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Abstract

This study assessed farmers' involvement in landscape horticultural operations in Lagos metropolis, Nigeria. A multistage random sampling technique was used to select 150 respondents from two agricultural zones (Ikeja and Lagos Island) known for a high concentration of horticultural operators. Data were collected using a structured interview schedule that had been validated and tested for reliability (r = 0.75), and were analysed using descriptive statistics (frequencies, percentages, means) and inferential statistics (chi-square and Pearson correlation). Results showed that the majority of respondents (86.7%) were actively involved in one or more landscape horticultural practices, particularly land preparation, plant production, and material sales. Most operators were female (53.3%), married (76.7%), aged 41–60 years (61.3%), and held at least post primary education (81.4%). Chi-square analysis revealed significant relationships ($p \leq 0.05$) between involvement and age, sex, marital status, education, years of experience, and income. Pearson correlation showed significant associations between involvement and motivating factors, technological impeding factors, and problems encountered. Disparities existed between the two zones studied, with Lagos Island recording a higher concentration of enlightened and socially engaged operators than Ikeja. The study recommends increased government support, targeted extension services, access to credit and improved planting materials, and the integration of landscape horticulture into secondary school curricula to sustain and expand the sub-sector.

Keywords: landscape horticulture, farmers' involvement, extension services, Lagos metropolis, Nigeria.

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Introduction

Landscape horticulture merges the creative dimensions of art and design with the technical and scientific principles of horticulture, encompassing the analysis, planning, design, implementation, and management of the built and natural environment. Beyond its aesthetic value, landscape horticulture has become an economically significant, business-oriented venture, used for the beautification of gardens, parks, and event centers, and increasingly recognized as a viable channel for income generation and poverty alleviation (Alogba, 1999).

In Lagos, Nigeria's fastest growing and most densely populated metropolis, rapid urbanization, industrialization, and population growth have led to congestion, loss of open space, and reduced opportunities for recreation and environmental amenity. Despite the sector's demonstrated advantages including environmental beautification, erosion and pollution control, recreational value, and income generation, public awareness of, and support for, landscape horticultural operations remain limited. There is therefore a need to systematically assess the extent and pattern of farmers' involvement in landscape horticultural operations, the factors that motivate or impede this involvement, and the problems operators' encounter, in order to inform policy and extension practice.

Objectives of the Study

The general objective of the study was to assess farmers' involvement in landscape horticultural operations in Lagos metropolis. The specific objectives were to:

1. Examine the personal characteristics of landscape horticultural operators;
2. Investigate the nature and extent of landscape horticultural operations in the study area;
3. Determine the factors motivating farmers' involvement in landscape horticultural operations; and
4. Identify the problems militating against horticultural operation

H_o1: There is no significant relationship between operators' personal characteristics and their level of involvement in landscape horticultural operations.
H_o2: There is no significant relationship between motivating factors and operators' level of involvement.
H_o3: There is no significant relationship between problems encountered and operators' level of involvement.

Literature Review

Landscape horticultural operations sit at the intersection of several bodies of theory relevant to agricultural extension: rural development, innovation adoption, community development, and participation. Rural development is understood as the coordinated improvement of infrastructural, economic, and social conditions in rural and peri-urban areas (Ogunfiditimi, 1995), typically pursued through extension, project, or service-based approaches. Adoption theory frames farmers' uptake of horticultural innovations as a multi-stage mental process involving awareness, interest, evaluation, trial, and adoption, shaped by personal, cultural, social, and situational factors (Adams, 1984, 1987). Communication theory, particularly the Sender Message–Channel–Receiver–Effect model, underscores the centrality of effective information flow between extension agents, government, and horticultural operators in determining the rate and depth of adoption (Berlo, 1960; Rogers and Shoemaker, 1971). At the operational level, landscape horticulture is commonly divided into hard landscaping (structural features such as ponds, paths, and water gardens) and soft landscaping (the use of hedges, flowering plants, lawns, and ornamentals). Successful practice depends on site analysis, adherence to design principles (unity, balance, emphasis, and scale), careful plant selection, and consistent maintenance. The Lagos State Government has classified landscape horticulture under urban forestry, with policy objectives including the coordination of florists and horticulturists, beautification of public spaces, and public awareness campaigns, implemented in part through mandates such as the 2002 presidential-route beautification directive.

Materials and Method

Study Area

The study was conducted in Lagos metropolis, Nigeria, specifically within the Ikeja and Lagos Island agricultural zones, which were purposively selected for their high concentration of landscape horticultural operators. Lagos State, created in 1967, lies in the southwestern coastal belt of Nigeria and comprises five administrative divisions. It has a tropical climate with distinct rainy and dry seasons, an estimated metropolitan population exceeding 9 million (2006 census), and a diverse socio-cultural composition shaped by high rates of rural–urban migration.

Sampling Technique

A multistage random sampling procedure was used. From the two selected zones, Ikeja (eight local government areas) and Lagos Island (five areas), a total of 150 respondents, representing 15% of an estimated population of 1,000 registered operators (drawn from the National Landscape Horticultural Society list), were selected: 92 from the Ikeja zone and 58 from the Lagos Island zone.

Data Collection and Instrumentation Primary data were collected using a structured interview schedule comprising 76 items across four sections: (A) personal characteristics, (B) level of involvement in landscape horticultural operations, (C) technological impeding factors, and (D) motivating factors and problems encountered. The instrument

was pre-tested on 20 operators in areas outside the study zones, and face validity was established through review by four experts in Agricultural Extension and Rural Sociology. Reliability was assessed using the test–retest method with a two-week interval, yielding a correlation coefficient of 0.75.

Analytical Techniques

Descriptive statistics (frequencies, percentages) were used to summarise personal characteristics and levels of involvement. Inferential statistics, chi-square tests and Pearson product-moment correlation, were used to test the study hypotheses at the 0.05 level of significance.

Results and Discussion

Personal Characteristics of Respondents

The majority of respondents (61.3%) were aged 41–60 years, suggesting that the sector is dominated by mature, experienced operators. More than half (53.3%) were female, and 76.7% were married, indicating that family labour and household stability may support engagement in the practice. A large majority (81.4%) had at least post-primary education, which is likely to enhance access to and use of information relevant to horticultural practice. Slightly more respondents identified as Christian (53.3%) than Muslim (46.7%), though the literature review noted that ornamental horticulture practice has increasingly cut across religious lines. In terms of experience, 53.3% had 6–10 years in the trade, and none had less than five years, pointing to a relatively seasoned operator base. Most respondents (67.3%) were introduced to the trade through friends rather than formal extension channels, and 82% practised landscape horticulture as their primary occupation. Regarding income, 58.7% earned above ₦100,000 from horticultural activities, reflecting the commercial viability of the sector for established operators.

Level of Involvement in Landscape Horticultural Practices

Involvement was high across most core operations: land preparation (86.7%), landscape plan implementation (83.3%), plant production and management (86.7%), flower garden development (86.7%), plant propagation (86.7%), material sales (92%), and training (78%). Involvement was comparatively lower in landscape plan development (51.3%) and consultancy (46%), suggesting a gap at the planning and advisory stages that may limit knowledge transfer to prospective entrants. Only 13.3% of respondents were engaged in exporting ornamental plants, likely reflecting regulatory and cost barriers associated with plant quarantine and export compliance. Sources of innovation were dominated by the Ministry of Agriculture and informal networks (both 100%), followed by horticultural groups (75.3%) and the National Institute of Horticultural Research and Training, NIHORT (68%). Extension agents were a comparatively minor source of information (24.7%), underscoring a weak formal extension presence in the sector. Most operators (75.3%) accessed land through government allocation, offering a degree of security of tenure relative to rental or leasehold arrangements.

Technological Factors Impeding Operations

Respondents most frequently cited the unavailability of improved machinery (62% regularly impeded), high cost of new seedling varieties (54%), and reliance on rudimentary implements such as hoes and cutlasses (60%) as constraints. Nearly all respondents (100%) were at least occasionally impeded by a lack of technological know-how, indicating limited exposure to modern agricultural technologies such as mechanised tools, irrigation systems, and digital communication tools.

Motivating Factors

Personal interest was the dominant motivator, with 100% of respondents reporting some level of motivation from this source and 67.3% "highly motivated." Economic returns (92% motivated or highly motivated) and career opportunity (92%) were also strong drivers, confirming the sector's perceived commercial viability. Community value and recognition were comparatively weaker motivators, with most respondents reporting only "fair" motivation from these sources — suggesting the operation is driven more by individual economic incentive than by social status.

Problems Encountered

All respondents reported encountering at least one operational problem. Universal or near-universal challenges (100%) included inadequate improved seedling supply, exorbitant cost of implements, poor information sources, and lack of extension services. High proportions also reported insufficient land/space (92%), lack of required tools (92%), weak cooperative groups (96%), and over-exploitation by local council officials (84%). In terms of severity, lack of required tools (78.7% "very serious"/"serious"), exorbitant implement costs (67.3%), lack of extension services (83.3%), and over-exploitation by officials (76%) were rated most acute.

Hypothesis Testing

H_o1 (personal characteristics and involvement):

Chi square analysis showed significant relationships between involvement and age ($\chi^2 = 14.21 >$ tabulated 0.711), sex ($\chi^2 = 30.07 > 1.103$), marital status ($\chi^2 = 46.17 > 0.711$), education ($\chi^2 = 46.47 > 2.733$), years of experience ($\chi^2 = 32.62 > 0.711$), and annual income ($\chi^2 = 318.16 > 3.940$), all at $p \leq 0.05$. H_o1 is therefore rejected for all six variables tested.

H_o2 (motivating factors and involvement):

Pearson correlation revealed a significant relationship between motivating factors and level of involvement ($r = 0.247$, $p = 0.02$, $n = 150$). H_o2 is rejected.

H_o3 (technological impeding factors and involvement):

A significant relationship was found between impeding technological factors and level of involvement ($r = 0.693$, $p < 0.001$, $n = 144$). H_o3 is rejected.

H_o4 (problems encountered and involvement):

All problem variables tested showed significant correlations with level of involvement at $p \leq 0.05$, including lack of land/space ($r = –0.483$), inadequate seedling supply ($r = 0.413$), cost of implements ($r = 0.737$), lack of credit facilities ($r = –0.462$), and lack of infrastructural facilities ($r = –0.594$), among others. The corresponding null hypothesis is rejected. These findings collectively indicate that operators' personal characteristics, the motivating factors they enjoy, and the problems and technological constraints they face are all significantly associated with their level of involvement in landscape horticultural operations.

Conclusion and **Recommendations**

Landscape horticultural operations in Lagos metropolis are predominantly undertaken by mature, married, moderately-to-highly educated, experienced operators, with women playing a leading role. Involvement is high in production-related activities but comparatively low in planning and consultancy, pointing to an underdeveloped advisory layer within the sector. Operators are strongly motivated by personal interest and economic returns but are constrained by inadequate access to improved seedlings, tools, credit, land, and extension services, as well as by weak cooperative structures and, in some cases, exploitative local administration. Age, sex, marital status, education, experience, and income are all significantly associated with level of involvement, as are motivating factors, technological constraints, and operational problems. The sector demonstrates clear potential for job creation, income generation, and environmental improvement, but this potential is not yet matched by adequate institutional and extension support.

The following recommendations were made:

1. Government should increase statutory allocation to agriculture, with a specific focus on landscape horticultural services, and expand public awareness through seminars, workshops, and targeted training.
2. Local government interference and exploitative revenue collection practices affecting operators should be reviewed and regulated to improve operator morale and compliance.
3. Government and relevant agencies should extend more favorable policies, credit facilities, and access to improved planting materials and tools to operators.
4. Landscape horticulture should be incorporated into secondary school curricula to build a pipeline of young entrants (ages 18–30) into the sector.
5. Extension services should be strengthened and made more visible to operators, given the current heavy reliance on informal peer networks over formal extension channels.

Suggestions for Further Research

1. Evaluation of the specific factors influencing landscape horticultural operations in greater depth.
2. Assessment of operators' perceptions of their operations' contribution to aesthetic and economic value.
3. Integration of perception-based indicators into models of factors influencing landscape horticultural operations.

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