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USERS' VISIT AND EVALUATION OF MICRO-OPEN SPACES IN FEDERAL COLLEGE OF FORESTRY, JOS PLATEAU STATE

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Abstract

Open space is a space within tertiary institutions used by the staff, students and visitors for social interactions, recreation, and relaxation. The aim of this study is to evaluate the factors that influence users' level of satisfaction during visits to micro-open spaces within the Federal College of Forestry, Jos and the expectations they have about its general environmental portrait. It utilized structured questionnaires and observation techniques to obtain primary data from users'. A purposive sampling technique was used to select twenty-one micro, open spaces in the study area. A total of 230 questionnaires were distributed, 196 were retrieved representing 85.23%, used for final analysis. Tables, percentages, photographs and relative satisfaction index (RSI) were used to present the results of the research. The study revealed that visits to the micro-open spaces are for personal studies or academic group study, socializing and making use of the internet network. Findings further revealed that parking spaces for bikes and bicycles used by students are inadequate. The study therefore recommends that more infrastructures be installed in the micro-open spaces.

Keywords: Micro-open spaces, Social interaction, User satisfaction

INTRODUCTION

Open space is an important element of the urban landscape in the built environment. In an institution, open space aids in the provision of a conducive physical environment. These open spaces are fundamental and bring significant growth as well as the development of campus universities (Rufai & Maina, 2018; Afon & Adebara, 2022). It also held that open spaces provide avenues for various activities within and around the university campus. These include meeting friends, sitting, socializing, surfing the net, group discussions and others (Ezeanah, Songden & James, 2021). An open space is described as an area of land enclosed or not enclosed, absolutely accessible and set aside for public functions such as recreational, amenity, conservation and other scenic purposes. It encompasses all the streets, squares and other rights of way, the open spaces

and parks; and the ‘public/private’ spaces where public access is unrestricted.” These spaces either natural or man-made contribute to the quality of life in many ways (Simon, 2015; Oladunjoye, 2016; Ezennia, Uwajeh & Irouke 2017; Adeleke, Ikudayisi & Adegbehingbe, 2018; Rufai *et al.*, 2018; Uduma-Olugu, Olasupo & Adesina, 2018).

The term “micro open space(s)” as it relates to tertiary institutions, is recent and defined as spaces within the institution which are small in scale or scope and used by the staff, students and visitors for social interaction, recreation, relaxation, etc. They contain landscape components with interesting features to stimulate physical activities. As averred by Adeleke, Ikudayisi and Adegbehingbe, (2018), they are modern in nature and constitute the built and natural environment where people make connections between the place, their personal lives and the larger world. In addition, these spaces whose rhythms are defined by curricular activities motivate educators and students to engage in co-curricular activities and provide relief from the stresses of busy working time (Rufai & Maina 2018). Others (Ikudayisi and Adegbehingbe, 2017; Ayeni, Olanrewaju and Fadaïro, 2018) have expanded the definition to cover all public parks, sports fields, tourism areas, squares, streets, open spaces and parks, pathways where public access is unrestricted.

In Nigeria, the character of campus open spaces and public domain play a vital role in shaping the university environment in addition to creating lasting impressions for users of these spaces (Ayyad & Al-Shatnawi, 2021). Adekunle and Basorun, (2016); and Orewere, Mustapha, Ibrahim and Edom, (2022) noted that these open spaces and streetscapes on the campus represent landmark status that constitute attractive spaces that improve and sustain the quality of the environment, represent campus identity, and draw attention to the campus as a unique and distinct institution. Learning in a well landscaped physical environment of an institutional building will impact staff and students, and improve their productivity levels.

Several studies on the quality of open spaces in tertiary institutions exist (Adekunle *et al.*, 2016; Ikudayisi *et al.*, 2017; Adeleke *et al.*, 2018; Ayeni *et al.*, 2018; Rufai *et al.*, 2018; Uduma-Olugu, *et al.*, 2018; Alnusairat, Ayyad & Al-Shatnawi, 2021; Ezeanah *et al.*, 2021; Orewere *et al.*, 2022). For instance, the studies of Adeleke *et al.*, (2018), document the evaluation of maintenance of green open spaces in urban areas: a case study of the Federal University of Technology Akure, Nigeria using a descriptive survey. The sample was 510 respondents drawn from the six schools of FUTA. The data collected were analyzed using Frequency charts, and Mean Score, while the hypothesis was tested with Analysis of Variance (ANOVA). The study revealed students perceived that the Campus green open spaces are well landscaped, very attractive, clean and well maintained. However, the green open spaces were mostly used for social activities. The study recommended various methods of maintaining the quality of green open spaces. Uduma-Olugu *et al.*, (2018) found in their study on users' perception and evaluation of campus eco-open spaces at the University of Lagos, Akoka Campus, Nigeria using a descriptive survey. From 77 responses, findings revealed that users perceive the spaces as average, indicating that work needs to be done to make them more desirable. Additionally, poor maintenance was what restricted the anticipated

use of such green spaces. The study recommended that proper planning of its open spaces and new developments be done to create a high-quality network of green spaces across the campus for a more biophilic impact on its users.

Similarly, Orewere et al., (2022) conducted a study on sustainable landscaping of horticulture and landscape technology (HLT) building to improve users' productivity levels at the Federal College of Forestry, Jos. The objective was to evaluate the various ways through which the environmental quality can be improved upon in order to achieve maximum productivity and a good state of health and wellbeing. The study made use of data and information from both primary and secondary sources. The study revealed that learning in a well-landscaped physical environment of an institutional building will impact staff and students, improve their productivity levels and more attractive to users. Although the previous studies have enhanced our understanding of the quality and usage of campus open spaces within tertiary institutions, preliminary study within the study area, reveals majority of these open spaces are not optimally utilized for the purpose for which they have been established. It is in light of the foregoing that this study evaluates the factors that influence users' level of satisfaction during visits to micro-open spaces within the Federal College of Forestry, Jos and the expectations they have about its general environmental portrait.

This study addresses the following research questions: Why do people visit any of the micro-open spaces within the college? To what extent have visual amenities been provided in the micro-open spaces? What is the level of satisfaction derived from utilizing these micro-open spaces? The study is considered important for several reasons. First, built environment professionals and policymakers could be more guided on how to design and maintain micro-open spaces in tertiary institutions to improve users' productivity levels. Second, academicians and students are sensitized to the management of open spaces in the tertiary institution.

REVIEW OF LITERATURE

The review section of this study's theoretical discussion is divided into three sub-sections to highlight the relationship between the keywords. These sections are presented as follows: micro-open spaces on campus environments, visual amenities used to enhance micro-open spaces and level of satisfaction derived from utilizing any micro-open space. These are further discussed in section four and thereafter, the conclusion is drawn and some recommendations are suggested.

Micro-open spaces on campus environments

Micro-open spaces are spaces within the campus environment which are either learning areas, hostels, staff areas etc. that are used by the public ranging from the staff, students and visitors for recreational activities that bring about social, psychological, economic, and ecological as well as the aesthetic benefit to the users. These open spaces and public realm play an important role in defining the University and in creating memorable first impressions of the campus environment

and experience (Rufai *et al.*, 2018; Afon *et al.*, 2022). In addition, they provide a setting for classes, special events, recreation, and contemplation. Moreover, these spaces are critical for enhancing the university's quality of life (Alnusairat *et al.*, 2021). Unah, (2020) posit that a greater number of students use and consider these green spaces as essential components of the campus environment. The aesthetic qualities of campus design are influenced by the use of its green spaces in a formal environment. Thus, user's productivity levels and a healthier environment, are enhanced through well-developed open spaces which is essential for staff and students (Mogra & Furlan, 2017; Orewere *et al.*, 2022).

Unah, (2020), opined that campus environments are categorized into two: the physical and social environments. The physical environment is the physical location of campus life or activities, while the social environment is the locations where staff, students and visitors meet and interact. In addition, these spaces connect and organize other fragmented spaces between institutional buildings as well as facilitate the movement of people in and around campus under safe and comfortable conditions. As posited by, Mogra *et al.*, (2017), open spaces are important in achieving sustainable micro ecology which provides diverse plants with compatible species and acts as ecosystem services. Such services positively influence the emotional and mental health of the students and are considered a part of a healthy campus.

Micro-open spaces visual amenities

Landscape components and attractive facilities are used to enhance the outdoor spaces in campus environments. These stimulate physical activities such as leisure, relaxation, being bored, and walking vis-à-vis chatting with friends, and colleagues (Alnusairat *et al.*, 2021). Previous research by Rufai *et al.*, (2018); Uduma-Olugu *et al.*, (2018); Unah, (2020) and Alnusairat *et al.*, (2021) revealed that the visual amenities of campus open spaces which students frequently enjoy most are shaded areas which are easy to access with uncontrolled atmosphere. Also, a good layout lawn, pedestrian pavement circulation that is a network connection between campus buildings, landscapes with leisure settings, street furniture, adequate space, internet connectivity, and good views are some consideration factors. The study of Rufai *et al.*, (2018) revealed that the provision of reliable and fast wireless access and internet connectivity within these open spaces facilitates academic and personal growth as well as communication with loved ones.

Proper shading, trees, landscaping and other features add to this appeal and bring comfort and peace. Another study demonstrated that landscape lighting, water features, waste bins, pedestrian walkways, interlocking and ground covers are considered the most adequate visual amenities by respondents (Unah,2020). In addition, users suggest adding more benches, providing shelter for bad weather conditions, planting seasonal flowers to increase aesthetic value, more trees and shrubs, more fountains and additional signage (Ezeanah *et al.*, 2021).

Level of satisfaction derived from utilizing micro-open spaces

The physical surroundings and how students positively engage in activities are two essential dimensions of school life. Therefore, institutional open spaces (academic areas, students' hostels,

hot spots etc.) used by students, staff and visitors for recreational activities bring about associated mental or physical health, social, aesthetic, economic and ecological benefits to users (Popoola, Medayese, Olaniyan, Onyemenam & Adeleye, 2016; Rufai *et al.*, 2018). Sati & Oyedemi, (2015), Unah, (2020) and Alnusairat *et al.*, (2021) posit that more than half of the students value green spaces, both organised and natural as an integral part of the university surrounding. Therefore, it is important to understand the relationship between open spaces and students' personal needs, particularly about factors that make outdoor spaces attractive and meaningful to university students. Users are satisfied when they believe and know that the organization of open spaces meets their expectations. Social interaction increases when people of different backgrounds gather for different activities. Pedestrian-friendly designs encourage outer space activities and interaction areas offering opportunities for urban dwellers to reconnect with the natural environment. The relationships which users share with these natural places are increasingly being recognized as playing an important role in influencing their environmental behaviour (Popoola *et al.*, 2016).

METHODOLOGY

Study Location

Jos is the administrative capital of Plateau State, (Figure 1) and lies within latitudes 9°45'00''N to 09°57'00''N and longitudes 8°48'00''E to 8°58'00''E. The study covered a tertiary institution situated in Jos North Local Government Area (LGA) with an estimated population of about 3,206,531 (NPC, 2019). This is attributed largely to the unprecedented flux due to rural-urban and urban-urban migration fueled by insecurity in the state and elsewhere in Nigeria in the last two decades (Rikko, Pwajok, Namo & Habila, 2022).

Study Area

Federal College of Forestry, Jos is located between Latitudes 09° 56'N and 09° 48'N, and Longitudes 08° 53'E and 08° 34' E of the Greenwich meridian (Figure 1). It is an important educational Centre in Nigeria and one of the seven Colleges owned by the Forestry Research Institute of Nigeria (FRIN), Ibadan which is a parastatal of the Federal Ministry of Environment, established in 1958. The category of students includes Pre-National Diploma (PRE-ND), National Diploma (ND), Higher National Diploma (HND) and Vocational students. Besides its educational facilities, there are numerous micro-open spaces, a greenhouse, a plant nursery and a standard football pitch (Archives of Library and Documentation Unit FCF, Jos, 2019).

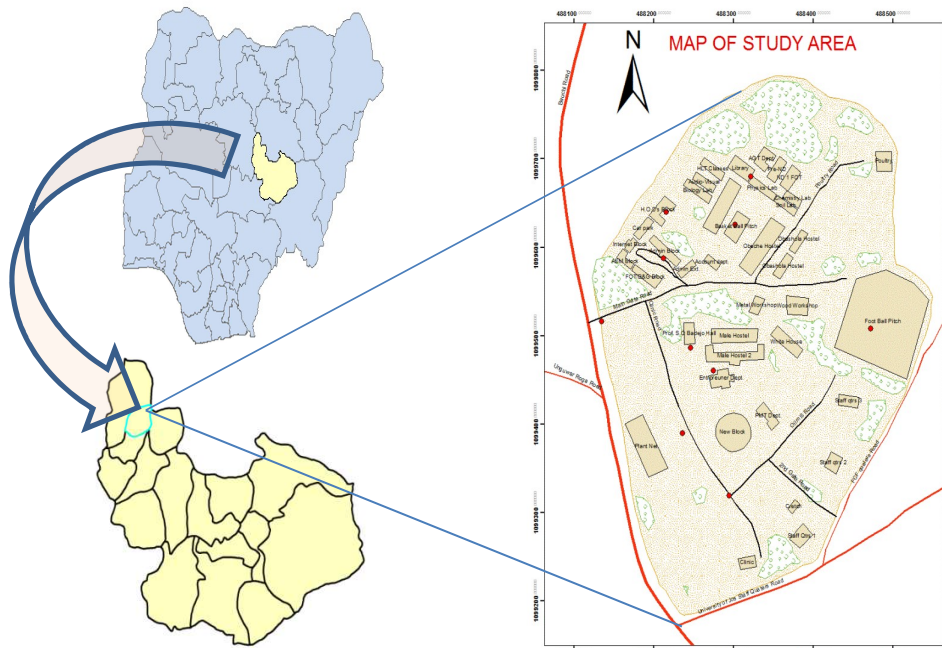


Figure 1: Plateau State in the National context and Jos North Local Government Area in the State context leading to the study area (FCF, Jos) in the Local context
 Source: Archives of Library and Documentation Unit FCF, Jos, 2019. Tertiary

Data Collection and Analysis

The study employed a descriptive survey research design as its methodology. The study population was thirty-seven (37) micro-open spaces identified, from which a sample size of twenty-one (21) was selected using a purposive sampling technique. The micro-open spaces were selected for the study due to their proximity to academic areas, their accessibility within the college and their sizes to accommodate users. The respondents received a total of 230 questionnaires, of which 196 were retrieved representing 85.23%, used for final analysis.

Data collected was analyzed using descriptive statistics and the relative satisfaction index (RSI). Descriptive statistics were employed to obtain the profile of respondents while RSI was employed in establishing the purpose of visit to micro-open spaces and the physical attributes expected in such open spaces. The relative students' satisfaction index (RSI) was obtained by using 5-point Likert Scales of Strongly Agree =5, Agree =4, Undecided =3, Disagree =2 and Strongly Disagree =1. The relative satisfaction index (RSI) method formula as used by Rufai *et al.*, (2018), Iorpenda, Orewere, Owonubi & Ikong (2020) and Unah (2020) was adopted. The formula is presented in Equation 1

$$RSI = (5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1) / 5N \text{----- Equation 1}$$

Where RSI = Relative Satisfaction Index, n_1 is the number of criteria with Strongly disagree, n_2 is the number of criteria with disagree, n_3 is the number with neither undecided, n_4 is the number

with agree, $n5$ is the number of criteria with Strongly agree. N is the total number of questionnaires filled and collected in the area. The Relative satisfaction index with a value of 1 shows the most available utility within the micro space (s). Responses were analyzed in Statistical Package for Social Sciences (SPSS) version 23 to obtain the mean, sum, standard deviations and rankings. The analysis, presentations and discussions of results and findings from the questionnaires are presented in various formats below.

RESULTS AND DISCUSSION

The findings are presented in four sections. The first discusses the socio-economic characteristics of respondents. The second section is devoted to the documentation of micro-open spaces in campus environments. While the focus of the third is on visual amenities in micro-open spaces, the level of satisfaction derived from utilizing micro-open spaces is investigated in the fourth section.

Socio-economic characteristics of respondents

The socio-economic characteristics of respondents presented in Table 1 reveal that out of the 196 respondents involved in this research, (52%) were males and (48%) were females. This implies that the male respondents participated actively in the study more than their female counterparts. The analysis further revealed respondents from different departments as follows: Horticulture and Landscape Technology (HLT) (14.80%), Forestry Technology (FOT) (16.30%), Science Laboratory Technology (SLT) (19.40%), Agricultural Extension Management (AEM) (11.20%), Crop Production Technology (CPT) (5.10%), Agricultural Technology (AGT) (3.20%), Pest Management Technology (PMT) (6.60%), and Computer Science (CS) (6.10%) while Statistics (ST) (17.30%). The distribution of respondents by levels of education appeared to be skewed towards a particular level with National Diploma (ND) (54.00%), Higher National Diploma (HND) (31.10%) and Staff (14.90%). Thus, the majority of the respondents were ND students. In terms of work and study duration, the majority (64.80%) of respondents had worked/studied in the college for a period of 1-5 years, (20.90%) less than a year, (9.70%) 6-10 years, (3.10%) 11-15 years while (1.50%) of them were above 16 years.

Table 1: Demographic information of respondents (n=196)

Variables		Frequency	Percent	Cumulative %
Gender	Male	102	52.00	52.00
	Female	94	48.00	100.00
Department	HLT	29	14.80	14.80
	FOT	32	16.30	31.10
	SLT	38	19.40	50.50
	AEM	22	11.20	61.70
	CPT	10	5.10	66.80
	AGT	6	3.20	69.90
	PMT	13	6.60	76.50
	COMP SC.	12	6.10	82.70
	STATISTICS	34	17.30	100.00
	Description	ND student	106	54.10
HND student		61	31.10	85.20
Staff		29	14.80	100.00
Work/study duration	Less than a year	41	20.90	20.90
	1-5 years	127	64.80	85.70
	6-10 years	19	9.70	95.40
	11-15 years	6	3.10	98.50
	16 yrs and above	3	1.50	100.00

Source: Field survey, 2022

Purpose of visit to any of the micro-open spaces in the college

The results in Table 2 reveal the factors that motivate users to visit any of the micro-open spaces in the college including observing nature/quiet reflection (M = 3.6021) having the 1st rank is considered the topmost priority of users' visits to micro-open space within the college environment. The succeeding factors which are a photocopy of handouts/books/practical (M = 3.5516), buying an item (M = 3.4184), personal study (M = 3.3316), academic group discussion/assignments (M = 3.3316), meeting a visitor/friend (M = 3.3015) ranked 2nd, 3rd, 4th, 4th, and 5th are considered vital reasons that determine the visit to micro-open spaces. Other factors such as relaxing (M = 3.2857), eating out in a restaurant (M = 3.1692), taking photographs (M = 3.1582), playing games (outdoor games) (M = 2.8316), browsing the internet (M = 2.7755), are ranked as 6th, 7th, 8th, 9th, and 10th are attributed by the respondents as not to vital for visiting micro-open spaces. Meeting boyfriend or girlfriend (M = 2.4235), and political campaign/rally (M = 1.4898) are ranked 12th and 13th respectively are considered irrelevant for visiting any of the micro-open spaces. This finding concurs with the study of Rufai *et al.*, (2018), who affirmed that students visit the open public space in most cases to meet up with their friends for socialization, and group discussion. Secondly, the students look for good internet connectivity in the open space for academic purposes.

Table 2: Purpose of visiting any micro-open spaces in the college

Visits Reasons	SA	A	U	D	SD	weighted means	Rank
Personal study	51(26.00)	64(322.70)	17(8.70)	27(13.80)	37(18.9)	3.3316	4
Academic group discussion/assignments	51(26.00)	64(32.70)	15(7.70)	31(15.80)	35(17.9)	3.3316	4
Photocopy of handouts/books/practicals	57(29.10)	74(37.80)	16(8.20)	18(9.20)	31(15.80)	3.5516	2
Eating out in the restaurant	42(21.40)	61(31.10)	17(8.70)	38(19.40)	37(18.90)	3.1692	7
Buying an item	53(27.00)	72(36.70)	10(5.10)	26(13.3)	35(17.90)	3.4184	3
Meeting a visitor/friend	52(26.50)	59(30.10)	20(10.20)	26(13.30)	39(19.90)	3.3015	5
Relaxing	50(25.50)	58(29.60)	19(9.70)	36(18.40)	33(16.80)	3.2857	6
Playing games (outdoor games)	38(19.40)	45(23.00)	16(8.20)	40(20.40)	57(29.10)	2.8316	9
Browsing the internet	33(16.80)	45(23.00)	18(9.20)	45(23.00)	55(28.10)	2.7755	10
Political campaign/Rally	4(2.00)	12(6.10)	11(5.60)	22(11.20)	147(75.00)	1.4898	12
Meeting boyfriend or girlfriend	20(10.20)	43(21.90)	24(12.20)	22(11.20)	87(44.40)	2.4235	11
Observing nature /quiet reflection	73(37.20)	54(27.60)	17(8.70)	22(11.20)	30(15.30)	3.6021	1
Taking photographs	66(33.70)	36(18.40)	12(6.10)	27(13.80)	55(28.10)	3.1582	8

Note: The highest weighted mean indicates the most important purpose or reason for the micro space patronage

Source: Field survey, 2022.

To what extent have visual amenities been provided in the micro-open space

Table 3 reveals the visual amenities provided within the micro-open space(s). The RSI ranking of shade trees and flowers is 0.95 (1st), lawn and grass covering 0.75 (2nd) and provision of seats 0.74 (3rd) values are considered the utility users feel comfortable with about micro-open spaces. Other utilities provided such as provision of waste bins 0.73 (4th), pedestrian walkways 0.705 (5th), defined entrance 0.695 (6th), street lights 0.693 (7th), parking space for bikes and bicycles 0.64 (8th), and sculptures' 0.55 (9th) are inadequate and low but considered necessary for such open spaces. This compares with the findings of Chen, Liu, Xie, and Marušić (2016) who examined the factors that attract people to visit community open spaces in China. Results showed that large areas with accessible lawns, well-maintained footpaths, seats, commercial facilities and water landscapes were important characteristics that increased the use of open spaces. It concluded that user-oriented spaces with facilities encouraged active use rather than improving ornamental vegetation and accessories. However, open spaces with little or no visual amenities may discourage general usage but may encourage such open spaces to be turned into dump sites for refuse and criminal activities by idle youths.

Table 3: Provision of visual amenities within the micro-open space(s) (n =196)

Scale	5	4	3	2	1	Total	Total	A*N	RSI	Importance
Utilities provided	SA	A	UND	DA	SDA		Number (N)			
Defined entrance	205	356	54	38	29	682	196	980	0.695918367	6
Street lights	185	332	81	66	16	680	196	980	0.693877551	7
Provision of seats	255	360	42	60	11	728	196	980	0.742857143	3
Provision of waste bins	300	304	51	48	19	722	196	980	0.736734694	4
Internet connectivity	205	192	84	82	38	601	196	980	0.613265306	
Parking space for bikes and bicycles	180	308	51	48	42	629	196	980	0.641836735	8
Pedestrian walkways	165	360	96	58	12	691	196	980	0.705102041	5
Sculptures'	70	232	111	90	42	545	196	980	0.556122449	9
Shade trees and flowers	450	316	33	90	42	931	196	980	0.95000000	1
Lawn and grass covering	325	324	39	36	19	743	196	980	0.758163265	2

Source: Field survey, 2022

Plates I, II, III and IV reveal some of the visual amenities in the HLT department micro-open spaces with shade trees and flowers, lawn covering, pedestrian walkways and seats for users. The findings from this study are very similar to Ikudayisi *et al.*, (2017), Adeleke *et al.*, (2018), Rufai *et al.*, (2018) and Unah, (2020), studies on green open spaces in Nigeria universities, with visual amenities, layout pattern and maintained 'green', making it aesthetically pleasing and also encourages relaxation.



Plate I: HLT department micro-open space.



Plate II: Badejo Hall micro-open space

Source: Fieldwork, 2022



Plate III: Girls hostel court (Buffalo, Ebony I & II)



Plate IV: HLT department micro-open space
Landscaped walkway

Source: Fieldwork, 2022

Level of satisfaction derived from utilizing micro-open space in the college

The results from Table 4 reveal that the peaceful and quiet nature of space 0.8143 (1st), neatness of environment 0.8143 (1st), ease and accessibility 0.7510 (2nd) biodiversity 0.7449 (3rd) and sense of security within confine 0.7429 (4th) are highly ranked factors determining the level of

satisfaction derived from micro-open space(s). Other factors that motivate the users are visual and aesthetic appeal 0.7367 (5th), on-site, and off-site views from the space 0.7255 (6th), and layout pattern 0.7020 (7th). The findings from this study show that the landscape quality of micro-open space(s) within the institution is satisfactory to users. The results also conform to study of Adeleke *et al.*, (2018), Rufai *et al.*, (2018), and Iorpenda *et al.*, (2020), who affirmed students are satisfied with public open spaces and green spaces due to the high-quality standards of maintenance these places are associated with but some still lacked lack facilities that could support learning.

Table 4: Benefits derived from micro-open space(s)

Benefits derived from micro–open space(s)	Level of satisfaction derived from Micro space(s)					RSI	Rank
	VS(5)	S(4)	U(3)	D(2)	VD(1)		
Ease and accessibility	58(29.60)	82(41.80)	21(10.70)	20(10.20)	15(7.70)	0.7510	2
Visual and aesthetic appeal	46(23.50)	89(45.40)	28(14.30)	19(9.70)	14(7.10)	0.7367	5
Layout pattern	39(19.90)	80(40.80)	35(17.90)	26(13.30)	16(8.20)	0.7020	7
Sense of security within the confine	57(29.10)	71(36.20)	33(16.80)	25(12.80)	10(5.10)	0.7429	4
Biodiversity	39(19.90)	95(48.50)	36(18.40)	21(10.70)	5(2.60)	0.7449	3
On-site, and off-site views from the space	40(20.40)	85(43.40)	40(20.40)	20(10.20)	11(5.60)	0.7255	6
Neatness of environment	73(37.20)	89(45.40)	13(6.60)	17(8.70)	4(2.00)	0.8143	1
The peaceful and quiet nature of space	80(40.80)	82(41.80)	11(5.60)	14(7.10)	9(4.60)	0.8143	1

Source: Field survey, 2022.

Discussion

The findings reveal the bulk of the surveyed population were students and males, within the age range of 16 - 25 years from different departments in the institution. Most of the respondents who participated in the exercise are ND students from different departments and have studied in the college for a period of 1-5 years. Results also show that users frequently visit their departmental micro-open spaces rather than other numerous open spaces. Factors that drive users to go to an open public space include personal study, academic group discussions and socialising with friends. Secondly, to buy an item or making a photocopy, conducting individual/group research and browsing the internet in some micro-open spaces is considered important by the users'. This finding concurs with the study of Rufai *et al.*, (2018), who averred that in the design of open public spaces on campus architecture and the physical characteristics of users should be foremost.

The visual amenities considered by the users' of the micro-open spaces vary in different categories as well as the location, but the notable features include accessible green areas, outdoor seats, waste bins and parking spaces for bicycles and bikes. Furthermore, the neatness of an

environment, ease and accessibility, security environment, beautiful environment and its layout are considered factors which users derive satisfaction from whenever they visit any of the micro-open spaces. Previous studies reveal that the location of an open space and its purpose determines what the student users of a space carry out in such space, for as a space located by a cafeteria, users might usually take their snacks in such space which determines their perception of the space (Unah, 2020).

CONCLUSION

From the onset, this paper laid a foundation to evaluate the factors that influence users to visit micro-open spaces within the college and the expectations they have about its general environmental portrait. The findings emanating from this study show that users visit the micro-open spaces in most cases for personal study or academic group study with their friends, socializing with friends, and making use of internet connectivity. The availability of visual amenities in the micro-open spaces also ensures adequate usage. More landscape infrastructures are required in the micro-open spaces but the basic requirement by the users in the institution is reliable internet access. In addition, they opined that parking space for bikes and bicycles is inadequate being a tertiary institution dominated by students and outdoor lighting systems are low.

RECOMMENDATIONS

Based on this study's findings, the following are recommended:

- i. There is a need to develop and implement a maintenance standard for micro or green spaces in higher institutions.
- ii. There should be provisions for more facilities like internet connectivity, outdoor lighting, and parking lots for bikes and bicycles, signposts etc. to promote effective utilization of micro-open spaces on campuses.
- iii. Landscape architects have the mandate to advise school authorities on sustainable approaches to landscaping that are long-term, efficient, and cost-effective. This further reduces the adverse effects of climate change and global warming.

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