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EARLY VIEW

# **Exploring the Temporary Appropriation of Marginal Open Spaces in Urban Residential Neighbourhoods**

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## **Abstract**

Open spaces are essential to the liveability of urban residential neighbourhoods. While formal open spaces, including neighbourhood parks, have been extensively studied for their environmental and social values, there is scanty research on marginal open spaces' potential uses and benefits. Drawing on an empirical study of residential neighbourhoods in a Nigerian urban centre, this study explores the temporary appropriation of marginal open spaces. The study adopts a mixed-method approach using a questionnaire survey, photographic recordings, observations, open space measurements, and interviews with local planning authorities (LPAs). Findings showed that marginal spaces exist in various types and forms, including open areas along neighbourhood streets and stream corridors. The three major types of temporary appropriation in the residential neighbourhoods were informal commerce, leisure/social pursuit, and sacralisation (religious activity). The most critical concerns regarding open space appropriation, measured on a five-point Likert scale, were lack of safety, absence of tree cover/shade, and stench from uncollected waste, with scales of 4.92, 4.68, and 4.42, respectively. Information gathered from the LPAs also showed that the users violated the planning regulations guiding the marginal spaces. The study concluded that although the temporary use of open spaces in residential neighbourhoods is essential for improving the residents' livelihoods and socio-cultural lives, the practice is fraught with several challenges. Consequently, practical policy recommendations were proffered to ensure that marginal spaces are produced as desirable areas for everyday life while maintaining hygiene, safety, cleanliness, and comfort.

**Keywords:** Marginal open spaces, Temporary appropriation, Socio-spatial exclusion, Planning law, Nigeria

## INTRODUCTION

The urban population is estimated to grow to 80% of the world population by 2050, implying that 6.7 billion people will live in urban areas (United Nations, 2014). In this regard, there is an increasing interest in providing and managing open spaces to improve the liveability of urban residential environments (Villanueva *et al.*, 2015; Girma, Terefe, and Pauleit, 2019). This is because, in this age of rapid urbanisation, access to open space is essential for people's physical and mental health in residential settings. While several studies have empirically documented the environmental and social values of formal open spaces such as neighbourhood parks and gardens (Karuppannan and Sivam, 2013; Cohen *et al.*, 2013; Douglas, Russell and Scott, 2019; Cohen, Williamson and Han, 2021), marginal open spaces' potential uses and benefits have received little attention in extant research. In this respect, marginal spaces are often overlooked and undervalued in urban environments.

Marginal open spaces are incidental in nature. They are "left-over" areas that are byproducts of the processes of urban development (Garde, 1999). They are usually not meant for any specific purpose other than safety, amenity, and physical separation (Al-Hagla, 2008). Such spaces include marginal spaces along neighbourhood streets, streams and "left-over" spaces on the edges of buildings. The marginal open spaces are usually appropriated for purposes other than those they were intended for. However, some scholars noted that the temporary appropriation of marginal open spaces in residential environments could generate land-use problems and negatively affect residents' quality of life (Basorun, 2013; Abolade and Adeboyejo, 2013; Adedeji and Fadamiro, 2015; Afon and Adebara, 2022). Some arguments also favour removing informal actors, such as street vendors, from the marginal spaces in cities, as they can create undesirable outdoor areas and "urban sinks" (Yatmo, 2008; Batreau and Bonnet, 2016; Peimani and Kamalipour, 2022). The temporary appropriation of marginal open spaces for different purposes is generally considered an antithesis of modernity.

Although there are arguments against the temporary appropriation of marginal spaces in developing countries, there is a growing concern that over-management of such areas could bring about the socio-spatial exclusion of the urban poor (Devlin, 2015; Adebara, Adebara, and Badiora, 2022). Moreover, access to marginal open spaces is essential for urban residents as it can provide opportunities for physical activity and social interactions, most especially in the residential neighbourhoods of developing countries where recreational parks and other formal open spaces are short in supply (Garde, 1999; Adebara, 2022). Along this line, Lara-Hernandez, Melis, and Coulter

(2018) asserted that the temporary appropriation of open spaces could significantly create a strong bond between people and places.

Some studies have explored the temporary use of open spaces in the civic areas of cities in developing countries (Hernandez, Melis, and Coulter, 2018; Josey, Ramirez-Lovering, 2020; Adebara, 2022; Adebara, Adebara, and Taiwo, 2023). Nevertheless, more research needs to be conducted on how marginal open spaces are utilised in urban residential neighbourhoods. This is of great concern, knowing fully well that open spaces are put to diverse uses in different residential environments and consequently with physical planning implications. Therefore, this study explores the temporary appropriation of marginal open spaces in the different residential areas of a Nigerian city. The study is essential as it provides information that could guide open space management in the residential neighbourhoods of Nigerian cities and other developing countries with similar socio-economic backgrounds.

## **LITERATURE REVIEW**

This section focuses on reviewing the literature on the concept of marginal open space and the theoretical perspective of temporary appropriation. The review broadens knowledge on the subject matter and provides a theoretical base for the research.

### **Marginal Open Space**

Marginal open space is an essential feature of cities that can contribute significantly to sustainable urban development if properly managed and maintained. It can be found almost everywhere and accounts for a significant portion of urban land areas (Garde, 1999). Like formal open spaces such as parks and gardens, marginal spaces may encompass environmental, economic, and social aspects, which are fundamental sustainable urban development approaches (Gedikli, 2010). In other words, like sustainable urban development, open space also has mutually interacting social, economic, and environmental dimensions (See Figure 1). For instance, open spaces along urban streets promote safety and prevent traffic hazards. It also gives room for the future expansion of the roads and installation of utilities like pipe water, telephone, and electricity lines. This is why local planning authorities usually specify the minimum requirements for the marginal area along the streets, which may vary from place to place (Adebara, 2017).

Marginal areas are created in segments in today's cities. While each of these segments has a purpose, they constitute a distinct pattern of single open space. For instance, the planting strip, the sidewalk, the required space between property lines and the sidewalk, and the front setback of buildings

are all functionally defined segments that create a single open space (See Figure 2). A prominent pattern of open space may also be seen along streams in residential areas of developing nations owing to the strict enforcement of planning regulations (Adebara, 2019). Such spaces protect aquatic environments from excessive sedimentation, polluted surface run-off and erosion. Trees and vegetation characterize them. However, such open spaces are put to different uses outside their primary functions in residential environments (Adebara, 2019). A variety of variables has an impact on the appropriation of open spaces in urban settings.

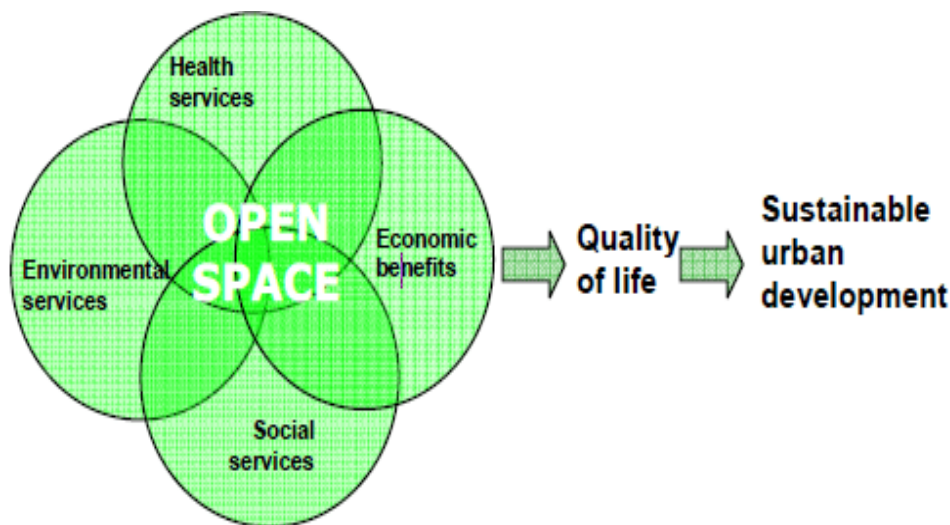


Figure 1. Benefits of open space (Adapted from Gedikli, 2010)

Some scholars have established that the difference in the use of open space can be attributed to variations in age, gender, educational status, income and race/ethnicity of the users (Yilmaz, Zengin and Yildiz, 2007, Sanesi and Chiarello, 2006, McWhorter, 2013). The research of Addas (2015) also identified gender and religious practice of the people as factors impacting the way open spaces are perceived and used in urban areas. Additionally, several environmental challenges are linked with open space utilisation in cities. For example, Okaka, Omondi and Peter (2014) documented that the common challenges associated with space utilisation are: noise and air pollution, indiscriminate dumping of refuse in spaces, littering and offensive odour from uncollected wastes. In another research, Okanlawon and Odunjo (2016) showed that the environmental problems emanating from using open spaces included: water pollution, blockage of drainage, noise pollution, congestion, defecation and urination in open spaces, motor accidents and breeding of disease vectors such as mosquitoes. The fact that the use of open spaces generates environmental problems calls for serious concern in urban areas,

especially in developing countries. As such, the use of marginal spaces should be given utmost consideration in urban studies.

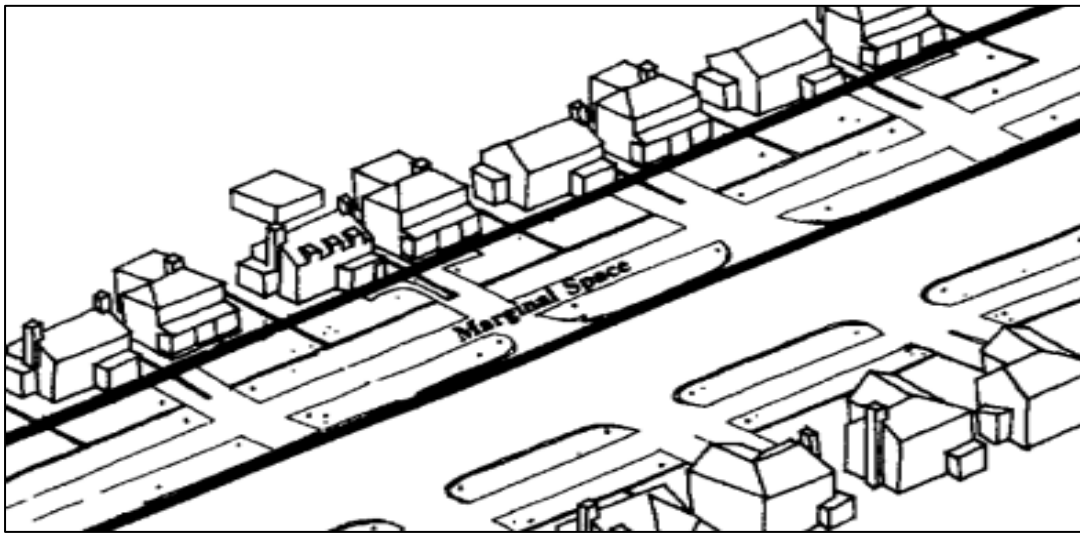


Figure 2. A cross-section of a street showing marginal space  
Source: Garde (1999)

### **Theoretical Perspective of Temporary Appropriation of Marginal Spaces**

Temporary appropriation is a relevant theoretical concept for comprehending how urban residents interact with marginal open spaces. Korosec-Serfaty (1976) initially proposed the concept in the proceedings of the Strasbourg conference. According to Korosec-Serfaty, the concept is a temporary phenomenon that entails a dynamic interaction between people and their environment (Korosec-Serfaty, 1976). Although some authors (Blanco, Bosoer and Apaolaza, 2014) have used the concept to refer to the illegal or informal use of spaces, it is ambiguous to refer to it as an illegal act because people have the right to the city. Lefebvre (1992) and Graumann (1976) argue that individuals have an innate desire to appropriate the built environment for their activities. Regarding the urban landscape, *temporary appropriation* may be defined as the interaction between people and the built environment as manifested in particular activities in open spaces (Lara-Hernández, Meli, & Caputo, 2017). One description that considers the concept's temporary nature is offered by Fonesca-Rodriguez (2015), who defines it as using spaces for activities other than those designed in urban areas.

Open spaces are settings for various activities, including religious and recreational pursuits. Not every activity, however, is a spatialised manifestation of temporary appropriation. Among the most recent studies of temporary appropriation and the built environment, the work of Lara-Hernandez et al. (2018) is notable. Drawing on the literature, Lara-Hernandez et al. (2018) developed a framework to investigate temporary appropriation in the built



environment. The forms of temporary appropriation identified in the research were informal commerce, leisure and social activities, and sacralisation.

Even though informal commerce in open spaces is typically viewed as undesirable by governments in developing nations, there is no doubt that it is a temporary appropriation of space by individuals. Leisure and social activities are also evidence of temporary appropriation. However, these activities may likely occur when people feel comfortable in an open space. Along this line, Gehl (2011), an urban theorist, asserted that necessary activities (such as earning income and shopping) could take place regardless of the quality of open space, while the incidence of leisure and social activities is significantly dependent on the physical conditions of the space. In other words, the better the physical quality of the open space, the more the urban residents will appropriate the space for leisure. Sacralisation is another form of temporary appropriation. This activity is common in countries with strong religious and cultural backgrounds. The term "sacralisation" refers to using spaces for religious purposes. It is characterised by installing prayer altars in spaces where people can pray. It can also be a personal or familial act of remembrance, for instance, if a friend or relative perished on the site or nearby.

## **STUDY SETTING**

The setting for this research is Ile-Ife, a traditional urban centre in Nigeria. The town is regarded as the "cradle of Yoruba race, a dominant ethnic group in Nigeria." It is a unique place in the history and mythology of the Yoruba people. The residents of Ile-Ife are deeply rooted in culture and tradition (Afon & Adebara, 2022). The town is located between Latitude 7°28'N and 7°45'N and Longitude 4°30'E and 4°34'E. According to the National Population Commission (2006), the city has a population of about 502,952 people. The town covers an area of 1,846km<sup>2</sup>. Using a 2.5% annual growth, the population was projected to be 541,642 in 2010. With the rapid population growth of Ile-Ife, there is an increasing demand for open spaces where people may engage in their daily routine activities. Consequently, the marginal open spaces in the different residential neighbourhoods have become settings for everyday life. These include the open areas along neighbourhood streets and streams/riverbanks (see Figure 3).

In Ile-Ife, four distinct residential areas may be identified. These are the traditional, transition, peripheral (post-independence), and post-crisis residential zones, as presented in Figure 4. The physical planning of the traditional residential zone (pre-colonial development) is primarily rooted in the culture of the people. The area follows the general morphology of the traditional town centre of other Yoruba cities, with significant elements which

include the palace, the king's market (Oja-Oba), and the traditional wards. The post-crisis residential area was initially part of the traditional area and a small portion of the sub-urban zone. However, the area's present physical and social status emerged due to the Ife-Modakeke communal crisis in the city.

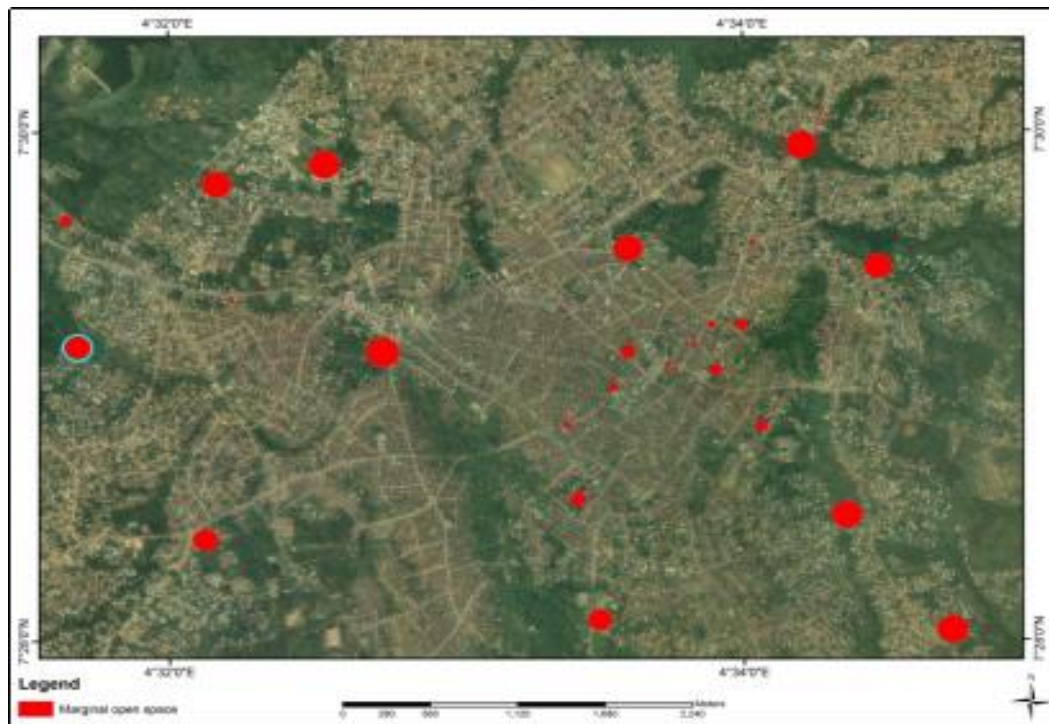


Figure 3. Image showing the location of marginal open spaces in the study area

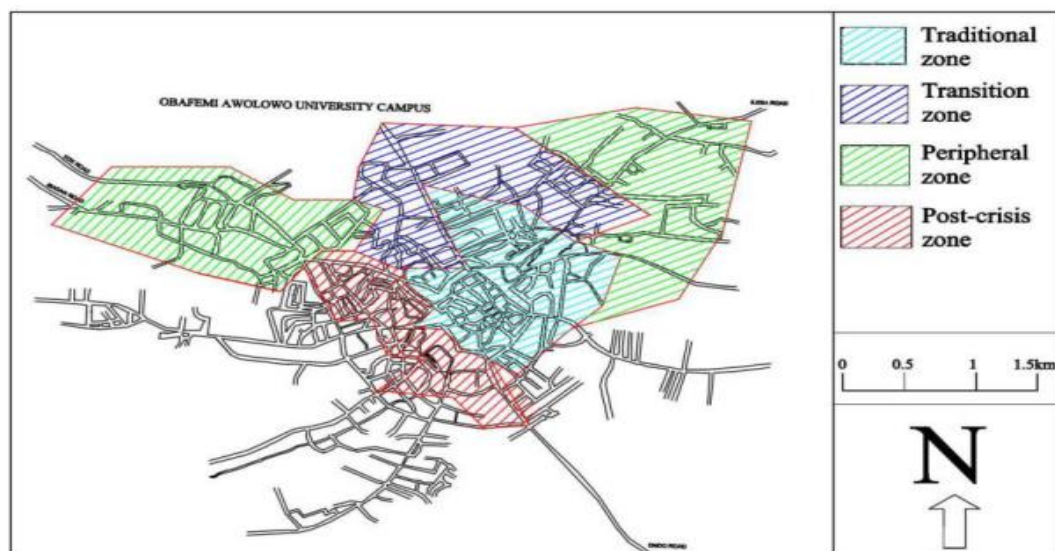


Figure 4. Map Indicating the Residential Zones of Ile-Ife  
Source: Daramola (2017)



The post-crisis area consists of freestanding row houses and dilapidated buildings, many vacant spaces, unoccupied buildings with some dump sites, and low trees and bushes between the buildings. The social compositions of the dwellers consist primarily of immigrants, unemployed and low-income families. The transition zone covers the areas developed to some extent through modern-day planning regulations. The peripheral zone includes areas developed through a good layout plan, and most residents are engaged in white-collar jobs. Each residential zone is observed to be internally homogenous in terms of physical layout, socioeconomic status, and environmental amenities, among other things. It is also worth mentioning that the traditional, transition and peripheral zones are known as the low, middle and high-income areas, respectively. The different residential zones' varying physical and social characteristics may influence how the local people appropriate marginal open spaces in everyday life.

## **METHODOLOGY**

The data for this study were obtained through a questionnaire survey, photographic recording and direct measurement of marginal open spaces in the different residential neighbourhoods. Ile-Ife was stratified into the traditional (low-income), transition (middle-income), peripheral (high-income), and post-crisis residential zones to obtain the data. Through a reconnaissance survey and Google Earth, 391 streets were identified in the four residential areas. This comprised 85, 79, 182 and 45 streets in the core, post-crisis, transition and suburban zones. One of every five streets (20%) in each residential neighbourhood was selected using systematic sampling. Furthermore, 561 houses were identified along the selected streets. These comprise 118, 141, 180, and 121 houses in the respective zones. After the first house was chosen randomly, every fifth house was selected using systematic sampling to determine where the questionnaire would be administered to obtain information on the temporary use of the marginal spaces and associated environmental problems, among other things. One hundred and thirteen (113) copies of the questionnaire were administered to the respondents in the selected buildings. For this study, the respondents were the household heads in the selected buildings. Therefore, they are considered to be in the ideal position to give good insights into the temporary usage of marginal spaces in their neighbourhoods.

The respondents were also provided with a list of problems associated with the temporary appropriation of open spaces identified in the literature. They were asked to rate the occurrence of the problems on a five-point Likert scale of *never*, *almost never*, *occasionally/sometimes*, *almost every time* and *every time*. The analysis of data obtained using this procedure was later evolved into an index called the residents' perception index (*RPI*). To calculate the index,

the ratings above were assigned a value of 5,4,3,2 and 1. The Total Weight Value (TWV) for each attribute is obtained through the summation of the product of the number of responses for each rating to an attribute and the respective weight value. This is expressed mathematically as:

$$RPI = \frac{\sum_{i=1}^5 P_i V_i}{\sum_{i=1}^5 P_i} \dots\dots\dots (i)$$

Where: TWV is the Total weight value,

$P_i$  is the number of respondents to rating  $i$ ,

$V_i$  is the weight assigned to attribute  $i$

$i$  is the designated value of the Likert point response under consideration

The  $RPI$  for each variable was arrived at by dividing the TWV by the summation of the respondents to each of the five ratings. This is expressed mathematically as:

$$RPI = \frac{TWV}{\sum_{i=1}^5 P_i} \dots\dots\dots (ii)$$

Marginal spaces exist in various types and forms, including open areas along neighbourhood streets and stream corridors. The study identified nineteen (19) and eleven (11) open spaces along neighbourhood streets and stream corridors. Direct measurements were conducted to determine the width of the open spaces. To do this, the trained research assistants measured the distance between the lines of the selected houses for the questionnaire survey and the edges of the abutting streets in metres (m). The sizes of the open spaces along the streams were also determined through physical measurements. In addition, interview guides were administered to the head of town planning departments in the local government areas of Ile-Ife. This was done to obtain information on the minimum requirements for the space along streets in the different residential zones. The data obtained through the questionnaire survey and direct measurements of open spaces were complemented with photographic recordings of life examples of the uses of marginal spaces. Descriptive and inferential analytical methods were employed to analyse the data obtained. Unless otherwise specified, all tables and plates in this section were products of the survey carried out in 2020.

## RESULTS AND DISCUSSION OF FINDINGS

### Sizes of the Marginal Spaces

Before examining the temporary use of marginal open spaces in the study area, it is necessary to determine the sizes of the spaces in the different residential areas. According to the information gathered from the Local Planning Authorities (LPAs), there are standards for the marginal spaces along the streets (see Figure 5). In the traditional area, the space should be at least 6.5 metres, while the minimum requirement was 8.5 metres in each post-crisis, transition and peripheral zone. It is therefore considered essential to examine the width of the space to establish the average sizes in the different residential areas. As presented in Table 1, the study showed that the average sizes of the marginal spaces along the streets varied directly along the line of residential areas. In other words, the size of the open spaces along the streets increases as one goes farther from the traditional to the peripheral area. However, it was established that the average sizes of the marginal spaces along the streets in the core and post-crisis residential districts were less than the minimum standard set out by the LPAs. This may be because the core and post-crisis districts were largely developed before the British colonialists introduced modern physical planning. On the contrary, the level of compliance with the planning requirements was highest in the peripheral zone, also known as the high-income residential area. Thus, the higher the socio-economic status of residential neighbourhoods, the higher the compliance with the planning requirements.

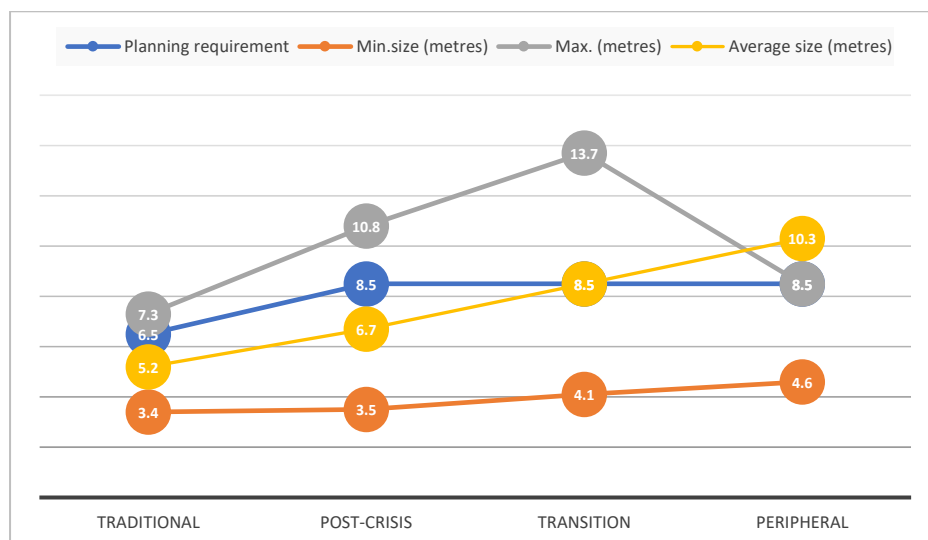


Figure 5. The sizes of marginal spaces in the residential zones

Table 1. The sizes of marginal spaces along streams (m<sup>2</sup>)

Statistics	Residential Zone				
	Traditional	Transition	Peripheral	Post-Crisis	Ile-Ife
Minimum Size	1180.3	1523.6	5222.3	1201.4	1180.0
Maximum Size	1228.0	3410.5	7340.9	1450.0	7350.9
Mean Size	1204.2	2192.5	6281.6	1325.7	2598.7

The sizes of the open spaces along the streams also followed the pattern established for those along the streets. The mean size of spaces along streams in the traditional area was 1204.2m<sup>2</sup>, while it was 2192.5m<sup>2</sup> in the transition, 6281.6m<sup>2</sup> in the peripheral and 1325.7m<sup>2</sup> in the post-crisis zone. There was also a significant difference in the size of spaces along streams in the four residential zones. This is established by the result of the one-way Analysis of Variance ( $F = 17.861$ ;  $p = 0.001$ ).

### Temporary Appropriation of Marginal Spaces and Compliance with Planning Regulations

This section investigates the temporary appropriation of the marginal open spaces in the residential neighbourhoods of Ile-Ife. In order to achieve the above, the respondents were instructed to identify the different forms of temporary use of the marginal spaces. The respondents were allowed to indicate different activities they could recognise (See Table 2). This thus gave rise to multiple responses. The identified activities were broadly grouped into informal commerce, leisure/social activities, and sacralisation. As shown in Figure 6, the dominant form of appropriation in the traditional (68.7%), post-crisis (61.0%), and transition (51.0%) areas were informal commerce (See Plates 1 and 2). This included trading, artisanship, and food vending activities. Such necessary activities are what people do to survive in the course of their daily lives. The study showed that the marginal open spaces were mostly appropriated for business purposes in the traditional (low-income) area.

On the contrary, it was found that the use of open spaces for leisure and social purpose was most common in the peripheral (high-income) area. In other words, as one move from the traditional to the peripheral area, using marginal open spaces for leisure is becoming more popular (See Figure 6). Leisure and social activities included sitting/resting, socialising with friends, children's play, eating and drinking, games, and ceremonies.

Sacralisation (religious activity) was the least common form of appropriation in the study area. It was most popular in the traditional area (20.8%). Responsible for this could be that the residents in the core area (traditional residential setting) of traditional African cities like Ile-Ife are known to be highly rooted in

Table 2. Forms of temporary appropriation of marginal open spaces

**Informal commerce**

Trading  
Artisanship  
Abattoir activities  
Food vending

**Leisure and social**

Sitting/resting  
Children's play  
Eating and drinking  
Playing Ayo/Draft games  
Socializing with friends/neighbors  
Story-telling  
Ceremonies

**Sacralization**

Ancestral worship  
Cultural festivals  
Praying

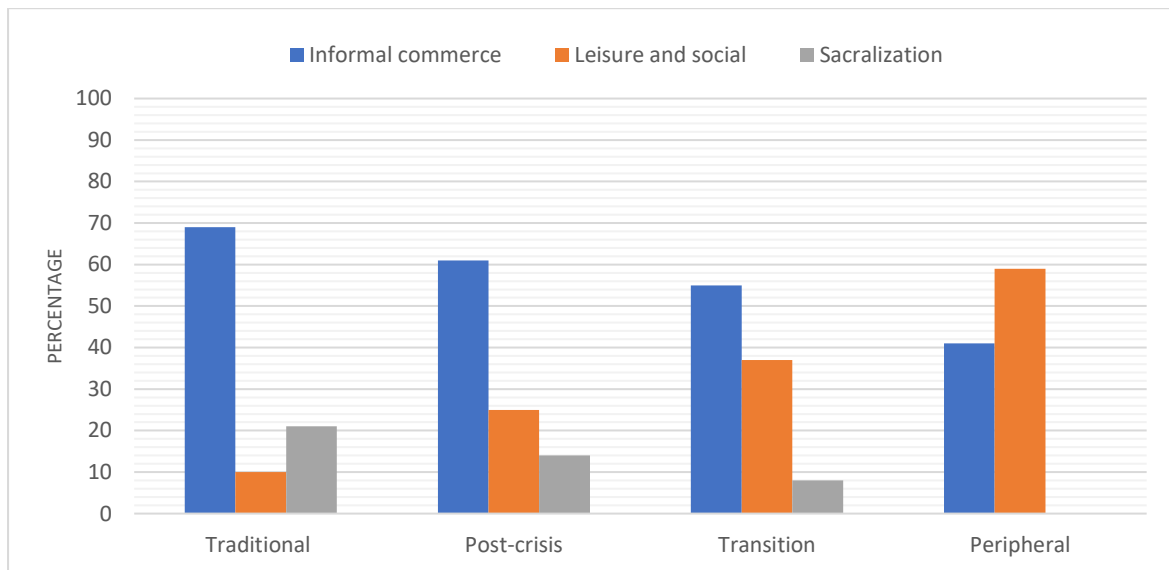


Figure 6. Temporary use of marginal spaces in the different neighbourhoods

cultural beliefs and traditions (Adebara, 2017). The activities categorised under sacralisation, including ancestral worship, festivals, and prayers, are strongly related to the cultural values and beliefs of the Yoruba people. They are what the residents do to fulfil their cultural and religious obligations to departed ancestors and fortify social ties among relatives (See Plate 3).





Plate 1: Marginal spaces used for the operation of informal sector activities in the traditional (top), transition (middle) and post-crisis (down) areas

Generally, it was observed that the rate of occurrence of leisure activities was low, especially in the traditional, post-crisis, and transition areas. This could be ascribed to the marginal spaces lacking basic auxiliary facilities that could support leisure pursuits. Such facilities include a well-designed sidewalk, ample outdoor seating area, tree cover, and other landscape elements. This finding supports the theory of Gehl (2011) that the incidence of optional and leisure activities is strongly related to the landscape quality of outdoor spaces. Observations revealed that the use of open spaces also varied based on the time of the day, days of the week and the socioeconomic status of the

residents. To further establish this, residents (household heads) were asked to identify the activities they performed most frequently in the open space and when they carried out the activities.



Plate 2. A commercial car wash along stream corridor in the transition area



Plate 3: A marginal space used for deity worship (sacralization) in the peripheral area

As presented in Figure 7, the marginal spaces were mainly appropriated for informal commerce in the morning (8:00-11: 00a.m). At the same time, the residents prefer to use the spaces for leisure and social activities in the evening (4:00-7: 00p.m). The reason for this can be linked to the fact that Ile-Ife is in a tropical country with high humidity and temperature throughout the year. Thus, it might be very uncomfortable for the residents to spend time in the spaces in the afternoon. This finding is in agreement with that of Sreetheran (2017) and Kerishnana, Maruthaveeran, and Maulan (2020), where it was found that in tropical countries, people usually avoided hot afternoons and preferred to visit open spaces in the morning and evening. The results also showed that 63.7% of the residents prefer to visit the open spaces on weekdays, while 36.3% prefer using spaces on weekends. Additionally, the study established that the use of

the marginal spaces varied according to socioeconomic attributes (See Table 3).

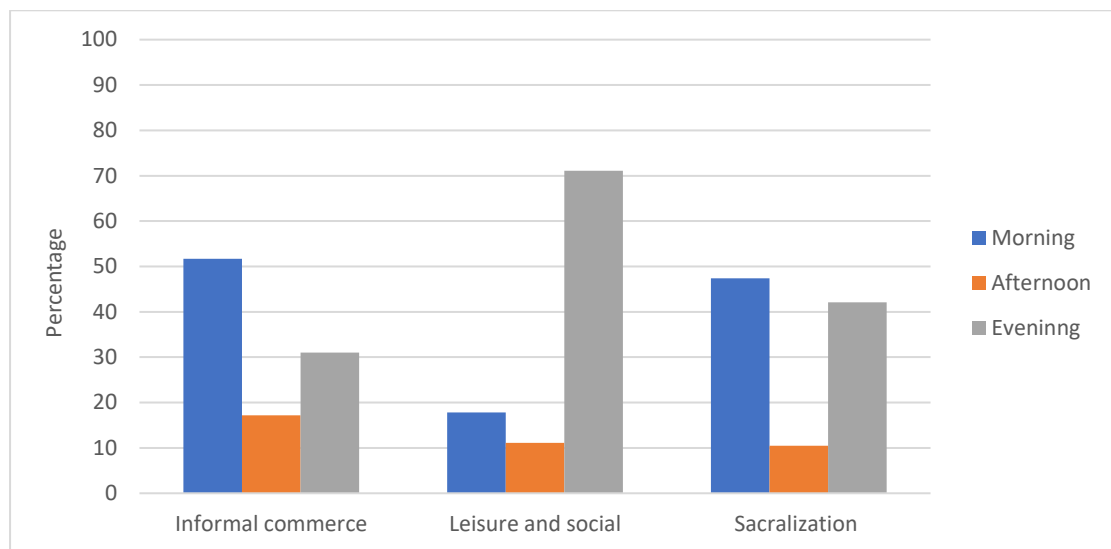


Figure 7. Temporary use of marginal spaces across different times of the day

As summarised in Table 3, the results revealed that the appropriation of open spaces for informal commerce (39.6%) was most common among people with primary school education. In comparison, those with tertiary education prefer to use the spaces for leisure and social purpose (57.8%). Similarly, the low-income residents primarily engaged in informal commerce (58.9%), while the middle (37.5%) and high-income (37.5%) earners often utilised the marginal spaces for leisure and social purpose. Appropriating open spaces for religious purposes (sacralisation) were most prevalent among older people (above 60 years).

Information was also gathered on the residents' compliance with the planning regulations guiding the use of the marginal spaces. As noted by the LPAs, the marginal spaces are primarily meant to promote safety and prevent residential environment hazards. Thus, the planning law states that there should be no structure in the open spaces to prevent environmental problems. The town planners further noted that they monitor and inspect physical developments daily to ensure that the planning regulations are not contravened. Nevertheless, it was observed that temporary structures were erected in the marginal open spaces to carry out informal business activities. These temporary structures included: kiosks, sheds, and metal containers. They provided security

Table 3. Residents' socioeconomic characteristics and the temporary utilisation of marginal spaces

<b>Demographic characteristics</b>	<b>Forms of appropriation</b>			<b>Total</b>
	<b>Informal Commerce</b>	<b>Leisure/Social Activity</b>	<b>Sacralisation</b>	
<b>Age Group</b>				
Less than 30 years	12 (21.8)	5 (12.8)	--- (0.0)	17 (15.0)
31-60 years	43 (78.2)	32 (82.1)	16 (84.2)	91 (80.5)
Above 60 years	--- (0.0)	02 (5.1)	03 (15.8)	05 (4.4)
<b>Total</b>	<b>55</b>	<b>39</b>	<b>19</b>	<b>113</b>
	<b>(100.0)</b>	<b>(100.0)</b>	<b>(100.0)</b>	<b>(100.0)</b>
<b>Level of Education</b>				
No formal Education	13 (24.5)	02 (4.4)	04 (26.7)	19 (16.8)
Primary	21 (39.6)	09 (20.0)	02 (13.3)	32 (28.3)
Secondary	17 (32.1)	08 (17.8)	05 (33.3)	30 (26.5)
Tertiary	02 (3.8)	26 (57.8)	04 (26.7)	32 (28.3)
<b>Total</b>	<b>53</b>	<b>45</b>	<b>15</b>	<b>113 (100.0)</b>
	<b>(100.0)</b>	<b>(100.0)</b>	<b>(100.0)</b>	
<b>Income Group</b>				
Low ( $\leq$ ₦ 24,500.00)	33 (58.9)	14 (34.1)	04 (25.0)	51 (45.1)
Middle (₦ 24,501- 54,000)	20 (35.7)	09 (22.0)	06 (37.5)	35 (31.0)
High ( $>$ ₦ 54,000.00)	03 (5.4)	18 (43.9)	06 (37.5)	27 (23.9)
<b>Total</b>	<b>56</b>	<b>41</b>	<b>16</b>	<b>113</b>
	<b>(100.0)</b>	<b>(100.0)</b>	<b>(100.0)</b>	<b>(100.0)</b>

and protection from harsh weather conditions. The construction of these structures in the open spaces indicated that planning regulations were violated. In this regard, the town planners mentioned that using marginal spaces was causing environmental problems such as defacing aesthetics, contamination of water bodies, air pollution, indiscriminate dumping of refuse in open spaces, and vandalising public facilities.

### Problems Associated with the Temporary Appropriation of the Marginal Spaces

This section examines the problems users (residents) encountered while using the marginal open spaces in the study area. To achieve this, the respondents (household heads) were asked to identify the problems in the open spaces and rate them on a 5-point Likert scale. As summarised in Figure 8, the notable challenges in the use of the marginal open spaces, as perceived by the respondents and tagged as residents' perception index (*RPI*), were lack of tree cover/shade (*RPI* = 4.68), traffic and pedestrian congestion (*RPI* = 3.94), odour from uncollected wastes (4.42), open space littering (4.07), and lack of safety (4.92). Therefore, the study established that the three most serious problems while using open spaces were lack of safety, tree cover/shade and odour from uncollected waste. These problems constituted a considerable challenge to open space appropriation in the study area.



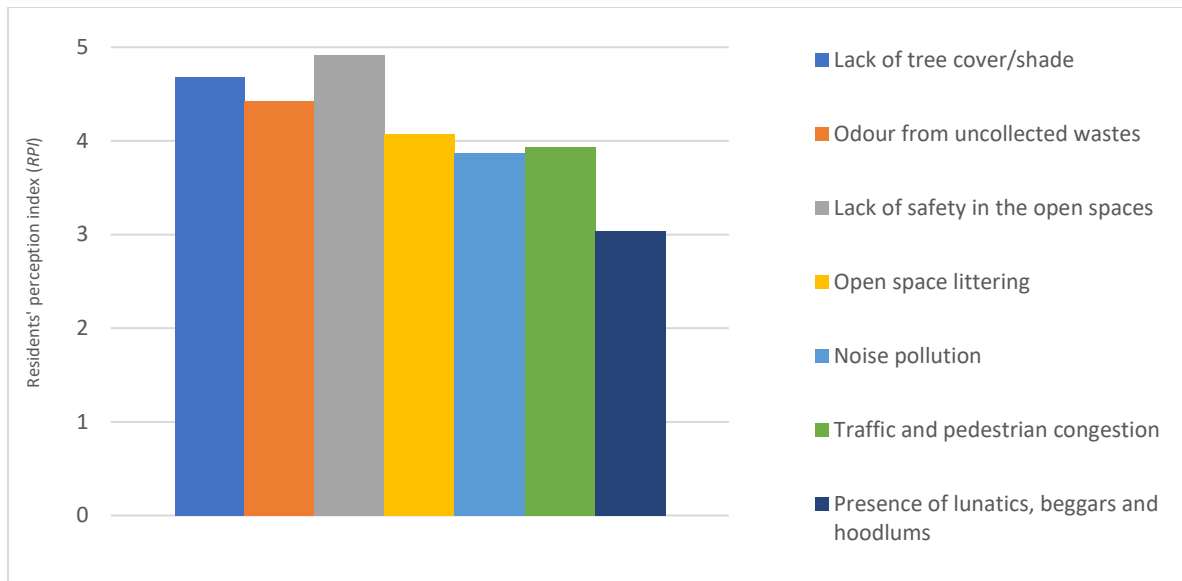


Figure 8. Perceived challenges facing the temporary use of marginal space

On the other hand, the least rated problem in the study area was the presence of beggars and hoodlums in the open spaces. The presence of intimidating groups and beggars can decrease the sense of personal safety and frequency of open space utilization in the study area. Under this circumstance, the residents might prefer to use the open spaces for necessary activities (such as earning income) rather than leisure and social pursuits.

## CONCLUSION

The study concluded that while the temporary appropriation of marginal spaces in residential neighbourhoods is essential for improving the residents' livelihoods and socio-cultural lives, several challenges face the practice. Lack of safety and tree cover/shade and the stench from uncollected waste were the major issues that the residents faced in the open spaces. The town planners also perceived that the temporary use of spaces generated environmental problems such as deface of aesthetics, contamination of water bodies, and air pollution. Given the preceding, the residents should be educated on the importance of marginal spaces in the built environment and the implications of violating the planning regulations guiding such open areas, especially in the traditional and post-crisis residential zones. It is also suggested that the local communities work closely with the town planning authorities to ensure users comply with planning guidelines while using the marginal spaces to ensure safety and prevent environmental problems.

Furthermore, the production of marginal spaces needs to adapt to and integrate the local people's needs and lifestyles while ensuring hygiene, safety, cleanliness, and comfort. In this regard, it is recommended that in the future,



there should be changes in the regulatory procedures of urban residential development to ensure that marginal spaces are produced as desirable areas that are responsive to people's needs and not only as mere incidental areas. The production of marginal spaces should result from deliberate planning strategies and design principles. Moreover, while the supply of formal open spaces is decreasing in the cities of developing countries, the marginal spaces can be made more useful by encouraging a variety of leisure and social activities in addition to the necessary activities (such as earning income). In essence, marginal space should be seen as a valuable asset that can contribute to sustainable urban development.

### **DECLARATION OF COMPETING INTEREST**

The author declares no conflict of interest

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