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## Evaluation of space adequacy and its impact on users' experiences in the art Exhibition Centre in Nigeria

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### Abstract

An exhibition hall is often identified by the majority of the items displayed there and it is a form of museum that attracts the widest range of users. The study examined the impact of space adequacy on the user's experience in the Art Exhibition Centre in Nigeria. A qualitative research design and Content analysis technique was adopted to achieve the objectives of the study. The findings revealed that the design of art exhibition spaces can enhance visitors' psychological well-being by creating attractive, comfortable, comprehensible, participative, innovative, and sustainable experiences. Furthermore, it has been demonstrated that a visitor's decision to explore an art display at first is more influenced by direct visual access, which is created by the building, than by physical distance. Besides, the physical design of exhibition centres is essential for establishing interactive links that can highlight visitors' desire for rich experiences.

**Keywords:** Space, Adequacy Users, ' Experiences, Art Exhibition, Centre

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### Introduction

An exhibition hall is often identified by the majority of the items displayed there and it is a form of museum that attracts the widest range of audiences (Adeyemi, 2004; Hong, Torsten, & Bekkering, 2022) <sup>[14]</sup>. There is a lot of interaction between people and space in the exhibition hall. Given its uses as an exhibition area, combination area, and informational medium, the space creates a particularly cohesive interaction with its users (Federico & Olof, 2019) <sup>[7]</sup>. To effectively convey information to visitors and attract them, an exhibition space must have established the quality and value of the exhibited pieces in addition to the spatial layout and organizational strategies.

However, modern exhibition stands have been constructed without consideration for the principles of movement and audience attraction, which has led to the user distancing herself from these spaces' interior environments (Dlrcoo, 2021). Upon entering the exhibition spaces, viewers find themselves in an abstract realm where they are unable to make the connection between their presence and the visual elements and movement within the building.

Additionally, the interaction between audience movement, layout, and movement in every exhibition space has altered in recent decades. It is not admirable that exhibition stand designs have been made without taking audience attraction into account. Thus, the nation's interior design and exhibition space development, particularly in Osun state, faces numerous difficulties in the modern day. The construction, for example, does not adhere to international requirements for exhibition room and space design. Due to the paucity of studies on space adequacy (Nnezi, Olawale, & John, 2019; Okoye Onyegiri, & Okafor, 2021; Nnezi Uduma-Olugu, & John, 2019) <sup>[12, 12]</sup>, the current study seeks to evaluate the impact of space adequacy on the user's experience in Art Exhibition Centre in Nigeria.

### Literature Review

#### Exhibition Space

In places of architecture, like museums, exhibition space serves as both the exhibition's carrier and its fundamental space. Triangular, radial, and hall kinds are the three primary plane arrangement categories for an exhibition space

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(Zhang & Zhou, 1998). With its specific and consistent visitor circulation, but less flexible layout, the tandem style seeks to connect all exhibition spaces. Radial design has a strong, adaptable, and selectable feature in that all of the display rooms are positioned along the corridor, around the atrium, etc. (Hameed, 2023). Additionally, the hall type

focuses on consolidating the majority of display rooms into a comprehensive hall with a flexible and cohesive layout. Nonetheless, it invariably tends to produce noise interference and overlapping visiting paths, which are dispersed across the atrium and central area (Fig. 1) and are therefore part of the radial architecture.

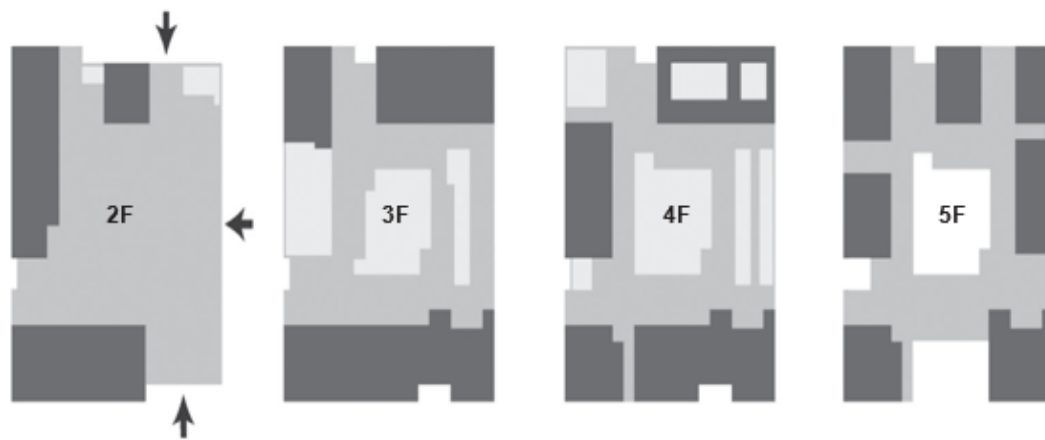


Fig 1: Exhibition arrangement

### Spatial Configuration of Spaces: Bill Hillier's Legacy Theory

Bill Hillier's theory of natural movement called "natural movement" deals with the effect of spatial configuration in the formation of behavioral and social patterns such as movement patterns. He considers the most important factor in guiding the movement of pedestrians in the architectural space to be aligned with the configuration of the space alone (Hillier, Penn, Hanson, Grajewski & Xu, 1993). In this approach, the spatial configuration can influence the distribution pattern of spatial attractors. First, it specifies the movement pattern inside the city. Secondly, it positions itself by uses and spatial attractors to make this movement efficient for those purposes (Hillier & Vaughan, 2007).

Based on the relationship between movement and morphology, this theory deals with the configuration of space and the way of communication between urban elements, so that spatial configuration alone can be considered the main factor in predicting pedestrian movement (Toker, Baran & Mull, 2005). The relationship between attractions, spatial configuration, and movement is shown in Fig. 2. This figure states that while the spatial configuration can affect the movement as well as the spatial attractors, it cannot be affected by them; Of course, movement and space attractors can affect each other. This study confirms the primary factor of creating movement in direct relation to the spatial configuration and without knowing it, it is not possible to study the pattern of movement in architecture and urban Map software, they concluded that in addition to the variables of integration and connection of the public domain, which is confirmed by the quantitative method, it also shows the effectiveness of variables such as geometry and vegetation, which cannot be identified by the quantitative method. In addition, the arrangement of semi-private territory in blocks is recognized as another variable in people's willingness to be in the space. Therefore, quantitative and qualitative methods complement each other in analyzing the sociability of physical space.

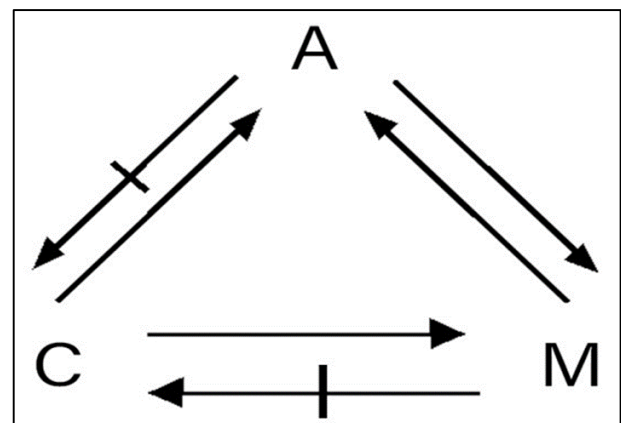


Fig 2: Relationships of attraction, configuration & movement in space (Hillier et al., 1993)

### Exhibition architecture and Exhibition stands

Architectural design is a visual program for creating works. Each design or composition consists of two main parts: architectural design elements and design principles (Ahmadi, 2012). According to the limited records of research about the architecture of the interior space of the exhibition and exhibition stands, part of the definitions of the architectural trend of this field can be reviewed and searched in the book "Pattern of Exhibit Stand Design Process" written by Azad (2018). Explanation of the physical signs that the architectural design and activities are among the important identifiers that define the exhibition stand in association with the way of access and movement of the users.

The designers of the exhibition facilitate effective communication with the audience (users) by using space, environment, and movement and gaining real experiences, and by using the potential of the environment to convey the message; they create a communication space between the message and the environment. The correct understanding of the two words space and display is essential concerning exhibition spaces (Behmanesh, 2018).

Furthermore, Giles Velarde in his book *Designing Exhibitions* (2001), asserts that the designer's position

between the visitor (users) and the scientific source of knowledge is crucial to the planning process of an exhibition. The scholar further argues that “the designer’s primary interpretive role, like that of a translator, must be performed in both technical and exhibition language by someone fluent in it.” The specialization of exhibition design can be partially attributed to the professionalization of design planning during the 20th century when the improvement of quality standards led to the division and differentiation of design fields. The designer explains the meaning of the space by developing the way of access and movement in narrative frameworks, and finally, they are displayed with colours, graphics, surfaces, and materials. Circulation means the movement pattern in an area a building or a space in a building that provides access to different parts for people or services (Puusepp, 2010).

### Previous Studies

Sakarya and Gurani (2021) examined how people and space interact, looking specifically at how people utilize architecture museums and how people use space as tourists. The study's focus was chosen to be museums since they belong to the complex structural groups that include places of healthcare, retail establishments, transportation hubs, and other public buildings that facilitate human interaction with the environment and one another. Permeability and visibility graph analysis were the two areas in which the spatial syntax analysis method was used. As a result of the analysis, it was discovered that visitor preferences are influenced by spatial configuration and that there was a significant overlap between the visible area structures and permeability of the museum space where fieldwork was done.

Furthermore, Adidas and Alserayhi (2020) conducted a quantitative analysis of public open space per resident in the Kingdom of Saudi Arabia: An analysis of the Jeddah city case study. Using a geographic information system (GIS) to determine the kinds of public open spaces that contribute to the per capita value in the city, the study calculated the current amount of public open space per resident in Jeddah. Located in a nation that is quickly developing, Jeddah is a replanned metropolis where public open spaces currently do not live up to international standards or user expectations.

Nnezi, Olawale, and John (2019) <sup>[12]</sup> looked at how people perceived the green infrastructure that was available, the tranquillity of the eco-open spaces that were already there and that students frequently visited because of their biophilic qualities, and how the amenities were perceived by the users. Eighty (80) photocopies of the survey were sent to respondents, who included staff members, tourists, and students whom they had met at the various locations. The study found that by utilizing accessible areas to experience plants and trees in a more biophilic way, the University of Lagos' open spaces need to better fulfil the psychological comfort of its students, employees, and visitors.

A study on quality analysis and public space categorization was conducted by Lorenzo et al. (2023). The research findings indicate that the Public Space Characteristics Observation Questionnaire (PSCOQ) tool is useful for classifying public spaces, users are competent assessors of public spaces, and physical order can predict users' perceptions of environmental quality and restorative ability. To make public places better and more user-friendly, it is possible to identify their advantages and disadvantages using the PSCOQ observation tool.

In 2017, Yafei Ou & et al. investigated the design of the

exhibition space based on service design thinking; case example: observation of Beijing rehabilitation technical assistance for the elderly exhibition hall. The results of the survey indicate that the design of exhibition spaces for the elderly requires the use of movement patterns and 2D and 3D pictograms.

Also, extensive lighting helps this process a lot. High visual resolution can make navigation easy (Ou, Wang, You, Tao & Liu, 2017). Werner also states that the wayfinding performance and the ability of humans to find direction depend on the geometric relationships between different parts of space (Wineman & Peponis, 2010). One of the key components in the interpretation of the exhibition space is the orientation and continuity of movement along a designer’s comprehensible storyline to the entire exhibition.

Moreover, Li, We, and He (2013) conducted a case study on museums in Hefei as part of their investigation of the functional organization and spatial constitution of museum architecture. Scholars have demonstrated the substantial social worth and importance of cultural architecture, particularly museum architecture, in enhancing the perception of a city and optimizing the quality of life for its inhabitants.

Barlow, Lyons, and Nolan (2021) <sup>[3]</sup> also looked at the objective amount of green space and more general issues in the area as factors that contribute to people's perceptions of a lack of open public space. A mixture of principle component analysis and logistic regression is used to analyze this. The findings imply that whether or not someone believes that there is an issue with the scarcity of open public space depends significantly on objective green space. The investigation also demonstrates that the perceived sufficiency of open public space is significantly influenced by criteria such as area cleanliness, safety, and service availability.

### Methodology

On the methodology, a qualitative research design was adopted to evaluate the space adequacy and its impact on users' experiences in the art exhibition centre. Existing journals and articles on the themes of the study were reviewed. Content analysis technique was used to analyse the information gathered through the secondary sources.

### Results and Discussion

The current study evaluated the impact of space adequacy on the user's experience in the Art Exhibition Centre in Nigeria. An art exhibition is a public presentation of artwork, which makes an art market attract a large number of artists, dealers, collectors, and media representatives, making space for artworks to be viewed, reported on, and debated.

From the review, shreds of evidence revealed that the design of art exhibition spaces can enhance visitors' psychological well-being by creating attractive, comfortable, comprehensible, participative, innovative, and sustainable experiences. Furthermore, it has been demonstrated that a visitor's decision to explore an art display at first is more influenced by direct visual access, which is created by the building, than by physical distance.

Furthermore, the physical environment of art exhibition spaces was guided by Bill Hillier’s theory of natural movement called “natural movement”. The theory deals with the configuration of space and the way of communication between urban elements so that spatial configuration alone can be considered the main factor in predicting pedestrian

movement in art exhibitions. Besides, the physical design of exhibition centres is essential for establishing interactive links that can highlight visitors' desire for rich experiences.

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