Factors Responsible for End-User Preference for Imported Ceramic Sanitary Ware in Ogun State, Nigeria

FADAIRO, Olurotimi Olakunle

Department of Industrial Design, School of Environment Technology, Federal University of Technology, Akure Ondo State, Nigeria

DOI: https://dx.doi.org/10.51584/IJRIAS.2026.11050168

Received: 22 April 2026; Accepted: 15 May 2026; Published: 10 June 2026

ABSTRACT

Environmental health through human waste management is one of the major issues of concerns to most societies and world at large. Ceramic sanitary ware (CSW) products are henceforth designed as plumbing fixture made from clay materials for hygiene purposes. Over the span of time, these products have been valued as life style products comprising water closet, wash basins, urinals, bidets, cisterns and squat pans. Ogun state is a host to two industries where these products are made and distributed yet the local market is flooded with imported brands of CSW. However, this study examined end-users' preference for CSW as it affects distribution of locally manufactured CSW products in the study area. Questionnaires collected were administered to CSW end-users to collect relevant data. These data were processed using simple descriptive research tools. Response from the CSW marketers revealed that CSW are available for sale, but 95% of CSW available with them were imported while 83% of end-users who responded have used installed CSW in public or private toilets. However, the most important factors considered by end-user respondents, as given by Relative Importance Index (RII) of preference was Ease of cleaning (0.98) Durability (0.97), Affordability (0.96), Coziness (0.96) and functionality of products (0.95).

Keywords: Ceramic sanitary ware, End-users, Imported, Preference and Marketers

INTRODUCTION

Historically, there has been no specific record on local sanitary ware development amongst the Yoruba speaking people of Nigeria, especially in Ogun state before the arrival of the colonials. The management of excrement has always been based on the diverse traditional value of the people. Ages before colonization, Yoruba people have defecated in bushes, river banks and pits without noticeable environmental or health related consequence. Some cultures bury their faeces in the ground while others leave them for dogs and pigs to feed on. Pits were dug in some more civilized villages but these eventually became breeding places for flies and mosquitoes. Other options include doing it in river channels also came up; this method also aided the spread of waterborne diseases (Odogwo, 2014). Bucket latrines were introduced during the colonial era to the government quarters and the houses of the few elites. This colonial latrine consisted of a wooden squatting plate and a metal bucket located in a small compartment immediately below the squatting plate. The night-soil labourer removes the full bucket of excreta, disposes it and replaces it with an empty bucket. This method faded out between the late 1970s and the early 80s, hence the Ceramic Sanitary ware (CSW) was introduced. CSWs are products specifically designed form clay to be used in secluded facilities to separate man from disease causing filths such as human fecal waste. CSWs are manufactured with either Vitreous China or Fireclay body, usually covered with an opacified glaze which appears in standard white or a range of other well-defined colours (Ryan & Radford 1987). Ogun state is a host to two major industries where CSWs are manufactured, yet their products seemed not to have been competing favourably with other foreign brands. Ogbebo (2014) and Odogwo (2014) speculated that over 34 million Nigerians defecate in the open. UNICEF (2017) also ranked Nigeria as worst country in Africa and third worst globally for sanitation delivery to its citizens. This implies that more CSWs are still needed in the country. However, in an attempt to measure up with the United Nations millennium goal of ending open defecation, Chikozie (2014) revealed that demand for CSW is so enormous in the country, stressing that Nigeria imports approximately $600million worth of ceramic products annually, flooding the market with different brands of

CSW products which includes Twyford, Royal Ceramics, Roca, Delta, Ideal Standard, Cera, Ariston, Virony, Astell, Hayu, and Vieany among others. Nwachukwu (2011) and Adindu, Moses, Thaddeus and Tse (2014) argued that there should be no reason for Nigeria to depend on foreign CSW products for her human waste management because of the abundance of human and natural raw materials suitable for the production of these much-needed products. Fajuigbe (2011) opined that the challenges confronting the ceramic industry in Nigeria is associated with corruption, mismanagement of resources, inadequate funding, shortage of electricity, low patronage, inadequate training of personnel, low technical proficiency and high cost of imported materials and equipment. Fatuyi and Ologunwa (2012) examined the state of ailing ceramic industries in Nigeria and suggested measures that could be adopted to reactivate them. Unfortunately, they did not specifically address issues as it affects local CSW production and consumer attitudes in terms of preference and utilisation. This study henceforth, investigate reasons for CSW preference in the study area, which in turn provides information to guide both government and local investors on strategies to revitalize production in the local industries.

RESEARCH METHODOLOGY

In order to achieve the focus of this study, survey research design as recommended by Babbie (2013) was adopted for this study. This is because it provided numeric description of trends, attitudes or opinions of a population by studying a sample of that population. This process included cross-sectional and longitudinal studies using questionnaire for data collection. The population for this research include marketers and end-users of CSW within Ogun state. Questionnaire was designed and administered for each of the groups of respondents within the study area. Likert scale model ranged in order of 5 to 1 was adopted in the design of questionnaire in order to elicit information from respondents. Ten (10) variables were considered in the questionnaire for product end-users and five (5) variables for CSW marketers. In this study, the sample frame for the end users was infinite but based on population record of census 2006, Ogun state was 3,751,140. As for the sample size for this research the Internet Electronic Sample Size Calculator was used to determine the numbers of respondents, and the result was 385. However, it has been established through various studies that returned questionnaires are always lower than number distributed (Argyrous, 2011) and in order to ensure that returned questionnaires falls within the recommended number, extra questionnaires was added. Eventually, four hundred (400) questionnaire were distributed to the twenty local government areas of the state and three hundred and ninety one (391) responses were returned. Six (6) respondents out of the users returned blank questionnaires and five gave multiple answers so it was annulled, making a total of three hundred eighty (380) end users that responded. Simple random sampling technique was employed to respondents within the study area to give every member of the population equal chances or probability of being included in the sampling exercise.

As for marketers in the study area, Ceramic Sanitary Ware Marketers (CSWM) do not exist as an association as at 2019, they are rather registered under the Building Materials Sellers Association. The number of registered CSWM in the study area are fifty (50). In this case Census sampling was adopted for data collection using semi-structured interviews. Data was collected from respondents by interviews and focused group discussion with CSWM in the specialized markets in Ogun state where building materials are sold; such as in Abeokuta, Atan, Akute, Sango Ota, Ijebu Ode, Remo, Ogun-waterside, Ipokia, Ifo, Shagamu, Ilese Ijebu, Ilaro, Ojodu, Iperu, Owode and Ibafo. Analyses were carried out on the collected data using the Statistical Package for Social Science (SPSS) to address the set objectives.

FINDINGS AND DISCUSSION

Demographic Data of the Respondents

Gender disparity was consider in this study because it helps to highlight sex distribution and helped to check if there is any gender influence. The gender distribution as displayed in Figure 1 indicates that the female gender represented 52% respondents in the study area. This suggests that more female responded to questionnaire than the male 48% respondents.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

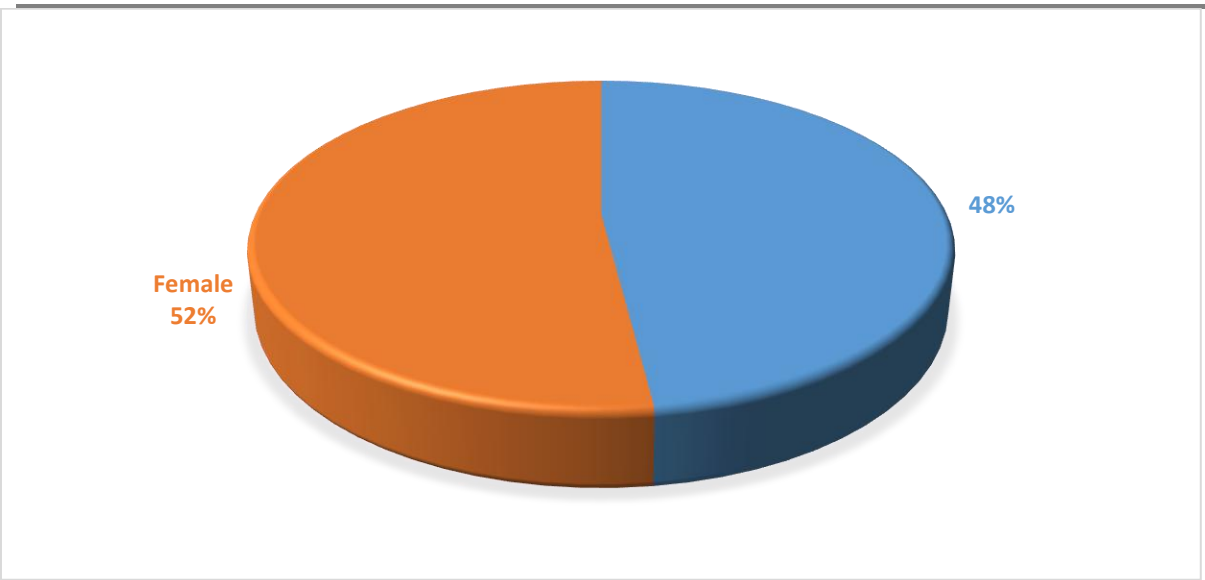

Figure 1: Gender distribution of respondents

Source: Author's field work, 2020

Age distribution of end-user respondents

Analysis carried out on age distribution of respondents revealed in Figure 2 that the age distribution of respondents corroborates that the use of CSW cut across all ages. The age ranges of respondents are from ages less than 21 to ages 40 and above. It is notable that approximately 70% majority of respondents are within the ages of 21 and 40 took part.

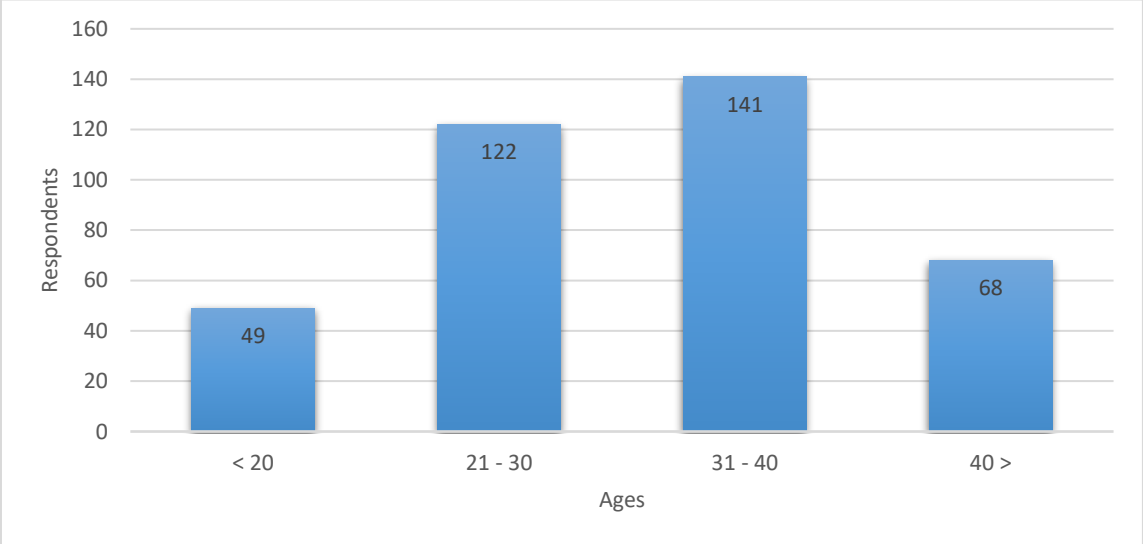

Figure 2: Age distribution of End-users

Source: Author's field work, 2020

Educational qualification of respondents

Result of analysis on Figure 3 represents the educational qualification of respondents. This result indicated that it does not require formal education to use CSW; as respondents gave a popular response of 26% possessing at least West African School Certificate (WAEC) while 5% are without formal education. This chart revealed that both literate and illiterate are familiar with CSW.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

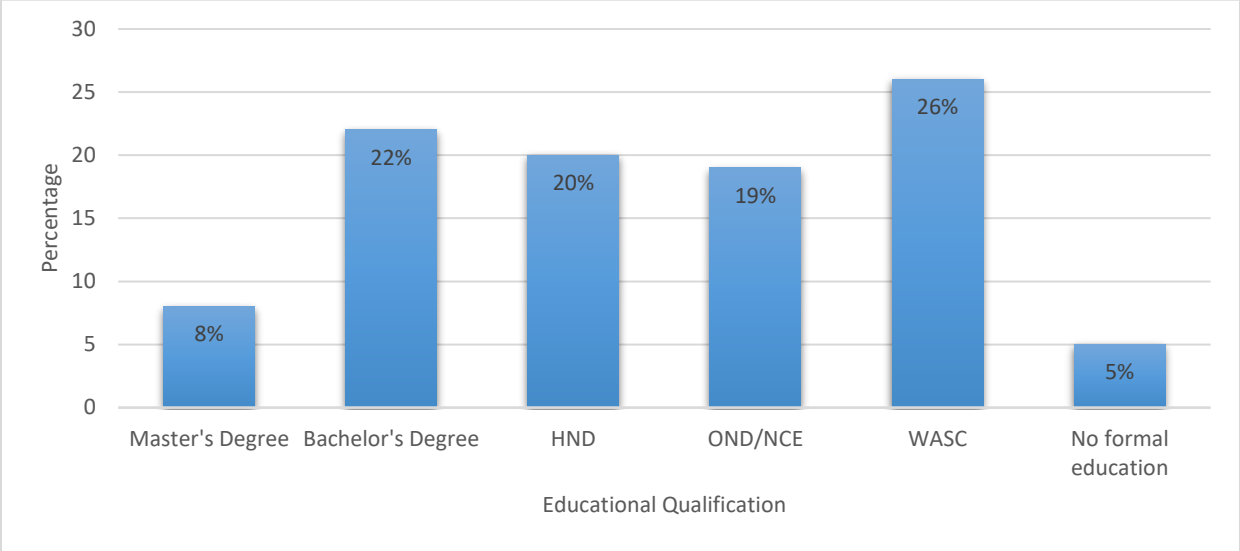

Figure 3: Educational qualification of respondents

Source: Author's field work, 2020

Ownership of CSW in houses

Analysis was also carried out to find out from respondents if they have CSW installed in their residents. The result of the analysis acknowledged on a pie chart in Figure 4, that majority (72%) of respondents have CSW installed in their houses, while only 18% have other alternative installed and the remaining 10% did not respond to the question. This indicates that the mainstream of respondents was well familiar with CSW.

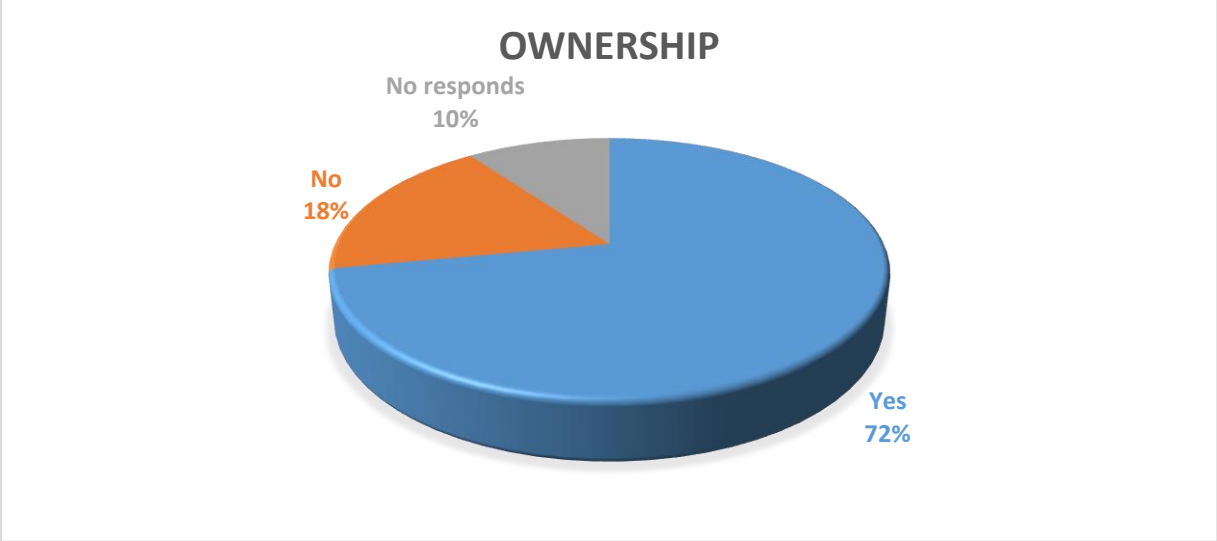

Figure 4: End-users' ownership of ceramics sanitary ware

Source: Author's field work, 2020

Preference for CSW based on place of origin

In order to ascertain end-user preference based on place of manufacture or origin, respondents were requested to specify the types of CSW they have used before and if given an opportunity to buy CSW which will they prefer. Hence, Figure 5 shows that 66% of the respondents preferred imported especially Asian products which are believed to be less expensive than the European and American brands. Meanwhile, 23% of respondents prefers locally made CSW, if available in the market not considering the cost or how expensive they are.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

Eventually, 11% do not have an idea. This indicates that more respondents are more attracted to foreign CSW than the locally produced because they are cheap, affordable and available in the market.

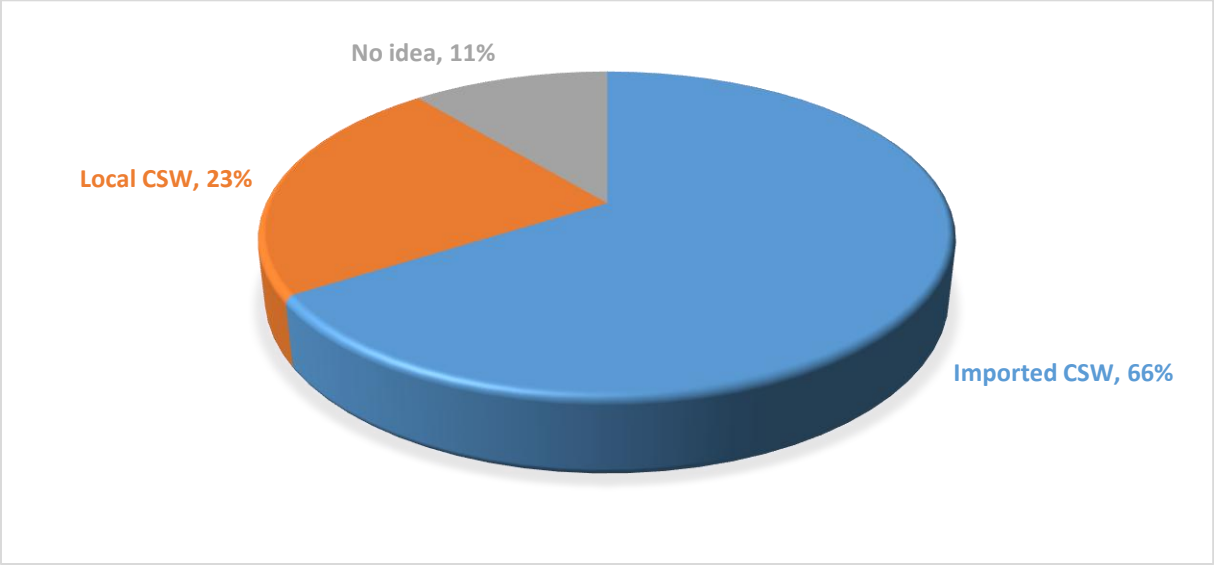

Figure 5: Preference of CSW based on origin

Availability of CSW in the market based on demand

Study carried out to discern the availability of CSW reveal that they were available in the market. Responds from marketers attest to having different brands of CSW in their stocks. Thus, availability of CSW measurement was based on the level of demand. The analysis shown in Table 1, acknowledged that 97.6% of respondents have water closets as most demanded with Relative Important Index (RII) of 1.0. The mean response for available water closet was 5.0; ranking it as the most demanded product in the scale of CSW in the study area. This suggests that water closets are the most stocked by the marketers and that most end-users purchase it than other CSW. Wash basin was ranked second most stocked with RII of 0.97 and mean response was given as 4.8. This responds from the marketers indicate that 84% have wash basin in stock. This implied that wash basins were also highly demanded and available in the study area. Squat pans, usually used as alternative to water closet, especially in compound accommodations where occupants share conveniences. The demand for squat pan gave a mean score of 4.0, RII of 0.8 and ranked the third most stocked CSW product.

Table 1 : Ceramic sanitary ware available in the market

S/N	***Level of demand***	***MTD/5***	***MED/4***	***AVD/3***	***LSD/2***	***LTD/1***	***Mean***	***RII***
1	*Water Closets*	*49 (98%)*	*1 (2%)*	*-*	*-*	*-*	*5.0*	*1.00*
2	*Wash Basins*	*42 (84%)*	*8 (16%)*	*-*	*-*	*-*	*4.8*	*0.97*
3	*Urinals*	*-*	*14 (28%)*	*22 (44%)*	*7 (14%)*	*7 (14%)*	*2.9*	*0.57*
4	*Bidets*	*1 (2%)*	*2(4%)*	*8(16%)*	*14 (28%)*	*25 (50%)*	*1.8*	*0.36*
5	*Squat pan*	*15 (30%)*	*26 (52%)*	*6 (12%)*	*3(6%)*	*-*	*4.0*	*0.81*

Source: Author's field work, 2019

Keys:

MTD = Most Demanded MED = More Demanded AVD = Average Demanded LSD = Less Demanded LTD = Least Demanded RII = Relative Importance index

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

Factors responsible for consumer preference for CSW from End users' responds.

It was observed that the market was stocked with wide range of CSW brands with different sizes, designs, and cost prices. Result from the preferential analysis given by respondents is an indication that buyer and end-users of CSW alike are enticed based on some qualities that appeals to them. These factors were valued using relative importance index (RII) and judging from the results shown in Table 2., the Ease of cleaning ranked as the first most important factor end-users consider before buying CSW with RII of 0.98 (Mean = 4.9). The table also categorized other priorities in the following order of RII; functionality (0.97), durability (0.97), cosiness (0.96), price (0.96) and availability of products in the market (0.92) were the most relevant factors sort after by end-users before purchasing a CSW. Other important factors include size (0.88), colour (0.86), elegance (0.85), surface texture (0.83), uniqueness (0.83) and Glaze type (0.76). While choice based on origin of CSWs remains undecided and has RII of 0.67.

Table 2 : Factors responsible for end-user preference for ceramic sanitary ware

S/N	Qualities of Attraction	VI	I	UD	LI	NI	Mean	RII
1	Colour	202 (53.0%)	120 (32.0%)	19 (5.0%)	35 (9.0%)	4(1.0%)	4.3	0.85
2	Elegance	186 (49.0%)	132 (35.0%)	27(7.0%)	35(9.0%)	-	4.2	0.85
3	Durability	337(89.0%)	35 (9.0%)	-	-	8 (2.0%)	4.8	0.97
4	Origin of product	85 (22.0%)	93 (25%)	109 (29.0%)	54 (14.0%)	39 (10.0%)	3.3	0.67
5	Coziness	325(86.0%)	43(11.0%)	8 (2.0%)	4 (1.0%)	-	4.8	0.96
6	Functionality	322(85.0%)	43(11.0%)	-	4 (1.0%)	11 (3.0%)	4.7	0.95
7	Availability in market	248 (65.0%)	121(32.0%)	11 (3.0%)	-	-	4.6	0.92
8	Ease of cleaning	349 (92.0%)	27 (7.0%)	4 (1.0%)	-	-	4.9	0.98
9	Uniqueness	190(50.0%)	80 (21.0%)	95 (25.0%)	15 (4.0%)	-	4.2	0.84
10	Affordability	319 (84.0%)	49 (13.0%)	4 (1.0%)	4 (1.0%)	4(1.0%)	4.8	0.96

Source: Author's field work, 2019

Keys: VI = Very Important I = Important UD = Undecided LI = Less Important NI = Not Important RII = Relative Importance index

CONCLUSION

The demand for CSW is on the increase owing to rate of property development and awareness of the people in the study area. This study revealed that majority of CSW available in the Ogun state market were imported into the country from China, Spain, Australia, India, Germany, Italy, South Africa, Brazil, USA and Thailand, while the local industries in the study area provided minority of CSW. In addition, consumers and end-users' opinions

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

were sampled to find out the factor responsible for their preference for CSW. The result shows that product price, coziness, durability, functionality of products and their availability in the market were considered the most essential criterial that influence consumers' choice for CSWs no matter where they are produced from. Locally produced CSW are more expensive as a result of the production cost. Considering the importance of CSW to the public health of the people and the state of economy, it is imperative to look inward and prioritize how local production within the country can be improved to reduce cost and meet the local demand.

RECOMMENDATION

Based on the findings and the conclusion of the study, the following is recommended

1. Indigenous investors and the Ceramic Research Association of Nigeria should collaborate to form a pressure group to lobby through the law makers to promulgate a law that would give priories local production thereby minimizing the influx of ready-made CSW which can be produced locally.

2. The government should promulgate and enforce laws to aid industrial research thereby bridging the gap between the academic and the industry through internship.

3. The government and private organization should collaborate in funding research for the benefit of indigenous production sector. This would encourage local industries to improve product quality, durability and affordability to complete favourably with imported CSW.

4. Future research could incorporate advanced statistical techniques such as regression analysis to better explain the relationship between the variables influencing consumer preference.

REFERENCES

1. Adindu, C. I., Moses J., Thaddeus C. A., and Tse D. T. (2014) Exploring ceramic raw materials in Nigeria and their contribution to nation's development
2. Argyrous, G. (2011) Statistics for Research: with a guide to SPSS. SAGE Los Angeles, USA
3. Babbie, E. R. (2013) The Basics of Social Research. 13th Edition, Belmont, CA Wadsworth Cengage Learning, Chicago USA
4. Fajuyigbe M. O. (2011); Actualising the Millennium development goals in Nigeria, Prospects and Challenges of the Ceramic industry. Journal of ceramics 8, 84-94
5. Fatuyi, O. A and Ologunwa, T. P. (2012) An Evaluation of Ceramic Industries in Nigeria. http://www.academia.edu/5391205/An_Evaluation_of_Ceramic_Industries_in_Nigeria Accessed 9th October, 2018
6. Nwachukwu McPhilips, (2011) Ceramic raw materials are everywhere. https://www.vanguardngr.com/2011/12_ceramic-raw-materials-are-everywhere-agonsi/ Accessed 12th December, 2011
7. Odogwo G. (2014) Can Nigeria stop open defecation? www.punchng.com Accessed 4th September, 2014
8. Ogbebo W. (2014) Why Nigeria needs to end open defecation now www.leadership.ng Accessed 14th July, 2014
9. Ojibo S. (2011) Excreta disposal and Sanitary ceramics: The face of the future ASHAKWU Journal of ceramics Vol. 8, pg 99-103
10. Ryan, W. & Radford, C. (1987) Whitewares: Production testing and quality control. England: Perganon Press.
11. UNICEF (2017) Making Nigeria Open Defecation free by 2025: A National Road Map https://www.unicef.org/Nigeria/resources_5620html Access 7th May 2018