and occupation:** Typically have non-seasonal income; typically own their own small shop or businesses
- **Mobile phone:** Half the households have a mobile phone
- **Mobile money:** Nearly all households have access to mobile money transfer platforms
- **Total value of assets:** Households are relatively affluent; the average total asset value per household is ~KES 50,000<sup>1</sup>
- **Bank account and savings groups:** Most households do not have a bank account; most are not members of a savings group<sup>2</sup>
- **Loans:** Four-fifths of the households have not taken a loan in the past

## Mental Model

- **Building a toilet is high priority;** nearly all households believe it allows one to defecate conveniently
- **Prioritize toilet construction** over other priorities such as school fees
- **Strongly believe that owning a toilet is a sign of modernity**
- **Community cleanliness is a significant priority;** all households believe that toilets reduce the possibility of diseases
- **Strongly desire respect** from people in their community but **do not value products that bring them prestige**
- **Conformity is important to households;** two-thirds believe that one should not do things differently from their neighbors



- **Current product:** Non-durable individual toilets; a third of the households use or own non-durable shared toilets
- **Desired product:** Desire toilets that are durable, provide privacy and can easily be used by children, and has the following attributes:
  - **Substructure:** A single onset pit, at least 20-feet deep, fully-lined with concrete blocks and mortar
  - **Interface:** One stance, a concrete floor with a cement pan
  - **Superstructure:** An iron sheets shelter
- **Willingness to pay:** ~KES 12,000<sup>1</sup>
- **Financing:** Typically do not take loans for toilet construction, because they are afraid of failure of repayment

## The Ask

Source: FSG quantitative survey with 95 households in Merille, Karare and Marsabit Town

1. Figure has been rounded off to the nearest 500

2. Savings groups include MFIs, SACCOs and informal self-help groups called chamas

# Primary urban rich | Key demographic statistics

## Segment size

Prevalence in Marsabit county	Low
-------------------------------	-----

## Sanitation profile

Durable, improved shared	4.0%
Unimproved individual toilets	60.0%
Unimproved shared toilets	36.0%

## Demographics

Family size (avg.)	7
<b>Gender of HH Head</b>	
Male	83.9%
Female	16.1%
<b>Highest education in HH</b>	
Primary	8.1%
Secondary	17.8%
University	74.2%

## Income

<b>Nature of income</b>	
Non-seasonal	90.3%
Seasonal	9.7%

<b>Main source of income</b>	
Small shop or business	

## Access indicators

<b>Distance to nearest HW store<sup>1</sup></b>	
<15 minutes	33.9%
15 to 30 minutes	56.4%
> 30 minutes	9.7%
<b>Access to electricity</b>	
90.3%	
<b>Drinking water source</b>	
Well	9.7%
Piped or other	66.1%
Surface water <sup>2</sup>	24.2%

## Affluence indicators

<b>Total stated monthly expenditure</b>		<b>Assets and other indicators</b>	
High (> KES 10K)	75.8%	Agriculture land	0.0%
Medium (KES 5K-10K)	0.0%	Computer	24.2%
Low (< KES 5K)	24.2%	Solar panel	0.0%
<b>Total asset value (avg.)</b>	49.9K	Refrigerator	41.9%
<b>Total asset value (spread)</b>		Farm animals	0.0%
High (> KES 20K)	24.2%	Bicycle	0.0%
Medium (KES 15K-20K)	25.8%	Mobile	83.9%
Low (< KES 15K)	50.0%	Television	74.2%
		Car or truck	8.1%
		Motorbike	0.0%

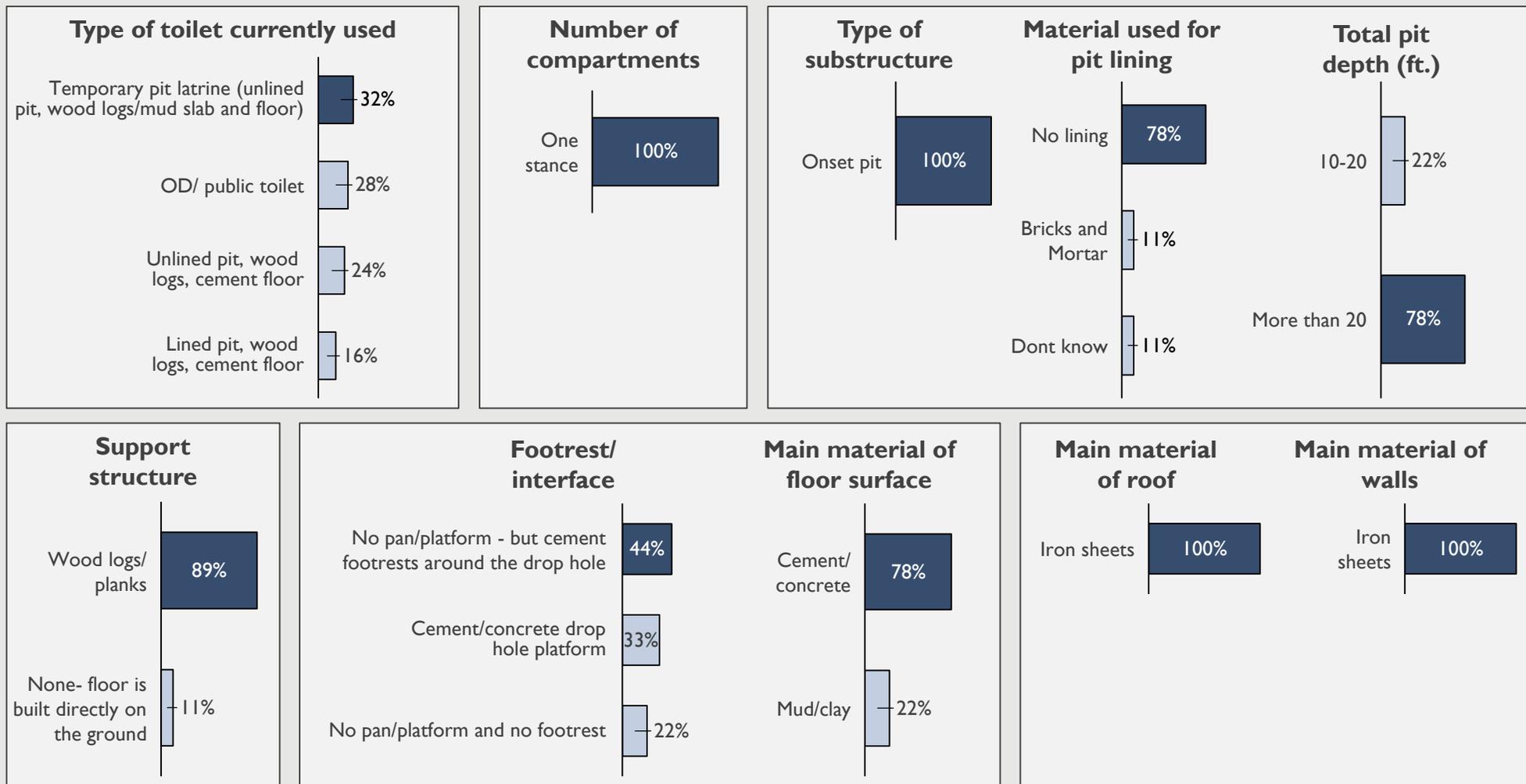
## Attitudes & beliefs

I would be willing to pay for products that are prestigious	59.7%
It is embarrassing to be seen defecating in the open	74.2%
Cleanliness of my community is important to me	91.9%
It is taboo to use or live near a toilet	33.9%

- Distance to nearest hardware store is calculated based on time taken to reach by bike/ two-wheeler
- Surface water includes water from ponds, springs, rainwater harvesting, etc.

# Primary urban rich | Current sanitation profile

Toilet users in this segment typically use a one-stance temporary pit latrine, with an unlined onset pit, at least 20-feet deep, a cement floor and cement footrests, and iron sheets roof and walls



**Note:** Questions related to the toilet components were not asked to HHs that resort to OD or use shared facilities

# Primary urban rich | Typical month of construction

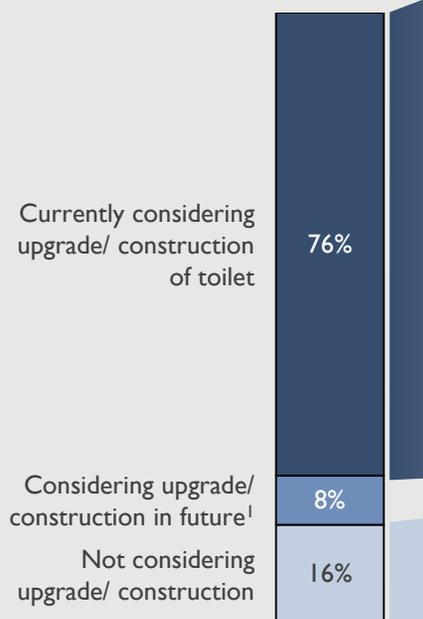
*Households most commonly construct toilets in the months of January as that is when they are able to save up*



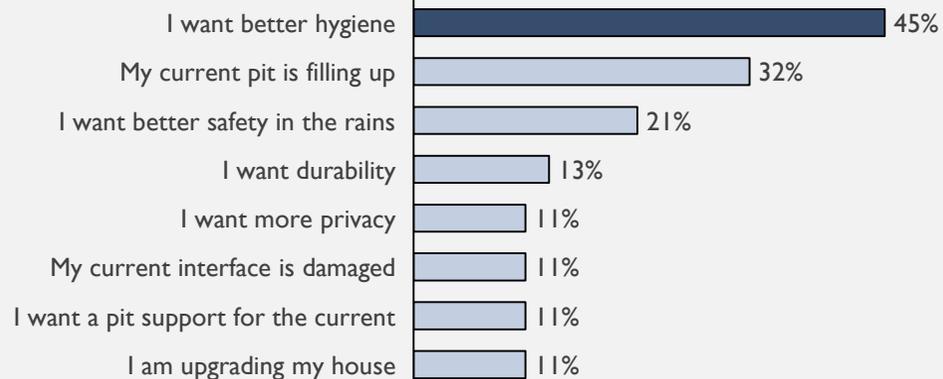
# Primary urban rich | Future consideration

Most households are currently considering a toilet purchase because they want better hygiene, or will consider one in the future if necessary materials and labor become available or if options become more affordable

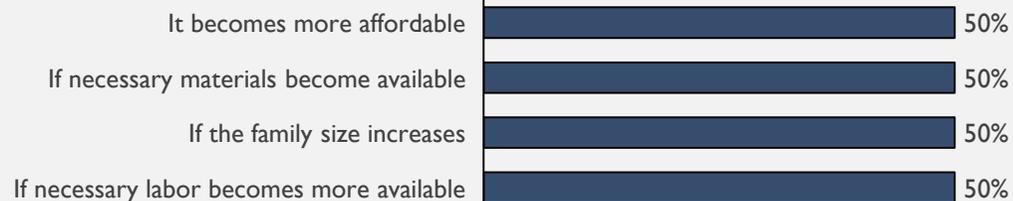
**% split of HHs without their own toilet by future preference for toilet purchase/upgrade**



**Reasons for currently considering toilet purchase/upgrade**



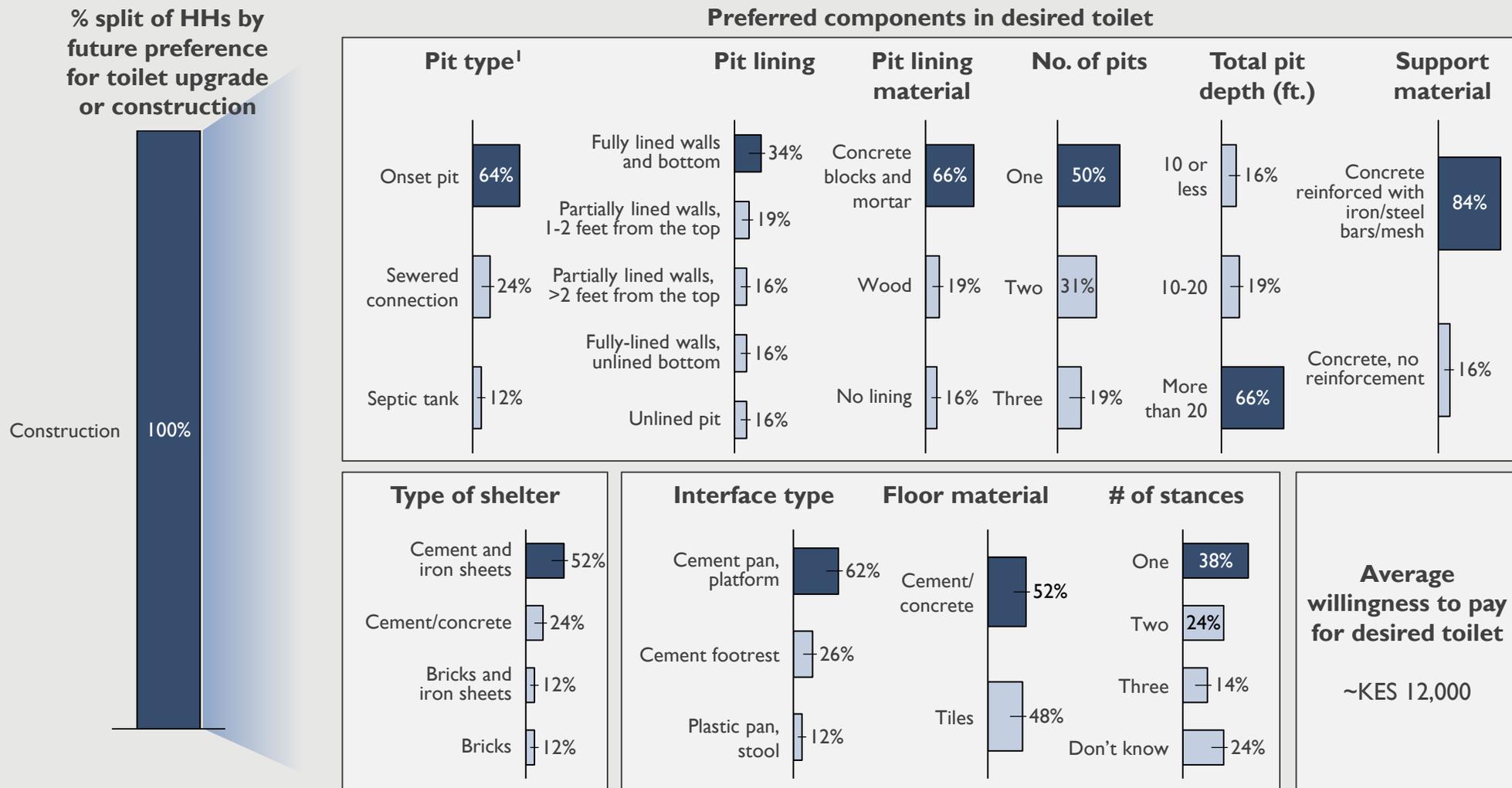
**Factors that could influence consideration in the future**



1. Those who were considering construction/ upgrade in the future were not asked for their reasons as their intent is unclear

# Primary urban rich | Desired toilet

Primary urban rich households desire a one-stance, onset pit, at least 20-feet deep, fully-lined with concrete blocks and mortar, a cement floor with a cement pan, and a cement and iron sheets shelter



I. If 'Pit type' chosen is sewer connection, further questions regarding pits are not asked to the respondents; proportions shown in all further charts on pits exclude respondents who chose sewer connection as their pit type

# Table of contents

- Overview of the Kenya SMA
- Compendium of findings for rural Western Kenya
- **Compendium of findings for urban Marsabit**
  - Sanitation context
  - Barriers and drivers for MBS
  - Customer segmentation
  - Product economics
  - Value-chain trace-back maps

# Product economics | Summary of prevalent toilet options

The most prevalent options in each toilet category cumulatively comprise 50-60%<sup>1</sup> of the toilets observed in urban Marsabit, and range from ~KES 10,000 to ~KES 70,000<sup>2</sup>

## Unimproved toilet (36% of current market)

KES 10,000-19,000

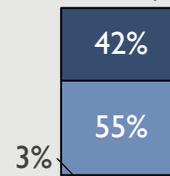


Source: FSG survey, 2021

**“Temporary” latrine, with unlined pit and wood logs/mud slab and floor, with shelter made of iron sheets**

## Non-durable, improved toilet (14% of current market)

~KES 49,000

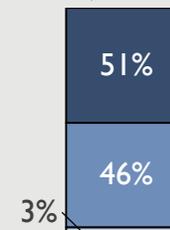


Source: FSG survey, 2021

**Unlined pit latrine with concrete foundation and slab, with shelter made of iron sheets**

## Durable, improved toilet (7% of current market)

KES 60,000-70,000<sup>3</sup>



Source: FSG survey, 2021

**Fully- or partially-lined pit latrine with concrete foundation and slab, with shelter made of iron sheets**

■ Material ■ Labor ■ Transportation<sup>4</sup>

1. Prevalence has been calculated based on an observation of 67 households in Marsabit town and 53 households in secondary urban Marsabit (excludes 80 respondents who either practice open defecation or share toilets not constructed by them); source: FSG quantitative listing survey with households in urban Marsabit, 2021 (n=200)
2. FSG analysis based on qualitative interviews with households and value chain players, 2021
3. Price range represents the estimated price variation between partially- and fully-lined pit variants
4. Transportation costs represent cost of transporting hardware materials from retailer to customer, and transport incurred by fundi to reach the household; transport of other materials (i.e., sand, aggregate, wood logs, and water) is included in their material cost as the break-up of material vs. transport is not available for them

# Product economics | Unimproved toilet (1/3)

The typical cost of a “temporary” toilet (i.e., unlined pit, wood logs or mud floor) with a shelter made of iron sheets comes to ~KES 19,000; 55% of this comprises labor cost

## Pit

Photo not available

- Rectangular onset pit
- Unlined
- 15-20 feet deep
- No ventilation pipe

## Support structure and interface



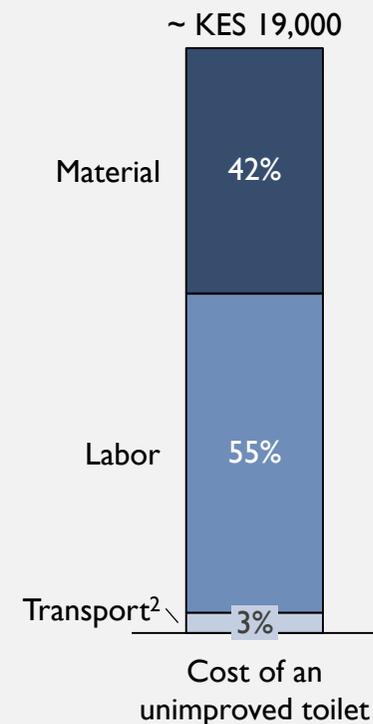
- Wood logs/planks support structure
- Wood logs/mud floor without a pan or platform

## Shelter



- Walls and roof made of either mud/poles or iron sheets

## Total cost to customer<sup>1</sup>

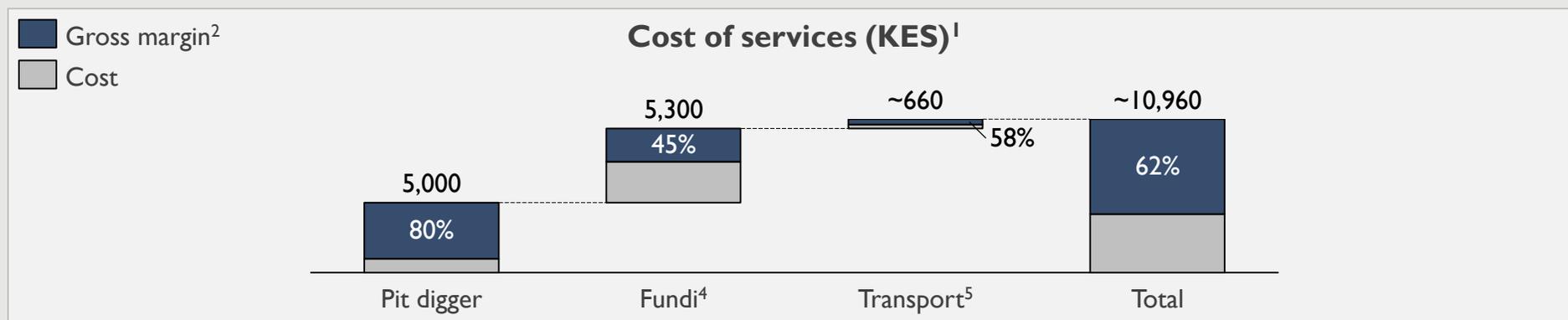
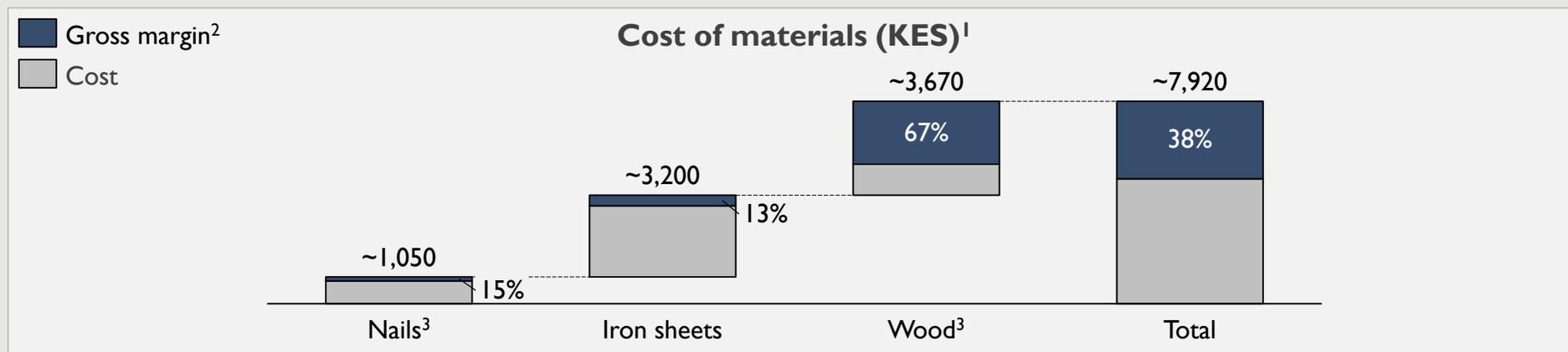


1. FSG analysis based on qualitative interviews with households and value chain players in urban Marsabit, 2021

2. Transportation costs represent cost of transporting hardware materials from retailer to customer, and transport incurred by fundi to reach the household; transport of other materials (i.e., sand, aggregate, wood, and water) is included in their material cost as the break-up of material vs. transport is not available for them

# Product economics | Unimproved toilet (2/3)

Of the total material cost to customer, 38% is retained as gross margin by the retailers/suppliers involved; service providers retain 62% of the total cost of services to customer

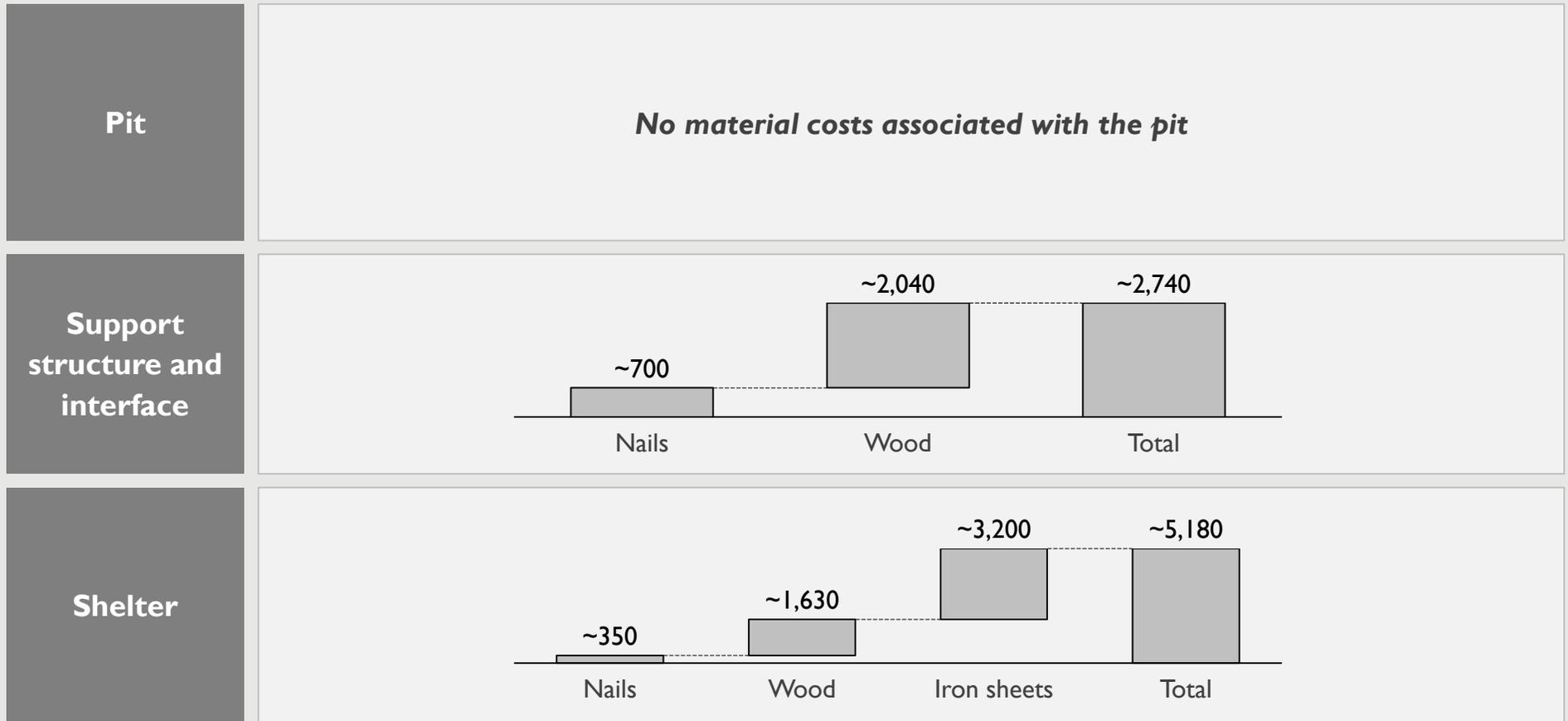


1. FSG analysis based on qualitative interviews with households and value chain players in urban Marsabit, 2021
2. Gross margin for materials equals price charged to customer less cost of material to retailer/seller; gross margin for labor equals price charged to customer less cost of hired labor and transport; gross margin for transport equals price charged to customer less total cost of fuel attributed to the trip
3. We have assumed gross margin on nails and wood logs to be the same as in rural Western Kenya due to lack of adequate information from players in Marsabit
4. Price charged by fundis excludes their transport cost
5. Transportation costs represent cost of transporting hardware materials from retailer to customer, and transport incurred by fundi to reach the household; transport of other materials (i.e., sand, aggregate, wood logs, and water) is included in their material cost as the break-up of material vs. transport is not available for them

# Product economics | Unimproved toilet (3/3)

Materials for the shelter, typically made of iron sheets and wood poles, comprise 65% of the total material costs

## Cost of materials (KES)<sup>1</sup>



# Product economics | Non-durable, improved toilet (1/3)

The most prevalent non-durable, improved toilet is an unlined pit latrine with concrete foundation and slab with iron sheets shelter, and costs an estimated ~KES 49,000; ~55% of this is cost of labor and ~42% is materials

## Pit

Photo not available

- Rectangular onset pit
- Unlined
- 20 feet deep
- Usually has a ventilation pipe

## Support structure and interface



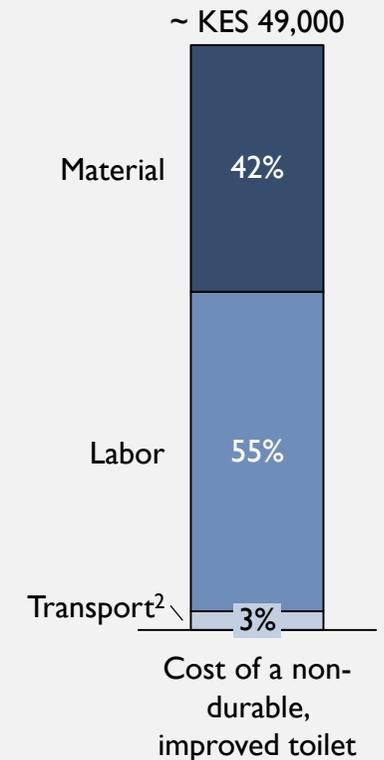
- Concrete support structure
- Concrete/cement floor

## Shelter



- Walls and roof made of iron sheets

## Total cost to customer<sup>1</sup>

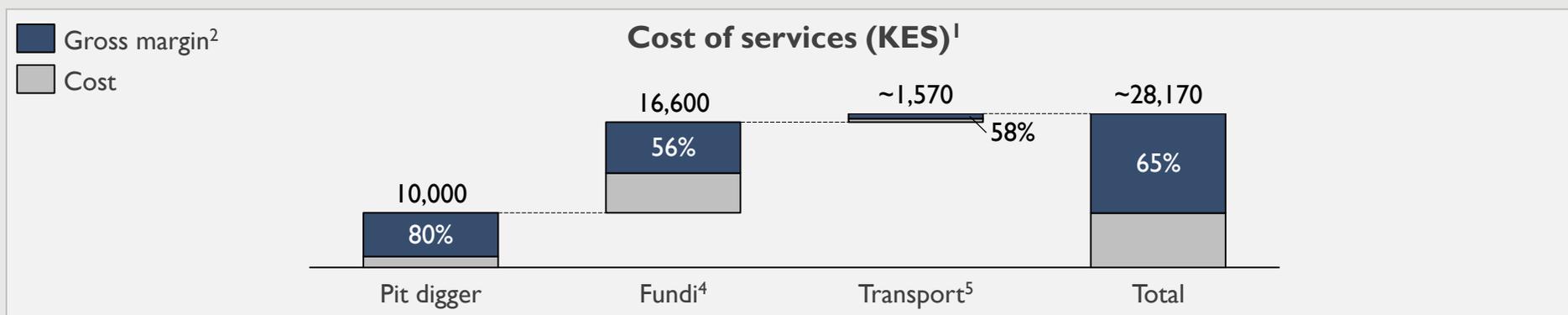
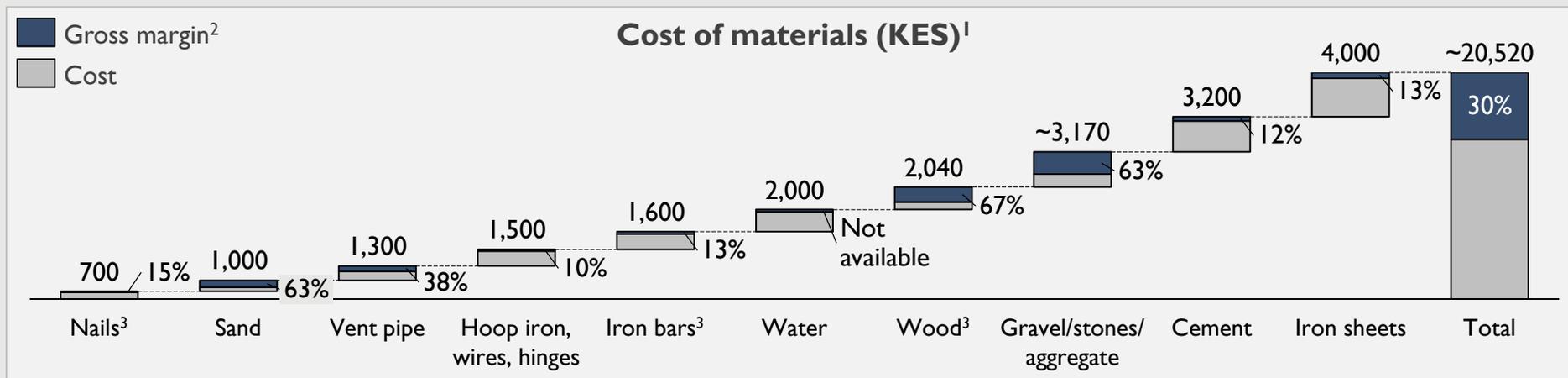


1. FSG analysis based on qualitative interviews with households and value chain players urban Marsabit, 2021

2. Transportation costs represent cost of transporting hardware materials from retailer to customer, and transport incurred by fundi to reach the household; transport of other materials (i.e., sand, aggregate, wood logs, and water) is included in their material cost as the break-up of material vs. transport is not available for them

# Product economics | Non-durable, improved toilet (2/3)

Of the total material cost to customer, 30% is retained as gross margin by the retailers/suppliers involved; service providers retain 65% of the total cost of services to customer

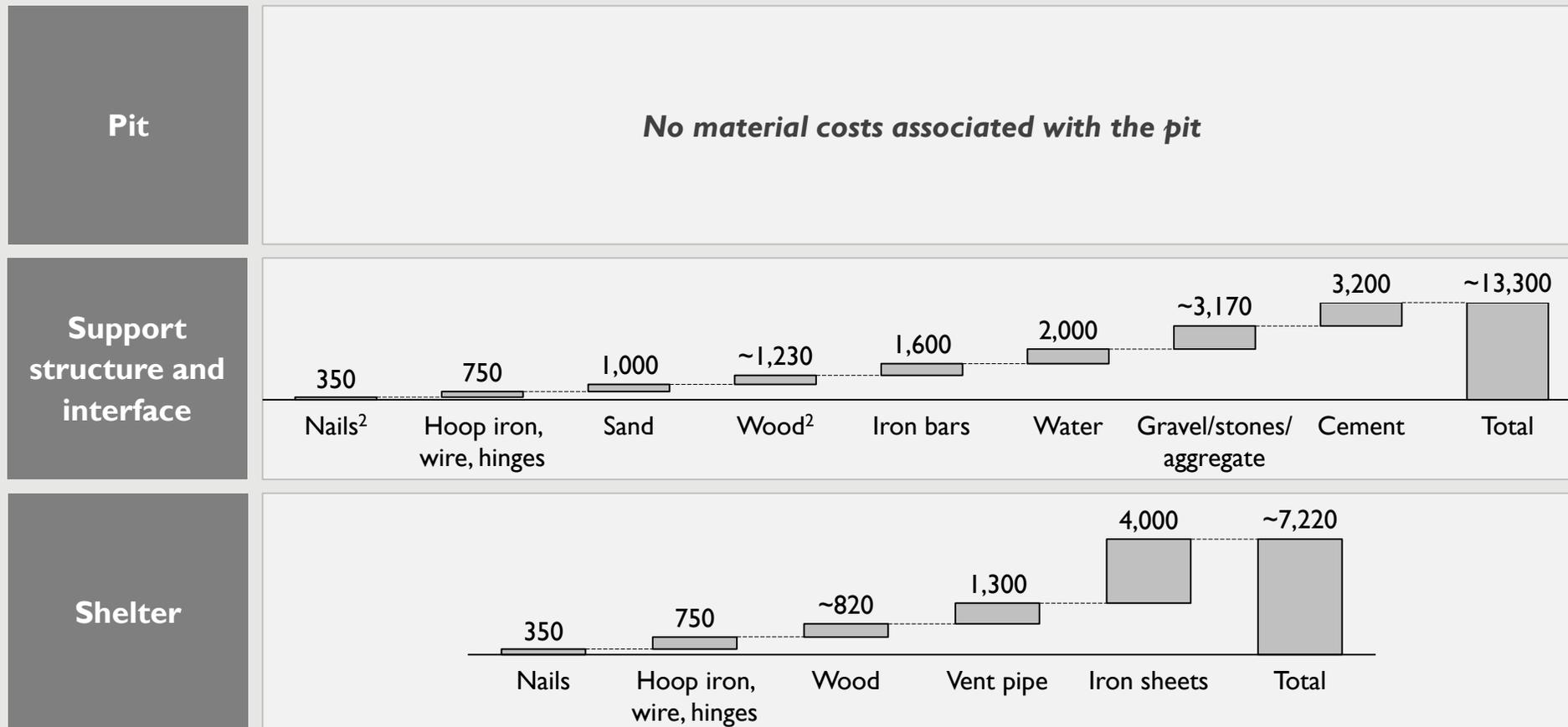


1. FSG analysis based on qualitative interviews with households and value chain players in urban Marsabit, 2021
2. Gross margin for materials equals price charged to customer less cost of material to retailer/seller; gross margin for labor equals price charged to customer less cost of hired labor and transport; gross margin for transport equals price charged to customer less total cost of fuel attributed to the trip
3. We have assumed gross margin on nails, iron bars, and wood logs to be the same as in rural Western Kenya due to lack of adequate information from players in Marsabit
4. Price charged by fundis excludes their transport cost
5. Transportation costs represent cost of transporting hardware materials from retailer to customer, and transport incurred by fundi to reach the household; transport of other materials (i.e., sand, aggregate, wood logs, and water) is included in their material cost as the break-up of material vs. transport is not available for them

# Product economics | Non-durable, improved toilet (3/3)

The materials required for the support structure and interface comprise ~65% of the total cost of materials; ~63% of this comes from cost of cement, aggregate/gravel, and water

## Cost of materials (KES)<sup>1</sup>



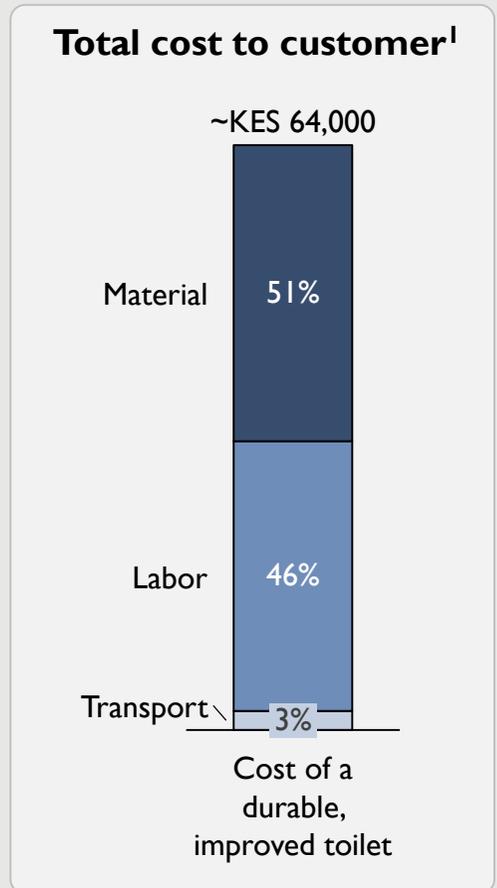
1. FSG analysis based on qualitative interviews with households and value chain players in urban Marsabit, 2021

2. Wood logs and nails are used to build the frame required for onsite construction of the concrete foundation and slab

# Product economics | Durable, improved toilet (1/3)

The typical cost of the most prevalent durable, improved toilet, with a simple iron sheets shelter, comes to ~KES 64,000; ~51% of this is attributed to costs associated with materials

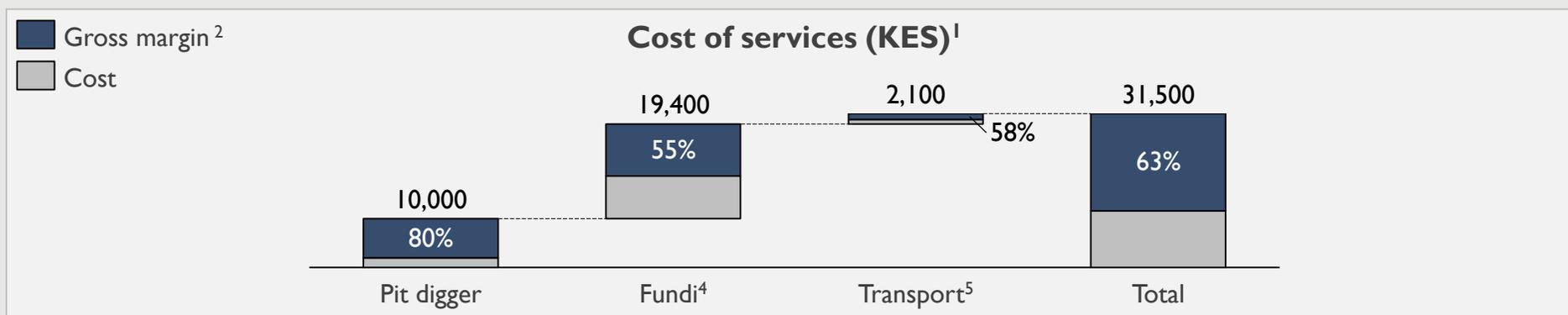
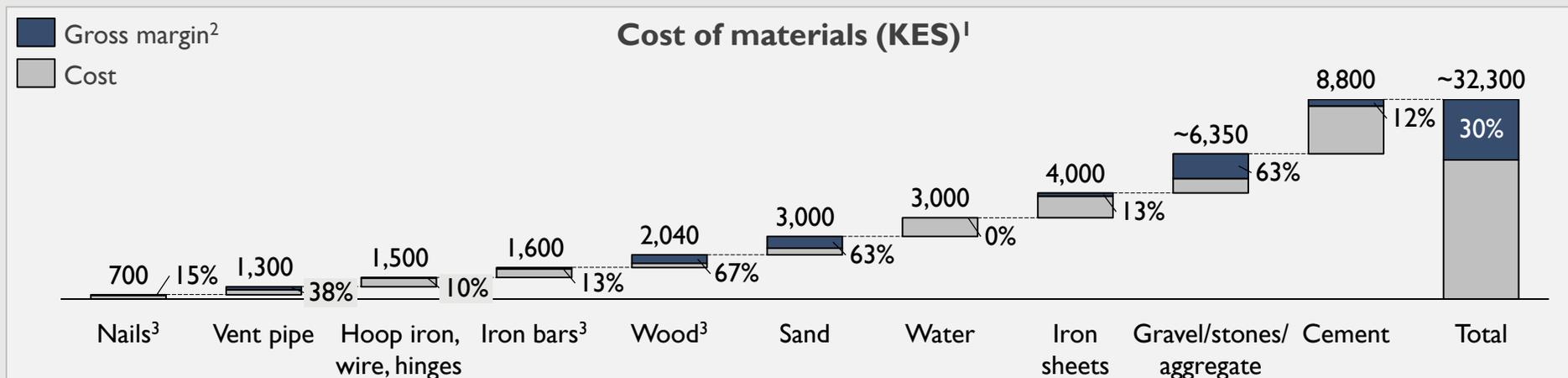
<b>Pit</b>		<ul style="list-style-type: none"><li>• Rectangular onset pit</li><li>• Partially or fully-lined with cement or brick and mortar</li><li>• 25-30 feet deep</li><li>• Usually has a ventilation pipe</li></ul>
<b>Support structure and interface</b>		<ul style="list-style-type: none"><li>• Concrete foundation and floor with butterfly-design footrests</li></ul>
<b>Shelter</b>		<ul style="list-style-type: none"><li>• Walls and roof of iron sheets, or, brick, cement and mortar</li></ul>



1. FSG analysis based on qualitative interviews with households and value chain players in urban Marsabit, 2021  
2. Transportation costs represent cost of transporting hardware materials from retailer to customer, and transport incurred by fundi to reach the household; transport of other materials (i.e., sand, aggregate, wood logs, and water) is included in their material cost as the break-up of material vs. transport is not available for them

# Product economics | Durable, improved toilet (2/3)

Of the total material cost to customer, 30% is retained as gross margin by the retailers/suppliers involved; service providers retain ~63% of the total cost of services to customer

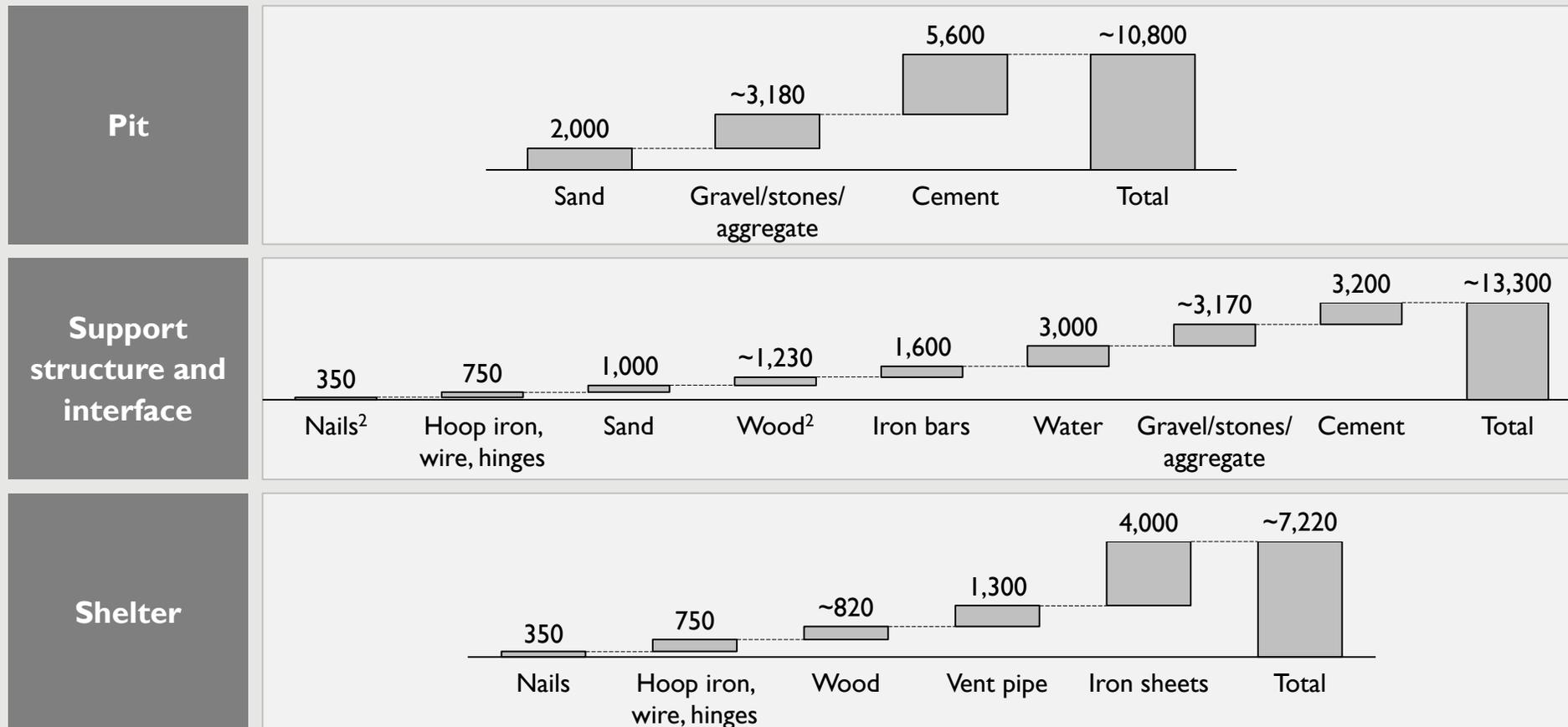


1. FSG analysis based on qualitative interviews with households and value chain players in urban Marsabit, 2021
2. Gross margin for materials equals price charged to customer less cost of material to retailer/seller; gross margin for labor equals price charged to customer less cost of hired labor and transport; gross margin for transport equals price charged to customer less total cost of fuel attributed to the trip
3. We have assumed gross margin on nails, iron bars, and wood logs to be the same as in rural Western Kenya due to lack of adequate information from players in Marsabit
4. Price charged by fundis excludes their transport cost
5. Transportation costs represent cost of transporting hardware materials from retailer to customer, and transport incurred by fundi to reach the household; transport of other materials (i.e., sand, aggregate, wood logs, and water) is included in their material cost as the break-up of material vs. transport is not available for them

# Product economics | Durable, improved toilet (3/3)

The materials required for support structure and interface comprise bulk of the material costs, at ~41%

Cost of materials (KES)<sup>1</sup>



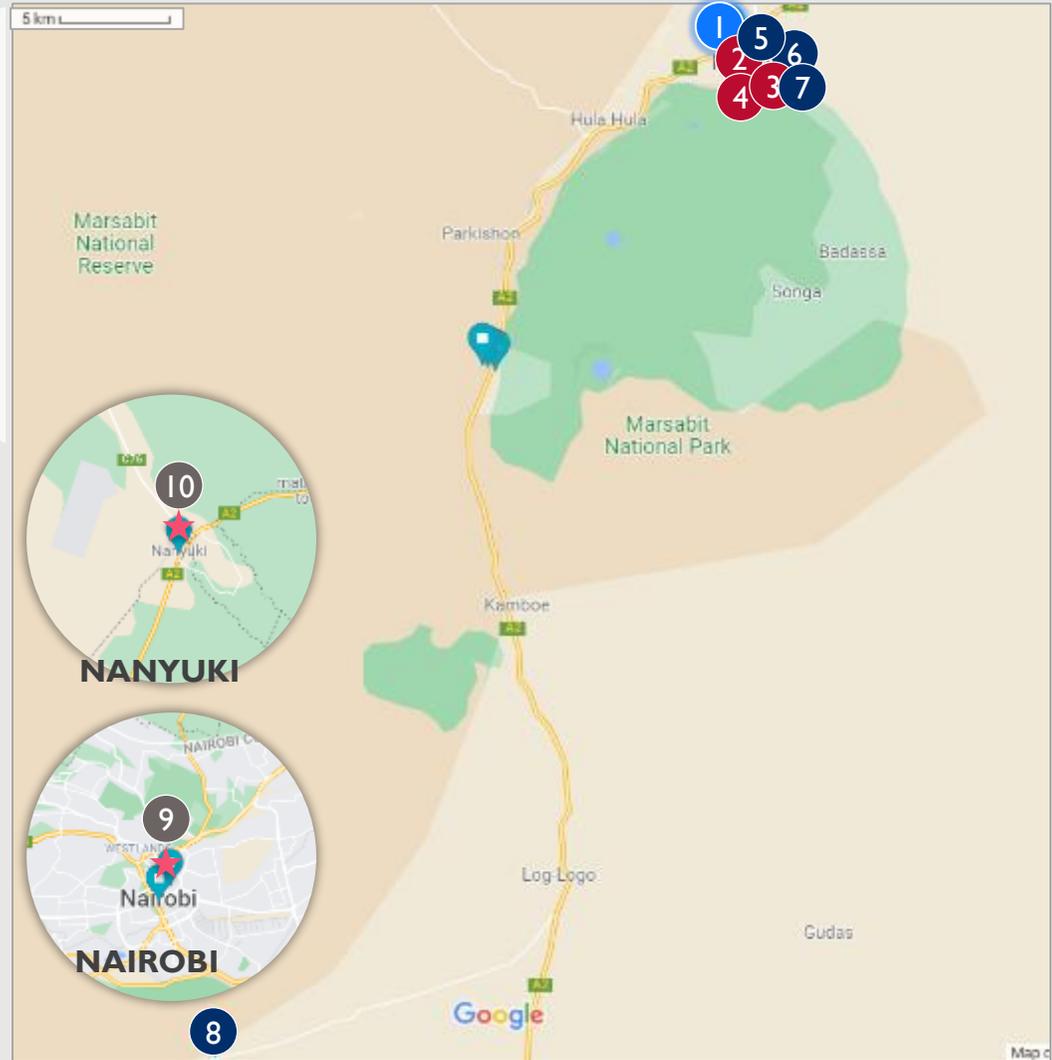
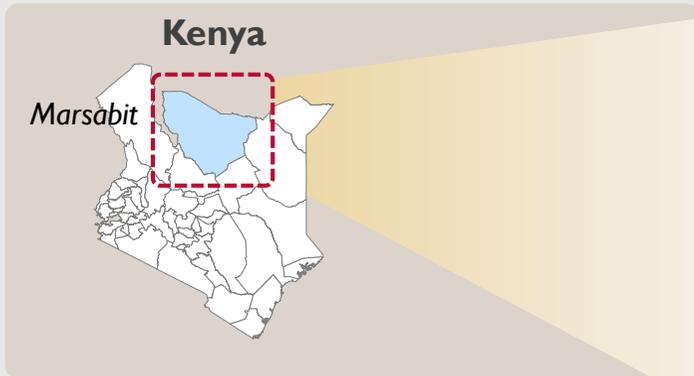
1. FSG analysis based on qualitative interviews with households and value chain players in urban Marsabit, 2021

2. Wood logs and nails are used to build the frame required for onsite construction of the concrete foundation and slab

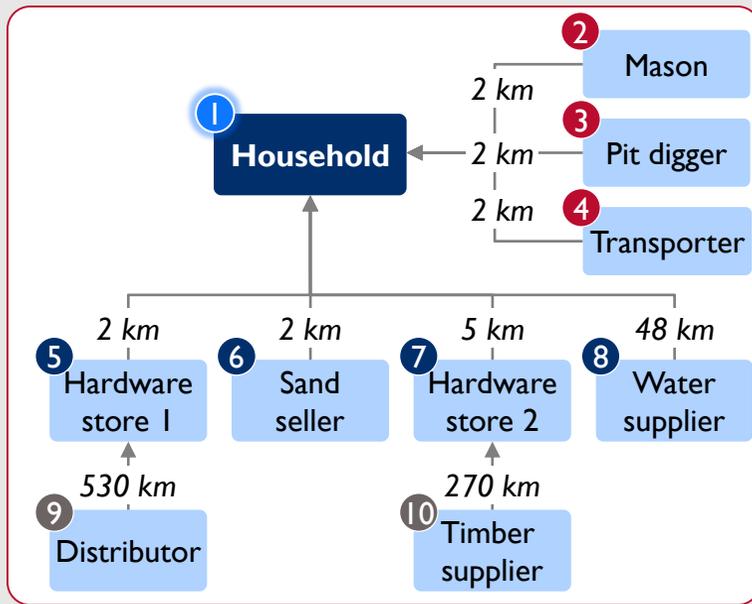
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- Overview of the Kenya SMA
- Compendium of findings for rural western Kenya
- **Compendium of findings for urban Marsabit**
  - Sanitation context
  - Barriers and drivers for MBS
  - Customer segmentation
  - Product economics
  - Value-chain trace-back maps

# Value chain trace-back<sup>1</sup> | Durable toilet in Marsabit town



## Trace back value chain



● Household

● Service provider

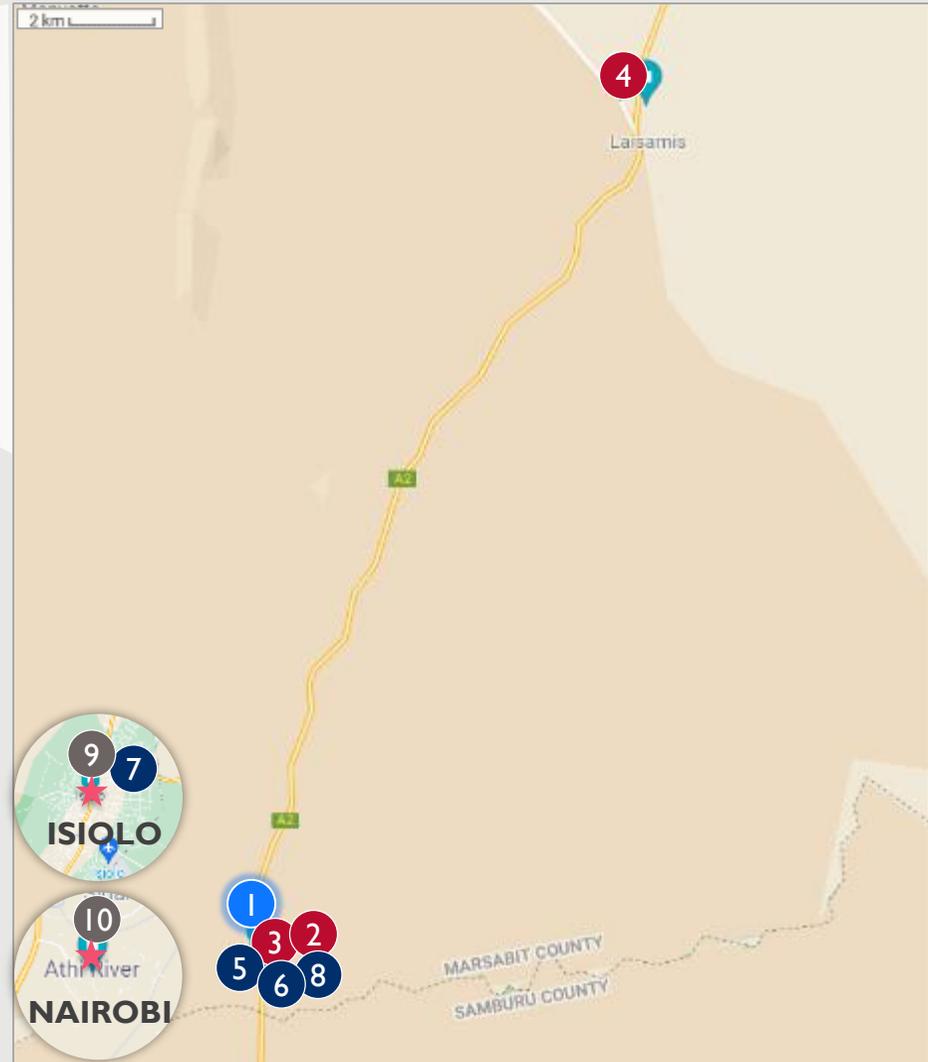
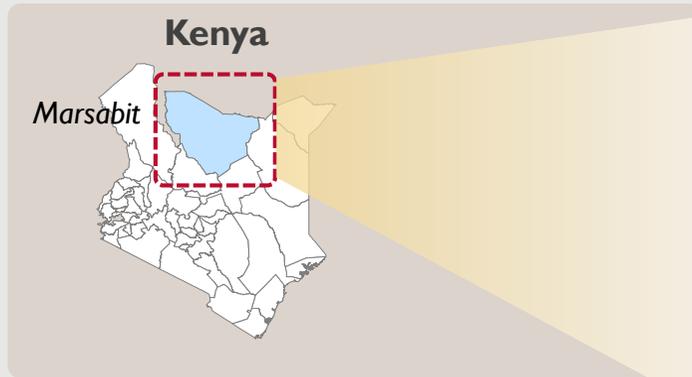
● Material supplier

● Distributors

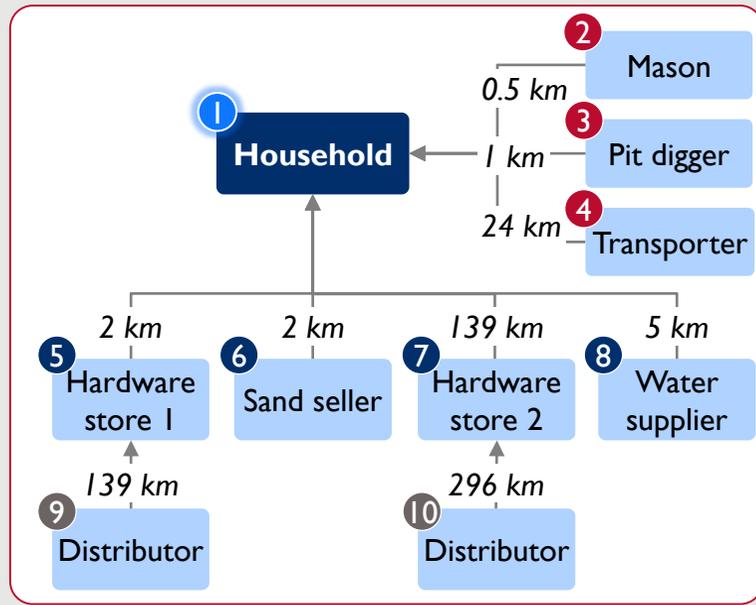
★ Town center

1. A value-chain trace-back identifies who and where customers and their suppliers procure materials and services from, using a snowball sampling approach

# Value chain trace-back<sup>1</sup> | Durable toilet in Merille



## Trace back value chain



Household

Service provider

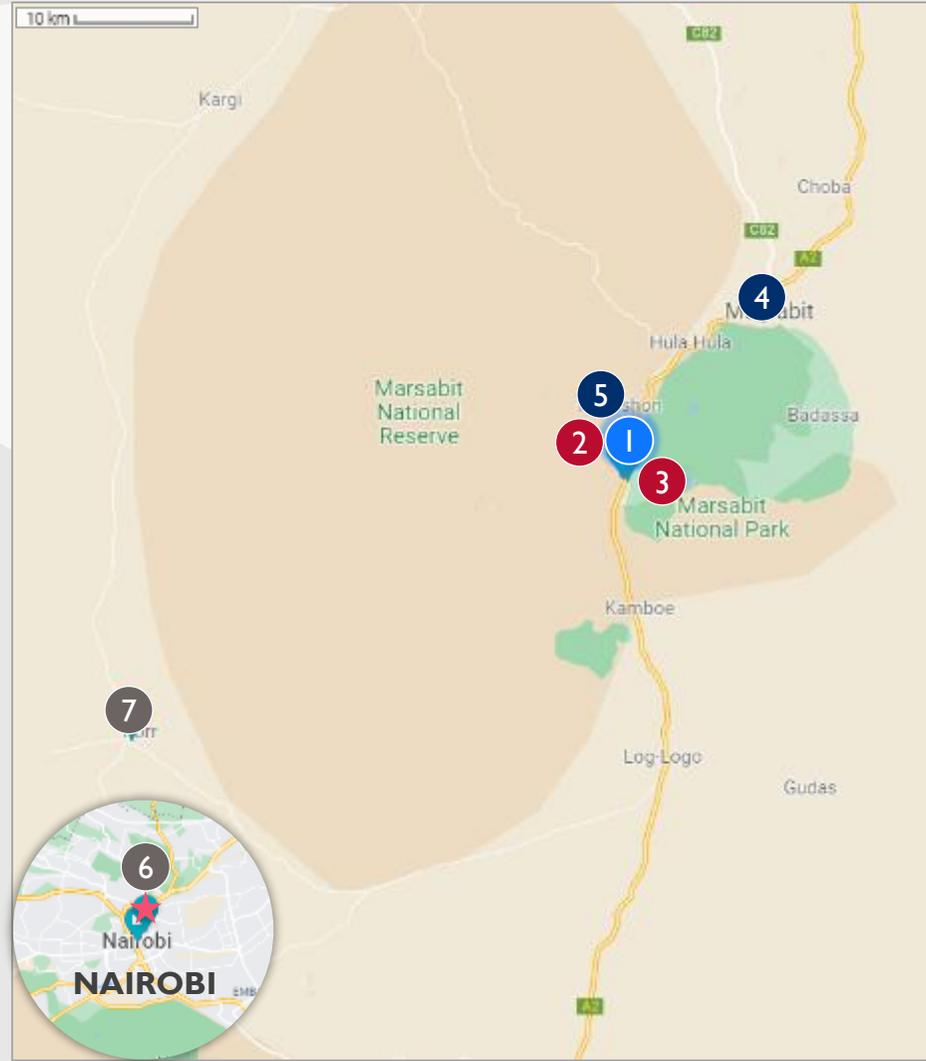
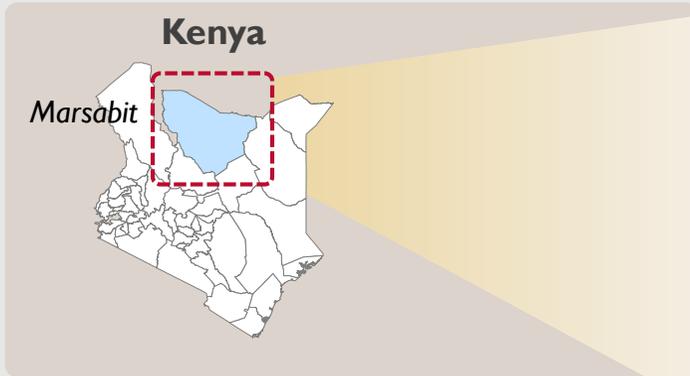
Material supplier

Distributors

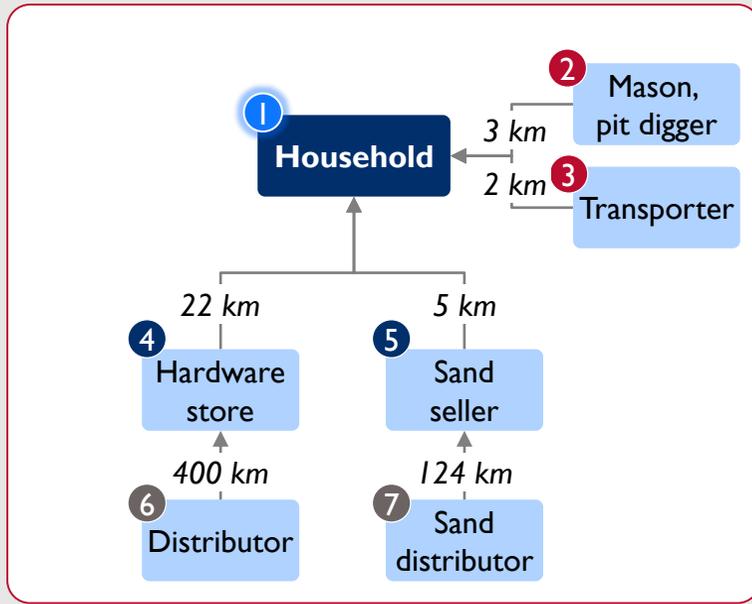
Town center

1. A value-chain trace-back identifies who and where customers and their suppliers procure materials and services from, using a snowball sampling approach

# Value chain trace-back<sup>1</sup> | Improved, non-durable toilet in Karare<sup>2</sup>



## Trace back value chain



Household



Service provider



Material supplier



Distributors



Town center

1. A value-chain trace-back identifies who and where customers and their suppliers procure materials and services from, using a snowball sampling approach
2. Water supplier details are not available for this particular trace-back