

## **TOWARDS IMPROVING PUBLIC PATRONAGE OF ART: A CASE STUDY OF CREATIVE SPACE DEVELOPMENT IN THE NATIONAL ART THEATRE, LAGOS, NIGERIA**

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### **Abstract**

*Cultural art buildings are at the centre of public interest because they bear witness to the history, traditions, and values of a community. Today, many cultural art buildings in Nigeria suffer from underutilization due to lack of activities and facilities to better serve the public. The idea of integrating creative spaces in the design of these facilities has the potential to improve public patronage of art. This paper sought to investigate creative space development in the National Art Theatre, Lagos, Nigeria; and its impact on promoting cultural activities, attracting users, and connecting people with the essence of the indigenous art. The study adopts a case study research design involving data collection through direct field observation and interviews from regular users. Initial findings reveal that essential design parameters and considerations that inform the design process of cultural art buildings include architectural features, auditorium, exhibition spaces, cinema and conference halls, restaurant, bars, flexible outdoor relaxation and parking spaces, as well as lighting, acoustics, accessibility, security, cultural and sustainability considerations amongst other important factors. Furthermore, the main impacts of creative space development at the facility, are showcasing indigenous art; hub for community engagement and collaboration, as well as, and serving the purpose of educational resource. Recognizing the value of providing creative spaces in improving overall user experience in terms of public patronage and art appreciation can thus enhance the overall quality and performance of cultural art buildings. The paper concludes by making useful recommendation for cultural institutions, policymakers, and urban planners.*

**Key Words:** *Creative spaces; Cultural Art Buildings; National Art Theatre, Lagos*

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### **Introduction**

Cultural art buildings are often architectural marvels that bear witness to the history, traditions, and values of a community or society (Meseneva, 2020; Olaniyan *et al.*, 2023). Fundamentally,

they are dedicated to the promotion, preservation, and celebration of various forms of art and culture. These buildings serve as hubs for artistic expression, cultural exchange, education, and community engagement; each with its

unique architectural style and historical significance (Owamoyo and Tabibi, 2023). Over the years, many of these buildings have fallen into disrepair or faced the threat of demolition due to neglect, lack of funding, or changing urban landscapes (EU, 2018). In response to these challenges, preservationists, architects, urban planners, and cultural advocates have increasingly turned to creative space development as a means to revitalize cultural art buildings and ensure their long-term sustainability. Creative space development involves repositioning these buildings for contemporary uses while preserving their historical integrity and cultural significance (OECD, 2018). This approach not only helps to conserve architectural heritage but also injects new life into these spaces, making them relevant and accessible to a wider audience (Australian Academy of the Humanities, 2019).

According to very recent studies, creative space development in cultural art buildings offers numerous benefits to communities, stakeholders, and the broader society. Firstly, it serves as a catalyst for economic development by attracting tourists, investors, and creative industries to the area (Jeannotte, 2021). In other words, by transforming heritage buildings into cultural hubs, cities can boost local economies, create job opportunities, and generate revenue through cultural tourism and creative enterprises (OECD, 2018). Secondly, creative space development contributes to the preservation of cultural heritage by ensuring the adaptive reuse of historic buildings instead of their demolition or neglect (Owamoyo and Tabibi, 2023). By repositioning these structures for contemporary uses such as art galleries,

performance spaces, studios, and co-working hubs, communities can breathe new life into these buildings while safeguarding their cultural significance for future generations (Australian Academy of the Humanities, 2019).

Nigeria has a rich cultural heritage and a growing art scene, but the state of cultural art buildings in the country varies. While some are faced with the problem of poor maintenance, under-utilization, and lack of adequate funding (Olaniyan *et al.*, 2023; Okoye and Chijioke 2020). Others are plagued with lack of infrastructure which often hinders their optimal functioning, as such; many buildings need renovation and modernization to better serve the artistic community and the public (Amalu *et al.*, 2023). The need for Nigerian cultural art buildings to diversify in their cultural programmes in serving the public to rekindle public interest in art cannot be over emphasized. This is because the traditional role of collection, housing and showcasing is fast becoming un-motivating to the general public. This is in fulfilment of the Federal Government's edict after the civil war in quest of lasting unity, peace and integration. This edict conceived the policy of establishing Arts centre of National Unity to serve as instruments of cultural education to foster unity and understanding among Nigerians.

Public patronage of these arts centre is on the decline. Architecture which is a problem-solving endeavour, has the capacity through proper space planning and effective analysis to seek out and provide spaces for new cultural programmes that will attract the public. Also, studies have shown that performing arts and visual arts can create a powerful synergy to improve public patronage of art

and enhance art appreciation. This paper seeks to investigate the creative space development at the National Art Theatre in Lagos, and its impact on promoting cultural activities, attracting users, and connecting people with the essence of the indigenous art.

## **Literature Review**

### ***Creative Spaces and Development in Cultural Art Buildings***

Cultural art buildings are essential spaces for preserving cultural heritage, fostering creativity, promoting community engagement, and enriching society (Olaniyan *et al.*, 2023). They include museums, galleries, theatres, and cultural centres. Cultural art buildings serve as important repositories of artistic expression, historical artifacts, and cultural identity (Zhao and Xu, 2022). They provide spaces for education, inspiration, and reflection, contributing to the enrichment of society and the preservation of collective memory (Odoh *et al.*, 2021). This is why the design of cultural art buildings is critical to their functionality, aesthetics, and impact on visitors. Architectural features, exhibition spaces, lighting, acoustics, and accessibility are key considerations in the design of cultural art buildings (Stanca, 2021). Armistead *et al.* (2007) argued that a successful cultural art building should engage all the senses, evoke emotional responses, and create a harmonious relationship between the built environment and the exhibited artworks.

Cultural art buildings contribute to community development by providing spaces for cultural exchange, artistic expression, and public participation. Feizollahzade (2016) emphasized the role of cultural art buildings in fostering cultural appreciation, cross-cultural

understanding, and social cohesion. They serve as hubs for community engagement, social interaction, and creative expression, fostering a sense of belonging and identity among residents (Tantawy and Khamis, 2021). Dare-Abel *et al.* (2018) explored the social impact of cultural art buildings in urban communities and their role in promoting social cohesion and civic pride. Furthermore, cultural art buildings play a crucial role in preserving and safeguarding cultural heritage for future generations.

Museums, archives, and cultural institutions house valuable artifacts, artworks, and documents that represent the cultural heritage of societies. Olaniyan *et al.* (2023) discussed the importance of cultural art buildings as custodians of cultural memory and as spaces for interpreting and transmitting cultural heritage to diverse audiences. Despite their cultural and social significance, cultural art buildings face various challenges, including funding constraints, maintenance costs, audience engagement, and changing cultural landscapes. Okoye and Chijioke (2020) highlighted the need for sustainable funding models, community partnerships, and innovative programming to ensure the long-term viability and relevance of cultural art buildings in a rapidly evolving society. Therefore, articulating the significance of cultural art buildings and addressing the challenges they face through creative space development and sustainable practices, stakeholders can ensure the continued vitality and relevance of these important cultural institutions.

Conceptually, creative spaces are physical environment designed to inspire creativity, collaboration, and innovation (Thoring *et al.*, 2018). In other words, these spaces are specifically created to

foster a creative and productive atmosphere for individuals, or teams working on various projects, such as art, design, technology, or other creative endeavours. Creative spaces are essential for nurturing creativity, innovation, and artistic expression. According to Thoring *et al.*, 2019; Baafi, 2020, providing individuals with dedicated spaces for creative work can enhance their motivation, productivity, and overall creative output. It is also argued that creative spaces are not only physical environments but also social and cultural contexts that support and inspire creative endeavours Marino *et al.*, 2023). Therefore, designing effective creative spaces requires careful consideration of various factors, such as flexibility, accessibility, and aesthetics. Thoring *et al.* (2018) emphasized the importance of incorporating elements that encourage exploration, experimentation, and collaboration in creative space design. Flexible layouts, natural light and interactive features are commonly cited design principles for fostering creativity and innovation in spaces (Thoring *et al.*, 2020).

Furthermore, creative spaces have the potential to engage communities, promote social interaction, and strengthen local identity. Bocconi (2016) highlighted the role of creative spaces in facilitating social cohesion and community development. By involving community members in the design and programming of creative spaces, organizations can create inclusive and vibrant environments that reflect the diverse needs and interests of the community. Also, creative spaces contribute to economic development by attracting talent, fostering entrepreneurship, and stimulating cultural

industries (OECD, 2018). Bartuska (2020) argues that creative spaces are key drivers of economic growth in the knowledge economy. Creative clusters and innovation districts that feature a mix of creative industries, startups, and cultural institutions can create a dynamic ecosystem that spurs economic activity and job creation. In addition, advances in technology have also revolutionized the way creative spaces are designed, utilized, and experienced. Virtual reality, augmented reality, and digital tools allow for new forms of collaboration, communication, and expression in creative spaces. Gębczyńska (2020) explored the role of technology in enhancing creativity and innovation in physical and virtual creative environments.

Moreover, sustainability is increasingly becoming a priority in creative space development, with a focus on energy efficiency, waste reduction, and environmental impact Rehman *et al.*, 2023; Ajijola *et al.*, 2021; Damola and Emmanuel, 2020). Green design principles, such as passive heating and cooling, renewable materials, and green roofs, are being integrated into the design of creative spaces to minimize their ecological footprint and promote environmental stewardship. UNIDO (2020) discussed the importance of sustainable design practices in creating healthy and resilient creative environments. It thus implies that creative space development is a multifaceted field that encompasses design, community engagement, economic impact, technology, sustainability, and innovation. Consequently, an understanding of the importance of creative spaces and incorporating best practices in their design

and management, organizations and policymakers can create dynamic and inspiring environments that foster creativity, collaboration, and cultural expression.

## **Methodology**

### ***Study Context***

The study context is the National Art Theatre, Iganmu; an iconic architectural masterpiece and cultural landmark in Lagos, Nigeria (Figure 1 & 2). The

building is shaped like a military hat and covers an area of about 23,000 square meters, standing well over 31 meters tall. The multipurpose National Theatre was established for the preservation, presentation and promotion of Arts and Culture in Nigeria. The building is termed "the culture house" and represents one of the most identifiable national symbols about Nigerian arts and culture at home and abroad.



Fig. 1: Approach View, National Art Theatre, Lagos

Source: <https://www.photos/nationalarttheatre-Lagos>

The design for the National Theatre in Lagos was taken from the Palace of Culture and Sports in Varna, Bulgaria. The contract for its construction was signed on April 24, 1973, during Gen. Yakubu Gowon's regime with the Bulgarian Construction Company called Technoexportstroy, the main constructors for the building of the complex. Apart from providing a befitting venue for the 2nd World Black and African Festival of Arts and Culture (FESTAC 77) which Nigeria successfully hosted in January/February, 1977 and for which the

National Theatre provided more than adequate venues, the complex is to be a rallying point for both Nigeria and international artistes wishing to share experience with their Nigerian counterparts. Even though it had been in use since late 1975 it was formally opened by the then Head of State of the Federal Republic of Nigeria, Gen. Olusegun Obasanjo on September 30, 1976, five months before FESTAC 77. Since then it has hosted a good number of international music concerts, dramas, film shows, symposia, exhibitions, conventions, workshops and even sports.



Fig. 2: Side View, National Art Theatre, Lagos  
Source: <https://www.photos/nationalarttheatre-Lagos>

### ***Study Design***

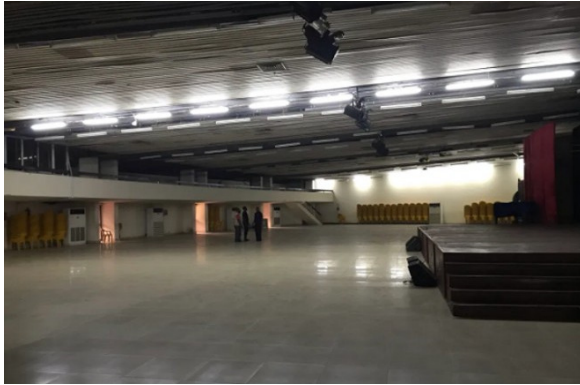
Due to the nature of the current study which requires an in-depth study of creative space development at the National Art Theatre, the case study research design was adopted and the instruments of data collection include direct field observation as well as interview with users of the facility. On one hand, an observation schedule was employed to assess the current physical conditions of the buildings and was also complemented with photographs. The results of observation are analyzed and presented in tables. On the other hand, the simple random sampling technique was used to recruit participants in the interview wherein three (3) regular users of the National Art Theatre was selected. Furthermore, an interview guide containing open-ended questions focused on assessing the impact of creative spaces at the National Art Theatre on promoting cultural activities, attracting users, and connecting people with the essence of the indigenous art. The collected data was analyzed thematically to identify patterns,

and provide insights for improving public patronage of Nigerian art.

### **Results and Discussion**

#### ***Creative Spaces and Facilities in the Building***

Cultural art buildings are unique architectural structures that serve as repositories of artistic expression, historical artifacts, and cultural identity. The design of these buildings plays a significant role in shaping the visitor's experience, preserving cultural heritage, and fostering community engagement (Katja Thoring and Badke-Schaub, 2020). The national art theatre, Iganmu, Lagos is a major tourist attraction, consisting of a central hall of about 5000 seating capacity; a 1600 seats conference hall which also serves as banquets and cocktails; a collapsible stage which can be reassembled for concerts, meetings, film demonstrations, and various types of indoor sports competitions; two large exhibition halls and two cinemas with 800 seats each; large lobbies, lounges, office spaces, coffee bars and a buffet (Figure 3).



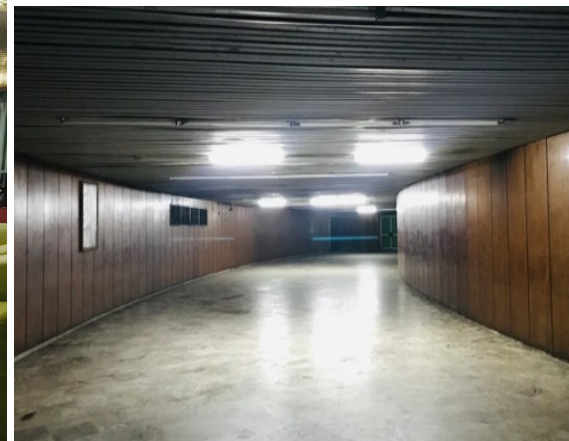
Exhibition hall



Parts of the Lounge



VIP Conference Room and Lounge



Large lobbies

Fig. 3: Interior spaces, National Art theatre, Iganmu, Lagos

Source: <https://lifestyle.thecable.ng/photo-a-look-inside-the-national-theater-lagos/>

Furthermore, the interior of the theatre is packed with distinctive artworks, such as stained-glass walls credited to Yusuf

Grillo, sculptures and murals to Lamidi Fakeye, Erhabor Emokpai, and other legendary contemporary artists (Figure 4).



Fig. 4: Stained glass walls and Mosaic rendering on walls, National Art Theatre, Lagos

Other available facilities include 250 toilet cubicles and 300 urinals; 2 boreholes and an underground tank, a stand-by generator, 8726 lighting points made of 1003 incandescent bulbs and 7723 fluorescent tubes. The theatres’ interior also has optimal sound quality and audience comfort. At the basement is a 250-capacity parking lot. In addition,

there is a main car park which takes about 500 cars. The exterior of the complex is characterized by outdoor recreational spaces with lush green lawns (Figure 5). A meaningful tour of the complex takes more than eight hours and the facility has the capacity to handle 12 programmes simultaneously.



Fig 5: Aerial View showing exterior of the National Art Theatre, Lagos

Source: <https://www.photos/nationalarttheatre-Lagos>

Table 1: Appraisals and deductions from the Case study

<b>Summary of Appraisal</b>	
<b>Merits</b>	<p>The building is well situated and properly zoned to minimize noise ingress from adjoining roads and facilities.</p> <p>The National Art Theatre serves as a cultural hub where artists, performers, and diverse users can come together to showcase their talents and collaborate on projects.</p> <p>The building has essential infrastructure to support the development of Nigerian arts and the creative industries.</p> <p>There is a good view of the whole building as you can drive round the whole structures just to get a better experience of the building on tarmac</p> <p>Lobbies are very large to serve as exhibition and accommodate population influx and exit.</p> <p>The Theatre engages with the local community, hence contributes to the development of a vibrant and inclusive community.</p>
<b>Demerits</b>	<p>Spaces are poorly ventilated. There are few windows in the building. Except for the ones used within the conveniences, other windows are sealed.</p> <p>Most of the spaces depend on artificial lighting than natural lighting.</p> <p>Inadequate parking spaces which are far from the main building.</p> <p>The building lacks adequate maintenance and upkeep of its facilities, thus limiting the usability of creative spaces.</p>



**Impact of Creative Space Development at the National Art Theatre, Iganmu, Lagos**

The results on the impact of creative spaces on promoting cultural activities, attracting users, and connecting people with the essence of the indigenous art are presented in Table 2.

Table 2: Discussions on the impact of creative spaces on promoting cultural activities

<i>Interviewee</i>	Details
<b>A1</b>	<p><b>Role:</b> Artists</p> <p><b>Frequency of visit:</b> Weekly</p> <p><b>Main theme:</b> <i>Showcasing indigenous art</i></p> <p>The spaces provide a platform for artist to display their works, collaborate with other artist, and host a variety of events to contribute to preserving and celebrating our indigenous cultural heritage</p>
<b>A2</b>	<p><b>Role:</b> Set Designer</p> <p><b>Frequency of visit:</b> Monthly</p> <p><b>Main theme:</b> <i>Showcasing indigenous art &amp; Collaboration</i></p> <p>The spaces showcase diverse forms of artistic expression by hosting various cultural events such as art exhibitions, workshops, and festivals; thereby reminding users of their cultural identity and indigenous art.</p>
<b>A3</b>	<p><b>Role:</b> Visitor</p> <p><b>Frequency of visit:</b> Weekly</p> <p><b>Main theme:</b> <i>Educational Resource, Community Engagement &amp; Collaboration</i></p> <p>The exhibitions provide insights into the history and significance of the various Yoruba art forms, as well as the cultural context of the artwork on display. The spaces also provide opportunity for cultural exchange programs and engagement with the community.</p>

Based on analysis of results in Table 4.2, the main impacts of creative space development in the study context are: (i) showcasing indigenous art (ii) hubs for community engagement and collaboration, as well as (iii) educational resource. This finding provides support for earlier studies, for instance, Tantawy and Khamis, (2021) noted that when spaces in cultural art buildings are creatively designed, they promote community involvement, social interaction, and artistic expression that helps people feel connected and recognized within their neighbourhood. The findings further confirms that creative spaces supports the growth of artistic creativity, encouraging community involvement, enhancing social

connections, and reinforcing a sense of local identity (Bocconi, 2016; Baafi, 2020). An inference may be drawn that creative space development in cultural art buildings are valuable and plays a critical role in improving overall user experience in terms of public patronage and art appreciation.

**Conclusion and Recommendation**

Attempt has been made in this study to examine creative space development at the National Art Theatre in Lagos, and its impact on promoting cultural activities, attracting users, and connecting people with the essence of the indigenous art. The two deductions from this study are; first, the essential design parameters and considerations in the National Art Theatre

include the architectural features, auditorium, exhibition spaces, cinema and conference halls, restaurant, bars lighting and acoustics, flexible outdoor relaxation spaces, parking, accessibility, security, cultural and sustainability considerations amongst other important factors. Second, the main impacts of creative space development at the National Art Theatre, are showcasing indigenous art; community engagement and collaboration, as well as, and educational resource. The implication of this findings hold significant importance for cultural institutions, policymakers, and urban planners aiming to improve creative spaces. For cultural institutions, it highlights the significance of incorporating spaces to showcase indigenous art into their programs and exhibition areas in order to preserve cultural heritage, attract diverse audiences, and promote a greater understanding of indigenous art forms. Therefore, improved collaboration with indigenous artists and host community in order to ensure inclusivity and diversity within these spaces is highly recommended. Also, policymakers can utilize these findings to support the sustainability of creative spaces in cultural art buildings, such as by funding initiatives for indigenous artists, promoting community engagement programs, and advocating for cultural diversity within public areas. By acknowledging the value of creative spaces in showcasing indigenous art and fostering community bonds, policymakers can thus contribute to a more vibrant cultural landscape. Furthermore, urban planners can apply these findings to design cultural art buildings that prioritize creativity, community engagement, and

inclusivity by creating versatile spaces that support various artistic practices and events. Moreover, they can ensure that these spaces are accessible and welcoming to all community members, including indigenous artists and audiences.

## References

- Ajijola, S., Raheem, M.A. and Obileke, R. (2021). Understanding Sustainability and Challenges with Sustainable Building Design and Construction Practice in Lagos-State, Nigeria. *International Journal of Advances in Engineering and Management*, 3(3): 167–174. <https://doi.org/10.35629/5252-0303167174>
- Amalu, N.S., Jack-Rabin, Y.I.-O., Udeh, M.K. and Ufana, M.P. (2023). Cultural Security and National Development in Nigeria, 1960-2020. *LWATI: A Journal of Contemporary Research*, 20(1): 2–15.
- Armistead, E.H., Schaumburg, V., Armstrong, J., Council, I.A., Cory, J. and Evanston, C. (2007). *Arts and Culture Planning: A Toolkit for Communities*.
- Australian Academy of the Humanities. (2019). *Transformative: Impacts Of Culture and Creativity* (Issue November).
- Baafi, R.K.A. (2020). School Physical Environment and Student Academic Performance. *Advances in Physical Education*, 10: 121–137. <https://doi.org/10.4236/ape.2020.102012>
- Bartuska, T.J. (2020). Chapter One: The Built Environment: Definition and Scope. In *Built Environment Design, and Development*

- Introduction: Definition, and Scope* (pp. 1–14).
- Bocconi, L. (2016). Social Innovation in Arts and Culture Social Cohesion in Contexts of Culture-led Place Rejuvenation. In *Deliverable 4.3 of the project: “Impact of the Third Sector as Social Innovation” (ITSSOIN), European Commission – 7th Framework Programme* (Issue October).
- Damola, S. and Emmanuel, O. (2020). Waste minimisation strategies at the design phase : Architects ’ response. *Waste Management*, 118: 323–330. <https://doi.org/10.1016/j.wasman.2020.08.045>
- Dare-Abel, O.A., Obaleye, J.O., Oyesode, S. and Adeyemo, A. (2018). Art, Culture, Architecture And Urbanization Convergence: Case Of Two Centers. *Caleb International Journal of Development Studies*, 2(1): 1–11.
- Europeann Union. (2018). *How to design cultural development strategies to boost local and regional competitiveness and comparative advantage: overview of good practices*. <https://doi.org/10.2863/666915>
- Feizollahzade, H. (2016). Designing a Cultural – Art Complex with a Sustainable Architecture Approach. *International Journal of Science and Research*, 5(5): 1866–1873.
- Gębczyńska, A. (2020). *Virtual reality technology in architectural education*. 18(1): 24–28.
- Jeannotte, M.S. (2021). Social Sciences and Humanities Open When the gigs are gone : Valuing arts , culture and media in the COVID-19 pandemic. *Social Sciences and Humanities Open*, 3(1): 100097. <https://doi.org/10.1016/j.ssaho.2020.100097>
- Marino, M. Di, Chavoshi, S.H., Andersen, T. and Nenonen, S. (2023). The future of multilocational work and New Working Spaces in small and medium-sized urban municipalities and in rural municipalities : A Norwegian perspective. *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 77(4): 1–17. <https://doi.org/10.1080/00291951.2023.2249480>
- Meseneva, N.V. (2020). Current Trends in the Design of Urban Neighborhoods. *International Science and Technology Conference “FarEastCon-2019”: IOP Conf. Series: Materials Science and Engineering*, 753: 1–7. <https://doi.org/10.1088/1757-899X/753/3/032066>
- Odoh, P., Okeke, F.O., Anih, K.E. and Sam-amobi, C. (2021). *Architecture And Tourism ; The Place Of Architecture In Tourism*. February.
- OECD. (2018). *The Value of Culture and the Creative Industries in Local Development*.
- Okoye, Chijioko, H. (2020). The Values of Art and Culture; Their Challenges to the Nigerian Society. *Odezuruigbo Journal*, 4(1): 243–250.
- Olaniyan, O.M., Egunjobi, F.B. and Adegoke, A. (2023). African Traditional Arts and Ornamentation in the Architecture of the Cultural Centre Ibadan. *African Traditional Arts and Ornamentation*, 9–15. <https://doi.org/https://dx.doi.org/10.4314/etsj.v14i2.2>
- Owamoyo, L. and Tabibi, B. (2023). The Impact of Globalisation on

- Traditional Architecture in Nigeria : A Case Study of Lagos Island. *Advances in Applied Sociology*, 13: 636–650.  
<https://doi.org/10.4236/aasoci.2023.139040>
- Rehman, A., Alam, M.M., Ozturk, I., Alvarado, R., Murshed, M., Işık, C. and Ma, H. (2023). Globalization and renewable energy use: how are they contributing to upsurge the CO<sub>2</sub> emissions? A global perspective. *Environmental Science and Pollution Research*, 30(4): 9699–9712.  
<https://doi.org/10.1007/s11356-022-22775-6>
- Stanca, S. (2021). Improving Building Acoustics. *Journal of Applied Engineering Sciences*, 11(2): 137–142. <https://doi.org/10.2478/jaes-2021-0018>
- Tantawy, D.-E. and Khamis, N.E. (2021). Cultural Buildings ' Design between Visual Creativity and Psychological Impact : An approach for activating the concept of uncanny architecture in expressing national issues  
Research problem : Research Aim : Research Significance : Research
- Methodology : *Journal of Architecture Arts and Humanistic Science*, 6(26): 79–101.  
<https://doi.org/10.21608/MJAF.2020.23673.1506>
- Thoring, K., Mueller, R.M., Badke-Schaub, P. and Desmet, P. (2019). An Inventory of Creative Spaces: Innovative Organizations and their Workspace. In *Proceedings of the 22nd International Conference on Engineering Design (ICED19)*, Delft, The Netherlands, 5-8 August, 39–49.  
<https://doi.org/10.1017/dsi.2019.7>
- Thoring, K., Mueller, R.M. and Desmet, P. (2018). Design Principles For Creative Spaces. *International Design Conference - Design 2018, Figure 1*, 1969–1980.
- UNIDO. (2020). Energy efficiency technologies and benefits. In *Sustainable energy regulation and policymaking for Africa*.
- Zhao, Y. and Xu, W. (2022). On the Cultural Construction of Community. *ISEMSS 2022, ASSEHR* 687(2): 3737–3745.  
<https://doi.org/10.2991/978-2-494069-31-2>