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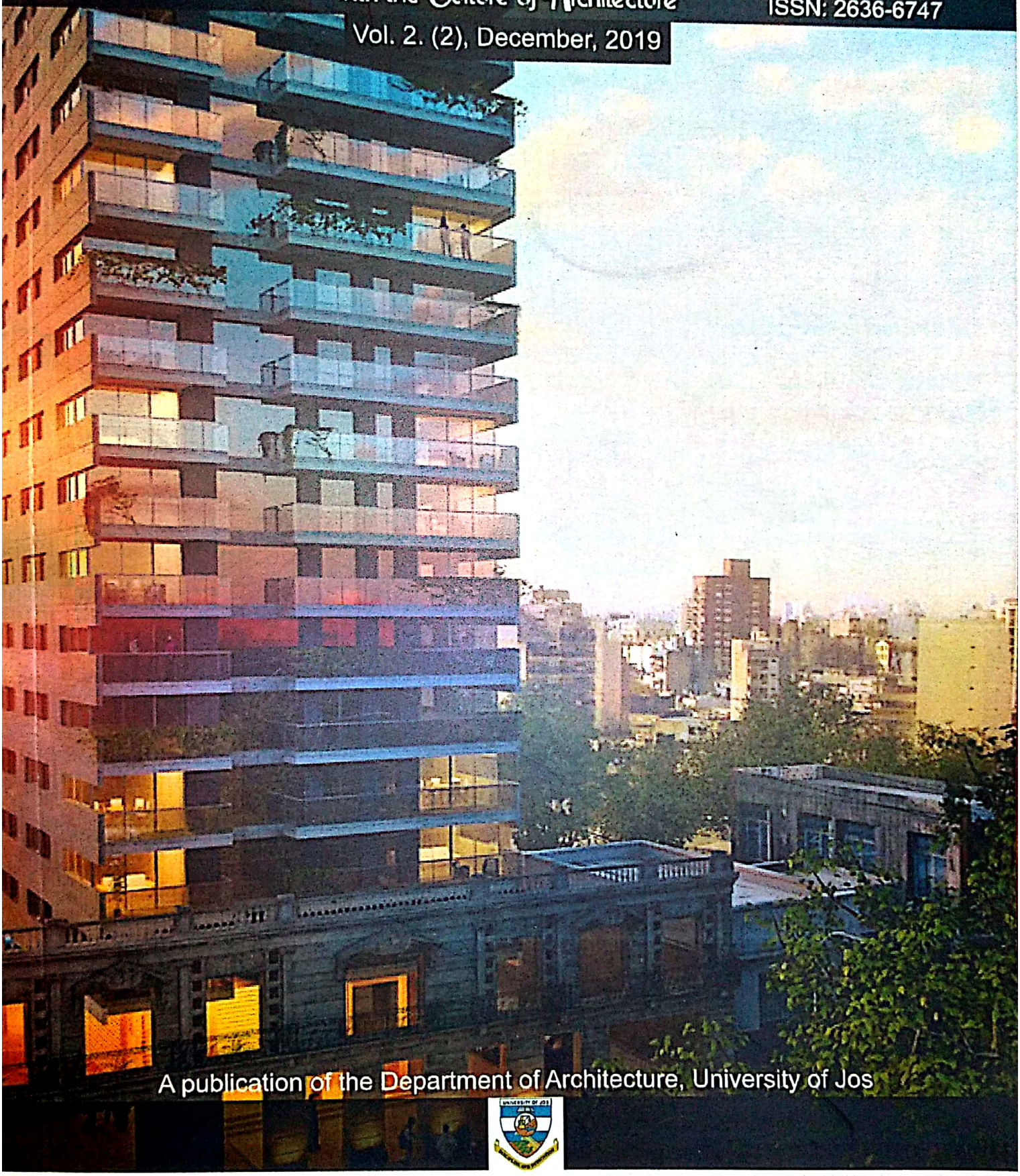

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ArchiCulture is an international journal that publishes original research papers, review articles and technical reports related to architecture, building science, and man's interaction with the built environment. The journal focuses on fundamental and pragmatic research aimed at promoting sustainable built environment and climate change mitigation. The journal is to provide information and encourage debate between academics and practicing professionals in all aspects of building design, construction, performance, and other related environmental issues. The journal provides an open access platform to facilitate the exchange of information between architects, engineers, and other related fields to support the advancement of environmental sustainability.

The ArchiCulture journal publishes articles that utilize conceptual and evidence-based approaches which reflect the complexity and linkages between architecture, culture, environment, economy, society, organisations, quality of life, health, well-being, design and engineering of the built environment. We support a wide range of methodological and technical approaches including experimental, observational, monitoring and management studies and policy analysis. In addition to fundamental and applied papers, review articles on important developments will be considered. Papers considered for publication are original, high-quality papers that form a significant contribution to the theory or practice of Architectural engineering, present contemporary work on related topic, or describe a case study in which theory is applied to a significant environmental and human problem. All submitted manuscripts are subject to initial appraisal by the Editor, and, if found suitable for further consideration, will undertake peer review by independent, anonymous expert referees.

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Articles

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Evaluation of Social Interactive Spaces for Commercial Buildings: A Case study of Selected Shopping Centres in Abuja, Nigeria

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Abstract

Commercial activities have always been important in the operation of the built environment throughout the history of urbanisation. Apart from commercial activities, shopping centres are places that promote an inflow of people which can be utilised to serve as a space for social interactions and societal coherence. Meanwhile, significant research effort through various studies also recognized social interactive spaces do relieve stress arising from commercial activities. Yet, this has not been given much attention in shopping centres situated in many municipal areas of Nigeria. This paper investigated the adequacy of interactive spaces provided in Abuja municipal shopping centres, Nigeria. It adopted a combination of quantitative and qualitative line of inquiry using questionnaire survey, observation schedules and case studies. Purposive sampling method was used; twenty (20) shopping centres were sampled within the Abuja municipal area council (AMAC). Findings arising from the study reveal the inadequacy of interactive spaces in selected shopping centres that could encourage social interaction and cohesion in the community. Design interventions is recommended which is tailored towards requirements of the users beyond shopping (commercial) activities as well as develop strategies for remodelling shopping centres in Abuja metropolis towards accommodating mixed-use development to facilitate greater social interaction among the users. From this point of view, the paper concludes that there is a need for redirection for designers of shopping centres to integrating social interactive spaces that can successfully generate improved public life.

Keyword: Adequacy, built environment, interactive space, shopping centres

1. Introduction

Social interaction is the meaningful contact people have with one another. Meaningful implies an exchange that includes real communication, even if only for a moment, and leaves each party feeling that he has shared something with another human being (Jacobs, 2009). Good places for interaction are places where people often from many parts of the community and diverse backgrounds meet naturally and interact comfortably and often pleasurably because of the nature or attraction of the space and or the activities associated with it. The concept of a space designated to social functions is known as an interactive space, also called public spaces (Morris, 2005). Public spaces including high streets, street markets, shopping precincts, community centres, parks, playgrounds, and neighbourhood spaces in residential areas play a vital role in the social life of communities, such spaces act as a self-organising public service, a shared resource in which experiences and value are created (Mean & Tims, 2005).

Public spaces offer many benefits like the excitement from being part of a busy street scene, the therapeutic benefits of quiet time spent on a park bench, places where people can display their culture and identities and learn awareness of diversity and difference, opportunities for children and young people to meet, play or simply hang out. All have important benefits and help to create local attachments, which are at the heart of a sense of community (Morris, 2005). Retailing and commercial leisure activities dominate town centres, and public space can act as social glue (Holland et al, 2006). The question then beckons if the field of architecture has completely catered for the requirements of Interactive space both for

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its physical and mental purposes in shopping centres.

1.1 The concept of Interactive Space

There are two kinds of Interactive spaces in Architecture; the first being spaces that encourages meeting and communication between two people or group of people, often referred to as public space. The second kind of interactive spaces are found in smart buildings; they are structures that use automated processes to automatically control the building's operations including heating, ventilation, air conditioning, lighting, security and other systems thereby enhancing interaction between the structure and users. It is a branch of architecture that deals with building automation using sensors, processors and effectors, embedded as a core part of its nature and functioning, only digital technology can facilitate this type of conversation (Tali, 2008). This paper delves into both kind of interactive spaces but focuses on public spaces. Often times an interactive space is called a public space because it serves as a concourse which are generally open and accessible to people, examples are Roads, public squares, parks and beaches (Oldenburg, 2009).

2. Architecture and Interactive Spaces: Recognizing the Bridge

In many regions of the world, people spend the majority of their time indoors. Americans, for example, spend approximately more than 90% of their time within buildings (Sophie, 2006). Hence, the feeling and interactions of the occupants are highly correlated with the design elements and architectural features of the built environment. In other words, the built environment provides the setting by which we live, and impacts on our senses, emotions, participation in physical activity and community life, sense of community, and general wellbeing. Meanings are generated by buildings and spaces, which we read as we pass through them. Places are created and shaped by those in control of resources and with certain interests, which affects our degree of access to, and the way we use, those spaces (Butterworth, 2000). One of the important issues is the understanding and translation of these psychological and behavioral concepts into the real physical world by environmental designers such as architects, planners and urban designers. In architecture we do not use the terms "psychological needs" (Robert & Russell, 2002). The way a person can express his feelings about a space is by recognizing that it is an exciting space. It is the architect's responsibility to design required spaces that are exciting and lively. This paper gives a brief explanation of these concepts and their relation to the physical environment.

3. Types of Public Space

Indoor interactive spaces include spaces like lounge, gaming arcade, food courts, lobbies, courtyards, restaurants, galleries, open spaces within the building while outdoor Interactive spaces can have referred to as public spaces which may be a gathering spot or part of a neighbourhood, downtown, special district, waterfront or other area within the public realm that helps promote social interaction and a sense of community. Possible examples may include such spaces as plazas, town squares, parks, marketplaces, public commons and malls, public greens, piers, special areas within convention centres or grounds, sites within public buildings, concourses, or public spaces within private buildings.

4. The Importance of a good place for Interaction

According to Register, (2006) the reasons for creating good places for interaction are as follows:

1. Interactive spaces help to develop a sense of community pride and ownership. Especially if worked upon together, the user can start to see them as centres of their community that belongs to them.

2. It helps build a true sense of community among people of diverse origins, backgrounds, and points of view. By getting to know one another, people with different histories and assumptions can establish relationships and begin to value their differences as well as their similarities.

3. Interactive spaces broaden children's horizons through interactions with people who have different assumptions and expectations. Through contact with friends with different world views, children can broaden their own, and realize there are different ways of looking at and experiencing life, and different paths that people can take. This interaction may also increase the number of positive adult role models in children's lives.

4. Interactive spaces make the community a more pleasant place to live because more people have contact with one another. Especially in a small neighbourhood where everyone is familiar, it creates a sense of community, and leaves one with a feeling recognition.

5. Interactive spaces increase safety and security. When people in the neighbourhood know one another from meeting regularly, they are more likely to look out for one another as well. That means eyes on the street, a feeling of ownership of the neighbourhood, and less tolerance of both crime and unsafe situations.

6. They can improve the liveability of neighbourhoods. Good places for interaction are also good places to be. They are generally pleasant, close to or linked to services and shopping, and filled with friends or potential friends. That in itself improves neighbourhood liveability, but such spaces may also nurture the kind of neighbourhood solidarity and good feeling that leads to neighbourhood clean-ups, taking back the streets from drug dealers and gangs, and advocating for increases in services.

7. Interactive spaces promote individuals' understanding of one another's culture and humanity. The humanity in people is better understood, revealing that we all are equals when it comes to hopes and fears, although these may be expressed in different ways, and our attempts to address them may be different. Diverse culture is embraced with comfort rather than a feel of threat. The exchange of food, traditions, and celebrations help to break down the barriers to the appreciation of diversity.

8. Interactive spaces provide a forum for the exchange of ideas. The more people interact, and particularly the more they engage in enjoyable or substantive activities together helps to build a playground in a neighbourhood park, participating in a community celebration, the more they find out about one another, and the more they begin to understand that their goals are similar, even though their ideas about how to achieve them may be different.

9. A good place for interaction increase equity. People of different economic levels mix and develop relationships, the interactive spaces in a community can provide low income people with some of the social networking opportunities that people higher up the economic ladder take for granted. The ultimate result, in some cases, may be a neighbourhood or community presenting a united front in a fight for greater equity. It can also lead to employment opportunities and other possibilities that allow lower-income people to change their lives.

10. Interactive spaces are known for increasing social capital, particularly bridging social capital. Social capital is the sum totals of the benefit that people build up from their web of relationships. Bonding social capital is the advantage people develop from relationships with those who are essentially similar to themselves. Bridging social capital is that gained from relationships with people who are quite different, whether in culture, race or ethnicity, economic status, political philosophy, or all of these and more besides.

11. A good space for interaction gives the chance for concerted community action and social change. The building of a sense of community can also build a sense of shared purpose. It is much easier to mobilize the community to work for change when there exists among community members a sense of fellowship and mutual respect.

4.1 Research Approach and Method

The quest for specific strategies and approach to achieve the target of this research led to the use of mixed methods research approach to find solutions to the research problem of providing an efficiently conditioned facility in a shopping centre which will enhance social interaction and cohesion in the community. Using a qualitative methodology, twenty (20) shopping centres were purposefully selected in Abuja Municipal Area Council (Table 1) as samples and case studies that typify certain characteristics of shopping centres in the study area in order to look for observed and illuminating trend in the design of the shopping centres. For more robust findings, the quantitative methodology involved 15 questionnaires administered in each sample area giving a total number of 300 questionnaires administered to randomly selected shop users in the study area. The questionnaire was developed and piloted among the targeted population of the study to note the response of the respondent to the structured question after which ambiguous and complex questions were corrected.

Table 1: The selected shopping Centre and their location

S/N	Name of Shopping Centre	Location
1	Efab	Garki Area 11
2	Exclusive Stores	Wuse 2
3	Dbm Plaza	Wuse Zone 1
4	Worldmart Mall	Garki Area 1
5	Sahad Stores 1	Garki Area 11
6	Grand Square	Central Area
7	Jabi Lake Mall	Jabi
8	Dunes Centre	Maitama District
9	Purplestone Centre	Apo
10	Omega Centre	Wuse 2
11	Cedi Plaza	Central Area
12	Samfa Plaza	Wuse Zone 5
13	Next Cash And Carry	Kado
14	Jinifa Plaza	Central Business District
15	Banex Plaza	Wuse 2
16	Cappador Mall	Maitama
17	Park And Shop	Wuse 2
18	Apo Shopping Centre	Apo
19	Sahad Stores 2	Central Area
20	Silverbird Galleria	Central Area

Four-point Likert Scale was employed as it has been the most recommended by researchers that it reduces the frustration level of patient respondents and increases response rate and response quality...to obtain the perception and the level of satisfaction of the users. The questions were made up of a set of structured closed-ended questions and choices were selected from the given options. Required data were collected at 4pm West African time on the sampled shopping centres to facilitate meeting the respondents at the shopping hour. Of the 300 questionnaires, 285 were returned and of this number 10 invalid questionnaire were recorded (Table 2).

This leaves the number of valid questionnaires at 275. This implies that of the 300 questionnaires administered, 91.6% (Figure 1) were valid for use as data. The data so generated was analysed using SPSS (Statistical Package for Social Scientist) and the result of the analysis were imputed into Microsoft Excel for the design of Charts that would be used for result discussions.

Table 2: Breakdown of Administered Questionnaires

Respondent	Frequency
Valid response	275
Invalid response	10
Not returned	15

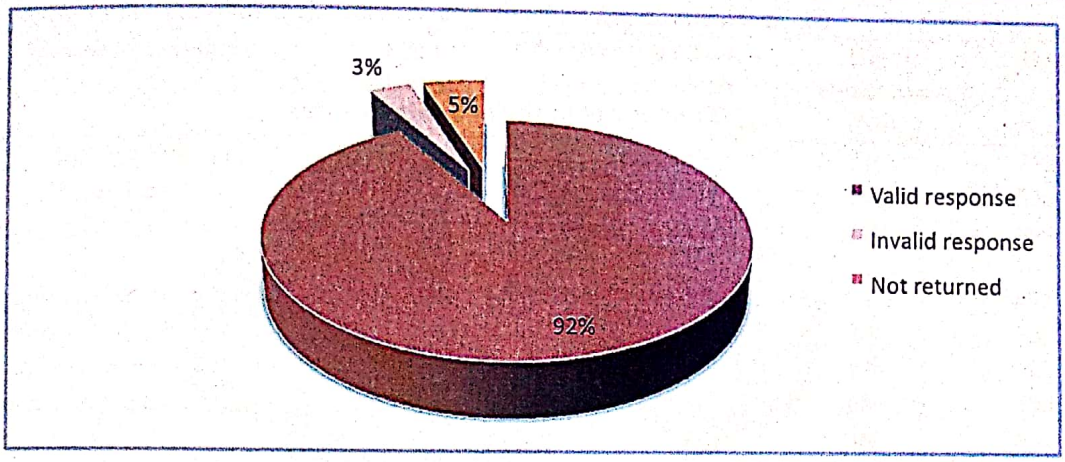

Figure 1: Breakdown of Response rate of the Administered Questionnaires

5. Results and Discussion

Out of the two hundred and seventy-five (275) valid respondents, 17.8% were less than twenty years (<20), 57.5% were between the age of twenty to forty (20-40) while the elderly between the age of sixty-one to eighty (61-80) were 20.7% implying that the respondents were active members of the society. Table 3 shows the age of respondent in the selected shopping centres.

Table 3: Age of Respondent

	Frequency	Percent	Valid Percent	Cumulative Percent
<20	49	17.8	17.8	17.8
20-40	158	57.5	57.5	75.3
41-60	57	20.7	20.7	96.0
61-80	11	4.0	4.0	100.0
Total	275	100.0	100.0	

One hundred and twenty-seven (127) of the respondents were males and one hundred and forty-six (146) were female, hence majority of the respondents were females which could imply that females go shopping more than male.

The study revealed that the respondent who spends six to eight hours per day in the shopping Centre were just six percent (6%), those that spends over eight hours were two percent (2%), 35% spends three to five hours, 57% spends zero to two hours. Figure 2 below reveals the percentage of the time spent in the shopping Centre by the respondents.

Table 4: Gender of Respondent

	Frequency	Percent	Valid Percent	Cumulative Percent
MALE	127	46.2	46.2	46.2
FEMALE	146	53.1	53.1	99.3
	1	.4	.4	99.6
	1	.4	.4	100.0
Total	275	100.0	100.0	

A regimented scoring of 1-4 was given to the varying options for the respondent perception based on the variable being measured. The scoring options are; Highly Effective (1), Effective (2), Ineffective (3) and Highly ineffective (4). Table 5.0 shows that majority of the respondents are spread within the effective and ineffective section of the scale of measurement.

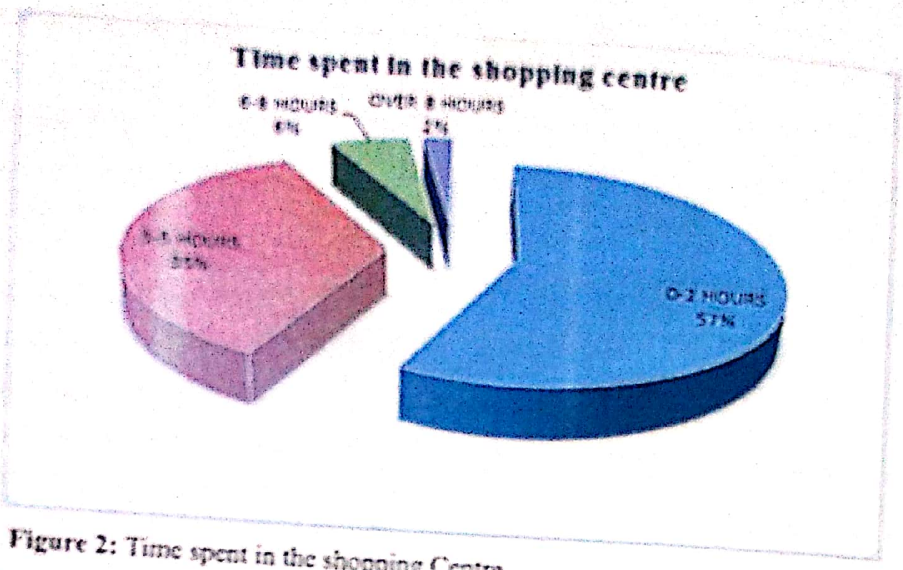

Figure 2: Time spent in the shopping Centre

Table 5: Number of respondents per opinion on Effectiveness of variables that affects interaction that was measured

Measured variable	Highly Effective (X1)	Effective (X2)	Ineffective (X3)	Highly ineffective (X4)	Total
Availability of sitting areas	40	89	67	79	275
Movement within lobbies	45	158	53	19	275
Movement of children, elderly and disabled persons	34	98	103	40	275
Ability to access different products	86	161	22	6	275
Ability to perform different activities	50	78	83	64	275
Wide range of dining options	31	90	98	56	275
Availability of basic amenities	38	171	49	17	275
General design of shopping Centre	63	163	40	9	275
Variety of organized events	24	51	115	85	275
Availability of outdoor eateries	27	94	76	78	275
Organization of art exhibition	17	41	79	138	275
Condition of the access road (accessibility)	78	169	20	8	275
Closeness to public transport(accessibility)	94	117	46	18	275
Navigation within the Centre	52	173	37	10	275
Multiple entry into the shopping Centre	24	108	111	32	275
Distribution of lighting	42	174	42	17	275
Background music	19	64	83	109	275

The number of respondents in each section is multiplied by the weighted score allocated to it, the calculation for this is shown in Table 6 and the total score across the rows are added up and presented as the total at the end of the table.

The interpretation of the results obtained based on the Likert Scale calculation is based on the range of scale indicated as Highly Effective (1.00 - 1.49); Effective (1.50 - 2.49); Ineffective (2.50 - 3.49); Highly Ineffective (> 3.50). It can be observed from table 7 that half of the Respondent said the variables that affected interaction.

Table 6: Number of respondents On Effectiveness of variables that affects interaction

Measured variable	Highly Effective (X1)	Effective (X2)	Ineffective (X3)	Highly ineffective (X4)	Total
Availability of sitting areas	40	178	201	316	735
Movement within lobbies	45	316	159	76	596
Movement of children, elderly and disabled persons	34	196	309	160	699
Ability to access different products	86	322	66	24	498
Ability to perform different activities	50	156	249	200	727
Wide range of dining options	31	180	294	224	729
Availability of basic amenities	38	342	147	68	595
General design of shopping Centre	63	326	120	36	545
Variety of organized events	24	102	345	340	811
Availability of outdoor eateries	27	188	228	312	755
Organization of art exhibition	17	82	237	552	888
Condition of the access road	78	338	60	32	508
Closeness to public transport	94	234	138	72	538
Navigation within the Centre	52	346	111	40	549
Multiple entry into the shopping Centre	24	216	333	128	701
Distribution of lighting	42	348	126	68	584
Background music	19	128	249	436	832

in the selected shopping centres were ineffective, a proportion of the half said the background music and the organization of Art Exhibition were highly ineffective. The other half agreed to the effectiveness of the variables. This shows that the available sitting areas were insufficient hence showing the ineffectiveness, the lobbies were too narrow to allow for easy movement of children, elderly and disabled persons. The major activities performed in the selected shopping centre is commercial which is shopping hence the response signifying ineffectiveness of the ability to perform different activities so also is the organization of other events.

Table 7: Respondents' opinion on effectiveness of variables that affects interaction

Measured variable	Sum	Mean	Interpretation
Availability Of Sitting Areas	735	2.67	Ineffective
Movement Within Lobbies	596	2.17	Effective
Movement Of Children, Elderly And Disabled Persons	699	2.54	Ineffective
Ability To Access Different Products	498	1.81	Effective
Ability To PerformDifferent Activities	727	2.64	Ineffective
Wide Range Of Dining Options	729	2.65	Ineffective
Availability Of Basic Amenities	595	2.16	Effective
General Design Of Shopping Centre	545	1.98	Effective
Variety Of Organized Events	811	2.95	Ineffective
Availability Of Outdoor Eateries	755	2.74	Ineffective
Organization Of Art Exhibition	888	3.23	Highly Ineffective
Condition Of The Access Road	508	1.85	Effective
Closeness To Public Transport	538	1.96	Effective
Navigation Within The Centre	549	2.00	Effective
Multiple Entry Into The Shopping Centre	701	2.55	Ineffective
Distribution Of Lighting	584	2.12	Effective
Background Music	832	3.03	Highly Ineffective

Multiple entries were insufficient in the selected the shopping centres. This analysis shows that the general design of the selected shopping centres were effective apart from the provision of interactive spaces and activities. It is imperative to examine the level of adequacy of the interactive spaces provided in the selected shopping centres. Tracy, (2005) stated that, in order to provide spaces in any building, the knowledge of the users in relation to the building is important. This will aid in reasonable space allocation so as to achieve a functional building; this explains why the analysis on satisfaction of the interactive space should be made before giving a recommendation on its integration in shopping centres. Table 8. Shows Respondents opinion on satisfaction of existing elements that make up the social interactive spaces under this study. The interpretation of the results obtained based on the Likert scale calculation is derived from the range of scale as follows: Very satisfied (1); Satisfied (2); Dissatisfied (3) and Very dissatisfied (4).

In determining the satisfaction of the option for each measured variable the weighted score was also divided by the number of valid respondents for each section and the value is presented. As shown in Table 8, in the same way analysis was made in table 5, 6 & 7 above. It can now be observed that all the measured variables in Table 8.0 are all inadequate based on the interpretations made hereunder.

Table 8: Respondents opinion on satisfaction with the interactive spaces provided

Measured Variable	Very Satisfied (X1)	Satisfied (X2)	Dissatisfied (X3)	Very Dissatisfied (X4)	Total
Restaurant	50	151	42	32	275
Café	8	67	89	111	275
Sitting area	22	90	78	85	275
Open spaces	44	151	48	32	275
Courtyard	13	58	94	150	275
Pool	1	15	59	200	275
Garden	13	38	63	161	275
Concert spaces	6	60	80	129	275
Pedestrian path	14	168	54	39	275
Fitness Centre	10	16	77	172	275
Lounges	14	62	60	139	275
Galleries	12	31	74	158	275
Games room	15	49	46	165	275

Table 9: Sum of Responses on Opinion of Satisfaction of users on the interactive spaces provided

Measured Variable	Very Satisfied (X1)	Satisfied (X2)	Dissatisfied (X3)	Very Dissatisfied (X4)	Total
Restaurant	50	302	126	128	606
Café	8	134	267	444	853
Sitting area	22	180	234	340	776
Open spaces	44	302	144	128	618
Courtyard	13	116	282	440	851
Pool	1	30	177	800	1008
Garden	13	76	189	644	922
Concert spaces	6	120	240	516	882
Pedestrian path	14	336	162	156	668
Fitness Centre	10	32	231	688	961
Lounges	14	124	180	556	874
Galleries	12	62	222	632	928
Games room	15	98	138	660	911

The interpretation of the results obtained based on the Likert scale calculation is based on the range of scale indicated as Very Satisfied (1.00 - 1.49); Satisfied (1.50 - 2.49); Dissatisfied (2.50 - 3.49); and Very Dissatisfied (> 3.5). The social interactive spaces provided in all the shopping centres studied were not satisfactory. This can be observed from Table 9; most of the users are unsatisfied with the leisure spaces provided. This implies that designing a shopping centre with functional social interactive space becomes very necessary, taking into consideration the interactive spaces needed by users which were analyzed above in table 8.

Table 10: Respondents' opinion on satisfaction with the available interactive space data interpretation

Measured Variable	Sum	Mean	Interpretation
Restaurant	606	2.20	Satisfied
Café	853	3.10	Dissatisfied
Sitting area	776	2.82	Dissatisfied
Open spaces	618	2.24	Satisfied
Courtyard	851	3.09	Dissatisfied
Pool	1008	3.67	Very Dissatisfied
Garden	922	3.35	Dissatisfied
Concert spaces	882	3.21	Dissatisfied
Pedestrian path	668	2.42	Satisfied
Fitness Centre	961	3.49	Dissatisfied
Lounges	874	3.18	Dissatisfied
Galleries	928	3.37	Dissatisfied
Games room	911	3.31	Dissatisfied

In addition, measured variables such as Café, Sitting area, courtyard, garden, concert spaces, fitness centre, lounge, galleries and games room were dissatisfactory; however, pool has the strongest value for dissatisfaction from the interpretation in table 10. This could be linked to the fact that there was no predetermined design consideration for the social interactive spaces in the preconceived design stage of the shopping centres. One of the major factors in interaction is the space provided for an individual to socialize and the location of such spaces, because of individual difference in personality. This therefore gives the need to examine the type of interactive spaces provided in the shopping Centre; this is an important tool to be used in determining the adequacy of such space. In the course of this research majority of the respondents stated that the interactive spaces were outdoor.

Figures 3 and 4 revealed that 5% of the shopping centres studied had a well prone garden, gaming arcade, dance class, 15% provided for karaoke band, 20% had an averagely adequate sit out provisions, 15% with lounges and also Cinema, fitness centre, concourses where not provided hence they were 0%. 65% of the selected shopping centres have no interactive space. This goes to show the gross inadequacy of the social interactive spaces in the selected shopping centres. As regards location of the interactive spaces, figure 5 shows that fourteen of the selected shopping centres incorporated majority of their interactive spaces outdoor, two of them located theirs majorly indoor and three of them made provision for both indoor and outdoor. From the research done, it was observed that users prefer a balance in the location of the interactive spaces; both indoor and outdoor, this will enable buyers easily locate a space for both relaxation and interaction after a stressful shopping experience or after a hectic day at work.

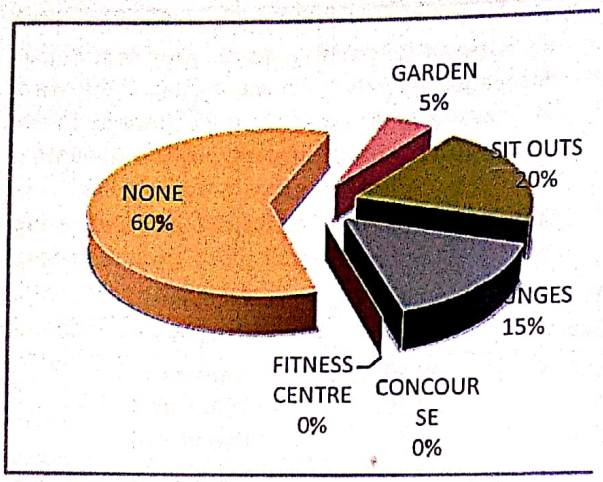

Figure 3: Type of interactive space provided

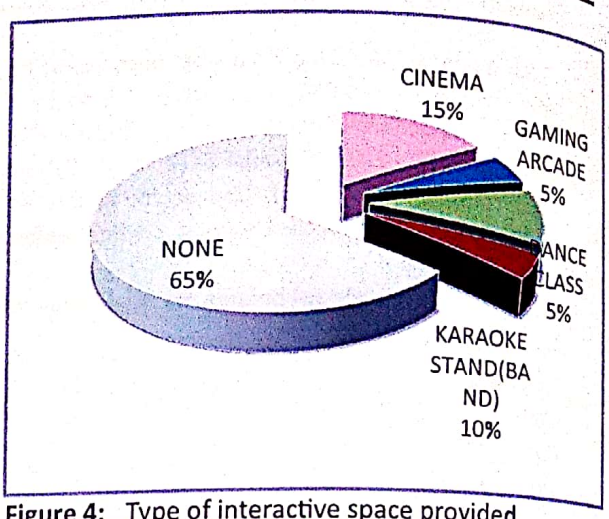

Figure 4: Type of interactive space provided

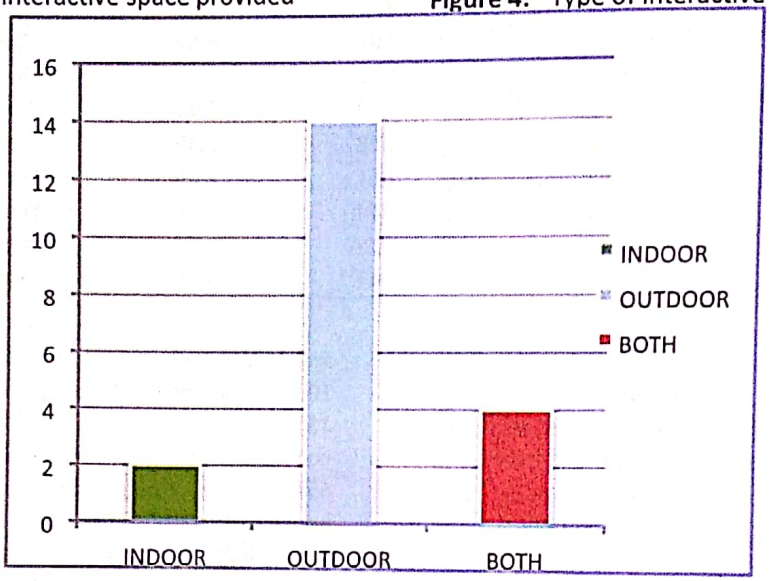

Figure 5: Location of Interactive Space Provided

The productivity of the users would increase with provision of interactive spaces was a premises assumed at the onset of this research, and the figure 6 shows that most of the respondent concurred. Majority of the respondent admitted that the social interactive spaces help them attain a certain level of productivity at work after each visit. 70% of the respondent answered yes to social interactive space being a source of motivation for their productivity at work and 30% answered No.

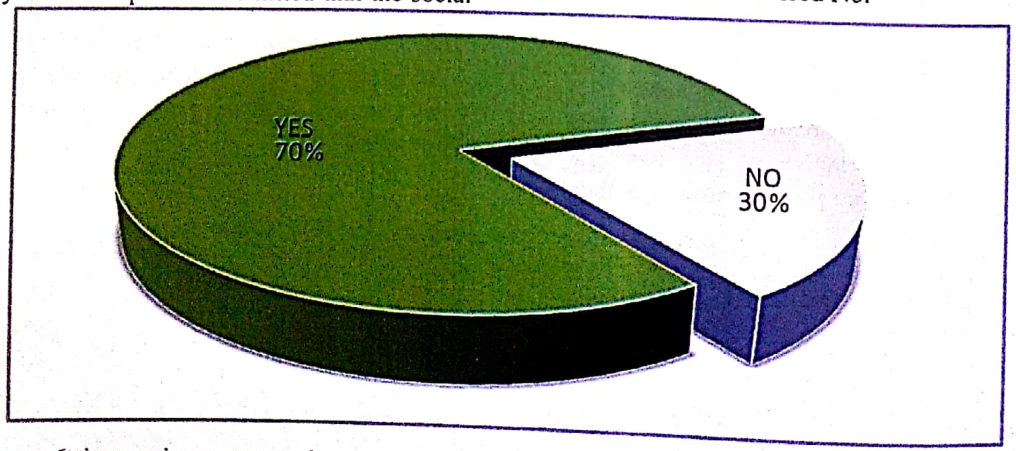

Figure 6: interactive spaces and user productivity

6. Recommendations and Implications for Practice

Evidence from this study suggests that the contestation of spaces, variety and the need for unregulated spaces are inevitable and necessary in the design of shopping centres. This study showed that shopping centres in Abuja municipal area provided places for just the basic and the mundane while important functional (i.e. interactive) spaces are overlooked thus missing out innovative and adaptive places. Thus, this study recommends that cost-effective integration of interactive space should be made to enhance their design this breaks up the current trend of monotony found in many shopping centres designs with the dynamic use of space. In spite of the fact that interactive spaces increase safety and security through familiarity gained from constant meet ups, passive security measures should still be considered but done succinctly to ensure maximum relaxation by the users. Furthermore, attention should be given to other interactive elements such as lighting, accessibility, entertainment and other pull factors which will make a huge difference in the enhancement of shopping centres.

7. Conclusion

This study establishes that while there are interactive spaces provided in the shopping centre visited, the interactive spaces provided are grossly inadequate in comparison with the wants of the users. The users of the selected shopping centres want social interactive spaces subconsciously; as seen in figure 6, however the present spaces do not cater for this particular need. It was noticed that there were spaces that were redundant but still not used for social interaction because they were not preconceived at the design stage; the courtyards were let bare without provision of seating. The only forms of interactive space found in many shopping centres observed in the study area were the provision of mini benches along the lobbies. The provision of additional furniture such as couches to support relaxation when users are not shopping would enhance interaction and also improve their comfort level. Individuals are considered different so is their preferences; this is why it is necessary to provide diverse options of interaction possibilities for users. The results indicated that there is need to have more appropriate design that suited integration of interactive spaces. Since the want of the users is beyond shopping activities in shopping centres it is recommended that the development of shopping centres should be accompanied by interactive facilities for the benefit of the users. Spaces such as lounges, gaming arcade, galleries should be provided for interactions which would offer indoor relaxation and socialisation possibilities for the Users. Spaces such as a garden, food courts, pool side, and defined concourses should be provided for outdoor interaction.

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