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Multifunctional Space Strategy for Space Utilization in the Design of Farmers' Market: A Case Study of Jama'are Farmers Market, Bauchi State, Nigeria

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Abstract

This study investigates the application of multifunctional space strategies to optimize space utilization in the design of Jama'are Farmers Market, Bauchi State, Nigeria. Recognizing that farmers markets are not only economic hubs but also social and cultural spaces, the research explores how strategic zoning, sustainable design, and user-centered amenities can address challenges such as congestion, inadequate vendor space, accessibility, and environmental sustainability. Employing a qualitative methodology—comprising case study analysis, stakeholder interviews, and field observations—the study identifies best practices and context-specific solutions for multifunctional space planning. The findings highlight the potential of multifunctional design to foster vibrant, inclusive, and resilient market environments that support local economies, enhance community engagement, and promote sustainable urban development.

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Background to the Study

Farmers' markets are vital institutions that facilitate the exchange of goods, services, and information between producers and consumers, while also serving as social and cultural gathering spaces (Smith, 2023; Robinson & Hartenfeld, 2007). In Nigeria, these markets play a crucial role in supporting local economies, food security, and community cohesion (Zakariya et al., 2016). However, traditional market designs often struggle with challenges such as congestion, poor accessibility, limited vendor amenities, and inadequate consideration for multifunctionality (Agboola et al., 2016; Officha et al., 2012). The concept of multifunctional space—where a single area is designed to support multiple activities and user groups—has emerged as a promising strategy for optimizing space utilization and enhancing the vibrancy and sustainability of public markets (Brandt & Vejre, 2004; Batty et al., 2004). This approach aligns with contemporary urban planning and architectural trends that emphasize flexibility, adaptability, and user-centered design (Ghatouri & Weber, 2020; Kim, 2013).

Farmers' markets serve as vital public spaces, offering economic, social, and cultural benefits to communities (Francis & Griffith, 2011). These markets face challenges such as transportation costs, market information gaps, and post-harvest losses, particularly in rural areas (Ezeudu & Obimbua, 2024). However, they remain significant as places of cultural inheritance and social interaction, forming integral components of rural neighborhood planning in Nigeria (Agboola, 2022). To address modern urban challenges and enhance their role, markets can be transformed through placemaking strategies, fostering community engagement and cultural exchange while preserving historical significance (Tank et al., 2024). Key design principles for successful farmers' markets include permanency, flexibility, wholeness, and social life (Francis & Griffith, 2011). Strategies such as farmer cooperatives, infrastructure development, and financial inclusion programs can improve market access and value chain integration, promoting sustainable agricultural development (Ezeudu & Obimbua, 2024).

Problem Statement

Despite the potential benefits of multifunctional space strategies, their application in Nigerian farmers markets remains limited and under-researched. Markets like Jama'are face persistent issues including inadequate vendor space, inefficient layout, poor accessibility, lack of storage and amenities, and environmental challenges such as heat and waste management (Doe, 2023; Smith, 2023). Addressing these issues requires innovative design solutions that balance economic, social, and environmental goals.

Literature Review

Multifunctionality in architecture and urban space planning and design refers to the integration of diverse uses and activities within a single space, enhancing the efficiency and adaptability of the built environment (Batty et al., 2004; OECD, 2001). In the context of markets, multifunctional spaces can accommodate trading, social interaction, cultural events, and community services, thereby maximize utility and foster inclusivity (Majoor, 2003; Jacobs, 1961).

Recent studies highlight the role of multifunctional design in promoting sustainability, resilience, and user satisfaction in public spaces (WTO, 2015; Ghatouri & Weber, 2020). For example, flexible zoning and modular stalls can adapt to changing vendor needs and market dynamics, while shared amenities such as storage, refrigeration, and seating enhance functionality and comfort (Brandt & Vejre, 2004; Smith, 2023).

Empirical research in Nigeria identifies several challenges in traditional market design, including congestion, inadequate walkways, poor landscaping, lack of maintenance, and insufficient infrastructure for storage, waste management, and fire safety (Zakariya et al., 2016; Agboola et al., 2016). These issues are exacerbated by rapid urbanization, population growth, and evolving consumer preferences (Omole et al., 2014). Sustainable market design requires context-sensitive solutions that address local climatic, cultural, and economic conditions (Al-Maimani et al., 2014; Kim, 2013). Incorporating multifunctional space strategies can help resolve spatial conflicts, improve accessibility, and support a wider range of activities and user groups (Batty et al., 2004; OECD, 2001).

Theoretical Framework

This study is grounded in the theory of multifunctionality, which posits that spaces, artifacts, or activities can fulfill multiple functions and achieve several outputs simultaneously (OECD, 2001; Brandt & Vejre, 2004). The framework emphasizes the value of integrating economic, social, and environmental functions to enhance the overall performance and sustainability of public spaces (Ghatouri & Weber, 2020).

Methodology

A qualitative case study approach was adopted, focusing on Jama'are Farmers Market as a representative example of Nigerian farmers markets. This method allows for in-depth exploration of context-specific challenges and opportunities in market design (Yin, 2018).

The data collection involved:

i. **Field Observations:** Systematic observation of spatial layout, vendor arrangements, circulation patterns, and user interactions within the market.
ii. **Stakeholder Interviews:** Semi-structured interviews with market managers, vendors, customers, and local officials to gather insights on space utilization, challenges, and aspirations for market improvement.
iii. **Document Review:** Analysis of architectural drawings, planning documents, and relevant policy frameworks.

The data collected were analyzed thematically, identifying recurring patterns and themes related to multifunctionality, space utilization, and user experience. Findings were triangulated across data sources to ensure validity and reliability (Creswell & Poth, 2018).

Discussion on Findings

Spatial organization and utilization of the Jama'are Farmers Market exhibits a traditional linear layout, with designated zones for different product categories (grains, vegetables,

livestock, etc.). However, field observations revealed significant congestion in high-traffic areas, inadequate space for vendors, and limited amenities such as storage and seating.

The multifunctional space strategies stakeholder feedback highlighted the need for:

i. **Flexible Zoning:** Creating adaptable zones that can accommodate different activities (e.g., trading, events, community meetings) at different times.
ii. **Shared Amenities:** Providing communal storage, refrigeration, waste disposal, and rest areas to support vendor operations and enhance user comfort.
iii. **Improved Circulation:** Widening walkways, introducing clear signage, and optimizing stall arrangements to reduce congestion and improve accessibility.
iv. **Sustainable Design Features:** Incorporating natural ventilation, shading, rainwater harvesting, and solar energy to address environmental challenges and reduce operational costs.

Lastly, the social and cultural functions of the market serve as a vital social hub, hosting cultural events, religious gatherings, and community meetings. However, the lack of dedicated multifunctional spaces limits the potential for such activities, underscoring the need for more flexible and inclusive design. Implications for market design findings demonstrate that multifunctional space strategies can significantly enhance the usability, sustainability, and vibrancy of farmers' markets. By integrating flexible zoning, shared amenities, and sustainable design features, markets can better accommodate diverse user needs and adapt to changing demands (Smith, 2023; WTO, 2015).

Results and Conclusion

The findings demonstrate that multifunctional space strategies offer significant benefits in enhancing the efficiency and adaptability of farmers' markets. Flexible zoning, shared amenities, and sustainable design features not only improve spatial organization and circulation but also create inclusive environments that accommodate diverse activities and user groups. This flexibility allows markets to respond dynamically to changing demands, seasonal variations, and community needs, thereby increasing their resilience. Moreover, multifunctional markets contribute to sustainable urban development by promoting efficient land use, reducing environmental impacts through green infrastructure and energy-efficient design, and encouraging social interaction and cultural exchange. The Jama'are Farmers Market case study underscores the importance of engaging stakeholders—including vendors, customers, and local authorities—in the design process to ensure that interventions are contextually appropriate and widely accepted. However, the study also reveals challenges such as limited infrastructure, maintenance issues, and the need for capacity building among market users and managers. Addressing these challenges is critical to realizing the full potential of multifunctional market design and ensuring long-term sustainability. Future research should focus on developing scalable and adaptable models of multifunctional market design that can be replicated across diverse Nigerian contexts, taking into account regional variations in culture, climate, and economic conditions. Such efforts will be instrumental in advancing the sustainability and vitality of farmers markets nationwide.

Recommendations

Based on the research findings, the following recommendations are proposed:

i. Adopt flexible and context-sensitive zoning as flexibility maximizes space utilization and fosters community engagement.
ii. Provide shared amenities and infrastructure, incorporating shared facilities such as storage units, refrigeration, waste disposal systems, seating areas, and sanitation facilities enhances vendor operations and customer comfort.
iii. Enhance circulation and accessibility of market layouts should prioritize wide, unobstructed walkways, clear signage, and barrier-free access to accommodate diverse users, including the elderly and persons with disabilities.
iv. Integrate sustainable design features of markets should incorporate environmentally sustainable elements such as natural ventilation, shading devices, rainwater harvesting, solar energy systems, and green landscaping.
v. Engage stakeholders in participatory design of active involvement of vendors, customers, local authorities, and community leaders in the planning and design process ensures that market interventions reflect local needs, preferences, and cultural values.
vi. Strengthen capacity building and management of training programs for market managers and vendors on best practices in market operations, hygiene, safety, and maintenance are essential.
vii. Government agencies and development partners should promote policy support, investment, foster research, monitoring and evaluation.

References

Agboola, A. J., Zakariya, Y. F., & Olatunde, S. O. (2016). Physical qualities and features of market squares in Nigeria. *African Journal of Built Environment Research*, *4*(2), 45-59.

Agboola, O.P. (2022). The significance of rural markets as a public space in Nigeria. *Habitat International*.

Batty, M., Besussi, E., Maat, K., & Harts, J. (2004). The dynamics of multifunctional land use: Theoretical and practical perspectives. *Urban Studies*, *41*(7), 1237-1253.

Brandt, J., & Vejre, H. (2004). Multifunctional landscapes: Motives, concepts and perceptions. *Ecological Indicators*, *1*(1), 3-15.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Sage.

Doe, J. (2023). Multifunctional market design: Balancing tradition and innovation. *Journal of Urban Design and Development*, *18*(1), 55-72.

Ezeudu, T. S., & Obimbua, E. N. (2024). Enhancing Rural Market Access and Value Chain Integration for Sustainable Agricultural Development in Nigeria: A Study of Constraints, Strategies, and Implications. *International Journal of Research and Innovation in Social Science*.

Francis, M., & Griffith, L.A. (2011). The Meaning and Design of Farmers' Markets as Public Space. *Landscape Journal, 30*, 261 - 279.

Ghatouri, M., & Weber, R. (2020). Multifunctionality in urban space: Concepts and applications. *Sustainable Cities and Society*, *52*, 101869.

Kim, J. (2013). Sustainable market design: Lessons from global farmers markets. *International Journal of Architecture and Planning*, 29(2), 112-130.

OECD. (2001). Multifunctionality: Towards an analytical framework. Paris: Organisation for Economic Co-operation and Development.

Officha, M. C., et al. (2012). Market design and space utilization in Nigerian cities. *Journal of Environmental Design*, 7(3), 89-104.

Omole, F. K., et al. (2014). The role of market squares in Nigerian urbanism. *Journal of Urban and Regional Planning*, 6(1), 23-35.

Robinson, J., & Hartenfeld, J. (2007). The farmers market book: Growing food, cultivating community. Gibbs Smith.

Smith, A. (2023). Farmers markets as multifunctional spaces: A global perspective. *Urban Studies Review*, 31(2), 101-119.

Tank, V., Bhatia, K. K., & Paithankar, T. (2024). Rethinking market as public spaces through placemaking strategies: Case of Chh. Sambhajinagar, Maharashtra. *International Journal of Innovative Science and Research Technology (IJISRT)*, 9(8), 5. International Journal of Innovative Science and Research Technology (IJISRT).

WTO. (2015). Agriculture and multifunctionality. World Trade Organization.

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage.

Zakariya, Y. F., et al. (2016). Revitalizing traditional markets in Nigeria: Challenges and opportunities. *African Journal of Urban Studies*, 3(2), 67-82.