

RESEARCH BRIEF, MAY 2021

WILLINGNESS-TO-PAY FOR SANERGY PRODUCTS AND SERVICES IN NYALENDA, KISUMU, KENYA

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SANERGY

Sanergy builds healthy, prosperous communities by making safe sanitation, accessible and affordable for everyone, forever – starting with the urban slums of Nairobi, Kenya.

INTRODUCTION

Sanergy is currently expanding their container-based sanitation (CBS) services into Kisumu, Kenya. Container-based sanitation (CBS) is a sanitation service that provides toilets that collect human excreta in sealable, removable containers on a regular basis and safely disposes of or reuses excreta. In CBS facilities, liquid and solid human waste are separated and deposited in removable containers, which are collected on a regular basis for safe disposal or resource recovery.

In February 2021, the Aquaya Institute conducted a survey of potential customers in the low-income area of Nyalenda in Kisumu to estimate demand and inform pricing for Sanergy's Fresh Life and Fresh Fit Toilets (Figure 1). The Fresh Life Toilet is a standalone structure that can be used by multiple households and is often marketed to landlords as a facility for their tenants to use. In Kisumu, Sanergy charges a total monthly service fee of 950 KES per toilet for container collection (pricing is determined based on local market demand and varies geographically). The Fresh Fit Toilet is a small in-home facility often marketed to households with elderly or disabled members, and Sanergy charges a monthly fee of 300 KES in Kisumu. Currently, Sanergy does not charge an upfront deposit for installation or as a mechanism to cover loss.



Figure 1. Sanergy's Fresh Life (left) and Fresh Fit (right) Toilets.

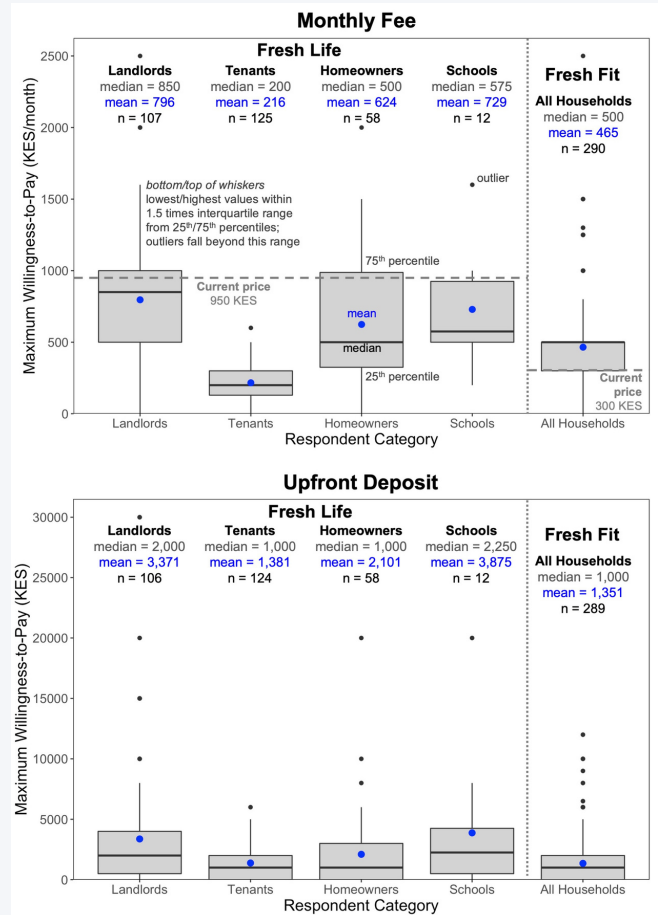


Figure 2. Distributions of maximum WTP reported by respondents.

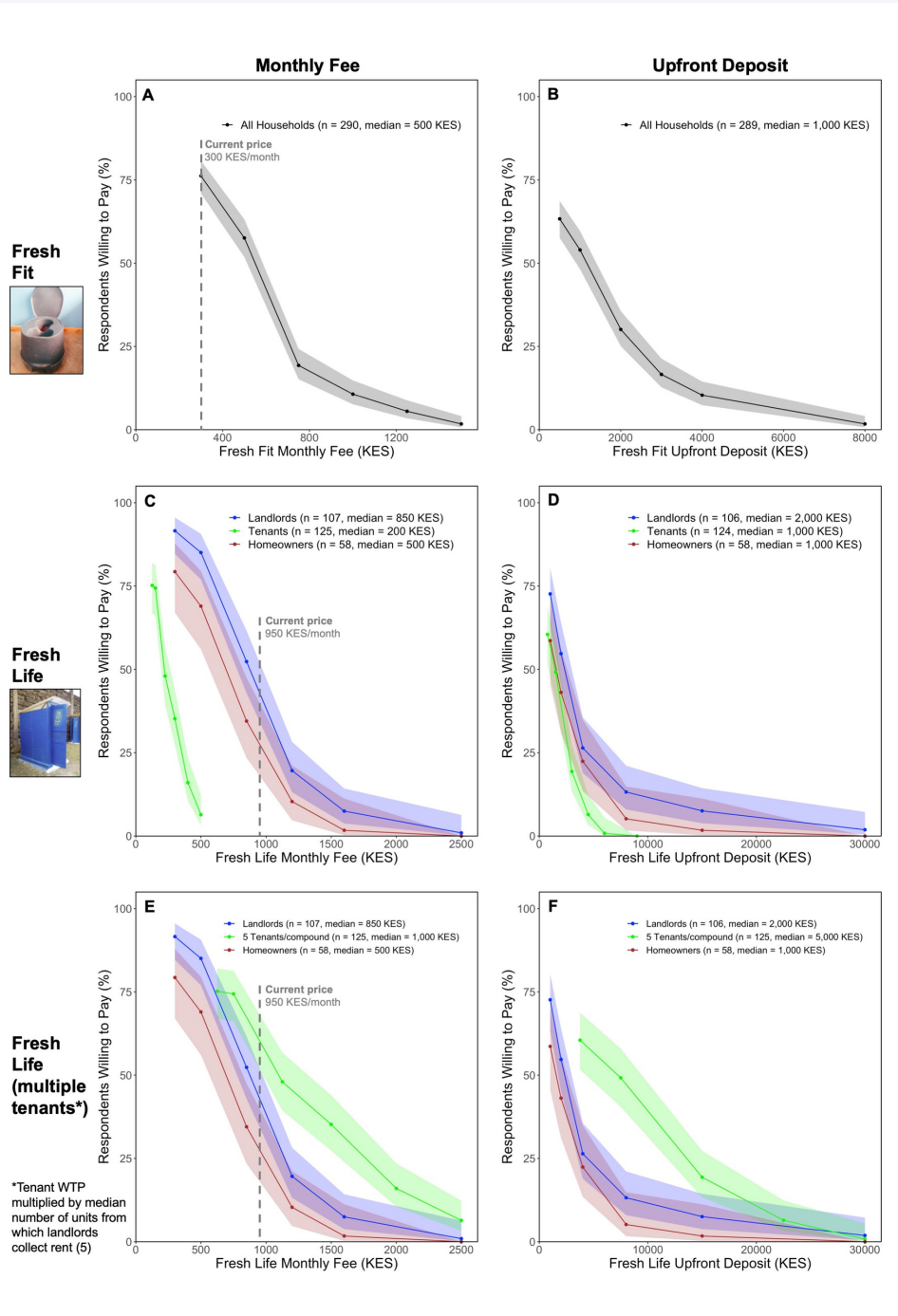
In total, 302 surveys were completed among landlords, tenants, homeowners, and schools (Table 1). This survey used a stated willingness-to-pay (WTP) method (double-bound dichotomous choice) in which two hypothetical questions are asked about randomly selected price points, followed by a direct question asking for the respondent's maximum WTP. Here we present summary statistics (Figure 2) and WTP curves (Figure 3), with regard to both monthly service fees and upfront deposits. Further, we also explore alternative payment models and factors that may be associated with a respondent's WTP.

Category	Surveys
Landlords	107
Tenants	125
Homeowners	58
Schools	12

Table 1. Surveys completed.

WILLINGNESS-TO-PAY FOR MONTHLY FEES

Results for the Fresh Life Toilet are separated by category of respondent, as they may reflect different use cases (e.g., a landlord installs a toilet for tenants, a homeowner installs it for her own use). **Landlords' median monthly WTP (850 KES) is similar to Sanergy's current monthly fee of 950 KES, while homeowner and school WTP is lower** (median of 500 KES and 575 KES respectively, Figure 2). **Nearly half of landlords (46%) stated they would increase tenants' rent to cover the monthly fee, with a median increase of 200 KES per month** (8% of the median monthly rent currently paid by tenants). This rent increase aligns well with tenants' WTP, with a tenant household being willing to pay a median monthly fee of 200 KES. **A compound containing five tenant households (the median in our survey) might be willing to pay a total monthly charge of 1,000 KES** (Figure 3E).



Fresh Fit results were combined across all households, as the use case is the same (one household installing the in-home facility). **At the current Kisumu monthly fee (300 KES), 76% of households are willing to pay, while the median WTP was 500 KES.** Above this price point, however, demand drops substantially, with only 19% willing to pay at 750 KES (Figure 3A).

WILLINGNESS-TO-PAY FOR UPFRONT DEPOSITS

Generally, WTP for upfront deposits was relatively low. Median upfront WTP for the Fresh Life Toilet ranged from 1,000 to 2,250 KES, with landlords and schools being on the higher end (Figure 2). As with the monthly fee, **median upfront WTP would be higher (5,000 KES) in a compound containing five tenant households, assuming all households contribute.** However, 29% of tenant respondents expressed no upfront WTP for the Fresh Life Toilet (Figure 3D).

Across all household respondents, median upfront WTP for the Fresh Fit Toilet was 1,000 KES (Figure 2). However, many respondents believed this system's installation costs should be minor, **with 33% of households expressing no upfront WTP for the Fresh Fit Toilet** (Figure 3B).

PREFERENCES FOR CONCEPTUAL PAYMENT SCENARIOS

Sanergy's current payment model in Kisumu asks customers to pay a regular monthly fee for container collection services, with no upfront deposit (Figure 4, Scenario A). However, a large number of respondents indicated that they would prefer one of two other models (Scenarios B or C) that included upfront payments and reduced monthly fees accordingly (Figure 5). Despite the relatively low WTP for upfront deposits (Figures 2-3), these preferences suggest **at least some customers may be interested in options that include a deposit to reduce ongoing payments.** Regression analyses confirmed that respondents preferring Scenario C (with the largest deposit) also tended to state higher WTP for upfront payments.

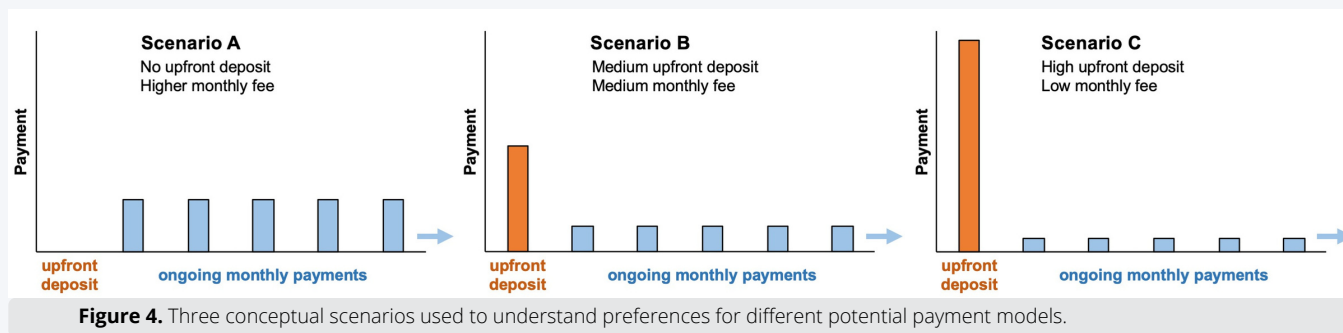


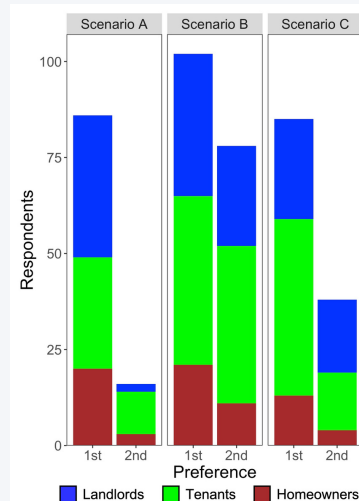
Figure 4. Three conceptual scenarios used to understand preferences for different potential payment models.

While many respondents did not express a second choice among the three scenarios, most who did noted Scenario B as their second preference (Figure 5). Some also expressed interest in owning the toilet facility (e.g., via a rent-to-own model), as opposed to the current model of paying monthly for service but not owning the infrastructure.

ADDITIONAL CHARACTERISTICS ASSOCIATED WITH WTP

Using multivariate regression models, we examined possible relationships between WTP, preferred payment models, and other characteristics. Separate WTP models were developed for each product and respondent type. Generally, factors such as existing toilet type, location, and emptying frequency, as well as opinions related to current toilet satisfaction and the reasons why safe sanitation is important, may all relate to a customer's WTP and preference for a given payment model. These models controlled for several additional factors such as reported monthly income and wealth index (derived from asset ownership).

Figure 5. Number of respondents stating each payment scenario is their 1st or 2nd preference. The number of landlords, tenants, and homeowners is shown within each total.



Improved toilet facilities appear to influence WTP in different ways, depending on system and respondent type. For example, **tenants who use a pit latrine with a concrete or plastic slab tend to have lower monthly WTP** (compared with those using other types of toilets; Table 2). We hypothesize that these respondents may already be satisfied with their existing sanitation facilities and therefore are less interested in new options. In contrast, **landlords who use a flush toilet and septic tank tend to have higher WTP**, perhaps because they have experienced challenges related to septic tank emptying and management. Similarly, **households whose toilets are emptied at least once a year tend to have higher monthly WTP, while those whose toilet is located outside of their compound typically exhibit higher upfront WTP, particularly for the Fresh Fit Toilet**. This product's in-home nature and reliable collection service may be especially appealing to such individuals.

Respondents with negative perceptions of their current toilets, particularly concerning safety, privacy, and feeling a sense of shame, tend to have higher upfront WTP (Table 2). We suspect these individuals feel a relatively urgent desire to improve their facilities. Additionally, **respondents more concerned with local health and hygienic conditions also have higher WTP**. In particular, WTP is higher for those stating that maintaining good health and hygiene is the primary reason for having safe sanitation, and also those who believe sanitation has improved during the COVID pandemic (primarily due to increased awareness of hygiene).

RECOMMENDATIONS

Overall, approximately half of respondents are willing to pay the Fresh Life monthly fee of 950 KES currently charged in Kisumu (assuming tenants would contribute collectively), while 76% of respondents are willing to pay the Fresh Fit's current monthly fee (300 KES). WTP drops considerably at higher prices, so **care must be taken to balance ensuring financial viability and impacting large proportions of the population**. Perhaps appropriate price points can be identified by using the alignment between landlords' proposed rent increases and tenants' WTP (200 KES), talking with both groups, and possibly piloting a few options.

Upfront WTP is fairly low, but there does appear to be interest in models that include an upfront deposit, especially if monthly fees can be reduced. Perhaps **including a small upfront payment (similar to a single monthly payment) could serve as a default option** and show that customers will likely pay monthly fees. For customers who are interested, alternatives with higher upfront deposits might present opportunities to reduce monthly fees. Some piloting and analysis would likely be needed to find the specific price levels that are feasible and appealing to consumers.

Finally, associations between WTP and other factors may offer opportunities for targeted marketing. **Specific messaging related to current facilities, toilet satisfaction, and the importance of maintaining good health and hygiene may help to show the value of Sanergy's products**. Further (qualitative) research, and tracking uptake among certain groups, may help to understand whether, how, and why these associations play a role in WTP, potentially leading to more effective marketing strategies in the future.

Category	Characteristic	Monthly WTP	Upfront WTP	Preference for models with upfront deposits
Improved sanitation	Pit latrine, concrete/plastic slab (tenants)		Lower	
	Flush toilet to septic tank (landlords)	Higher	Higher	
	VIP latrine (all households)			Higher
Latrine emptying	At least once a year	Higher		
Toilet location	Outside compound		Higher	
Wealth indicators	Income over 10,000 KES/month		Higher	
	Top wealth quintile		Higher	
	Larger household size			Lower
	More households in compound			Lower
Sanitation satisfaction	Feels the toilet is unsafe		Higher	
	Feels a sense of shame when using the toilet		Higher	
	Feels the toilet never or rarely offers privacy		Higher	
Sanitation and COVID	Sanitation has improved during the pandemic	Higher		
Primary reason for safe sanitation	Maintaining good health and hygiene		Higher	
Key factors when installing a toilet	Cleanliness and space availability			Higher

Table 2. Characteristics associated with WTP or preferences for payment models with upfront deposits. Each characteristic that is shown reflects a statistically significant result in a multivariate regression model.

