

## Getting a foot on the sanitation ladder: Users' satisfaction and willingness to pay for improved public toilets in Accra, Ghana

### Abstract

Rapid urban growth in ~~most~~ developing countries has led to an increase in unplanned, high-density settlements dependent on ~~contributed to the changing role of~~ public toilets for sanitation ~~from being mostly meant for the transient population into a permanent sanitation options for many urban residents, especially those living in low income areas, yet we know relatively little about users' perceptions and concerns about such facilities.~~

This paper ~~therefore~~ seeks to explore users' satisfaction and willingness to pay for improved sanitation services in Accra. Using a questionnaire, data were gathered from 245 users of public toilets ~~living~~ in two low-income communities of Accra. 80.8% of users expressed overall dissatisfaction with the public toilets, the main areas of concern being: long queues and waiting times, unpleasant smells, ~~and dirtiness,~~ concerns about security and lack of running water and soap. ~~Meanwhile, t~~ The majority of the respondents said that they would be willing to pay more higher fees for improved services. ~~We therefore implore~~ ~~o~~ Operators should take note of this and to explore the potential market for building and maintaining high-~~quality~~ public toilet facilities as a means to ending open defecation and getting to the first step on the sanitation ladder.

**Key words:** Sanitation; public toilets; satisfaction; willingness to pay; Ghana

### Introduction

Across the developing world, rapid urban growth has led to an increase in unplanned settlements, with overstretched governments struggling to keep pace with

infrastructure demands. One area of particular concern is ~~the provision of adequate sanitation for growing urban populations,~~ particularly in informal/high-density settlements (Katukiza et al. 2012; Tumwebaze, 2014). Despite progress made over the MDG period, in 2015, nearly one third of the world's population (2.4 billion people) still ~~had no lacks~~ access to basic sanitation facilities ~~such as toilets or latrines; and,~~ of these, almost one billion people (13% of the global population) defecate openly, in street gutters, behind bushes or into open water bodies, ~~etc.~~ (WHO, 2016). While ~~most~~ open defecation happens predominantly in rural areas, the WHO (2016) has declared ~~recently noted that~~ this to be ~~is~~ an increasing problem in towns and cities, as urban populations grow without a corresponding expansion of sanitation facilities. Globally, Sub-Saharan Africa continues to have the largest sanitation gap: only 30% of the population in 2015 had access to improved sanitation facilities (ones that "hygienically separate human excreta from human contact"), compared with 62% in developing regions as a whole and 68% globally (WHO, 2016). ~~continues to have by far the lowest proportion of population with access to improved sanitation facilities (ones that "hygienically separate human excreta from human contact"); only 30% in 2015, compared with 62% in developing regions as a whole and 68% globally (WHO, 2016).~~

~~Meanwhile~~ This is alarming, since, it is widely accepted that hygienic sanitation facilities are known to be a crucial pre-requisite for good public health and were recognised, ~~underlined in 2010~~ by the UN General Assembly's in 2010 recognition of access to safe and clean drinking water and sanitation as a basic human right. An estimated 842,000 people in low- and middle-income countries die each year from diarrhoea and other causes associated with inadequate water, sanitation and hygiene, with children under five bearing the greatest burden (WHO, 2016). Poor sanitation is believed to be

~~responsible the main cause in for some~~ 280,000 of these deaths, yet sanitation continues to be the 'poor relation' compared with drinking water quality when it comes to investment priorities. While the Millennium Development Goal (MDG) target to halve the proportion of people without sustainable access to safe drinking water was met in 2010, the corresponding target for improved sanitation was missed (UN, 2015).

Ghana's progress in relation to water and sanitation broadly reflects that across sub-Saharan Africa. ~~Though Ghana exceeded~~ its MDG water supply target ~~(of 77% coverage), but falling far short of it grossly failed in achieving the its~~ sanitation target of 52% by 2015 (Republic of Ghana, 2015). ~~Only a~~ An estimated 15-26% ~~Estimates of the proportion~~ of Ghanaians ~~still lacked~~ had ~~with~~ access to improved sanitation by 2015 ~~vary from around 15-26% (WHO/UNICEF, 2015; Republic of Ghana, 2015),~~ with almost a fifth (18.8%) practising open defecation (WHO/UNICEF, 2015; Republic of Ghana, 2015 ~~Republic of Ghana, 2015~~). While ~~those living in~~ towns and cities have higher rates of ~~were more likely to have~~ access to improved sanitation (28.6%) than ~~those in~~ rural areas (10.5%, ~~Republic of Ghana, 2015~~), the fact that nearly 75% of Ghana's urban population lacks access to hygienic facilities poses a grave public health threat, particularly in the context of overcrowding which facilitates ~~pathogen the~~ transmission ~~of pathogens~~.

In response to this situation, successive governments and donor agencies, through the Metropolitan, Municipal and District Assemblies, have actively promoted ~~been at the forefront in the~~ provision of communal toilet facilities (~~popularly known as~~ public toilets'). Theoretically designed for visitors rather than long-term residents, in the country ~~public toilets have become the permanent mainstay of sanitation for many of~~

~~the urban poor in Ghana (Van der Geest & Obirih-Operah, 2002).~~ It is estimated that over a third of households ~~(35.7% nationally in Ghana (35.7% nationally~~ and 38.7% in urban areas) use public toilets as their primary source of sanitation (Republic of Ghana, 2015).

However, public or shared toilets remain a controversial proposition: ~~according to the - with considerable international debate as to whether such facilities should be considered ‘improved’ or not (Tumwebaze, 2014). The WHO/UNICEF (2012), they do do not constitute regard shared (especially public) toilets as ‘improved sanitation’, on the grounds that the accessibility, safety, cleanliness and proper maintenance may be compromised (Allen, et al., 2008; Schouten & Mathenge, 2010). However, this assessment has been challenged by some other researchers, who contend that shared / or public toilets (as opposed to individual household toilets) may represent the best (or only viable) option for some high-density, low-income urban areas, where private household toilets remain way beyond reach~~ (Schouten and Mathenge, 2010; Katukiza et al. 2012; Tumwebaze, 2014).

Our motivation in undertaking the research for this paper was a pragmatic one. If – as seems to be the case – public toilets continue to be a major source of sanitation ~~across in~~ urban ~~Ghana (and in urban~~ settings across the developing world), it is important to understand how they are perceived and used by the populations they serve. ~~The Our~~ study ~~contributes to a small but growing literature in this area (see Peprah et al. 2015) by that we report below aimed to ascertain exploring~~ user perceptions and experiences of public toilets in low-income neighbourhoods of Ghana’s capital city, Accra, and ~~to~~ ascertaining users’ willingness to pay more for improved services.

## Study setting and methods

The study was conducted in Ghana's capital city, Accra, ~~the capital city of Ghana~~, with an ~~estimated urban~~ population of nearly 3 million ~~as of in~~ 2012 (Ghana Statistical Service, 2012). An estimated 58% of Accra's inner-city population live in low-income, high-density developments with overstretched infrastructure and services. Most of the city's informal businesses are located in these ~~low-income~~ areas, which are the first point of arrival for many new migrants to the city. Two study areas were selected for this research: Nima, ~~which is one of the~~ major informal ~~high-density~~ settlements in inner-city Accra, and Kwame Nkrumah Circle ~~(popularly known as Circle)~~, ~~right a commercial city-centre district in the city centre, with which has~~ a high transient population living side-by-side long-term residents. Figure 1 ~~shows the locations of the study areas~~.

[Figure 1 about here]

Need to insert a paragraph here giving some background on the public toilets, as requested by reviewer # Two toilet facilities were ~~selected~~ chosen for this study: one in each study site. The facility in Circle had ten ~~(10)~~ cubicles each for males and females, and hand-wash basins with intermittent flow of water for hand-washing. At the time of data collection, the taps were not flowing so the operators ~~provided~~ had two containers of water (one each for males and females) ~~of water~~ for pour-flush by users. ~~In~~ The facility at Nima was smaller than at Circle, with ~~there were six (6)~~ cubicles each for males and females; ~~they also appeared with similar conditions like that at Circle~~ less clean (both toilets and hand-wash basins). ~~However, the facility at Circle was better~~

~~than that of Nima in terms of cleanliness of the cubicles and the hand-wash basins. In addition to a basic charge for using the toilet, clients could purchase toilet paper, at varying amounts depending on the quality (i.e. newspaper versus 'proper' toilet roll). Depending on how much a user was willing to pay, different toilet papers were given by the operator. None of the facilities was connected to a treatment plant but rather to a septic tank that is emptied when full.~~

The ~~study adopted a similar~~ approach ~~by this study was similar~~ to others that have sought to understand public-toilet-users' experiences and motivations -(Bayha, 2009; Schouten & Mathenge, 2010; Biran et al, 2011; ~~Peprah et al, 2015~~). ~~The data were obtained through administering a~~ structured questionnaire ~~was administered consisting of both open and closed-ended questions~~ to public toilet users ~~at one facility in each of the two study areas, using an 'exit interview' approach. A researcher was positioned by the toilets at different times of day and approached users on exit, inviting them to.~~ Accidental sampling technique was adopted for the study, where respondents in area were approached as they left the public toilets at different times of day ~~participate in the study. Every toilet user was approached, except for the busiest times when it was necessary to take every second or third user., and those who agreed to participate in the study completed the questionnaire. Such an~~ This approach strategy was necessary because there ~~was~~ no formal sampling frame for public toilet users in these informal settlements. Altogether, 245 toilet-users responded to the questionnaire, which was administered orally to ensure comprehension and completion by a population with varying levels of literacy. ~~The questionnaire consisted of both closed-answer (yes/no and Likert scale) and open-ended questions, enabling participants to comment freely on their experiences. In addition, some comments made by the~~

respondents during the administration of the questionnaires were captured and reported. The quantitative data from the questionnaire were analysed using IBM-SPSS software (version 18) while the qualitative data from open-ended the comments made by respondents in the course of completing the questionnaire were analysed thematically to support the findings from the questionnaire.

### **Ethical Considerations**

All of the study participants were aged 18 years or above. Very few children and elderly people were encountered during the period of data collection. However, only adults were interviewed because we believe that they were in a better position to provide the needed information for the study. Meanwhile the few elderly people we approached refused to participate in the study citing inadequate time. Individual informed consent was sought verbally from all participants before the administering the questionnaires. Before the fieldwork began, we ensured that a All researchers were fully trained in methodological and ethical procedures, particularly the need to respect confidentiality. The questionnaire took only about five minutes to administer, thus minimising inconvenience to participants. No personal identifiers were recorded, so the dataset was automatically anonymous.

### **Results and discussion**

#### ***Background data on respondents: Socio-economic profile and toilet utilisation***

Table 1 gives basic socio-demographic information on the study sample. Of the 245 study participants, there were roughly the same number of men and women. Over 70% had been resident in the area for more than ten years, and the majority (64.5%) reported using public toilets on daily basis. The age distribution is noteworthy: The majority of respondents were young adults (aged 30 year or under), while only one was

over fifty. This is partly a function of people's willingness to take part in the study and partly reflective of the demographics of public toilet users in the study areas. Very few children or older people were encountered during the period of data collection. Under-18s were excluded from the sample because they were not covered by the study's ethical approval, while older people generally declined to participate in the study, citing lack of time. Peprah et al (2015) note that public toilets in Accra are under-used by children and older people, who may either lack the money to use them or who may struggle to keep their balance over squat holes designed for adults (see also Van der Geest and Obirih-Opareh, 2002).

and most were single. Most had completed either junior high school or senior high school, though relatively few had tertiary qualifications and some had only primary education or none at all. The majority had lived in the area for more than ten years but almost 30% were more recent migrants. The majority of study participants (64.5%) reported using public toilets on daily basis.

[Table 1 about here]

#### ***Users' satisfaction with public toilet facilities***

In response to a question on overall user satisfaction, Overall, the vast majority (80.8%) of respondents (80.8%) said that they were not satisfied with the public toilet facilities. those questioned deemed the public toilets they used to be inadequate. Table 2 indicates levels of satisfaction with various aspects of the toilets from a series of Likert-scale follow-up questions. Most The majority of users were satisfied happy with some aspects of the services: such as location of the toilet facilities, number of cubicles in the facilities, internal space, lighting system, and the opening times. However, in line with



another recent study in Accra (Peprah et al. 2015), our data indicate ~~there were~~ high rates of dissatisfaction with many ~~of the most~~ critical aspects of toilets facilities: ~~such as~~ convenience, security, privacy, cleanliness/hygiene, ~~flow of water~~, availability of soap ~~and water~~ for hand-washing, and waiting time ~~to use the facility~~. ~~No (Interestingly,~~ ~~there were no~~ statistically significant differences ~~were identified~~ in satisfaction ~~levels of~~ any criteria according to ~~by~~ gender, ~~age, etc.~~ age or settlement location although, as ~~noted above, the age range of respondents was relatively limited.~~)

[Table 2 about here]

The vast majority ~~83.3%~~ of respondents ~~(83.3%)~~ were either 'dissatisfied' or 'very dissatisfied' with the ~~toilets' smell~~. ~~Feelings of disgust associated with bad smells have been found by other researchers to be a serious barrier to public toilet utilization (Chambers and Myers, 2016; Rheinlander et al. 2013), and the salience of this issue was clear from its prominence in interviewees' open-ended comments, for example: of the public toilets — an issue which has been highlighted by other researchers as a source of disgust to public toilet users and as a serious barrier to utilization (Chambers and Myers, 2016; Rheinlander et al. 2013). The following excerpts are succinctly illustrative of the frustration users go through on daily basis due to bad smell of public toilets, resulting from poor maintenance and management:~~

*As for the smell, hmmm... I have a special shirt I wear to visit the public toilet because sometimes you use the facility and return home with smelling clothes*  
[Female User-April 2013].

*Two of my shirts were stolen because I always hang my shirt outside before entering the toilet facility to prevent it from smelling. So these days I have a special shirt I have dedicated for using the facility [Male User-April 2013].*

~~Other important major sources of dissatisfaction were general uncleanliness, inadequate flow of water and non-availability of soap for hand washing (very important for. Given that handwashing with soap after defecation is important for preventing disease transmission; (Curtis and Cairncross, 2003; see also ), this is a serious concern that needs to be addressed. In addition, perceived uncleanliness of the facility, a potential barrier to overall use, has also been shown to be a deterring factor to handwashing after using the toilet in Ghana, especially among women (Mariwah et al, 2012).~~

Toilet users were also highly dissatisfied with waiting times; 95.5% of respondents (234 out of 245) ~~reported having queued said that they had had to queue~~ to use the toilet, with ~~longest waiting times in the mornings reported to have particularly long queues.~~ When asked what they did when the queues were very long, most (87.2%) said they just waited, ~~despite even though this might cause~~ considerable discomfort and ~~potentially making~~ them late for other appointments. ~~The rest Others~~ either begged to use a neighbour's toilet (4.7%) or resorted to defecating into polythene bags (8.1%) which are then dumped, constituting a different form of open defecation.

When asked ~~to specify what~~ the single most important improvement that should be made to public toilets, responses ranged from more regular cleaning and use of disinfectants to better quality toilet paper: **Table 3.**

[Table 3 about here]

### *Users' willingness to pay for improved services*

In an increasingly market-oriented public health sector, willingness to pay for environmental sanitation services is an important consideration (Rahman et al., 2005). Most public toilets in Ghana, including those in the study areas, demand a small fee from users. Questionnaire respondents reported paying between GHS 0.10 and GHS 0.50 for using the public toilets, with most spending GHS 0.20 – 0.30 (Table 4). ~~The exact amount depends~~ on the quantity and quality of toilet paper required, as explained by one (male) respondent:

*Due to complaints from us, the attendants these days have both ordinary paper and toilet roll, so depending on the user's preference, you pay accordingly. For ordinary paper, you pay GHS 0.30 and for toilet roll, you pay GHS 0.40 [April 2013].*

~~Study participants were asked whether they would be prepared to pay more for an improved service (more regular/thorough cleaning, provision of 'proper' toilet paper, etc; see Table 3) and, if so, how much more (i.e. contingent valuation). To measure willingness to pay, we basically employed both close-ended and open-ended contingent valuation methods, where respondents were asked to indicate whether they were willing to pay for improved services at the public toilet (close-ended) and how much they were willing to pay (open-ended). Among our study participants, over three-quarters (75.9%) said that they would be willing to pay more for improved services, typically an additional GHS 0.10 per visit, amounting to a total fee of upwards of GHS 0.30 or more~~

~~total per visit (86.1% of respondents):~~ Table 4. While willingness to pay does not necessarily map clearly exactly onto *ability* to pay (especially in low-income populations like these), and while not everyall respondents indicated a willingness to increase payments, this is nonetheless an important finding, suggesting ~~that there is~~ potentially a strong effective demand for clean and hygienic public toilets, ~~and hence the widespread willingness to pay for improved facilities in our study sites.~~

[Table 4 about here]

### Conclusions and recommendations

Despite their shortcomings, public toilets continue to be in widespread use in Ghana and throughout the developing world, particularly for people living in low-income, high-density urban settlements. While we would not disagree with international agencies, ~~who~~ advocate private single-household toilets as preferred forms of sanitation, this is unlikely to be realised in the short term for many of the world's urban poor. In the meantime, there is, we believe, a danger in lumping all shared/public toilets into the same disaggregated category of 'unimproved sanitation' – a category classification that covers many degrees of '(un)improvement' (Mazeau, 2013). ~~At the moment~~ Currently, in Ghana (and in many other countries that failed to meet their MDG sanitation targets), public toilets represent the main alternative in high-density, 'informal' urban areas settlements to the far more dangerous (and growing) practice of open defecation (WHO, 2016) ~~—a practice that the WHO says is on the rise in high-density, informal urban areas.~~

Our argument, therefore, is not that public/~~or~~ communal toilets ~~should be~~ promoted ~~instead of encouraged as a replacement or alternative to~~ private household toilets, but rather ~~that to promote~~ proper management of public toilets may be as an important first step on the sanitation ladder, with the immediate focus of ending open defecation. However, ~~in order~~ to be effective – i.e. for people to be willing to use them *and* for them ~~to be hygienic enough so as not to pose a significant~~ public health ~~risk to the health of users and communities –~~ public communal toilets must be clean, hygienic, well-maintained, ~~and hygienic and safe,~~ devoid (as far as possible) of unpleasant smells and security threats. As other studies have shown, It is clear from the data presented in this paper that there is widespread dissatisfaction with ~~the~~ public toilets may result in non-use in parts of Accra, which as (e.g. Nelson et al, (2014), have suggested, is likely to lead to non-use. One limitation of our exit-sampling approach is that this study is that, ~~because the sample was drawn from users of public toilets,~~ we do not know what non-users ~~(and those who do not use public toilets every day)~~ do or why. However, even among users, it appears that long waits – among other considerations – may drive people to alternative, more hazardous arrangements, such as defecating in plastic bags which are then dumped.

The good news is that people *appear* to be willing to pay for better facilities. Although ~~there are some important caveats here, in that non-users were not interviewed and that same caveat applies in that non-users have not been interviewed and (as noted above)~~ *willingness* ~~to~~ is not necessarily the same as *ability* to pay, this is nonetheless encouraging and suggests that operators (public and private) should further explore ~~the~~ potential markets s for building and maintaining high quality public toilet facilities. Further information about the economic status of toilet users and non-users will be

~~important in relation to the feasibility of different financing options. This is particularly pressing in the light of on-going government-supported privatisation of 'public' toilet facilities, which potentially incentivises facility improvement through increased competition, but also risks disinvestment in areas where private operators may not expect to see a good financial return.~~ Crucially, local people need to be brought into dialogue with providers to establish how best to set up and manage public toilets that genuinely meet their needs, bearing in mind that solutions to safe sanitation are as much ~~about~~ socio-cultural ~~appropriateness~~ as they are ~~about~~ technical ~~specifications~~ (Drangert, 2004; van der Geest, 2007; ~~;~~ Kvarnstrom et al, (2011)) ~~have argued that ensuring that public toilets address people's sanitation needs in the way most appropriate to the particular context is at least as important as technical specifications in yielding successful outcomes.~~

In summary, public toilets are almost certainly here to stay for some time ~~as an important part of the sanitation 'landscape' in towns and cities across the developing world. to come as a sanitation option used by many of the developing world's urban residents.~~ Simply dismissing them all as 'unimproved' ~~could is likely to~~ lead to disinvestment ~~and rejection which, -and the concomitant risks of people rejecting them, which,~~ without alternatives, is a recipe for an increase in open defecation. Instead, we should see public toilets as a ~~potentially~~ important step on the sanitation ladder, and ~~facilitate do our best to ensure that it is a positive step through~~ proper investment and appropriate management.

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