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Users Perception on Need for Universal Design in Recreation Centres in Ogun State, Nigeria

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ABSTRACT

The study examined perception of users on the need for Universal Design (U.D.) in Recreation Centres in Ogun State Nigeria. Cross-sectional survey method was adopted with stratified random Sampling. A sample size of 100 instead of expected minimum of 53 from maximum 2,650 estimated daily users of the nine standard recreational facilities in the State. A questionnaire was randomlyadministered to the users of the facilities in the State, to harness their views on need for U.D. in them.

Data gathered were appropriately analysed. Findings showed that the facilities have good accessibility and usability. It was recommended that management and architects, among others involved with designing and constructing recreational facilities should ensure conformity to U.D. principles forimproved accessibility and usability for all users without discrimination.

Keywords: Behavioural design, built environment, evaluation, perception, user behaviour.

HIGHLIGHTS

- Users of recreational facilities in Ogun State, Nigeria have high perception of the need for Universal Design in the Centres.
- The recreational facilities adopted fairly Universal design principles, though not extensive enough to provide accessibility, usability and understanding for all possible users irrespective of their disabilities.
- Physical barriers to access, use and understanding posed a social barrier which prevents the social sustainability of possible users of the facilities from the community and its environment.
- Management and architects, among others involved with designing and constructing recreationalfacilities should ensure conformity to Universal Design requirements for improved accessibility and usability for all users without discrimination.

1. INTRODUCTION

The designed world does not fit everyone perfectly. Designers were taught to plan for a mythical average group that does not exist. Every individual is special and belongs to a group because humans are diverse species. Universal design is 'barrier-free architecture', which implies that the built environment is taking an enabling role for all user groups of a community. The world has experienced an increase in the population of the physically challenged and has put pressure on designers to provide spaces and products that are accessible by all. In recent times, there is increased attention with regards to Universal Design among both design educators and practitioners in order to provide to the necessity of the diverse members of the society. According to Mace (1985), universal design is the design that is usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. It is intent of surroundings and products available by all-natural and as independently as possible without the adoption of adaptable

measures or specific plan. Very similar to the above definition is that given by the National Disability Authority (2012) which states that 'Universal Design refers to the attempt and makeup of surroundings for unhindered entrance, comprehensible and used to the greatest extent by all populace, careless of their age size, potency or incapability'.

According to Steinfeld & Maisel (2012a), Universal Design is outlined as the move that provides an environment that optimally serves a varied inhabitants by modifying its human productivity, healthcare and inclusion. This definition considers the importance of place-making and understanding the context of integrated assessment, user needs and user-centred approach to development. Diversity of society members is the basis for Universal Design which can be as a result of accidents or can be a natural occurrence such as ageing or difference in body size. Universal Design is a practice that ascertains the needs of the various ranges of users of space early enough to ensure the usability of proposed designs. Design of an element for a particular group can serve as a solution to the necessity of manysemblance.For instance,point entrances, i.e. step-free passage-ways could be designed specifically for wheelchair users but could also serve people with luggage, parents with children buggies, shopping carts, persons with mobility aids and persons with larger body mass. Clear signage with well-known pictograms assists people with various languages as well as people with cognitive difficulties. However, in some cases, one resolution does not fit all, and varied choices need to be adopted. An example is providing a ticketing machine that serves persons of various heights (tall, short or sitting).

2. LITERATURE REVIEW

2. 1 Users of Universal Design

Universal design is not exclusive to persons with impairments. It serves broad scopeof users and can be useful for delivery personnel, parents with buggies or persons who use walkers, to state a few as well as persons with temporary or permanent physical challenges.

2.2 Persons with Impairments

These among others are the evident donees of Universal Design implementations. According to Konrad, Leslie, &Peuramaki (2007), accessibility is a socialobligationto guaranteepersons with disabilities get the backing they need to take part and contribute to the society actively. Universal Design breaks the barrier of segregation and helps to fit persons with physical challenges into mainstream society. It takes away the stigma and special treatment due to its fair use (The City of Calgary, 2010).

2.3 Persons without Disabilities

Universal Design is a raised standard of design that aims at providing a better device for everyone rather than providing a particular tool for one group, which in turn improves the quality of life of everyone. For example, sidewalk curb cuts are not only used by people with mobility devices; they are used by skaters, pedestrians with luggage and persons with shopping carts.

2.4 Older Adults

There are cases, adults in their senior years have to leave the comfort of an environment they are used to; as a result, lack of conduciveness. Universal Design enables the continuity in the habitation of older people in their homes and communities. The incorporation of the universal design approach can alleviate the frustration encountered by most senior citizens as they get older and experience changes in their mobility (The City of Calgary, 2010).

2.4.1 Diverse abilities Considered in Universal design

According to Froyen (2013), the various categories of diverse users may include people who:

i Have impaired vision or hearing

ii. Have different culture

iii. Have speech impairment

iv. Have physical limitations due to temporary or permanent causes

v. Are of varying ages

vi. Have different cognitive abilities

vii. Have different diet requirements

viii. Have different needs due to their gender

Physical, receptiveand mental capabilities are different from one person to another and for some when aging. Variation is not bizarre. Persons with diverse skills should be able to use spaces with ease and safely without the need for special assistance. Everyone should have the opportunity to find

their way with ease, understand the workings of building facilities and how to manoeuvre them, e.g. lifts, know where pedestrian facilities are located, and traffic may be encountered.

2.5 History of Universal Design

Universal Design is deeply rooted in demographic, legislative, economic and social development amidst aged adults and persons with impairments (Story, Mueller, & Ronald, 1998). Older people and persons with disabilities were considered minorities earlier in the 20th century. Later on, in the 20th century, there was an increase in the number of sicknesses and injury survival as medical prowess advanced. The average life expectancy of the physically challenged increased.

Public acknowledgement of persons with disabilities has improved by three catalysts:

i. Legislation brought about by human rights movement

ii. Barrier-free design to Universal Design movement

iii. Assistive Technology.

The increased number of physically challenged persons led to Civil Rights movements and subsequently, the Disability Rights movement and hence, the introduction of anti-discrimination legislation and equal right by various Governments (National Disability Authority, 2012a). The barrier-free movement in 1950 started a process of development in public policies and design practices. Physical constraints in the environment posed hindrances to persons with movement impairments. Different states created accessibility laws and guidelines to provide full access of all groups to public and private settings. Assistive technology described devices designed specially to heighten the forcible, cognitive and sensory abilities of persons with physical challenges to enable their independence in environments unaware of their needs (Jones & Sanford, 1996).

The 1980s economic recession affected the removal of physical barriers and assistive technology negatively this led to the realization of the possibilities of the creation of cost-effective products by manufacturers. The market place adapted to the trend of globalization by recognizing inherent opportunities and challenges in the world. The consumer base diversity led to an increase in the need for designs sensitive to people's needs, capability and preferences. Universal design became a very marketable approach because it tends to the needs of most consumers (Story, Mueller, & Ronald, 1998).

In the years, the community's attitude and physical barriers in the built environment have restricted the participation of people with disabilities in society. There has been a restriction of their access to employment, recreation, education, housing, transportation and events. There has been a growth in the pursuit of equal rights and independence in relation to the growth of the disabled population. The impact of assistive technology on users as well as the functions were considered in the products' design. Universal Design offers an outline for maximum involvement of all people.

2.6 Principles of Universal Design

There are seven principles of Universal Design which were established in 1997 by a group of architects and other researchers from the North Carolina State University (Centre for Excellence in Universal Design, 2012). These principles were used as a guide for practitioners, students and users to assist in design processes, assessment and education (Ostroff, 2011).

i. Equitable Use: this is needful for people with various abilities. It encourages the provision of means useable by all users or a close alternative when not possible. It avoids discrimination and separation of users. It aims at creating a design appealing to all and provide for safety and privacy for all. The design should appeal to the various groups and encourage participation.

ii. Flexibility in Use: all Universal Design offers multiple options for the possibility of carrying out of tasks. The design allows a large variety of preference which includes right or left-handed access and use. It provides adaptable measures to the user's pace and helps users' speed and precision. Adaptability is a method of making a design universal.

iii. Simple and Intuitive Use: the design and use of universally designed buildings are easily understood by all users notwithstanding user's knowledge, prowess or level of attentiveness. Superfluous complexity is avoided. It considers a wide array of literacy skills and user's intuition.

iv. Perceptible Information: the design provides needful information in different modes to enhance communication efficiency. These modes may be in symbols, writing, words, pictures and tactile. It gives a clear difference that accentuates essential information from its surroundings. It includes communication techniques for users with sensory limitations.

v. Tolerance for Error: Universal Design anticipates and cushions the hostile effects of hazardous unintentional actions. Harmful elements should be made safe or adequate warning understandable by all users should be used.

vi. Low Physical Effort: the design can be effectively and enjoyably used without strain or stress. The design features employed requires low physical strength or force. For instance, using lever door handles instead of doorknobs that need to be grasped and turned. It encourages the minimization of repetitive activities and helps to maintain neutrality in the user's body position.

vii. Size and Space for Approach and Use: Universal Design provides apt spatial accommodation and access for use by the diverse user groups notwithstanding movability, posture or size this discourages spatial constraints that restrict the free movement of people go through and within a space.

This principle encourages the provision of a clear line of sight to vital features for all users, whether standing or seated. Allow the use of assistive strategies and persons.

The bedrock of Universal Design have been used to characterize the notion of Universal Design around the world. From these Bedrocks, Universal Design Goals can be recognized to give clear and quantifiable results that apply to all design scales. The first four principles are associated with support for activities. The fifth centred on wellbeing and environmental quality issues and the last three are associated with support for social inclusion.

2.7 Goals of Universal Design

According to Steinfeld & Maisel (2012b), there are eight universal design goals:

i. Body Fitness: accommodating a comprehensive range of body sizes and abilities.

ii. Comfort: keeping demands within desirable limits of body function and perception.

iii. Awareness: certifying that valuable information for use was easily attained.

iv. Understanding: ensuring that methods of operation and use are intuitive, clear and explicit.

v. Wellness: contributing to the improvement in health, evasion of disease and safe-keeping from hazards.

vi. Social integration: ensure all groups are treated with dignity and regard.

vii. Personalization: integrating opportunities for choice and the expression of individual preferences.

viii. Appropriateness: regarding and fortifying cultural values and the social and environmental context of any design project.

These goals of Universal Design were developed with the aim to updating and complementing its Principles, provide clarity to its concept, including human performance, health and wellbeing, produce social inclusion as results, and consign relevant and social issues. The goals of universal design express the upshot of Universal Design in methods that are measurable and applicable to all design sphere within the limit of existing resources.

2.8 Benefits of Universal Design

Universal design is seemly more widespread as fore-front design firms as well as popular practitioners, continually apply its principles in many developed countries. This section dismisses the myth about universal design being inflexible, uncompromising design approach. It aims at showing architects, designers, planners and other professionals the plus side of universal design inclusion in their process and the sustainability of the practice in the long run (The City of Calgary, 2010). The universal design offers various benefits to all people in various aspects. A clear understanding of progressive approach universal design offers encourages its acceptance and adaptation in the daily lives of all stakeholders of society.

2.8.1 General Benefits of Universal Design

Universal Design possesses personal, social and business benefits (National Disability Authority, 2012).

i. Personal Benefits: Universal Design is a people-centred approach to design that considers and respects the self-worth, rights and privacy of users. Universal Design concepts put human diversity needs blatantly rather than stigmatizing a particular group of people. People experience difficulties in using a product in different ways; hence, individual benefits will vary for their ability. However, every person will benefit from a properly designed environment that considers accessibility and usability.

ii. Social Benefits: with more survivals of illnesses and injuries, there is a need for these groups of users to access and use buildings and product independently, and this is hinged on Universal Design. Universal Design creates a design solution that enables users with varying levels of capability to live independently. According to Wolfgang &Ostroff, (2001), "Universal Design presumes that the rank of human ability is ordinary, not particular". Universal Design appreciates the difference in abilities and helps to guide the design for all users. It also encourages the inclusion and participation of users in the society as technology embedded in the built environment have helped to commence the blurring of segregation lines and promote equality and the quality of life of everyone.

iii. Business Benefits: the demand for an environment without segregation fuel the supply of methods and products to meet these needs. Universal design provides an accessible, usable and appealing environment for people who have previously been subjected to restrictions and barriers. Due to this, there is an existing market to be served as there is a wide range of potential customers. The satisfaction of a customer by a product encourages referrals and hence, an increase in the awareness of a product. A product or environment that creates positive impacts in society gains a reputation of participation in carrying out communal social responsibility.

2.8.2 Design Professional Benefits of Universal Design

According to The City of Calgary (2010), design professionals have the opportunity to express enhanced creativity, gain increased earning potential and create better-built buildings without sidelining aesthetics.

i. Enhanced Creativity: universal design encourages creativity in designers in an aspect of design stipulated to boom in years to come. Designing for a broader group poses some challenges; however, it encourages the implementation of creative elements as well as showcase a designer's ability to provide solutions to everyone's benefit. Universal Design is geared up for growth and optimum creativity.

ii. Increased Earning Potential: an increase in the scope of people considered as users of a design directly impacts the earning potential for said design. Designing projects based on social inclusion implies the increase in value, quality and longevity of the project as well as its scope of work.

iii. Better Built Buildings: this has to do with the consideration of sustainability as a factor of design. The consideration of future generation and their ability to use a building built today is important and can be termed longevity. Is a building designed to accommodate its use by an individual in his youth and when he is ageing? Is an example of a question that needs an answer in line with enhancing the longevity of buildings.

2.9 Implication of Universal Design on Social Sustainability

Since the origin of the design process, professionals have acknowledged the place of usefulness as a major factor for the success of any design. However, in the history of design, more emphasis and attention has been placed on form as compared to function. Most architects are concerned with the concept of form 'integrity' than the usefulness of buildings for the likely users which include the physically challenged who are restricted from accessing most buildings (Steinfeld & Maisel, 2012b). The new century requires a change in the orientation of designers. There has been a transformation of sustainability into a mainstream venture which focuses on the protection and preservation of the existing resources for use by the future generation. In addition to protecting the natural environment, the protection of people should be focused on sustainable designs. The fundamental purpose of design is to change the form and arrangement of our material world and how we interact with it. Design is a flexible tool that improves the efficiency of human adaptive behaviours.

Universal design in its purest form seeks to create enabling environments, systems and products. It strives to prevent the creation of barriers as well as provide for the facilitation of social goals and satisfaction. Universal Design represents a union of different design practice threads that focuses on usefulness.

2.10 Universal Design Strategies in Buildings

Natural environments are mostly not habitable for humans. There has always been a need for the constant modification and adaptation of the existing physical environments to make them more habitable and livable. Most times, the exclusion is not caused by a person's disability, but the way the built environment is structured (Greater London Authority, 2004). With the increase in the complexity of technology and access to information, discrimination and social exclusion of some diverse users has begun to decline.

Accessibility, usability and understanding are key terms in relation to Universal Design (National Disability Authority, 2012b). Availability with respect to Universal Design of the built environment implies availability and approachability. Accessibility and approachability involve providing access routes from the exterior, i.e. from streets and car parks through the public spaces of the building to its interior through entry points as well as providing access within the building where the users carry out their activities (Barrier Free NZ Trust, 2013). Usability refers to the measure to which the built environment satisfies needs of its users. It is the degree to which users of a building can effectively and efficiently use it and its facilities. Usability in Universal Design considers the various possible users of a building and aims at designing for all to use the building and its products independently (Barrier Free NZ Trust, 2013). Usability in a building is enhanced by the use of information, communication and technology to create products that are easy to use and improve user satisfaction. A natural, built environment refers to how perceptible information is to all users of the building and its facilities. Various users of a building have different abilities – physical, sensory, intellectual and cognitive skills. Perceptions vary from users and Universal design help to provide information to all users in a way they can understand (Barrier Free NZ Trust, 2013).

According to the Centre for Excellence in Universal Design (2012), Universal Design can be applied to various aspects of building for everyone to provide access, usability and understanding. This includes:

i. External environments and approach

ii. Entrances and horizontal circulation

iii. Vertical circulation

iv. Internal environment and services

v. Sanitary facilities

vi. Facilities in buildings

3. RESEARCH METHOD

To achieve the aim of this study, the multi-stage sampling techniques was adopted for the study- a quantitative measurement of variables from field survey was considered most appropriate. First, the nine facilities in the State were stratified into the four Local Government Areas (L.G.A.) from which

one facility was randomly selected from each L.G.A. The final sample size was systematically selected of every fifth user seen after the first random selection.

Table 1.1: Study Population, Sampling Frame and Sample Size

L.G.A.	No of No. of Facilities	Estimated Users Population	Max. Users Population	Total Number of Users /LGA	Sampling Frame	Calculated Sample Size	Actual Sample Size	Retrieved
Abeokuta North	1. Emrald Amusement Park, Ibara	n.e. 300	300	850				
	2. Funfactory: MAS, Kuto	n.e. 250	250					
	3. Olumo Rock, OkeMosan	n.e. 300	300		300	17	25	24
Abeokuta South	4. Abeokuta Hoff Club, OkeMosan	n.e. 350	350	1000				
	5. Akin-Olugbade Social Centre, Owu	n.e. 300	300					
	6. Olusegun Obasanjo PL Amusement Park, Abeokuta	n.e. 350	350		350	20	25	25
Ado-Odo Ota	7. Dalco Plaza, Agbara	n.e. 250	250	500	250	10	25	22
	8. Ogun State Public Recreation Centre Office Sango Otta	n.e. 250	250					
Obafemi Owode	9. Hi-Impact Planet Amuzement Park, Ibafo	n.e. 300	300	300	300	6	25	20
Total				**2650**	1200	**53**	**100**	**91**

Sources: Authors' field work, 2019; Finelib, 2016; &VConnect Global Services Limited, 2019

The research strategy was quantitative research based on cross sectional survey of randomly Adewale &Fasae (2019), Adewale, Ibem, Amole &Adeboye (2019) and Tunji-Olayeni, Afolabi, Adewale & Fagbenle (2018). A total of 100 of the daily users of the nine standard recreational facilities in Ogun State were selected. The study population estimated as maximum number of users of the facilities during peak (other than festive) periods was 2,650. Considering the main variable which is a 10-point Likert scale, the standard sample size formula and table, acceptable margin of error of .03, alpha level of .05 for continuous variable Bartlett, Kotrlik& Higgins (2001), Ojo (2005) and Pallant (2011), the calculated minimum sample size was 53 which based on experiences of the researchers on similar studies in the country was increased by over 80 per cent to 100; to take care of the non-responses and invalids (Table1.1).

The quantitative measurement involved the administration of questionnaire conducted in a standard format for recreational centre users, and physical observation of the environment similar to method implored in Ibem, & Amole (2011), Ibem, Oni, Umoren, &Ejiga (2017), and Ibem, Opoko, Adeboye, & Amole (2013). The objective was based on the premise of a design that meets the needs of all users, irrespective of their singularities. A questionnaire was designed and administered to the users of selected recreational facilities, to harness the views of users on the need for Universal Design in these facilities. For the selection of respondents to questionnaire within each recreational facility, the simple random sampling method which is a sub-division of the probabilistic method of sampling was selected as the most suitable to achieve the aim of the study. The objective of this sampling technique is to improve the accuracy of the sample, by decreasing the sampling error.

The data gathered from this study, were analyzed engaging both content analyses and statistics obtained. The information gathered was evaluated, sorted and presented in the form of figures, tables, maps and graphs. Photographs were presented as plates for a clear grasp of the findings.

Ogun State, located in the southwestern Nigeria, covering an area of 16,762 square kilometres was created on February 3, 1976 by the then regime of General Murtala Mohammed and it comprises of former Abeokuta and Ijebu Provinces of defunct Western State also carved out of Western Region in 1967. Its capital is Abeokuta and it is the largest city in the state. The State is bounded to the north by Osun and Oyo States, to the south by Lagos State, to the west by Republic of Benin, and to the east by Ondo State. Though covered predominantly by tropical rain forest, it has wooded savannah in the northwest The state has 20 Local Government Areas which are Abeokuta North, Abeokuta South, Ado-Odo/Ota, Ewekoro, Ifo, Ijebu East, Ijebu North, Ijebu North East, Ijebu Ode, Ikenne, ImekoAfon, Ipokia, Obafemi Owode, Odogbolu, Odeda, Ogun Waterside, Remo North, Sagamu (Shagamu), Yewa North (formerly Egbado North), and Yewa South (formerly Egbado South) and with many important cities and towns such as Abeokuta, Ijebu-Ode, Sagamu, Ikenne Remo, Ilaro, Ijebu-Igbo, Aiyetoro, among others (EncyclopaediaBritanica, n.d., and NigeriaGalleria, 2017).

4. RESULTS AND FINDINGS

4.1 Respondent's Profile

One hundred questionnaires were distributed from which ninety-one (91%) was recovered. As shown in table 1.1 below, of the 91 respondents, 58.2% were male and 41.8% were female. This expresses the ratio of male to female gender in recreational facilities in Ogun State, Nigeria. The data expresses more views from the male gender.

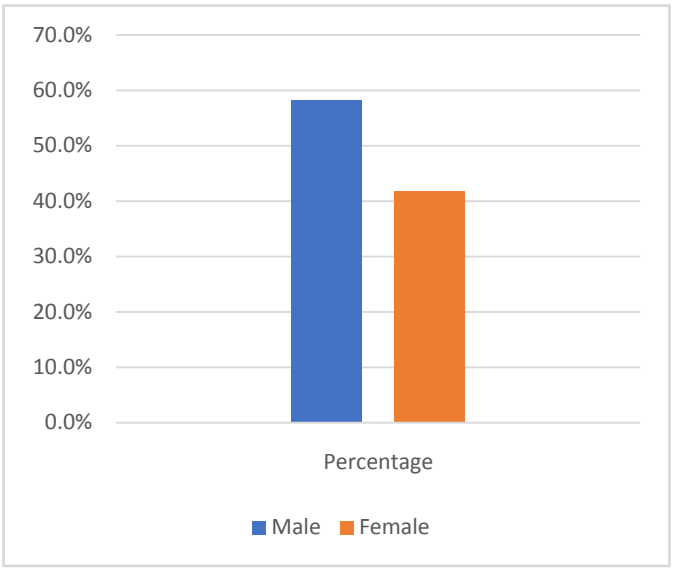

Figure 1.1: Gender of Entire Response Population

Source:Authors' field work (2019)

Table 1.2 implies that 8.8% of the respondents were 20 years old and below, 47.3% were within the range of 21 and 30 years old, 30.8% were within the range of 31 and 40 years old, 7.7% were within the range of 41and 50 years old and 5.5% were 50 years old and above. From the result, an inference can be drawn that persons within the ages of *21 and 40 years visit recreational facilities in Ogun State the most representing over 78%.*

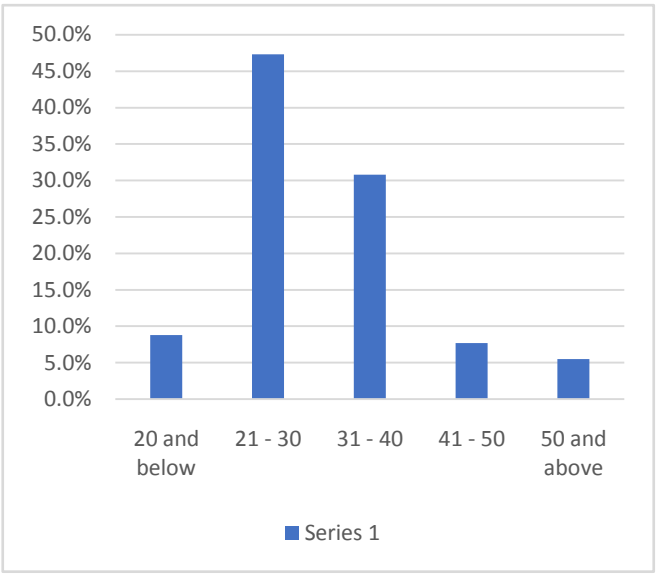

Figure 1.2:Age of Entire Response Population

Source:Authors' field work (2019)

Figure 1.3 represents the data for the highest educational degree attained by the respondents. No respondent had no formal education nor primary education as their highest level of education. 7.8% of the respondents had secondary education, 78.9% of the respondents had tertiary education and 13.3% of the respondents had post graduate education. From the results, most (over 92% of) visitors to the recreational facilities in Ogun State have tertiary level of education.

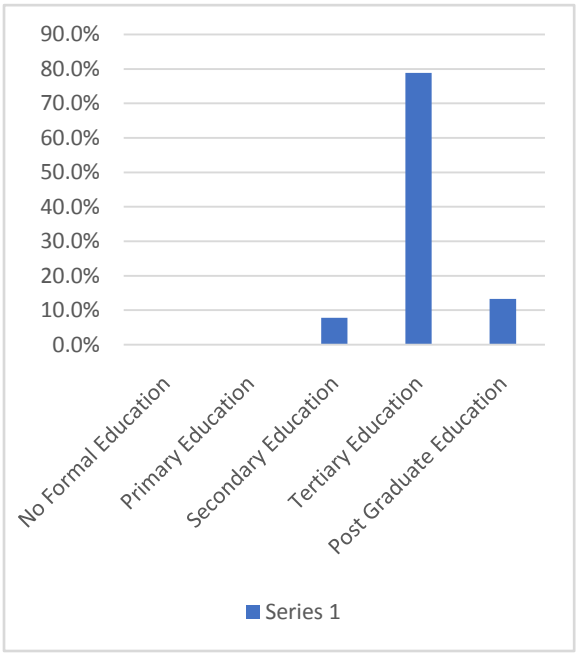

Figure 1.3:Highest Level of Education of Respondent

Source:Authors' field work (2019)

Figure 1.4 represents the data for the marital status distribution of the respondents. 53.4% of the respondents were single, 40.9% of the respondents were married, 1.1% of the respondents were divorced, 2.3% of respondents were single parents and 2.3% were others. From the results, most (over 94%) of the users of the recreational facilities in Ogun State are either single or married.

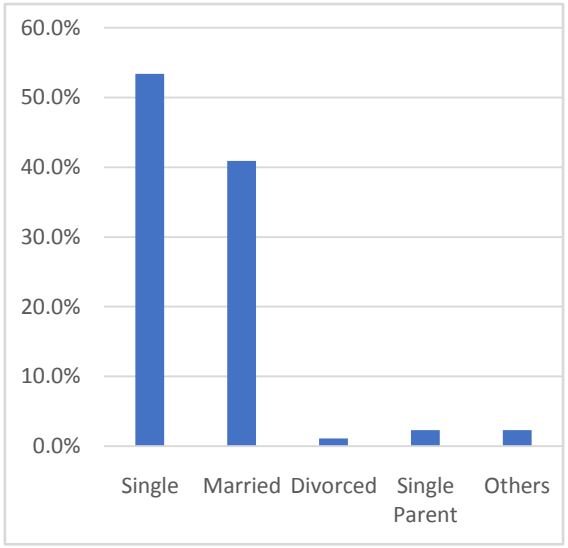

Figure 1.4: Marital Status Distribution of Entire Response Population

Source:Authors' field work (2019)

4.2 Examine the perception of users towards the need for Universal Design in Recreation Centres.

The aim of this study, is to examine the perception of users towards the need for Universal Design in Recreational Centres. Table 1.2 represents the data for the number of persons with disabilities amongst the respondents. 6.6% of the respondents have a disability, 93.4% of the respondents do not have a disability. From the results, only about 6.6% of the recreational facilities users in Ogun State have a disability.

Table 1.2: Persons with Disabilities amongst the Entire Response Population

		Frequency	Valid Percent
Valid	Yes	6	6.6

	No	85	93.4
	Total	91	100.0

Source:Authors' field work (2019)

Table 1.3 represents the data for knowledge of number of persons with disabilities amongst the respondents. 54.9% of the respondents know people that have disabilities, 45.1% of the respondents do not know people that have disabilities. From the results, 54.9% of the recreational facilities users in Ogun State know people that have a disabilities which is greater than half of the total.

Table 1.3: Respondents that Know Persons with Disabilities amongst the Entire Response Population

		Frequency	Valid Percent
Valid	Yes	50	54.9
	No	41	45.1
	Total	91	100.0

Source:Authors' field work (2019)

Table 1.4 represents the data for the number of respondents that think anyone should be able to access a space irrespective of their disabilities. Majority (94.4%) of the respondents think anyone should be able to access a space irrespective of their disabilities, 5.6% of the respondents do not think anyone should be able to access a space irrespective of their disabilities.

Table 1.4:Respondents that think anyone should be Able to Access a Space Irrespective of their Disabilities amongst the Entire Response Population

		Frequency	Valid Percent
Valid	Yes	84	94.4
	No	5	5.6
	Total	89	100.0
Missing	System	2	
Total		91	

Source:Authors' field work (2019)

Table 1.5 represents the data for the number of respondents that think anyone should be able to use a space irrespective of their disabilities. Majority (88.8%) of the respondents think anyone should be able to use a space irrespective of their disabilities, 11.2% of the respondents do not think anyone should be able to use a space irrespective of their disabilities.

Table 1.5:Respondents that think anyone should be Able to Use a Space Irrespective of their Disabilities amongst the Entire

Response Population

		Frequency	Valid Percent
Valid	Yes	79	88.8
	No	10	11.2
	Total	89	100.0
Missing	System	2	
Total		91	

Source:Authors' field work (2019)

Table 1.6 represents the data for the amount of respondents that think persons with disabilities should be considered when designing recreation centres. Majority (97.8%) of the respondents think persons with disabilities should be considered when designing a recreation centre, 2.2% of the respondents do not think persons with disabilities should be considered when designing Recreation Centres.

Table 1.6: Respondents that think Persons with Disabilities should be considered when designing Recreation Centres amongst the Entire Response Population

		Frequency	Valid Percent
Valid	Yes	89	97.8
	No	2	2.2
	Total	91	100.0

Source:Authors' field work (2019)

Table 1.7 represents the data on Overall perception of Users towards the Need for Universal Design in Recreational Centres. Majority (91.0%) of the respondents had at least high perception (1 to 4) of the Need for Universal Design in Recreational Centres, while 9.0% of the respondents had at most neutral to very low perception (5 to 10).

Table 1.7:Respondents Overall perception of Users towards the Need for Universal Design in Recreational Centres

		Frequency	Valid Percent	Group Percent
Valid	1	61	68.5	79.7
	2	10	11.2	
	3	8	9.0	11.3
	4	2	2.3	
	5	2	2.3	3.4
	6	1	1.1	
	7	2	2.3	3.4
	8	1	1.1	
	9	1	1.1	2.2
	10	1	1.1	
	Total	89	100.0	100.0
Missing	System	2		
Total		91		

Source:Authors' field work (2019)

5. SUMMARY AND CONCLUSION

5.1 Summary of Findings

The results showed that although 54.9% of recreation centre users know persons with disabilities, only 6.6% of users of the recreational facilities in Ogun State had disabilities. From these results, an inference can be drawn that, there are very low (6.6%) patronage of recreational facilities by the physically challenged persons in in Ogun State. In addition, at least 88.8% of recreational facilities users think anyone should be able to access and use a space respectively. Majority (97.8%) of recreational facilities users think persons with disabilities should be considered when designing Recreation Centres. It was clear from the results that the users of recreational facilities in Ogun State have a high perception of the need of Universal Design in Recreation Centres.

5.2 Conclusion

The users of the recreational facilities in Ogun State, Nigeria have high perception of the need for Universal Design in Recreation Centres. Although, the recreational facilities adopted fairly Universal design principles, these principles were not adopted extensively enough to provide accessibility, usability and understanding for all possible users irrespective of their disabilities. The physical barrier to access, use and understanding posed a social barrier which prevents the social sustainability of possible users of the facilities from the community and its environment irrespective of their disability status.

RECOMMENDATIONS

Based on the findings from this study, the followings are recommended:

The management of recreational facilities should incorporate features required to meet the accessibility and usability needs of all its users regardless of their disabilities.

The management of and architects involved in the design of recreational facilities should ensure the adaptation of Universal Design parameters in line with the Universal Design principles in the design of facilities for improved accessibility, usability and understanding of these facilities for the widest possible range of users.

AREAS FOR FUTHER STUDIES

i. Importance of Universal Design and its involvement in promoting Social Sustainability in Recreation Centres in south-west Nigeria.

ii. Importance of Universal Design and its involvement in promoting Social Sustainability in Recreation Centres in Nigeria.

iii. Users Perception On Need For Universal Design in Recreation Centres in south-west, Nigeria.

iv. Users Perception On Need For Universal Design in Recreation Centres in Nigeria.

CONFLICTS OF INTEREST

There are no conflicts of interests to declare.

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APPENDIX

QUESTIONNAIRE

A Study on the perception of users on need for universal design in recreation centres in Ogun State, Nigeria

Dear Respondents,

This questionnaire is designed to collect information to identify the perception of users towards the need for Universal Design (design for all irrespective of abilities or disabilities) in Recreational Centres. Findings of this study will enable the researcher to analyse the importance of Universal Design and its involvement in promoting social sustainability in Recreational Centres. Please kindly give your sincere responses to the following questions. All information will be used strictly for academic purposes and treated with absolute confidentiality.

Thank you for your anticipated cooperation.

Instruction: Please tick [✓] or fill as appropriate.

Section A:

1. Recreational facility: OOPL [ ] Hi-impact Planet [ ] Olumo rock [ ] Dalco Plaza [ ]
2. Gender: Male [ ] Female [ ]
3. Age of Respondent: 20 and below [ ] 21-30 [ ] 31-40 [ ] 41-50 [ ] 51 and above [ ]
4. Marital Status: Single [ ] Married [ ] Divorced [ ] Single parent[ ] Others[ ]
5. Highest Level of Education: No formal education [ ] Primary education [ ] Secondary education [ ] Tertiary education [ ] Post graduate education [ ]

Section B: Perception of Users towards the Need for Universal Design in Recreational Centres

Please tick [✓] as appropriate

SN		**Yes**	**No**
6.	Do you have a disability?		
7.	Do you know anyone that has a disability?		
8.	Do you think anyone should be able to access a space irrespective of their disabilities?		
9.	Do you think anyone should be able to use a space irrespective of their disabilities?		
10.	Do you think people with disabilities should be considered when designing recreation centres?		

11. Please rate the Users Overall perception from '1 to 10', where '1' is the highest and '10' is the least.

Description	1	2	3	4	5	6	7	8	9	10
Overall perception of Users towards the Need for Universal Design in Recreational Centres										

Section C: Importance of Universal Design and its Involvement in Promoting Social Sustainability in Recreational Centres

12. How often do you visit this recreational facility? Always [ ] Often [ ] Sometimes [ ] Rarely[ ] Never [ ]

13. Why do you visit this recreational facility?

Please tick [✓] as many as applies

To relax alone or with family	Always	Often	Sometimes	Rarely	Never
To meet friends and socialize					
To enjoy the peaceful environment					
To celebrate special occasions					
For its cultural significance					
For events					
For sports					
For meetings					
For others					

If others please list …….....

Please tick [✓] as appropriate

SN		**Yes**	**No**
14	Does this recreational facility help to improve your well-being?		
15	Is this recreational facility safe?		
16	Can everyone (including people with disabilities) access this recreational facility?		
17	Can everyone (including people with disabilities) use this recreational facility?		