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## **Un-nuances of Co-designing and co-creating: a design thinking approach within a 'Zongo' community in Ghana**

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### **ABSTRACT**

The paper reports on a study exploring co-designing and co-creation (collaboratively) with the main stakeholders – residents, landlords and designers– in prototyping a design system for tackling sanitation and environmental issues within a section of a deprived community in Kumasi, Ghana. The aim was to explore the benefits of including stakeholder voices in decision-making in sanitation planning; as well as analysing the contributions of stakeholders (landlords, tenants, and residents) in improving their environment through sanitation and sustainable environmental practices. Interviews, focus group discussions and ethnographic activities were employed in collecting data for the study. Even though the results indicated stakeholders (co-designers) in such collaborative (design intervention) approach will want their voices be heard in decision-making in sanitation planning and environment that will boost the self-efficacy of their sanitation. But more importantly, the study unpredictably tended to restore peace and befitting relationships, as unhealthy factions and differences between two ruling classes in the community created unsavoury attitude to insanitary conditions.

**Key Words:** Co-creation, participatory design, ethnography, design intervention.

## 1. INTRODUCTION

That the world is filled with countless social difficulties that cry out for solution, including improvement in sanitation is no exception in Ghana. Efforts by governments, local Government, non-governmental organizations and others to implement interventions to persuade and engage citizens to adapt to environmental cleanliness, have not yielded desired results. The task, however, seems to be confronted with reoccurring difficulties and hence, appear to be ineffective especially in some *underserved* areas and communities in Ghana.

These campaigns mostly resort to the print and electronic media for public sensitization, knowing that these are unconcealed means of effective communication which have the capacity to influence how people think, act and also evaluate their responsibility to promote sustainable development (United Nations 2014). Assumption by planners that when people are well informed, they avoid unsanitary practices and embrace hygienic living is not always true (Van Wijk, Murre, and Esrey 1995). Studies reveal that in Ghana, the media have all it takes to help change attitudes to the environment but they often focus on issues of little value to national development (Asante 2012).

Other interventions employed by the government of Ghana to correct the unhealthy sanitation practices over the years include programmes such as: Ecological Sanitation (**ECOSAN**): an approach, which promotes a practicable, closed-loop system, where human excreta are treated as a resource, rather than waste; Water, Sanitation and Hygiene Project (**WASH**): designed for change of conduct and maintenance (Dreibelbis et al. 2013), and Community-led Total Sanitation (**CLTS**). These are also participatory in nature and facilitates communities to take a decisive role in safeguarding that each and every member internalises the implication of poor sanitation, such as open excretion (Sah, 2008). Such efforts have achieved some level of success in some communities in the country but not to the level of satisfaction.

Attitudes and behaviour of people in these unsanitary areas validate finding from a study that states that “poor sanitation is significantly noticed in poor neighbourhoods” (Owusu 2010). One of the main reasons for this seemingly challenging situation stems from the attitude of the citizens, whose behaviour and tendencies seem to be difficult to change. This study sought to test a social innovation intervention with the inhabitants of Moshie Zongo, a less deprived community in Kumasi - the second largest city in Ghana - through a design approach, which in turn could be replicated in other deprived communities in Ghana. The overall aim was to explore how a design approach can stimulate and support sustainable environmental sanitation by changing the attitude of inhabitants—through the ambit of design thinking. This paper reports on one of the nuances that characterized the design approach of co-creation and co-design, and how its solution helped to impart positively on a social innovation intervention for sustainable environmental sanitation programme.

The research however focused on the following questions as a guide for investigation:

1. How do stakeholders perceive the conditions of their environment using participatory design-thinking approach?
2. What are the benefits and contributions of including stakeholder voices in decision-making to enhance the environment as far as sanitation and environmental sustainability is concerned?

## 2. LITERATURE FOCUS

The plan for the study was hinged on the following cardinal factors:

i. Scheduling a series of participatory events involving residents, experts, cooperation partners, networks, employees of related agencies relating to waste management, and other interested parties. These events resulted in the articulation of seven core values to be explored as part of the development process and ultimately to be incorporated into the project. These were:

1. The residents as Key Factor;
2. Lifelong Learning and Community;
3. Diversity, Cooperation, and Network;
4. Culture and Experiences;
5. Bridging Citizens, Technology, and Knowledge;
6. Flexible and Community but Professional Organization; and
7. Sustainable Icon for the community (Dalsgaard, 2012).

ii. Identification and exploration of the factors influencing residents in understanding the sanitation challenges, and the problems concerning providing adequate and appropriate tools for the maintenance of sustainable environmental sanitation. Design for social innovation is really interaction design in the broadest sense; it is interaction between people that take responsibility for positive, systemic impact” (Unreasonable Group, 2015). For

instance, the approach in Design for Social Innovation which basically deals with collaborating with the stakeholders to plan, develop and execute a protocol that seeks to be human-centered, technologically feasible, and economically viable (Sain, 2014).

### 2.1. Co-design

Co-design is a creative system that supports and facilitates the democratic involvement of people in addressing social challenges (Szebeko & Tan, 2010). It can be a powerful change management tool, encouraging the collaboration of people within organisations and among local communities. The key principle in its approach is to view all stakeholders of an issue as valued partners in the development and decision-making process, rather than being passive recipients of products or services. “When working with individuals and families, it is important first to establish a positive, proactive, and personalized relationship: with communities, it is important to promote community empowerment, which is achieved through participatory decision-making and planning from the bottom up and is culturally sensitive” (Keller & Lehmann, 2008).

### 2.2. Design push for behaviour change

Behavioural change is central to attaining sustainable growth as far as environmental sanitation is concerned (NESSAP, 2010). A school of thought is also of the view that people mostly have subjective stand on situations; they have predictable mental biases that affect how they perceive situations and make decisions (Weinreich, 2011). Smith-Asante (2011) in agreement with other researchers, is certain that attitudinal change towards the environment is one of the main solutions to sanitation problems in the country.

Colfelt (2010) believes that designers are in a position to firmly nurture behaviour in the direction of sustainable practices. “They are in a position to purposefully shape behaviour towards more sustainable practices” (Colfelt, 2010). It is therefore understood that notional design has been tested to be relatively more appropriate for solving issues on environmental cleanliness and therefore conceptual design solutions to a given problem is suitable for addressing complications that pertain to environmental sanitation (Blessing & Chakrabarti, 2009)..

### 2.3. Theoretical model

Using the framework by Lee (2014), designers and co-designers (communication, architectural, urban and stakeholders) shared expertise and experiences in their related fields during the pre-design phase. They will then construct and justify initial concepts and ideas during the schematic design phase, as prescribed in the theory. Next, they then developed a concrete proposal for a particular site or street during the design development phase; and finally, they would disseminate the new knowledge during the documentation and presentation phase. According to Nonaka and Toyama (2003), such new knowledge will then have to be internalised in the practice and will then become new routines for achieving a sustainable sanitary environment.

Another instrumental subject with regard to the study worth a review is design for social innovation. This is significant to the study in a sense that it fosters the ability to create what this new study is revolved around, based on a shared responsibility among all stakeholders (including end users). Co-design seeks to involve and integrate diverse expertise and is a keen requirement for this study. This is because Participatory Design is a guiding, principled approach for development aimed at achieving implementable recommendations within a schedule articulated by human need.

### 2.4. Design intervention

Activities were formulated for the implementation of the objectives to attain possible maintainable solutions to the sanitary issue. At the design-thinking stage, the main objective was to create the appropriate collaborative environment for establishing a framework for cleaning and maintaining a sustainable clean environment through the integrated process of a repeated pattern of research or analysis and team workshops in each phase of the project (Lee, 2014). Using Lee's (2014) framework, designers shared expertise from various individuals in the related fields during the pre-design phase; constructed and justified initial concepts and ideas during the design development phase; and disseminated the new knowledge during the documentation and presentation phase. Such new knowledge was adopted for future practice, and became new custom for achieving a sustainable clean environment.

The intervention code-named “5-Star Street Project” drew on the motivation of awarding each street with a “Star”, which would be tagged to the Street's name after street residents fulfilled basic sanitation and environmental

instructions. This is in line with United Nations Development Programme (UNDP) belief that such targets can only be attained through equipping individuals, households, and communities to take charge of their own development (Conant, 2005). A 3-Star Street would imply such a street where residents and all users on that street – were more environmental and sanitation conscious than a 1-Star Street. It also meant a 3-Star Street is much superior in terms of all that would happen on the street to 1-Star or no-star street. A 5-Star Street would seem to be above all standards, and hence, possess the ultimate superiority tag. Residents in this case would therefore have to consistently make conscious effort to maintain the status of their streets since there is a probability of a 5-Star Street being downgraded or elevated. A sustainable design required environmental solutions with a sustainable future, environmental solutions sought within a complete and profound perspective on the relationship between dwellers and the environment beyond mere technical solutions (Lee, 2014).

### 3. MATERIALS AND METHODS

The study employed an ethnographic approach to the study on the field; a qualitative research orientation used to study other cultures (Hunn, Fox, and Hunn 1998). Brewer (2000) describes ethnography as “the study of people in naturally occurring settings or fields by means of methods which capture their social meanings and ordinary happenings, involving the researcher partaking directly in the setting, if not also the activities, in order to collect data in a systematic manner but without meaning being imposed on them externally”. By this method, we were able to deeply understand the residents who happened to be the end-users of the design solution. It also helped us to remain committed to getting connected to residents consistently, thanks to their receptive nature; contrary to a misconception in the public domain. This healthy relationship inspired the researchers throughout the study.

#### 3.1. Focus group discussions

Through Focus Group, the participants had significant impact on each other through their answers to the ideas and contributions for the duration of the dialogue (Jenkins, 1998). The Focus Group Discussion (FGD) sessions conducted for the respondents as part of the study was allied with its objectives. Meetings were held on two occasions for the residents who made time to be part of the programme from both streets. The first author, who doubled as the moderator, created a warm and friendly environment for participants before hand. The introductory stage of the discussion was treated cautiously because it is believed that, “the first few minutes in focus group discussion is always critical” (Krueger, 2002). “In a brief time the moderator must create a thoughtful, accommodating atmosphere, provide ground rules, and set the tone of the discussion; since much of the success of group interviewing can be attributed to the development of this open environment” (Krueger 2002).

### 4. DISCOVERIES AND DISCUSSIONS

#### 4.1 Sensitization programme

Attaining maintainable behavioural change towards environmental sanitation among residents of the two streets remained the ultimate goal throughout this study. The need for creating awareness was therefore deemed an integral step in this study. Researchers are of the view that people mostly adopt a subjective stand in situations they have predictable mental biases that affect how they perceive situations and make decisions (Weinreich 2011). It was hence necessary to correct a few misconceptions about sanitation that were the obstacle to improved sanitation among residents. The sensitisation programme was the initial cooperative dialogue for the study. It involved residents of the target community, resource persons and technocrats. This dialogue was conducted for clearer and profound understanding of the study to foster involvement among the stakeholders. The goal for the meeting was attained in that, residents demonstrated the willingness to cooperate with other researchers and thus became “co-researchers”. Such meetings also afforded the opportunity for residents, as stakeholders, to ask questions that baffled their minds about the study in particular, and about sustainable environmental sanitation in general.

#### 4.2. Ethnographic activities

As part of the ethnographic approach to the study, the researcher took a couple of days off to observe the community in question. This necessitated a deeper understanding of the cultural and social settings among the residents. This period was not without in-depth study to ascertain from existing literatures, pertaining to the generic issues on environmental sanitation at the Zongo societies.

In his work; “Sanitation: A human rights imperative” Alexander, (2008) asserts that, environmental sanitation is not only about hygiene and disease; but also about dignity; and everyone in the world has the right to have it (Alexander, 2008). Arguably, one does not take long to notice the extreme deprivation of the right to clean environment after touring the length and breadth of the community. The situation of most part of the community was noticed to be a true reflection of the finding of a research by Williamson (2014) which reveals that ‘severe cases to that effect are noted among underprivileged nations in the world such as Ghana, where reckless disposal of solid waste into gutters and water bodies by some citizens consequently impede drainage system and trigger flood cases which destroy human life in diverse ways’.

Engagement with the inhabitants over a year moreover, deepened the belief of the researcher to remain circumspect with people who appear to be deviant in a society and that rather than delighting in ruthless criticism, getting to the root of issue tends to render full and clearer picture for their related corrective line of attack. This is because; the residents had genuine issues that cry out for immediate attention. This notwithstanding, it was evidently clear that, almost all respondents were generally noted to be fully aware of the indiscriminate attitudes to certain daily activities that mostly give birth to insanitary condition within their neighbourhood in general and on their streets in particular. They hence acknowledged the need to team up for improving the existent condition.

Residents demonstrated high level of commitment to what they deem to be a worthy course by opening up to the researchers; suggesting pre-emptive measures to curtail insanitary practice; sharing insightful opinions for improving sanitation in the neighbourhood; buying into the concept behind the design intervention; giving the researcher the best of reception on cell phone or in person; and attending meetings in line with the study for discussions.

The study that is geared towards testing a social innovation phenomenon through a design thinking approach at the research area is in turn envisioned to be repeated in other deprived communities in Ghana for a sustainable environmental sanitation. Per the long-term visit to the community as an ethnographer, it was observed that the purpose has already started paying dividends; in that, the study has stimulated an atmosphere of team building for attaining worthy course.

## 5. CONCLUSION

It is established that, issues on energy, sanitation and transportation are the three foremost and noticeably global challenges that cry for immediate paradigm shift. Engaging in peculiar substandard activities recurrently however, can hardly result in an improved condition. The starting point of the way forward was therefore to pull resources together by way of sharing ideas in line with design-thinking or human-centred approach; this would help to attain innovative solutions bearing in mind that, the use of technology is essential, yet must be understandable and useful to the end-user. Hence, there was the motivation to involve residents on the streets vis-à-vis selected judges from the community in the context of this study, for intervention that improved sanitation.

Though the study is yet to attain its conclusive section, it has very nearly all the answers to the research questions.

### 1. *Hopeful design intervention*

The stakeholders or co-designers have firmly embraced the “5-star street” concept (design-thinking approach) with zeal to get entirely involved in execution of such a design intervention to address the environmental sanitation in the community, regardless of the fact that the design intervention is yet to be tested on the two selected streets with the stakeholders.

### 2. *Voice of end-users*

The inclusion of the stakeholders’ voices in decision-making as far as sanitation planning on the streets is concerned has practically boosted the self-efficacy of the residents; in the identify themselves as keen figures to ensure the furtherance of proper sanitary conditions on the streets and beyond. Besides, in both the focus group discussions and interviews, residents pinpoint certain insanitary practices as they acknowledge the need to improve their attitude to environmental sanitation.

### 3. *Intrinsic motivation by residents to cooperate*

There have been encouraging contributions by the stakeholders – landlords, tenants, and residents to enhance the environment as far as the issue of sanitation and environmental sustainability are concerned. The residents have wilfully demonstrated plans to team up in other to have practical impact on collective effort to address the insanitary practice.

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