



SHOWCASING SMART TOILET PARK FOR SUSTAINABLE TOURISM DEVELOPMENT IN BAUCHI

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Abstract

*Toilet means internal of travelling for the
or external space for purpose of health,
defecation or to transportation, water,
excrete, while Tourism sanitation and hygiene
means the business of
providing products
and services for
people traveling for
the purpose of
holiday, recreation and
relaxation, e.t.c. impacts in tourism
destinations. The
Therefore, Toilet water, sanitation and
Tourism is a business hygiene,*

Keywords:

*Declaration, Park,
Sanitation,
Stakeholders, Water*

INTRODUCTION

In the recent past, open defecation (OD) remains a huge obstacle for people and especially tourists and is responsible for thousands of unnecessary deaths. Eradicating it is crucial to achieving Global Goal number 6 on sanitation. Some Bauchi communities were triggered effectively with community led total sanitation (CLTS) and embarked on a journey of rapid collective behavioral change, achieving open defecation free (ODF) status and getting certified as such are important milestone in the process rather than the end of the journey. Travelers have dynamic interactions with microbes and places. Travelers can carry these microbes and their genetic

transportation of 2017, only 35% of the sanitation facilities. goods and services to population had access Meeting the support toilet to improved sanitation Sustainable infrastructure in which is not shared Development Goal Bauchi with good and 11 out of all the 2025-2030 targets on landscaping, 774 local governments Sanitation in Nigeria accessible and in Nigeria is open requires households to universal designs as defecation free. Bauchi construct over 2.4 one of the states is one of the million improved identified with open moderately open toilets every year up to defecation free defecation free area 2030, which is a 15- environment in which paved way for fold increase in the Nigeria can never be adequate market for current rate of latrine under estimated as a toilet business to uptake in the country. toilet park. This thrive, in order for the Findings in this work relationship of Toilet community to migrate indicates that more and Tourism in this totally from partial awareness and work will therefore open defecation (OD) campaigns are needed look deeply at Bauchi to total open through Toilet tourism by user experience semi-structured using the concept of survey of the smart interviews with low-cost but high- toilet park, which will stakeholders visiting quality toilets called be critically analyzed the well designed, 'SMART TOILETS'. by qualitative and constructed and Following the quantitative means as maintained Smart successful scaling up of majority of the Toilet Park at RUWASA Community Led Total household office, Bauchi state. Sanitation (CLTS) in respondents mostly The Nigerian tourism Nigeria, with Bauchi as prefer Temporary health sector is faced one of the SHAWN single offset, TYPE 2 with inadequate states since 2009, smart toilet while the sanitary facilities as implemented as the least was Permanent access to improved forerunner to create double offset, TYPE 5 sanitation is a major the demand and smart toilet, using concern in Nigeria. In supply of improved SPSS (Statistical

Package for Services The Toilet Campaign' declaration of state of Solution). It is towards positive emergency on therefore development in the sanitation and the recommended that state by providing signing of the government and more improved Smart Executive Order to end stakeholders should toilets products and open defecation in the strictly enforce and services, in line with country by 2025. implement the laws the current that will promote 'Use Presidential

material, and can play many roles with respect to microbes. Travelers can be victims, sentinels, couriers, processors, and transmitters of microbial pathogens, (Wilson, 2003). Conversely, arrival of travelers can affect host populations through contact with diverse groups of people and microbes throughout their trip and sharing environments sequentially. Travel should be considered a loop and not just an origin and destination, (Wilson, 2003). Toilet is a space for comfort zone, used for defecating which can be built from different materials chosen according to availability, cost of materials, skills available, and soil type (Abdulmageed, Musa, Henry and Kabiru, 2018). According to the UNICEF/WHO (2012), 82% of the 1.1 billion people practicing open defecation live in 10 countries and Nigeria is one of them. The others are India, Indonesia, Pakistan, Ethiopia, Nepal, China, Sudan, Niger and Mozambique. It means that to continue with the use of un-improved pit latrines that become a reservoir of open defecation with flies in and out, cockroaches in multitudes, smell from kilometers, impossible to wash, maintenance is close to zero, easy to collapse, un friendly to children, adults skeptical to get injured we can to shift the paradigm. To overcome this challenge there is the need to shift from the use of local unimproved pit latrines to something innovative and have suitable latrine designs that would not only be cost-effective, environment-friendly and easy to construct but also would be acceptable to people especially less privileged arise the concept of low-cost but high-quality toilets called 'SMART TOILETS'. Sensitization and promotion of durable but affordable toilet facilities is very important. This is a situation of improved toilet designs

that fits into all socio-economic standard of a household and at the end achieves an assured privacy, free from contamination and infections as well as total demarcation of feces to human contact. Smart toilet is easy to clean and maintain, it uses less water to flush, free from cockroaches, houseflies, nesting ground for mosquitoes, smell and irritation to use. It is more of a comfort toilet and easy to use by all age groups. It ensures hygienic separation of human excrete from human contact. Is an array of latrine options that are of varying cost especially super structure to suit all financial status ranging from permanent to temporary but all have features of an improved latrine. The availability of a well fitted squat pan and a trap with a good substructure as collection point coupled with affordable privacy wall guarantees a sustainable, smart toilet for tourists.

Sanitation marketing is an approach to household sanitation promotion that aims to create sustained and effective sanitation by stimulating household demand for sanitation products and services (Scott, Jenkins & Kpinsoton, 2011). The Nigerian government and policy makers have come up with various strategies over the years on how the Nation's social and economic potentials can be harnessed (Isa and Jimoh, 2013). As a result, there is market in sanitation. Sanitation marketing (SanMark) and Sanitation finance (SanFin) are market and finance based approaches to household sanitation promotion, with the aim to create sustained and effective sanitation by stimulating household demand for sanitation products and services (Scott, Jenkins & Kpinsoton, 2011). In particular, governments contract out private providers to supply a specified service of a defined quantity and quality at an agreed price and memorandum of understanding for a specific period of time. These contracts contain rewards and sanctions for nonperformance and include situations in which the private sector shares the financial risk in the delivery of public services (World Bank, 2009). In most African countries, especially some states in Nigeria and particularly Bauchi have actually migrated to the next higher level in terms of hygiene as ODF area. The types of toilets are as a result of different spaces (open/close, public/private, internal/external, tangible/intangible) and levels (upper/lower, large/small, necessity/luxury) are: Traditional pit toilets, San Plat toilets, Conventional improved pit toilets, VIP toilets, Pour-flush toilets, Compost toilets, Mobile

toilets, Smart toilets, Other toilets. Hence, the Federal, State and Local governments are presently in partnership with the Federal Government of Nigeria, Multinationals and stakeholders to achieve safe hygiene practices for a collective responsibility, memorandum of understanding and benefits to the society. One of the nagging problems confronting the Nigerians apart from poverty is deteriorating sanitary facilities. Hence, there is the need for tourist's centred toilet aspirations such as the people's desirability, business viability and technical feasibility that will be explored as remedy as shown in **Figure 1**, which are necessary in order to create conducive environment for a healthy living in Bauchi metropolis, using smart toilet.

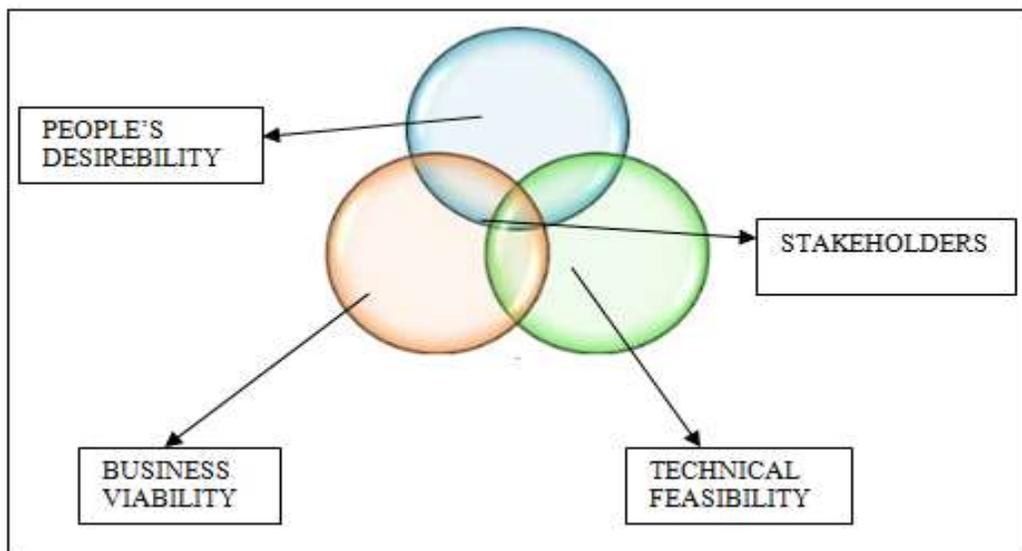


Figure 1: Tourist's Centered Toilet Aspirations
Source: Developed by the Authors, 2020

OBJECTIVES

The objectives of this paper are to:

1. Analyze the user experience survey of smart toilet design for tourists in Bauchi.
2. Ascertain user experience survey based on design and construction of smart toilet park sectioned into components of 3 permanent Superstructure, Squatting Platform, Substructures and 3 temporary Superstructure, Squatting Platform, Substructures.

3. Identify preference in building smart toilets (single direct pit, single offset pit and double offset pit) at an estimated cost price.
4. Showcase the various types of smart toilet options for tourists with their levels of aspirations.

STATEMENT OF THE PROBLEM

In 2017, only 35% of the population had access to improved sanitation which is not shared and 11 out of all the 774 local governments in Nigeria is open defecation free. Also, in 2015, Nigeria was highlighted as the 3rd worst country in terms of access to sanitation. 71% of the population does not have access to toilets, especially tourists on their way to various destinations. Nigeria also has the highest rate of under-5 deaths caused by diarrhoea – 11 children in every 1,000 die of diarrhoea illnesses each year in Nigeria. Diarrhoea is one of the three most common killers of young children globally yet 58% of these deaths could be prevented through access to clean water and sanitation. The removal of open defecation has wider implications too. It improves the education and safety of girls and women. In many schools there is a lack of toilet facilities for girls. This means, particularly when they reach puberty, girls often stop attending because they have nowhere to go to the toilet. There is also the darker side to this with reports of rape and attacks of women and girls venturing out into the bushes to go to the toilet. Often they go after dark for privacy – which leaves them vulnerable to attacks. Hence, we need solutions like the smart toilets in which tourists can appreciate and afford to build and use. If all these are revamped, it will therefore be necessary to create conducive environment for a healthy living in Nigeria, using a user experience survey of smart toilet design and construction in Bauchi for sustainability and tourism development.

JUSTIFICATION

Considering the sanitation sector as a marketplace full of business opportunities, requires serious attention by the stakeholders in filling the gaps of toilets at various spaces and levels which leads to the various toilet types in the toilet park as a sampled model for the user experience survey by tourists. The private sector; be it internationally operating large scale

enterprises, social entrepreneurial programmes or small and micro-scale businesses of masons, plumbers, cleaners, empties or wholesalers has often been ignored as a reliable alternative or addition to public service providers in the sanitation supply chain sector. The reason behind this is that the most appropriate technology that will provide the most socially and environmentally acceptable level of service at the least economic cost should be utilized in the environment.

LITERATURE REVIEW

Nigeria is a country which places a great emphasis on cleanliness. A decree from the days of military government which is still in force mandates that the final Saturday of every month is [Sanitation Day](#), meaning that travel is banned and a curfew enforced until 10 a.m. Families are told to use the time when they are confined to tidy the home. Unfortunately, once household waste is tidied, the problems begin. Nigeria's booming population, an asset in economic growth terms, is placing great pressure on Solid Waste Management (SWM) systems which are in many cases already either antiquated, informal or non-existent (Guardian News, 2016). About 70 million people, out of a population of 171 million, lacked access to safe drinking water, and over 110 million lacked access to improved sanitation in 2013. OD rates, at 28.5 per cent pose grave public health risks. Every year, an estimated 124,000 children under the age of 5 die because of diarrhoea, mainly due to unsafe water, sanitation and hygiene. Lack of adequate water and sanitation are also major causes of other diseases, including respiratory infection and under-nutrition (World Bank, 2009). As a result, Bio-Power Environmental Solutions Ltd says the establishment of high-quality public toilets can generate revenue, create 11,000 jobs and promote a healthier environment in the country (The Cable, 2017). There are ways in which the public and private sectors can join together to complement each other's strengths in providing education services and helping developing countries to meet the Sustainable Development Goals (SDG) waste management and to improve learning outcomes which can even be tailored and targeted specifically to meet the needs of low-income communities (World Bank, 2009). Recently, an interesting alternative to creating septic tanks with re-use materials has proven to help in

controlling sanitation problems and regulate waste disposal at low cost (thehomesteadsurvival.com, 2015).

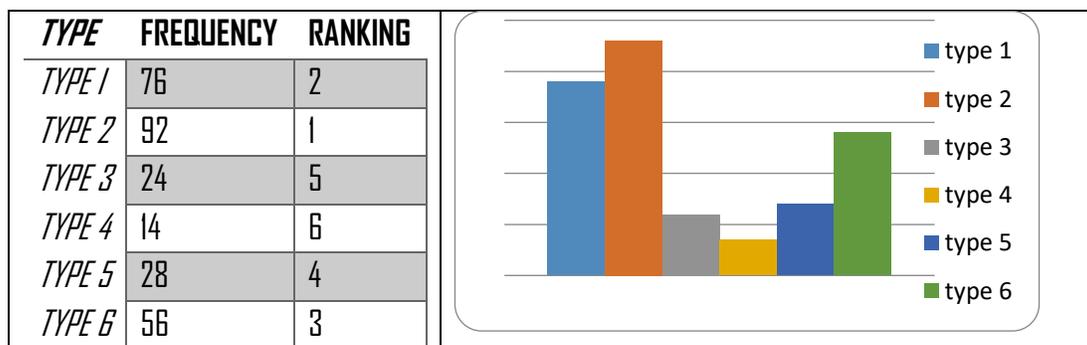
METHODOLOGY

The research methodology entails case study qualitative method of design and construction processes and procedures and quantitative analysis using the typical six toilet designs via a users experience survey at the smart toilet park for tourists, using SPSS to generate percentage distribution outputs.

USER EXPERIENCE ANALYSIS

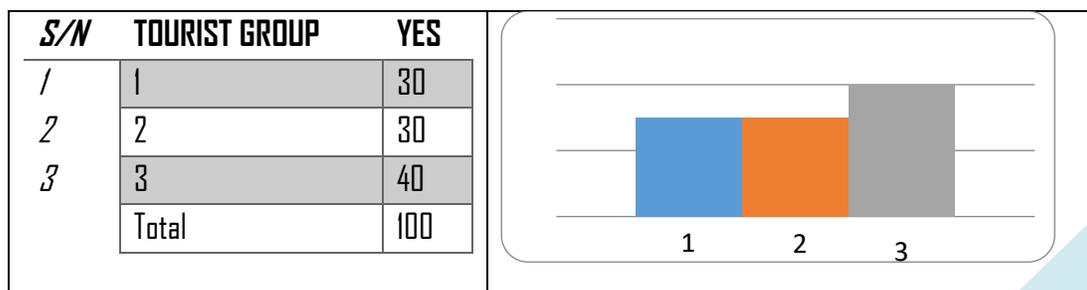
The analysis used case study approach to achieve its objectives as summarized in SECTION 1 to SECTION 5 below:

SECTION 1: TYPE OF MODEL PREFERRED



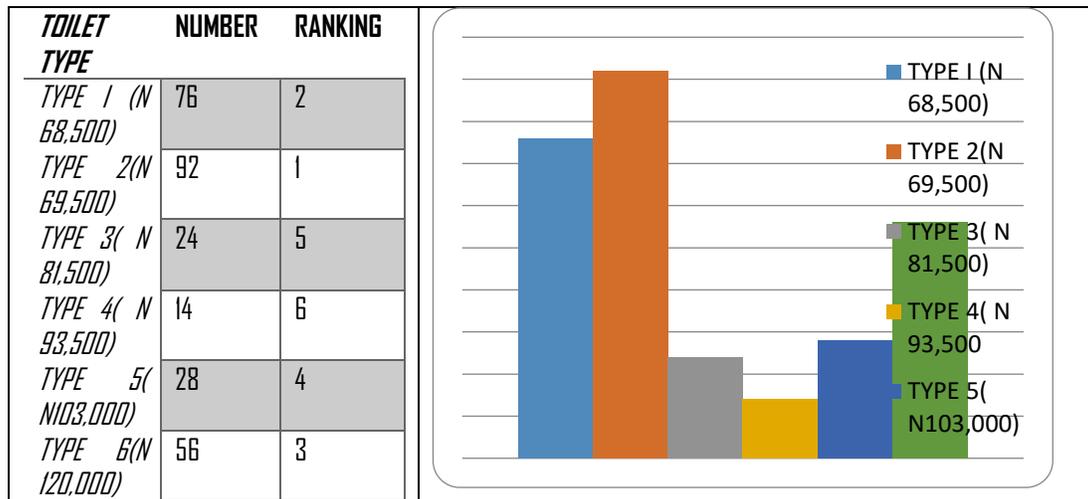
From the above SPSS generated percentage distribution output, the highest model preferred is Type 2 with 92 Frequency has the highest ranking of 1 while Type 4 with 14 Frequency has the lowest ranking of 6.

SECTION 2: WILLIGNESS TO CONSTRUCT THE TYPE OF THE SMART TOILET SEEN



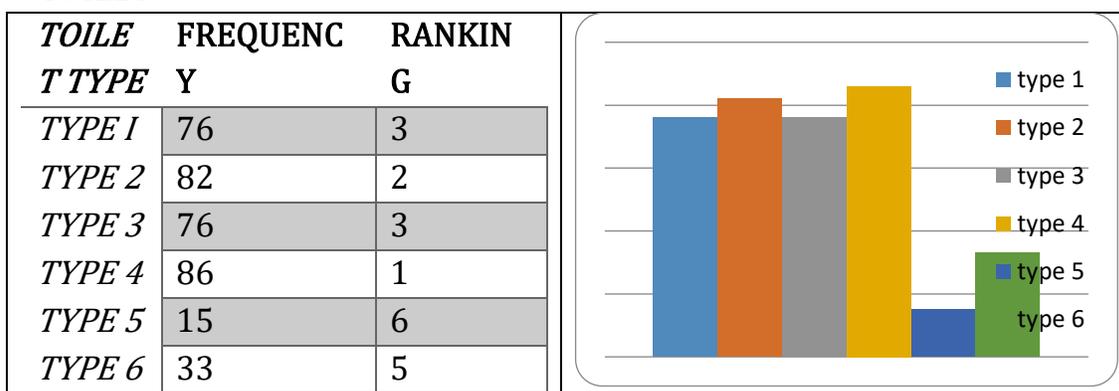
From the above SPSS generated percentage distribution output, the highest Tourist Group 3 with 40 Frequency has the highest ranking while Tourist Group 1 and 2 with 30 Frequency has the lowest ranking.

SECTION 3: WILLINESS TO PAY FOR THE TYPES SEEN



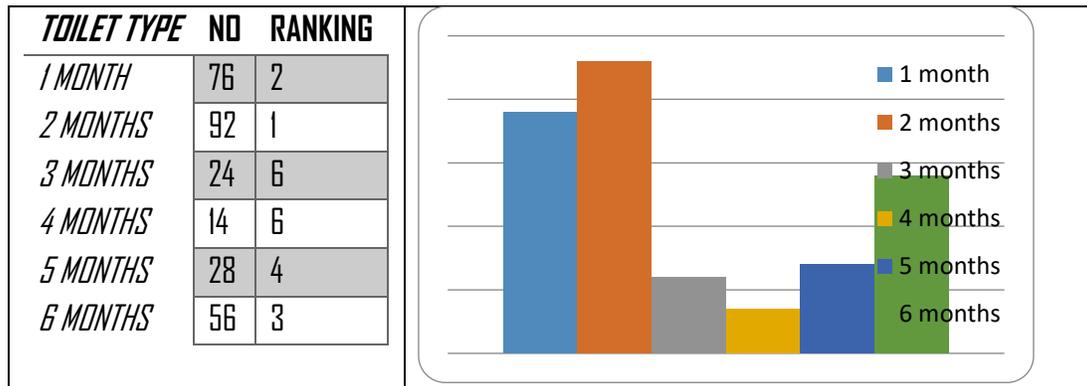
From the above SPSS generated percentage distribution output, the highest Toilet Type 2 with 92 Frequency has the highest ranking of 1 while Toilet Type 4 with 14 Frequency has the lowest ranking of 6.

SECTION 4: WILLINESS TO OBTAIN LOAN FOR DESIRED TYPE OF SMART TOILET



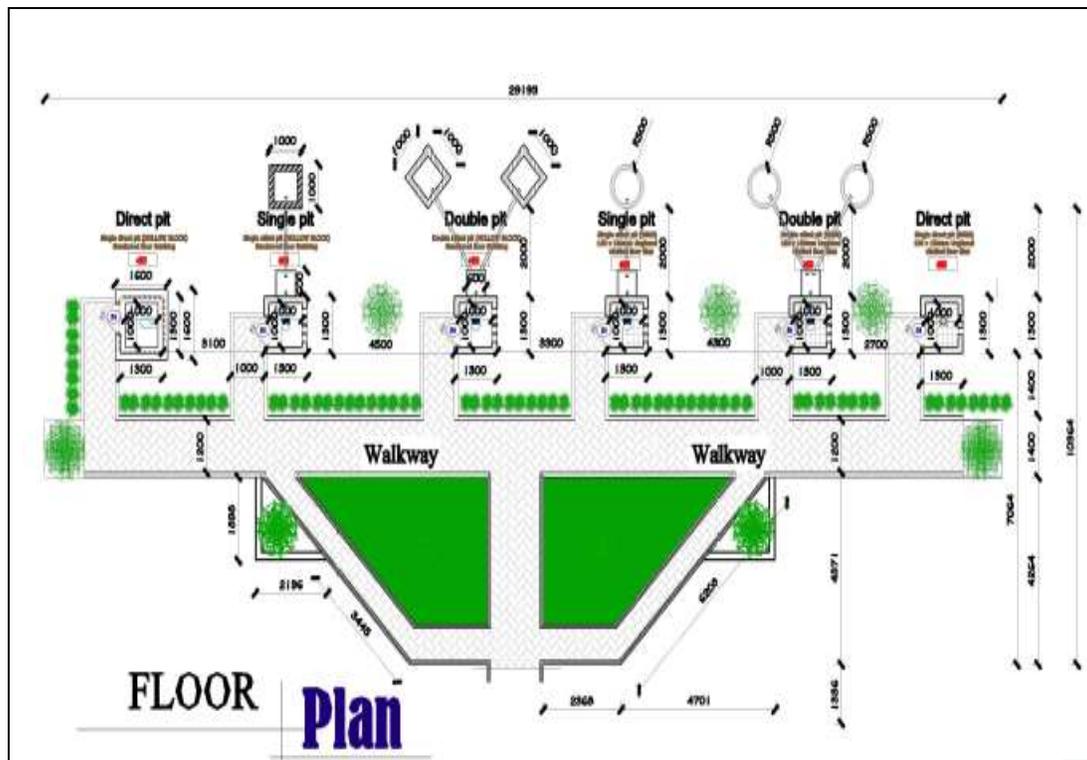
From the above SPSS generated percentage distribution output, the highest Toilet Type 4 with 86 Frequency has the highest ranking of 1 while Toilet Type 5 with 15 Frequency has the lowest ranking of 6.

SECTION 5: TIME TO CONSTRUCT LATRINE



From the above SPSS generated percentage distribution output, Two Months (2) has the highest Frequency of 92 and the highest ranking of 1 while Four (4) Months has the lowest Frequency of 92 and the lowest ranking of 6.

SECTION 6: PRESENTATION PLAN & THREE DIMENSIONAL DRAWING OF THE TOILET PARK FOR TOURISTS AT A GLANCE





Source: 3D Google Sketch up of the Toilet Park Developed by the Authors, 2020

FINDINGS/RESULTS

- Physical visitations were made to the case study areas by tourists with interviews showed that some existing smart toilet facilities are aspirational.
- Interviews carried out with the tourists to know how they perceive healthy living suggested that there is little awareness to the concept of sanitation marketing and sanitation financing which needs supports.
- Designs of various smart toilet features at the smart toilet park showcased that present conditions can be better improved upon to enhance sustainable, general community clean water and sanitation using indigenous construction materials and technology with organized finance system as illustrated in the design above.
- Majority of the tourists' respondents prefer Temporary single offset, TYPE 2 smart toilet while the least was Permanent double offset, TYPE 5 smart toilet.

CONCLUSION

The present low participation in smart toilet practices could be linked to lack of awareness, poverty, technical know-how, attitude, mindset of the

people and non implementation of government policies. 'Toilet money does not smell shit' means that there is a huge amount of benefits in toilet design, toilet tourism, toilet construction and toilet promotion opportunities are lying down unaccessed. Also, the opportunities and the need to participate in waste management; of waste to wealth, useless to useful, unwanted to most wanted and nothing to something will ensure achievement on the National Tourism Health objectives means that there has to be a collaborative partnership efforts by Government, stakeholders and non-Government organization in order to safe guard the major parameters raised in this paper as majority of the household respondents mostly prefer Temporary single offset, TYPE 2 smart toilet while the least was Permanent double offset, TYPE 5 smart toilet.

POLICY RECOMMENDATIONS

The following recommendations will be very important in the present and future situations os smart toilet park for Sustainable Tourism Development:

1. The government of the day should provide enabling environment to allow for the private sector to inject funds into the Tourism Health sector which will in turn provide adequate job opportunities as the country can progress positively.
2. Stakeholders in Public and Private Participation should sponsor and organize massive enlightenment programmes, workshops, promotions, conferences, seminars and symposia in collaboration with all the media houses so that Sustainable Toilet Tourism will be revamped.
3. If all the above are well implemented to its fullest, such a system of opportunities in Sustainable Toilet Tourism would yield better sanitation markets, better toilet structures, and better communities.
4. Schools' toilet trade/Business as Entrepreneurship Education Development should be implemented as toiletpreneur so that youth empowerment toilet schemes and pedagogy could be spread to MDAs, Parastatals and Politicians.
5. Camps (IDP, Hajj, Christian Pilgrimage, NYSC,) and Public Spaces (Hospitals, Motor parks, Market places, etc.) stakeholders should be

facilitated and supported to meet up the Sustainable Development Goal 2025-2030 targets on Sanitation and open defecation free deadline.

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