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Accessibility and patronage of urban open spaces in a south-western Nigeria city

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ACCESSIBILITY AND PATRONAGE OF URBAN OPEN SPACES IN A SOUTH-WESTERN NIGERIA CITY.

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ABSTRACT

This paper examines the patronage and utilization of urban open spaces in Osogbo, Nigeria. Data were obtained through a multi-stage sampling technique. The study area was divided into high, medium and low density areas and 553 (5%) of buildings were systematic selected from 11,022 buildings identified through preliminary survey and satellite images. One teenager and two adults (a male and female) were selected in each building resulting in the total sample size of 1,659.

Information on respondent's socio-economic characteristics, frequency of utilization open spaces, travel time, means of transportation and time spent in open spaces were obtained from the questionnaire. Descriptive and inferential statistics were used to analyze the data.

The results show that most of the respondents (60.8%) were occasional users of open spaces, 2.2% of respondents never used the open spaces while 37% were frequent users. In addition, the most frequently used open space was the neighborhood park (42.1%), followed by school playgrounds (39.2%) and pocket parks (32.7%). Incidental open spaces had the lowest proportion of patronage (20.9%). The longest duration of use occurred in school playgrounds while the neighbourhood park was the most accessible to the respondents. The frequency of use varies across typologies and residential densities. The mean travel time of respondents across all open spaces was 13.62 seconds, the variations in travel time across typologies were not statically significant ($F=3.802$, $p=.010$). Recommendations to make open spaces more accessible were suggested.

Keywords: Proximity, Accessibility, Open space utilisation, Open space typologies, Urban neighbourhoods.

1. INTRODUCTION.

Urban open spaces are multifunctional in nature because they are avenues through which people are able to interact with nature, recreate and socialise (Omoleke, 2012). They exist in various forms in the urban environment. Common classifications of open spaces include parks, gardens, school playgrounds, amenity space, incidental space, recreational space, plazas and streets (Stanley et al., 2012; Aziz, 2012; Schipperijn, 2010; Mell, 2010). However, in most developing countries like Nigeria, school playgrounds are the most common open space typology (Ajayi, 2018). Open spaces have different characteristics or attributes which can also be used for classification. These are sizes, aesthetics, facilities, amenities and conditions of open spaces.

The fact that various open spaces in the urban environment influence human health and well-being, physical, social and psychological, community, and sustainable environment is well reported in literature (Wolf, 2010; Regional Public Health, 2010; Bell et al., 2008). Access to open spaces, such as parks, playgrounds and recreational facilities are particularly important for children and young people. This is because children who have better access to such safe

places are more likely to be physically active, and less likely to be overweight, compared to those living in neighbourhoods with reduced access to such facilities (Croucher et al., 2007).

Despite the substantial evidence on which attributes influence the use of open spaces, there are contradictions in these studies. For example, a large number of studies report residential proximity to open spaces as the most important attribute that influences use (Jahdi and Khanmohamad, 2013; Lachwycz, 2013; Witten et al., 2008; Regional Public Health, 2010; Abraham et al., 2010). It is well reported in literature that the rate of use decreases as distance increases from open spaces (Sotoudehnia, 2013; Ord, 2013; Kellet and Rofe, 2009; Cohen et al, 2007). In contrast to these submissions, some studies conclude that residents choose to visit open spaces that they find most attractive, well maintained and safe rather than the nearest ones (Forounzade and Motallebi, 2012; Sugiyama et al., 2010; Coorey, 2007). In the same vein, Schipperijn, (2010) concluded that distance to green spaces is not a limiting factor for the majority of the Danish population. Beany (2009), reported that people generally employ an incidental way of using open space, that is open spaces are often not destinations in themselves, but generally, used on the way to somewhere else. Hence, it remains largely

unclear the whether the distance of residents to open spaces might influence their patronage in the Nigerian context.

2.0 LITERATURE REVIEW

One of the most studied attributes of open space is proximity or accessibility. In simple terms, accessibility is a concept that measure the distance between individuals and some other physical entities in the geographical space. Accessibility is the ease with which people can reach desired activity sites, it has been widely used as an important indicator to evaluate the extent to which planning has been able to adequately respond to population’s demand for urban open space (Johnston et al., 2009). Coorey (2007) construed travel time, proximity to residents, good visibility from streets, shortest network paths, Euclidean-straight line distance, coverage method and public space dispersion as common accessibility measures. Research on distance of open spaces from respondents’ homes either objectively or by self-report or both ways have been employed to by scholars (Lestan et al., 2014; Jahdi and Khanmohamad, 2013; Witten et.al, 2008).

Lachowycz (2013), studied the relationship between open spaces and use. Results showed that living nearer open space is associated with recording more physical activity within it (for children) and higher levels of recreational walking (for adults). There is also evidence that the distance from open space is associated with use and physical activity (Kaczynski et al., 2008). This suggests that creating more open spaces within walking distance may increase use and physical activity of residents (McCormack et al.,2010).

However, residents’ preferences may influence their opinion for not using the nearest open spaces. Sotoudehnia (2013) explored the spatial and social analysis of green space in Leicester, UK, results showed that 31% of the participants travel to open spaces rather than using their local facilities and that the route respondents took to their preferred open space were not the shortest path as determined by a GIS-based network analysis. In another related study significant relationship between people age, occupation, car ownership, actual travel time and mode of travel with the frequency of use was reported (Sotoudehnia and Comber, 2011). The study concluded that access and access perceptions are related to a number of different but significant factors, including spatial, environmental and socio-demographic factors and are reflected in respondents’ preferences.

Wang et al. (2013) posits that accessibility is a complex concept, difficult to define and more difficult to measure. As presented in Figure 1, accessibility goes beyond place and geographic boundaries (Wang et al.,2013). The framework shown in Figure 1 consists of four major components: people accessibility, perceived accessibility, place use/non-use behaviour and place accessibility.

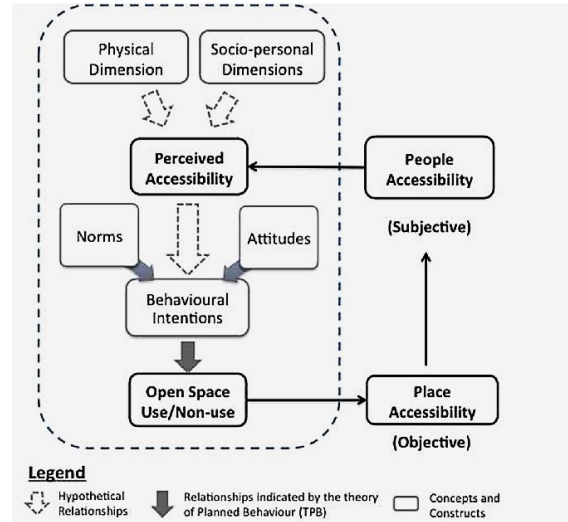


Figure 1: The Integrative Framework for Urban Open Space Accessibility
Source: Wang et al., (2013).

Although no universal standard exists, studies on accessibility generally shows that distance from place of residence to nearest open space should be between 0.4km and 0.8km in a neighbourhood. This is considered to represent a walkable distance (Brunnet et al., 2012; Kellet and Rofe, 2009; Cohen et al., 2007b). Beyond this distance threshold, the literature advances that willingness to travel declines with a corresponding impact on physical activity rates in such open space.

Although most studies on open spaces are inclined towards accessibility, other factors have been attributed to affect use of open spaces. For example, attributes such as personal safety, aesthetics, amenities and maintenance are important for encouraging open space use (McCormack et al. 2010). It also reported that perceptions of the social environment entwine inextricably with perceptions of the physical environment. Similarly, in a study carried out by Coorey (2007), social qualities such as interaction, privacy, safety and crowding were reported to be significant in a study of open spaces in high density zones of public housing estates in Hong Kong.

A study shows that having something beautiful or interesting to look at while visiting an open space can

be a powerful motivator for patronage (Bedimo-Rung et al., 2005). Some studies have suggested aesthetics of open space as the most important attribute that influence use. For instance, Sugiyama et al. (2010) posits that attractiveness of open space may be more important for physical activity than is size or number of open spaces alone. Thus, simply increasing the numbers of open spaces in neighbourhoods may not be effective in promoting residents' use, unless it has features that make them attractive.

In a qualitative review of the characteristics of open space associated with use and physical activity, presence of trees and hedges, flowers, grass, flowers, natural settings, water features, presence of distinctive smell in open spaces were attributed as aesthetic qualities (McCormack et al., 2010).

3.0 METHODOLOGY

This study used a survey research method. Primary data were obtained through a multi-stage sampling technique. The study area was divided into high, medium and low density areas and 553 (5%) of buildings were systematic selected from 11,022 buildings identified through preliminary survey and satellite images. One teenager and two adults (a male and female) were selected in each building resulting in the total sample size of 1,659. A set of pre-tested questionnaire designed to elicit information on respondent's socio-economic characteristics, frequency of utilization open spaces, travel time, means of transportation and time spent in their most utilized open spaces were administered on the respondents. Respondents were requested to indicate the neighbourhood open space they regularly used, and this was done to identify the location in addition to the frequency of their activities. Respondents evaluated the frequency of use on a 3-point likert scale: never, occasionally, frequently and always. Percentages were used to present the proportion of residents who were frequent users of open spaces (always + frequently), occasional users and those that never used the neighbourhood open space. Descriptive and inferential statistics were used for data analysis.

4.0 DISCUSSION OF FINDINGS

4.1 Demographic characteristics of respondents

Gender classifications of the respondents as depicted in Table 1 reveals that 54.5% of the total respondents in the study area were male while 45.5% were female. The results show that 50.9% were single, 42.7% were married, 2.1% were divorced, 2.9% were widowed and 1.3% were separated.

Table 1: Demographic characteristics of respondents

		Total
Gender	Male	689 (54.5%)
	Female	576 (45.5%)
	Total	1265 (100.0%)
Age	14-19 Years	320 (25.3%)
	20-40 Years	588 (46.5%)
	41-65 Years	344 (27.2%)
	65 And Above	13 (1.0%)
	Total	1265 (100%)
Marital status	Single	643 (50.9%)
	Married	540 (42.7%)
	Divorced	27 (2.1%)
	Widowed	37 (2.9%)
	Separated	17 (1.3%)
	Total	1265 (100%)

4.2. Frequency of use of neighbourhood open spaces

Overall, as presented in Table 2, the results show that most of the respondents (60.8%) were occasional users of open spaces, 2.2% of respondents never used open spaces while 37% were frequent users. This means that open spaces are used by people although not frequently by most, but by at least a third. The low frequency of activities reported in neighbourhood open spaces might be related to the likely fact that residents used other types of spaces like stadiums, gymnasium, streets, events centres and residential open spaces. This relatively low level of utilisation of open spaces in the city is similar to the findings of Simon (2015). The implication of this is that most residents in the city do not use neighbourhood open spaces frequently. This also suggests that respondents might not be taking full advantage of the health benefits possible from neighbourhood open spaces. Chi square results revealed statically significant variations in pattern of use across the residential densities ($\chi^2 = 45.133$, $df = 6$, $p < 0.001$).

The most frequently used open space typology by respondents in the city was the neighborhood park (42.1%), this was followed by school playgrounds (39.2%) and pocket parks (32.7%). The incidental open spaces had the lowest proportion of frequent use (20.9%).

Table 2: Frequency of utilization in typologies of open spaces

Open Space Typology	Frequency of use	Residential Density			Total	χ^2
		High	Medium	Low		
Playgrounds	Never	4(0.9%)	6(2.6%)	4(3.3%)	14(1.8%)	.000
	Occasionally	231(53.1%)	149(65.6%)	83(68.0%)	463(59.1%)	
	Frequently	141(32.4%)	38(16.7%)	17(13.9%)	196(25.0%)	
	Always	59(13.6%)	34(15.0%)	18(14.8%)	111(14.2%)	
	Total	435(100.0%)	227(100.0%)	122(100.0%)	784(100.0%)	
Neighbourhood Park	Never	4(4.3%)	0(0.0%)	1(6.7%)	5(4.4%)	.198
	Occasionally	45(47.9%)	4(80.0%)	12(80.0%)	61(53.5%)	
	Frequently	28(29.8%)	1(20.0%)	2(13.3%)	31(27.2%)	
	Always	17(18.1%)	0(0.0%)	0(0.0%)	17(14.9%)	
	Total	94(100.0%)	5(100.0%)	15(100.0%)	114(100.0%)	
Incidental Open Space	Never	0(0.0%)	3(3.3%)	0(0.0%)	3(2.3%)	.122
	Occasionally	26(68.4%)	73(80.2%)	0(0.0%)	99(76.7%)	
	Frequently	10(26.3%)	10(11.0%)	0(0.0%)	20(15.5%)	
	Always	2(5.3%)	5(5.5%)	0(0.0%)	7(5.4%)	
	Total	38(100.0%)	91(100.0%)	0(0.0%)	129(100.0%)	
Pocket Park	Never	0(0.0%)	0(0.0%)	1(3.8%)	1(2.9%)	.076
	Occasionally	4(50.0%)	0(0.0%)	18(69.2%)	22(64.7%)	
	Frequently	1(12.5%)	0(0.0%)	6(23.1%)	7(20.6%)	
	Always	3(37.5%)	0(0.0%)	1(3.8%)	4(11.8%)	
	Total	8(100.0%)	0(0.0%)	26(100.0%)	34(100.0%)	
Total	Never	8(1.4%)	9(2.8%)	6(3.7%)	23(2.2%)	.000
	Occasionally	306(53.2%)	226(70.0%)	113(69.3%)	645(60.8%)	
	Frequently	180(31.3%)	49(15.2%)	25(15.3%)	254(23.9%)	
	Always	81(14.1%)	39(12.1%)	19(11.7%)	139(13.1%)	
Total	Total	575(100.0%)	323(100.0%)	163(100.0%)	1061(100.0%)	

The proportion of frequent users of school playgrounds was 39.2%, while 59.1% were occasional users while 1.8% of respondents never used the playgrounds in the last 6 months. The neighbourhood park had 42.1% of frequent users in the city, 53.5% of respondents visited the park occasionally, whereas 4.4% stated they never visited it in the last 6 months. The proportion of respondents who used incidental spaces frequently, occasionally and those that never used these spaces in the city were 20.9%, 76.7% and 2.3% respectively. Results also show that 2.9%, of respondents in the city never used the pockets parks in

the last 6 months while 64.7% and 32.4% respondents were occasional and frequent users of pockets parks. In addition, statically significant variations were recorded in the respondents' frequency of use in the four types of open spaces across the residential densities in the city ($\chi^2 = 32.207$ df = 6, $p < 0.001$). The highest frequently used was the neighbourhood park while the least was incidental open spaces. This finding is similar to the results of direct observations which showed that the neighbourhood park was the most utilised open space in the city. This finding corroborates Schipperijn (2010) which asserts that parks are the most visited open spaces in Denmark.

4.3 Time spent in neighbourhood open spaces.

From literature review, time spent in open spaces is a good indicator of how the users find the open spaces useful. In this study responders were asked to state the amount of time spent (in hours) on each visit to their mostly utilized open space. For ease of analysis, three categories of users were classified. Short-time users (1-2 hours per visit), medium- time users (3-4 hours) and long-time users (5-7 hours). The results show a prevalence of short-time open space users in the city (63.6%), the proportion of respondents that spent between 3-4 hours and 5-7 hours respectively in neighbourhood open spaces were 32.3% and 4.1%.

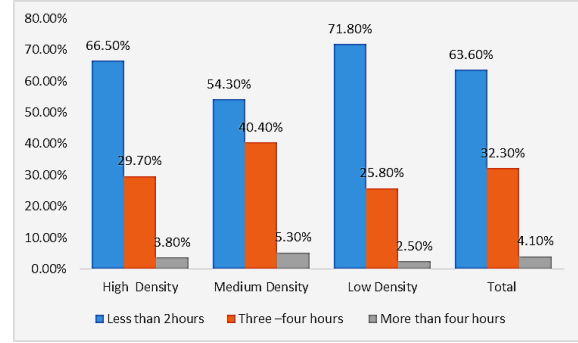


Figure 3: Time spent in neighbourhood open spaces.

The results also show that respondents in the low density area had the highest portion of users (71.8%) that spent less than 2 hours in their neighborhood open spaces. Further analysis was done to ascertain if variations existed in the time spent by respondents across various open space typologies. The results are presented in Table 3.

Table 3.: Time spent in neighbourhood open space typologies

Open Space Typology	Duration (hours)	Residential Density			Total	χ^2
		High	Medium	Low		
School Playground	1-2	284(65.6%)	107(47.3%)	89(73.0%)	480(61.5%)	.000
	3-4	129(29.8%)	104(46.0%)	29(23.8%)	262(33.5%)	
	5-7	20(4.6%)	15(6.6%)	4(3.3%)	39(5.0%)	
	Total	433(100.0%)	226(100.0%)	122(100.0%)	781(100.0%)	
Neighbourhood Park	1-2	62(66.0%)	3(60.0%)	12(80.0%)	77(67.5%)	.590
	3-4	31(33.0%)	1(20.0%)	3(20.0%)	35(30.7%)	
	5-7	1(1.1%)	1(20.0%)	0(0.0%)	2(1.8%)	
	Total	94(100.0%)	5(100.0%)	15(100.0%)	114(100.0%)	
Incidental Open Space	1-2	30(78.9%)	65(71.4%)	0(0.0%)	95(73.6%)	.168
	3-4	8(21.1%)	25(27.5%)	0(0.0%)	33(25.6%)	
	5-7	0(0.0%)	1(1.1%)	0(0.0%)	1(0.8%)	
	Total	38(100.0%)	91(100.0%)	0(0.0%)	129(100.0%)	
Pocket Park	1-2	5(62.5%)	0(0.0%)	16(61.5%)	21(61.8%)	.023
	3-4	2(25.0%)	0(0.0%)	10(38.5%)	12(35.3%)	
	5-7	1(12.5%)	0(0.0%)	0(0.0%)	1(2.9%)	
	Total	8(100.0%)	0(0.0%)	26(100.0%)	34(100.0%)	
Total	1-2	381(66.5%)	175(54.3%)	117(71.8%)	673(63.6%)	.001
	3-4	170(29.7%)	130(40.4%)	42(25.8%)	342(32.3%)	
	5-7	22(3.8%)	17(5.3%)	4(2.5%)	43(4.1%)	
	Total	573(100.0%)	322(100.0%)	163(100.0%)	1058(100.0%)	

The results show that the longest duration of use (more than 4 hours) occurred in school playgrounds. It became evident that among the respondents that used school playgrounds, 61.5% spent less than 2 hours, and 33.5% and 5% spent 3-4 hours and more than 4 hours respectively. This might indicate that respondents find it most suitable for multipurpose uses such as vigorous physical activities and avenues for social events in the neighborhoods.

Open space utilisation in groups or alone

Duration and types of activities of respondents in open spaces can be related to whether the respondents used open spaces alone or in the company of others. Respondents were asked to state if they used open spaces in a group, alone or both (group and individual use) in the past 6 months. From the summary presented in Figure 3, most (47%) of the respondents in the city used the open space in a group while only 19% of respondents used open spaces alone.

Findings show that the patterns of open space utilisation differed by typology (Figure 3). The results show that pocket parks had highest proportion (24.2%) of respondents that used the open space alone while the neighbourhood park had the least (16.7%). This suggests that attributes of pocket parks may encourage more individual activities than other type of open spaces.

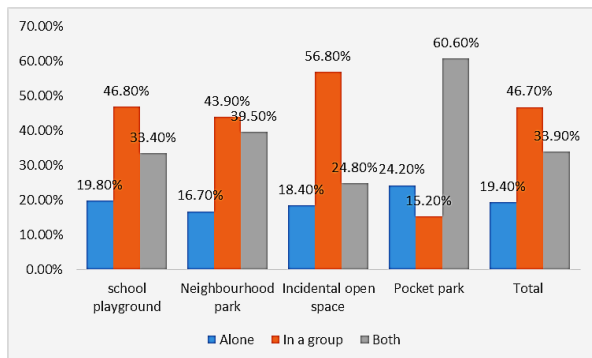


Figure . 3: Pattern of open space utilisation by typologies

4.5 Accessibility of neighbourhood open spaces

Respondents were asked to indicate approximate time taken to get to the most utilised open spaces in their neighbourhood in minutes, this was used to estimate ease of access. Two levels of analyses were done. The first level was the computation of mean, minimum and maximum travel time in minutes using the raw values supplied by respondents. Subsequently, the values

were put into categories for frequencies and percentages to discover the amount of time taken by respondents to travel to various typologies of open spaces in their residential densities. Table 4 shows the summary of travel time(s) in the study area. Results show that the minimum, maximum and mean travel time were 1, 50 and 13.6 minutes respectively.

Table 4: Travel time of respondents' visits to open spaces

Travel time minutes	High Density	Medium Density	Low Density	Total
Minimum time	1	1	2	1
Maximum time	50	45	45	50
Mean time	14.23	12.30	13.91	13.60
Standard Deviation	8.6	6.4	7.2	7.8

Significant variations were found in the travel time across residential densities according to the results of One-way ANOVA ($F=6.370$, $p=.002$). The mean travel time in high, medium and low densities were 14.2, 12.3 and 13.9 minutes respectively. This indicates that time taken to get to open spaces differed across the densities. The medium density had the lowest travel time (12.3 minutes), this may be due to the fact that the frequency of incidental open spaces observed in the city was highest in this residential area. It is therefore likely that residents had more choices of open spaces to utilise in the medium density area and also these spaces were close by. This also suggests that residents of the medium density area are likely to visit their chosen open spaces more than other residents and may perform more activities there.

In addition, figure 4 shows travel time of respondents to various open space typologies. The overall findings reveal that most of respondents (55.3%) spent less than 15 minutes to get to their open spaces locations in the city. Only 18.9% of respondents spent more than 30 minutes to access open spaces in the city. Results also indicate that 56.0%, 57.9%, 50.0% and 50.0% of respondents spent less than 15 minutes to get to the playgrounds, the neighbourhood park, incidental open space and pocket parks respectively. These findings suggest that the neighbourhood park was the most accessible for the respondents who used it.

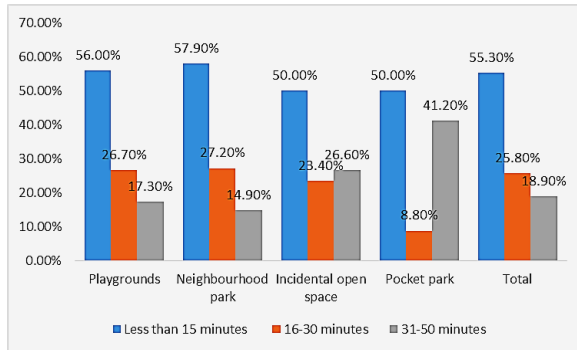


Figure 4: Travel time of respondents' visits to open spaces

In summary, these findings suggest that open spaces in the city were accessible because the reported average travel time to open spaces by most of the respondents was less than 15 minutes which is the maximum distance threshold in literature (Brunnet et al., 2012; Kellet and Rofe, 2009; Cohen et al., 2007; Obateru, 2003).

4.6 Respondents' means of transportation to open space

The level of accessibility of open spaces can also be measured by the forms of transport the respondents used to get to open space locations. Basically, transportation means can be motorised and non-motorised. As presented in Table 6, findings show that 35.7% of residents assessed open spaces by foot, while 33%, 19.6% and 11.7% of respondents' modes of transportation to open spaces in the city were motorbikes, cars and buses respectively.

According to the chi-square test results statically significant variations exist in the means of access across residential densities ($\chi^2 = 39.482$, $df = 6$, $p < 0.001$). It was observed that non-motorised means of transportation (foot) to open spaces was the highest in the city. Results also show that the proportions of

respondents in this category were 38.4%, 31.6% and 34.2% in the high, medium and low density areas respectively.

Table 5: Respondents' Means of transportation to open spaces

Means of transportation	Residential Density			Total
	High	Medium	Low	
Foot	224(38.4%)	101(31.6%)	55(34.2%)	380(5.7%)
Motorbike	205(35.2%)	111(34.7%)	35(21.7%)	351(3.0%)
Car	91(15.6%)	61(19.1%)	57(35.4%)	209(9.6%)
Bus	63(10.8%)	47(14.7%)	14(8.7%)	124(1.7%)
Total	583(100.0%)	320(100.0%)	161(100.0%)	1064(100%)

$\chi^2 = 39.482$, $df = 6$, $p < 0.001$

The prevalence of non-motorised mode of access suggests that most neighbourhood open spaces were within walkable distance from respondents and thus very accessible. This high percentage of residents walking to open space may also be connected to the high proportion of teenagers and youths who have high energy and physical strength.

4.7 Pattern of respondents' trips to neighbourhood open spaces

Presented in Table 6, are the origins of residents trips made to neighbourhood open spaces in the city. Findings show that overall, most (57%) of respondents set out for open spaces from their residential homes while small proportions: 13.5%, 11.3%, 11.2%, 4.5% and 2.5% of residents set out from work, shops, school, church and mosque respectively. Therefore, respondents' homes were the most common origins for these open spaces.

Table 6: Origin of respondents' trips to neighbourhood open spaces

Origin of respondents' trips	Residential Density			Total
	High	Medium	Low	
Home	354(60.8%)	184(57.7%)	68(41.7%)	606(57.0%)
Work	67(11.5%)	46(14.4%)	31(19.0%)	144(13.5%)
Shops	66(11.3%)	34(10.7%)	20(12.3%)	120(11.3%)
School	53(9.1%)	30(9.4%)	36(22.1%)	119(11.2%)
Church	23(4.0%)	21(6.6%)	4(2.5%)	48(4.5%)
Mosque	19(3.3%)	4(1.3%)	4(2.5%)	27(2.5%)
Total	582(100.0%)	319(100.0%)	163(100.0%)	1064(100%)

Results also show that a higher proportion of the respondents in the high density (60.8%), medium density (57%) than those in low density (41.7%) set out to open spaces from their homes. A breakdown of the respondents that used open spaces on their way to workplaces show very few proportions. Only 19%, 14.4% and 11.5% of respondents in the low, medium and high density areas were in this group. In addition, it is interesting to note that only 11.3% of respondents' trips to open spaces in the city originated from shops.

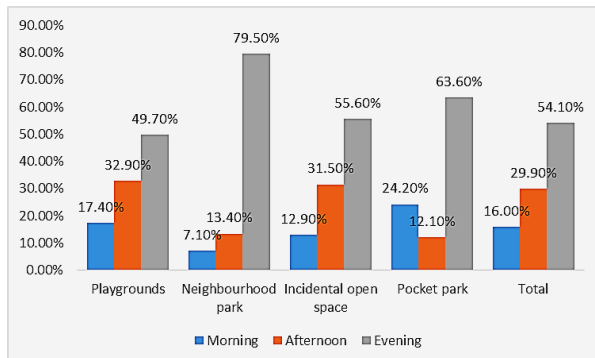


Figure 5: Period of respondents' visits to neighbourhood open spaces

Results on the respondents' time of trips to open space typologies are shown in Figure 5. Findings, overall show that most respondents (54.1%) used the open spaces in the evening. About a third of the population (29.9%) patronised open spaces in the afternoon and very few (16.0%) of respondents in the study area utilised open spaces in the morning. This pattern of use was very similar across the different types of open spaces except the pocket park where there were more morning users than afternoon. The results also indicate that the neighborhood park had the highest proportion of evening patrons (79.5%). This was followed by pocket parks (63.6%) incidental spaces (55.6%), while only (49.7%) of respondents used school playgrounds in the evening. The observed predominance of evening visits may be connected to the high proportion of students and self-employed respondents who may have academic, economic and other forms of engagements in the morning/afternoon.

Further analysis show that out of the open space typologies, school playgrounds and incidental spaces had high proportions of utilisation in the afternoon, accounting for 32.9% and 31.5% of total respondents. On the other hand, 13.4% and 12.1% of respondents utilized neighborhood and pocket parks in the afternoon respectively. The observed relatively high usage of playgrounds and incidental spaces in the

afternoon may be related to the high percentage of teenagers and the proximity of these open spaces. This result suggests that parks and incidental spaces were mainly used in the evening while playground are used in the afternoon by respondents.

5.0 CONCLUSION

Despite the closeness of quite a number of open spaces to residents, only few use them regularly. This study asserts that proximity to locations of urban open spaces does not necessary stimulate increased patronage in this context. It is therefore possible that other factors may be responsible for the residents' occasional utilisation of open spaces in Osogbo. Further studies are needed to investigate the factors influencing utilisation patterns of urban open spaces.

The low level of patronage observed in the study area can be improved if government, health and religious organisations can sensitise the public on the positive health potentials of outdoor activity. Outdoor programmes or competitions that promote activities for all age groups especially children, women and the aged should be organised by private and public organisations in the neighbourhoods. This will provide social support and encouragement for a more active living. In addition, mixed land use that prioritizes the safety of pedestrians' en-route open spaces and integrates other land use types in the neighbourhood should be embraced by architects.

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