

OCCUPATIONAL AND EDUCATIONAL DETERMINANTS OF RECREATIONAL CENTER UTILIZATION PATTERNS IN URBAN COMMUNITIES IN NORTH-WEST NIGERIA

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Abstract

Recreational center utilization remains substantially lower than facility availability would suggest, indicating that accessibility alone does not guarantee participation. This study examined how education level, income, and employment status influence actual utilization patterns among 361 urban residents across North-West Nigeria. Employing a descriptive survey design with multistage sampling, One-way ANOVA with post-hoc comparisons revealed highly significant effects: education level ($F = 88.567, p = .000$), income level ($F = 19.255, p = .000$), and employment status ($F = 37.912, p = .000$). All post-hoc comparisons for education demonstrated statistical significance ($p < .013$), with individuals lacking formal education showing dramatically lower utilization ($M = 2.50$) compared to primary school ($M = 12.00$), tertiary undergraduate ($M = 8.66$), and postgraduate groups ($M = 6.50$). Employment status analysis revealed private sector employees demonstrating highest utilization levels relative to other occupational categories. These findings suggest that education represents the strongest socio-economic predictor of recreational center utilization, operating through mechanisms of health awareness, skill confidence, and social capital. Policy implications emphasize need for targeted health promotion campaigns and utilization-focused programming addressing barriers faced by low-education populations, while addressing occupational time constraints through flexible scheduling and workplace wellness initiatives.

Keywords: Recreational utilization, socio-economic status, employment, education, urban health, Nigeria

Introduction

Recreational center infrastructure investment across sub-Saharan Africa frequently falls short of anticipated outcomes, with substantial facilities remaining underutilized despite meeting population needs and proximity standards. This paradox reflects a critical distinction: accessibility to facilities does not automatically translate to actual participation. Multiple socio-economic, cultural, and personal factors mediate the relationship between facility availability and utilization (Gonzálvez et al., 2021; Engemann et al., 2019). Understanding utilization patterns proves essential for optimizing infrastructure returns and identifying populations at risk for health disparities resulting from physical inactivity. In Nigeria specifically, rapid urbanization has generated increased recreational facility construction; however, utilization remains suboptimal, particularly among lower socio-economic populations (Wash et al., 2020, 2022).

The North-West geopolitical zone presents a particularly compelling research context. This region, comprising seven states with predominantly Muslim, Hausa-Fulani populations, experiences rapid urbanization alongside persistent socio-economic inequality. Religious and cultural norms significantly shape recreational participation patterns, particularly regarding gender and activity types (Okunola, 2021). Despite these contextual particularities, limited research has examined which socio-

economic factors most substantially influence actual utilization behaviours. Education, income, and employment status represent critical predictors through distinct mechanisms. Education influences health consciousness and awareness of recreation's benefits (Gordon-Larsen et al., 2005). Income determines whether individuals possess discretionary resources and time for recreational pursuits. Employment status shapes temporal availability, workplace culture regarding wellness, and stress levels driving recreation motivation. Beyond these direct effects, these factors interact—higher education typically correlates with higher income and more prestigious employment, creating cumulative advantage in recreational participation opportunities.

Implications for targeted health promotion and programming.

Theoretical Framework:

This study applies Human Capital Theory and Leisure Constraint Theory. Human Capital Theory posits that education yields return beyond economic productivity, including improved health behaviours and quality of life choices (Becker, 1993). Education enhances health literacy, enabling understanding of recreation's benefits and self-efficacy for engaging in activities. It facilitates social capital development—networks providing encouragement and companionship in recreational pursuits. Leisure Constraint Theory identifies three categories of barriers affecting recreational participation (Crawford & Godbey, 1987; Jackson, 1997).

Intrapersonal constraints: psychological factors (stress, perceived skill deficits, low self-efficacy)

Interpersonal constraints: social factors (lack of partners, family obligations, cultural norms).

Structural constraints: external barriers (cost, transportation, operating hours, discrimination) Critically, Jackson (1997) proposed a "hierarchical" model where intrapersonal constraints (internal motivation/interest) must first be overcome, then interpersonal constraints (social factors), with structural constraints representing the final obstacle. However, contemporary scholarship challenges this hierarchy, recognizing that structural constraints often operate as primary barriers for economically disadvantaged populations, preventing even motivationally strong individuals from participating (Bosiacki & Sniadek, 2021). These theoretical frameworks together suggest that socio-economic position shapes utilization through multiple pathways: education influences motivation and self-efficacy; income determines resource availability for overcoming structural constraints; employment status affects temporal availability and workplace recreation culture.

Statement of the Problem

Recreational centres are essential for promoting physical, mental, and social well-being, yet their utilization in urban communities of North-West Nigeria appears inconsistent and inadequate. Differences in occupational status and educational level may influence individuals' awareness, availability, and ability to use these facilities. However, there is limited empirical evidence explaining how these factors affect patterns of recreational centre utilization in the region. This lack of information constrains effective planning and policy decisions aimed at improving equitable access and use of recreational facilities.

Objectives of the Study

This study examines:

1. Whether education level significantly influences utilization of recreational centres
2. Whether income level significantly influences utilization of recreational centres
3. Whether employment status significantly influences utilization of recreational centres

4. The magnitude of differences in utilization patterns across socio-economic groups

Hypotheses

1. Education level not significantly influences utilization of recreational centres
2. Income level not significantly influences utilization of recreational centres
3. Employment status not significantly influences utilization of recreational centres
4. There is no magnitude of differences in utilization patterns across socio-economic groups

Methodology

This study is a descriptive survey research design, the population comprised all registered and active recreational center users in urban communities of the North-West zone who had accessed facilities within six months preceding data collection. Total accessible population was 5,838 individuals based on facility registry data. Using Krejcie and Morgan (1970) procedures at 95% confidence level and 0.05 margin of error, a sample of 361 respondents was determined. Proportionate allocation across states ensured geographic representation: Kano (55.7%), Katsina (11.1%), Kaduna (9.7%), Jigawa (7.2%), Kebbi (6.1%), Zamfara (5.8%), Sokoto (4.4%). Multistage sampling consisted of: (1) purposive selection of all seven states; (2) stratified random selection of Local Government Areas within each state based on socio-economic characteristics; (3) simple random selection of individual recreational center users from compiled registries.

The Socio-Economic Factors and Recreational Centers Utilization Questionnaire (SEFRCUQ) comprised five sections. For this analysis, focus was on: (1) demographic characteristics; (2) socio-economic status; (3) utilization patterns. Utilization was assessed through four dimensions: Frequency of visits: daily, 3-4 times weekly, 1-2 times weekly, 2-3 times monthly, monthly, occasionally. Duration of use: less than 30 minutes, 30 minutes-1 hour, 1-2 hours, more than 2 hours. Activity types: specific sports, fitness, social, or passive recreation categories. Consistency: regularity and continuity of participation. Utilization items employed a 4-point Likert scale (Strongly Agree=4, Agree=3, Disagree=2, Strongly Disagree=1), with higher scores indicating more frequent and sustained participation.

The SEFRCUQ was subjected to rigorous validation. Face validity was established through expert review by three recreation and sports management specialists and two measurement experts. Content validity was confirmed through systematic expert evaluation. Internal consistency reliability was assessed through pilot testing with 50 recreational center users from urban areas similar to the study region but not included in the main sample.

Descriptive statistics (frequencies, percentages, means, standard deviations) characterized the sample. One-way ANOVA tested differences in utilization scores across education levels, income levels, and employment status categories. Post-hoc comparisons (Tukey HSD) identified specific group differences. Significance was established at $p < .05$. Mean utilization scores were interpreted as: 3.50-4.00 (very high utilization), 2.50-3.49 (high), 1.50-2.49 (low), 1.00-1.49 (very low). Effect sizes (eta-squared) were calculated to assess practical significance. Eta-squared values of .01-.06 represent small effects, .06-.14 medium effects, and $>.14$ large effects.

Results

Sample Characteristics

The sample (N=361) was predominantly young, with 66.5% aged 18-24 years and 33.5% aged 25-34 years. Gender distribution showed 67.0% male and 33.0% female. Educational attainment revealed 75.1% with tertiary undergraduate credentials, 8.3% with postgraduate education, 8.3% with no formal education, and 8.3% with primary education. Occupational distribution indicated 54.3% students, 16.6% government employees, 16.6% private sector employees, and 12.5% self-employed. Income distribution showed 54.0% earning less than ₦20,000 monthly, 21.1% earning ₦20,000-₦50,000, 8.3% earning ₦50,000-₦100,000, and 16.6% earning ₦100,000-₦200,000.

Education Level and Utilization:

One-way ANOVA revealed highly significant differences in utilization across education levels ($F(3,357) = 88.567, p = .000$). The eta-squared value (.199) indicates education level explains approximately 19.9% of utilization variance—a substantial effect. Post-hoc Turkey HSD comparisons (Table 1) revealed that all education level pairs demonstrated significant differences. Notably, the no formal education group ($M = 2.50$) showed dramatically lower utilization than all other groups, with the largest difference compared to primary school ($M = 12.00$): mean difference = 9.50, $p = .000$.

Table 1: Post-hoc Utilization Comparisons by Education Level

Education Comparison	Mean Difference	p-value	Effect Size
No Formal vs. Primary	-9.500	.000	Large
No Formal vs. Tertiary Undergrad	-2.836	.000	Medium
No Formal vs. Postgraduate	-4.000	.000	Medium
Primary vs. Tertiary Undergrad	-6.664	.000	Large
Primary vs. Postgraduate	-5.500	.000	Large
Tertiary Undergrad vs. Postgraduate	-1.164	.013	Small

$p < .05$

Regarding effect sizes, the no formal education versus primary school difference (9.50 points) represents the largest single differential, suggesting that basic literacy and primary education substantially increase utilization likelihood. Interestingly, tertiary undergraduate education ($M = 8.66$) exceeded postgraduate levels ($M = 6.50$), a counterintuitive pattern potentially reflecting time constraints among postgraduate-educated professionals.

Income Level and Utilization

One-way ANOVA revealed significant differences in utilization across income levels ($F(3,357) = 19.255, p = .000$). The eta-squared value (.139) indicates income level explains approximately 13.9% of utilization variance—a medium-to-large effect, somewhat smaller than education's effect but still substantial.

Post-hoc comparisons (Table 2) identified systematic patterns where income positively correlated with utilization except at the highest income level. The lowest income group ($< ₦20,000$) demonstrated

substantially lower utilization than higher-income groups, with the largest difference comparing lowest to highest earners ($p = .000$).

Table 2: Post-hoc Utilization Comparisons by Income Level

Income Comparison	Mean Difference	p-value
₦20,000 vs. ₦ 20,000- ₦ 50,000	-1.754	.000
₦20,000 vs. ₦ 50,000- ₦ 100,000	-2.154	.000
₦20,000 vs. ₦ 100,000- ₦ 200,000	-2.337	.000
₦ 20,000- ₦ 50,000 vs. ₦ 100,000- ₦ 200,000	-.583	.284
₦ 50,000- ₦ 100,000 vs. ₦ 100,000- ₦ 200,000	-.183	.911

$p < .05$

Notably, differences between middle-income and highest-income groups were not statistically significant, suggesting that income thresholds rather than linear relationships operate—once individuals achieve moderate income (₦50,000+), additional income increments minimally enhance utilization.

Employment Status and Utilization:

One-way ANOVA revealed significant differences in utilization across employment categories ($F(3,357) = 37.912, p = .000$). The eta-squared value (.242) indicates employment status explains approximately 24.2% of utilization variance—a large effect, exceeding both education and income effects. Post-hoc comparisons (Table 3) revealed that private sector employees demonstrated highest utilization ($M = 12.29$), significantly exceeding all other groups. This counterintuitive pattern where those with most rigid employment demands show highest utilization warrants careful interpretation.

Table 3: Post-hoc Utilization Comparisons by Employment Status

Employment Comparison	Mean Difference	p-value
Student vs. Government Employee	1.541	.000
Student vs. Private Sector Employee	-3.459	.000
Student vs. Self-employed	.874	.058
Government Employee vs. Private Sector Employee	-5.000	.000
Government Employee vs. Self-employed	-.667	.225
Private Sector Employee vs. Self-employed	-4.333	.000

$p < .05$

Private sector employees' high utilization despite poor accessibility suggests motivational factors override structural constraints—perhaps occupational stress creates strong recreation motivation, or workplace wellness initiatives promote participation. Students showed moderate utilization ($M = 8.87$), government employees' lower utilization ($M = 7.33$), and self-employed individuals lowest ($M = 8.74$).

Weighted Means and Interpretation

Overall weighted utilization means by education, income, and employment were: education ($M = 1.92$), income ($M = 1.68$), employment ($M = 1.81$), all indicating "low" utilization on the 1-4 scale. This suggests that despite accessibility improvements and socio-economic variation, absolute utilization levels remain limited across the study population.

4.6 Effect Size Comparison:

Comparing effect sizes (eta-squared) across variables reveals employment status explains the most utilization variance (24.2%), followed by education (19.9%), then income (13.9%). This ordering suggests structural employment factors and educational awareness operate as primary utilization drivers, with financial capacity representing a secondary constraint for populations with adequate employment stability.

Discussion:

Education as a Utilization Determinant:

Education demonstrated substantial influence on utilization ($F = 88.567$, $p = .000$), explaining nearly 20% of variance. This aligns with Human Capital Theory, which posits that education yields non-monetary returns including improved health behaviors and quality-of-life choices. The relationship appears to operate through multiple mechanisms: Health Literacy and Awareness: Educated individuals better understand recreation's physical and mental health benefits, translating awareness into behavioral engagement. Gordon-Larsen et al. (2005) document that education significantly influences awareness and knowledge about recreational activities' importance for health. Self-Efficacy and Skill Confidence: Higher education correlates with greater confidence in learning new activities and engaging in organized programs. Individuals uncertain of their abilities may avoid recreational environments perceived as requiring specific skills or social competence.

Social Capital: Education creates networks with other educated individuals who provide encouragement, information, and companionship in recreational pursuits. These social reinforcement mechanisms facilitate sustained participation. The dramatically low utilization among those lacking formal education ($M = 2.50$) compared to primary-school-educated individuals ($M = 12.00$) suggests critical threshold effects. Basic literacy and foundational education appear necessary for navigating facility systems, understanding programs, and maintaining consistent participation. Paradoxically, utilization decreased from tertiary undergraduate ($M = 8.66$) to postgraduate levels ($M = 6.50$), suggesting that advanced education may correlate with time constraints or alternative leisure preferences among highly educated professionals. This finding warrants qualitative investigation.

Income Effects on Utilization:

Income significantly influenced utilization ($F = 19.255$, $p = .000$), but the effect was smaller than education's effect (13.9% vs. 19.9% of variance). Notably, meaningful differences emerged only between the lowest income group and all others, with no significant differences among middle and higher-income categories. This pattern suggests income operates through a threshold mechanism: below ₦50,000 monthly income, financial constraints substantially limit utilization; once this threshold is exceeded, income ceases functioning as a primary constraint. This reflects rational economic behaviour once basic expenses are covered and modest discretionary income is available, additional income increments beyond this point have diminishing effects on recreational participation.

For the 54% of respondents earning less than ₦20,000 monthly, financial barriers prove substantial. Transportation costs, facility fees, and equipment expenses consume disproportionate percentages of

limited income. Cost represents documented as a significant barrier among lower-income populations globally (Kruszyńska & Poczta, 2020). The lack of significant income differences above ₦50,000 implies policy interventions targeting affordability should focus particularly on subsidy mechanisms and fee reductions for lowest-income groups, with less urgent justification for progressive pricing beyond middle-income thresholds.

Employment Status as a Utilization Driver:

Employment status demonstrated the strongest utilization effect (24.2% of variance), surprising given theoretical emphasis on income and time availability. Several interpretations merit consideration:

Paradoxical Private Sector Employee Utilization: Private sector employees reported highest utilization despite reporting poorest accessibility in the companion analysis. This suggests: Motivation

Displacement: Occupational stress and rigid schedules may paradoxically increase recreation motivation. High-stress employment may create strong psychological drive for stress relief through recreation, overriding temporal constraints.

Workplace Wellness Programs: Private sector employers may offer more developed workplace wellness initiatives, workplace recreation clubs, or subsidized facility access than government employers or academic institutions.

Selection Effects: Individuals with strong recreation preferences may preferentially select into private sector employment, with reverse causation operating (recreation preferences determine employment choice rather than employment determining recreation).

Student Utilization: Students demonstrated moderate utilization ($M = 8.87$), reflecting flexible academic schedules despite limited personal income. Family financial support may partially compensate for low personal earnings, and campus-based recreational facilities may provide low-cost access. **Government Employee Utilization:** Government employees showed lower utilization ($M = 7.33$) despite potentially stable income and employment security. Bureaucratic rigidity and limited workplace wellness culture may explain underutilization relative to private sector employees. This employment-based variation highlights that temporal availability and occupational culture regarding wellness prove as important as financial resources in determining utilization.

Theoretical Implications:

The findings provide empirical support for Contemporary Leisure Constraint Theory emphasizing that structural constraints (employment demands, income insufficiency) operate simultaneously and interact—they do not follow a strict hierarchy where intrapersonal constraints must be overcome first. For many low-income individuals, financial constraints represent genuine barriers regardless of intrinsic motivation. For private sector employees, structural employment demands paradoxically correlate with higher utilization, suggesting occupational stress amplifies recreation motivation. Education's large effect aligns with Human Capital Theory but also indicates unmeasured social capital mechanisms. Future research should explicitly measure social networks and peer encouragement as mediating pathways through which education influences utilization.

Implications for Programming and Policy:

Education-Focused Interventions: Given education's substantial effect, health promotion campaigns should emphasize recreational benefits, particularly targeting low-education populations. Community-based education programs explaining recreational activities' health benefits, facility navigation, and skill-building may enhance utilization among lower-education groups. **Income-Targeted Affordability:** Given income threshold effects, policy should prioritize subsidies and fee reductions for populations

earning below ₦50,000 monthly (54% of the sample). Progressive pricing with substantial reductions for lowest-income groups could substantially enhance equitable access.

Employment-Specific Programming: Recognizing that private sector employees demonstrate high utilization motivation despite accessibility barriers, employers could establish workplace recreation clubs or subsidize facility access during work hours, accommodating rigid schedules. Government employers should consider similar initiatives to reverse underutilization patterns among civil servants.

Occupational Flexibility: For those with rigid employment demands, extended facility hours (early morning, evening, weekend) could facilitate participation by accommodating work schedules. Some facilities might establish "express recreation" programs—high-quality 30-minute sessions during lunch hours or before/after work.

Conclusions:

This secondary analysis reveals that education level, income, and employment status significantly influence recreational center utilization in North-West Nigeria's urban communities. Employment status demonstrated the strongest effect (24.2% of variance), followed by education (19.9%), and income (13.9%). Notably, all variables operated through threshold mechanisms rather than linear relationships—critical transitions occurred at specific educational or income levels beyond which additional increments had diminishing effects.

Education's substantial effect suggests that health awareness and social capital mechanisms substantially influence participation. The counterintuitive finding that private sector employees demonstrate highest utilization despite poor accessibility underscores that occupational stress and workplace wellness culture may override structural barriers in driving recreation participation.

These findings establish empirical evidence for employment-status-specific and education-targeted interventions. Health promotion campaigns addressing low-education populations, income-based subsidies targeting those below ₦50,000 monthly, and workplace wellness initiatives targeting high-stress occupational groups represent evidence-based policy directions for enhancing equitable recreational participation.

Recommendations:

1. Develop community-based health promotion campaigns specifically targeting low-education populations (<primary school education)
2. Create simplified, visual information materials about recreational facilities, programs, and health benefits that don't require advanced literacy
3. Establish partnerships with community centers, religious centers (mosques), and local leaders to disseminate information about recreational benefits in accessible formats
4. Conduct field-based demonstrations and "try-it-out" programs allowing low-education populations to experience activities rather than relying on written information
5. Provide basic orientation sessions at recreational facilities helping first-time visitors navigate systems and understand available programs
6. Use multimedia (audio, video, mobile phone-based information) to reach populations with limited literacy

References:

Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis with special reference to education* (3rd ed.). University of Chicago Press.

- Bosiacki, B., & Sniadek, J. (2021). Barriers to physical activity: A multilevel analysis in Polish urban context. *International Journal of Environmental Research and Public Health*, 18(9), 4921.
- Crawford, D. W., & Godbey, G. C. (1987). Reconceptualizing barriers to family leisure. *Leisure Sciences*, 9(2), 119-127.
- Engemann, K., Seltzer, A., Bakolis, I., Dadvand, P., & Bixby, H. (2019). Residential green space is associated with mental health benefits: A systematic review. *Journal of Environmental Psychology*, 63, 134-152.
- González, H., Espinosa-García, A. M., García-Alcázar, J. J., & Urbano-Labajos, G. (2021). Recreation and leisure behavior: A systematic review of the literature. *Frontiers in Psychology*, 12, 652612.
- Gordon-Larsen, P., Nelson, M. C., & Popkin, B. M. (2005). Longitudinal physical activity trends—adolescence to adulthood. *American Journal of Preventive Medicine*, 27(4), 277-283.
- Jackson, E. L. (1997). In the eye of the beholder: A comment on two recent critiques of the leisure constraints model. *Journal of Leisure Research*, 29(4), 458-468.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.
- Kruszyńska, A., & Poczta, J. (2020). Difficulties limiting access to sports and recreational facilities: A Polish case study. *Journal of Physical Activity and Health*, 17(1), 45-52.
- Okunola, M. A. (2021). Socio-cultural factors influencing recreational participation in North-West Nigeria. *African Journal of Recreation and Sport*, 13(2), 89-105.
- Wash, O. M., Badaruddin, M., & Mohd, S. (2020). Accessibility of recreational facilities through identification and mapping in Greater Jos. *Journal of Urban Planning and Development*, 146(2), 04020014.
- Wash, O. M., Omar, M. N., Mohamed, N. M., & Isa, I. B. (2022). Recreational facilities as social factors in urban development in response to COVID-19. *Cities and Health*, 6(1), 78-95.