© DEPARTMENT OF GEOGRAPHY, SOKOTO STATE UNIVERSITY, SOKOTO

Volume 4, Issue 2, August 2026 Edition

ANALYSIS OF FACTORS INFLUENCING INFORMAL COMMERCIAL APPROPRIATION OF URBAN SPACE IN BENIN METROPOLIS, NIGERIA

Jolly Osaretin EGHAREVBA

Department of Geography and Disaster Risk Management
Faculty of Environmental Sciences, University of Benin, Benin City, Nigeria
ORCID: 0009-0009-1801-2257, Scopus Author ID: 57220287200

Corresponding Author's Email: jolly.egharevba@uniben.edu

Abstract https://doi.org/10.65760/sjgs.v4.i2.2

Informal commercial activities are a persistent feature of rapidly expanding African cities, yet limited evidence explains how socio-economic pressures and spatial opportunities jointly shape their appropriation of urban space. This study examined the factors influencing informal commercial appropriation in Benin Metropolis, Nigeria. A survey design was adopted, and 410 questionnaires were administered to informal traders across 46 selected commercial locations using an adaptive systematic sampling approach. Data were analysed using multinomial logistic regression for location-choice motives, binary logistic regression for reported increases in trader activity, and chi-square tests with measures of association for trader challenges. The multinomial model was significant ($\chi^2 = 311.655$, $p < .001$; Nagelkerke $R^2 = .564$), with age ($\chi^2 = 43.956$, $p = .028$), marital status ($\chi^2 = 231.000$, $p < .001$), educational attainment ($\chi^2 = 46.172$, $p = .017$), household size ($\chi^2 = 44.217$, $p = .026$), monthly income ($\chi^2 = 48.100$, $p = .010$), and business type ($\chi^2 = 79.119$, $p = .004$) significantly associated with location-choice motives. The binary logistic model was significant ($\chi^2(8) = 26.19$, $p = .001$; Nagelkerke $R^2 = .116$), with high pedestrian traffic (OR = 5.83, $p = .006$) and no need for rent payments (OR = 13.96, $p = .029$) significantly predicting increased trader activity. Trader challenges were significantly associated with local government area ($\chi^2(24) = 40.55$, $p = .019$), years in trading ($\chi^2(18) = 46.75$, $p < .001$), and business type ($\chi^2(42) = 66.31$, $p = .010$), although the associations were small to moderate (Cramer's V = .157–.195). The findings demonstrate that informal commercial appropriation is shaped by the interaction of socio-economic pressures, spatial accessibility, and everyday livelihood practices. The study contributes empirical evidence from a medium-sized Nigerian city and highlights the need for differentiated planning responses that integrate livelihood needs, spatial organisation, accessibility, and regulatory practice.

Keywords: *Informal commerce; Urban space appropriation; Political economy of space; Commercial clustering; Spatial accessibility; Urban livelihoods.*

Introduction

Urbanisation involves not only population growth and physical expansion but also the production, contestation, and appropriation of urban space. Informal commercial activities expose these processes because traders occupy streets, intersections, transport corridors, vacant plots, and other spaces beyond conventional commercial premises (Deppisch & Yilmaz, 2021; Azunre et al., 2022; Dadi et al., 2024). Across sub-Saharan Africa, informality has become an established component of urban economies, driven by rapid urbanisation, limited employment, poverty, and weak institutional capacity (Bromley, 2000; Chen, 2012; Azunre et al., 2022). Although informal commerce provides livelihoods and accessible goods and services, its concentration can generate congestion, waste,

pedestrian obstruction, land-use conflict, and environmental concerns (Adeyinka et al., 2006; Olajoke & Adeboyejo, 2013; Egharevba & Edohen, 2025).

Informal commercial activities are increasingly viewed as integral to urban economies rather than temporary deviations from formal planning. Informal practices are structurally embedded in everyday urban life and provide livelihoods where formal systems offer limited opportunities (Laguerre, 1994). Informal urbanism also functions as adaptive self-help, enabling residents to negotiate access to weakly regulated or excluded spaces (Lehmann, 2023). These practices involve questions of legitimacy, belonging, and spatial justice, as traders negotiate recognition and participation in urban life (Schoenecker, 2026; Onolaja, 2020). Informal occupation can also transform public spaces into multifunctional workplaces and social environments (Iqbal & Khurshid, 2024; El-Banna, 2014).

In Nigeria, informal commercial activities reflect the interaction of economic necessity, customer access, spatial availability, and movement patterns. Rural-urban migration, underemployment, and restricted access to formal premises encourage traders towards affordable locations with accessible customers (Hart, 1973; Chen, 2012; Bank of Industry, 2022). Intersections, transport corridors, and other high-movement locations offer visibility and customer interaction, encouraging concentration at strategic urban nodes (Ayo-Odifiri, 2022; Dovey & Recio, 2024). Studies show that informal traders favour locations with strong movement flows, transport connections, visibility, and customer access (Akiyode, 2017; Ubogu et al., 2011; Othman, 2021). Pedestrian flow is also associated with commercial density and vitality, although these relationships vary spatially (Wang et al., 2025; Wu & Pang, 2025). Nigerian evidence further shows that accessibility influences market patronage and can outweigh formal zoning considerations (Ayo-Odifiri, 2022; Bakare, 2023).

Informal commercial spaces are also shaped by governance and lived practice. Regulatory interventions can alter informal activities without eliminating them, sometimes producing hybrid relationships between formal regulation and informal use (Dewi et al., 2023; Axinte, 2015). Selective enforcement can produce uneven experiences among traders (Schoenecker, 2026; Farah, 2026). Informal commerce simultaneously supports livelihoods while creating mobility, infrastructure, sanitation, and land-use pressures (López et al., 2022; Yakubu, 2018; Adeyinka et al., 2006; Olajoke & Adeboyejo, 2013; Egharevba & Edohen, 2025). Everyday routines, social relationships, and adaptive responses also help traders maintain commercially valuable locations despite changing regulatory conditions (Qi et al., 2024; Akiyode, 2017; Onolaja, 2020; Yakubu, 2018).

These dynamics are evident in Benin Metropolis, where informal commerce has expanded along major roads and intersections amid sustained urban growth, heterogeneous land use, and pressure on accessible commercial space. Traders respond to customer flows, space availability and cost, transport accessibility, social networks, and regulatory conditions. Yet existing literature rarely examines these dimensions simultaneously. Spatial studies may identify clustering without sufficiently explaining socio-economic constraints, while socio-economic studies may overlook how accessibility shapes spatial expression. Governance research also often separates regulation from everyday practice and livelihood realities.

A further gap concerns geographical coverage. Research remains concentrated in major cities such as Lagos and Abuja, while medium-sized Nigerian cities receive less systematic attention. Few studies simultaneously examine traders' location choices, changes in trader concentration, and variations in trader challenges within one analytical framework. This limits understanding of how structural

https://doi.org/10.65760/sjgs.v4.i2.2

pressures, spatial opportunities, governance, and everyday practices interact to produce persistent informal commercial clusters.

This study therefore examines the factors influencing informal commercial appropriation in Benin Metropolis. Specifically, it investigates the socio-economic and spatial factors associated with traders' location-choice motives, examines spatial and regulatory-economic factors associated with increased trader concentration, and determines whether trader challenges vary across spatial and social characteristics. The study focuses on informal commercial locations away from established markets to reduce potential market spill-over effects. By integrating socio-economic, spatial, accessibility, regulatory-economic, and trader-level dimensions, the study provides evidence on informal commercial appropriation within a medium-sized Nigerian metropolis.

Theoretical Framework

This study adopts an integrated theoretical-methodological framework to explain the emergence, spatial concentration, persistence, and challenges associated with informal commercial appropriation in Benin Metropolis. The framework positions the Political Economy of Urban Space as the primary explanatory perspective, while Accessibility Theory, Everyday Urbanism, and the Right-to-the-City provide complementary spatial, behavioural, and normative dimensions. Together, the four perspectives link structural conditions, spatial opportunity, everyday practices, and claims to urban space.

Political Economy of Urban Space provides the structural foundation of the framework. It conceptualises urban space as socially produced through unequal relations involving land, capital, labour, and institutional power (Lefebvre, 1991; Castells, 1977; Harvey, 1985, 2008). From this perspective, informal commerce emerges where formal labour markets, commercial premises, and urban institutions do not adequately accommodate vulnerable populations. Unemployment, low income, exclusion from formal commercial premises, and weak regulatory capacity therefore create pressures that encourage informal livelihood strategies. In this study, these structural conditions are treated as underlying factors shaping traders' participation in informal commerce and their capacity to occupy strategic urban locations.

Accessibility Theory explains the spatial expression of these structural pressures. Accessibility refers to the ease with which people can reach activities and opportunities within land-use and transport systems (Hansen, 1959; Ingram, 1971; Geurs & van Wee, 2004). Locations with high pedestrian movement, strong transport connectivity, major intersections, and prominent corridors provide greater visibility and customer exposure. Previous evidence cited in the literature indicates that informal trading frequently concentrates around transport nodes and high-movement corridors (Bromley, 2000; Akiyode, 2017; Ayo-Odifiri, 2022; Bakare, 2023). Accessibility Theory therefore explains why informal commercial activity is concentrated at particular nodes rather than distributed evenly across the urban area.

Everyday Urbanism explains how temporary occupation can become established through repeated daily practices. It views urban space as continuously produced through routine activities, negotiation, adaptation, and social interaction rather than through formal planning alone (Crawford, 1999; Chase et al., 2008). Informal traders repeatedly occupy commercially attractive spaces, negotiate with other users and enforcement agents, and adapt their practices to changing conditions. These routines can stabilise commercial activity and contribute to the persistence of informal nodes despite regulatory uncertainty. In this study, everyday occupation, negotiation, and adaptation are therefore treated as

https://doi.org/10.65760/sjgs.v4.i2.2

mechanisms linking structural pressures and spatial opportunities to the continued use of informal commercial locations.

The Right-to-the-City provides the normative dimension of the framework. It views urban space as a collective resource and highlights the claims of marginalised groups to livelihood, participation, and access to urban opportunities (Lefebvre, 1996; Harvey, 2008). Informal occupation can therefore represent more than economic adaptation. It can also constitute a practical claim to visibility, livelihood, and participation within an urban system that does not provide equal access to formal commercial space. In Benin Metropolis, this perspective helps interpret tensions between regulatory control and traders' continued occupation of strategically valuable locations. It remains complementary to, rather than a substitute for, the structural and spatial explanations provided by the other theories.

The four perspectives are analytically connected rather than treated as competing explanations. Political Economy identifies the structural conditions that generate livelihood pressure. Accessibility Theory explains how those pressures become spatially concentrated. Everyday Urbanism explains how repeated practices and negotiations stabilise occupation. The Right-to-the-City interprets continued occupation in relation to claims for livelihood, access, and participation. The framework therefore conceptualises informal commercial appropriation as the outcome of interacting structural, spatial, behavioural, and normative processes.

This framework also guides the empirical analysis. Socio-economic variables such as age, marital status, education, household size, income, and business type represent the social and economic conditions within which traders make location decisions. Accessibility-related factors, including pedestrian flow, customer access, vehicle movement, and spatial availability, represent the opportunity structure of locations. Regulatory-economic factors capture conditions affecting the cost and practical freedom of occupation. Finally, trader challenges and reported changes in concentration provide empirical indicators through which the spatial and social consequences of informal appropriation are examined.

The analytical logic can therefore be summarised as follows: structural pressures create the conditions for informal livelihood activity; spatial accessibility directs traders towards particular urban nodes; everyday practices support repeated occupation and persistence; and socio-spatial claims shape interactions with formal planning and regulatory systems. The resulting commercial concentrations are expressed through location choice, changes in trader concentration, and differentiated trader challenges. This integrated framework provides the basis for examining informal commercial appropriation in Benin Metropolis as a structured socio-spatial process rather than as random or isolated urban disorder. See Figure 1: theoretical framework for informal commercial appropriation in the study area.

https://doi.org/10.65760/sjgs.v4.i2.2

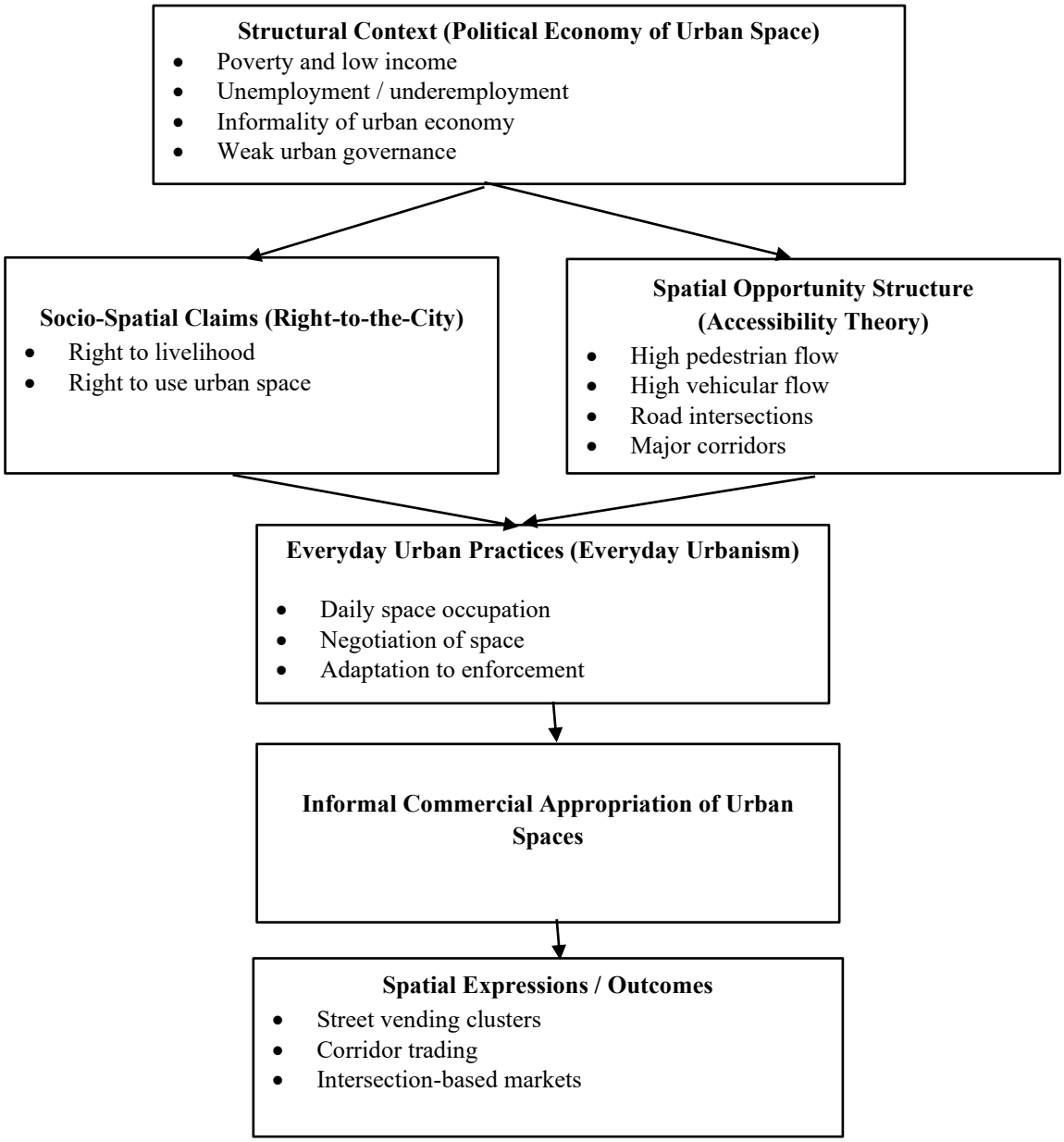

Figure 1: Theoretical Framework for Informal Commercial Appropriation in Benin Metropolis. Source: Author's Abstraction, 2026.

Study Area

Benin Metropolis is located between latitude 6° 9' 30" N and Longitude 5° 32' 0" E with an average elevation of 77.80 metres. The city is located between the south-west and eastern regions of Nigeria. Its built up area covers an area roughly 275.04 square kilometres and measuring from edge to edge, it covers a distance of 35km from north to south and 26.5km from east to west (Egharevba & Osakue,

https://doi.org/10.65760/sjgs.v4.i2.2

2024). Benin Metropolis provides an analytically important context for examining the spontaneous emergence of unplanned commercial centres within a medium-sized Nigerian city. Benin Metropolis primarily comprises three contiguous local government areas (Egor, Ikpoba-Okha, and Oredo) and extends into parts of two additional local government areas, Uhunmwode and Ovia North-East (Egharevba & Asikhia, 2018; Egharevba & Edohen, 2023; Egharevba & Atewe, 2024; Egharevba, 2025a). As the administrative and commercial hub of Edo State, the city exhibits overlapping phases of colonial planning, post-independence expansion, and contemporary informal urbanisation (Egharevba & Edohen, 2025). It provides an analytically important context for examining the spontaneous emergence of unplanned commercial centres within a medium-sized Nigerian city. According to recent demographic estimates, the urban agglomeration of Benin City now exceeds two million residents, reflecting sustained population growth and urban expansion beyond its administrative core (World Population Review, 2026). As Nigeria's sixth most populous city after Lagos, Kano, Ibadan, Abuja and Port Harcourt (United Nations, Department of Economic and Social Affairs, Population Division, 2025), Benin City occupies a significant position within the national urban hierarchy and exemplifies the dynamics of secondary urban growth outside megacities. Its role as the capital and largest metropolitan centre of Edo State underscores its economic centrality in the South-South region, where it serves as a hub for commerce, services and industry (Egharevba, 2025). These layered processes have produced a heterogeneous urban structure in which planned neighbourhoods coexist with organically developed areas. This makes the metropolis suitable for analysing how informal commercial centres emerge, stabilise, and persist under contrasting spatial and regulatory conditions.

The city's morphology is broadly concentric, radiating from the historic core around the Oba's Palace and traditional city centre (Agheyisi, 2023; Egharevba & Osakue, 2024). This core remains a dominant commercial focus, surrounded by intermediate mixed-use zones and outer residential districts (Egharevba & Edohen, 2025). Such spatial differentiation produces uneven accessibility, land-use intensity, and pedestrian concentration across the metropolis. These variations are central to the study's investigation of why spontaneous commercial activities concentrate in specific locations rather than dispersing evenly across the city.

Street network structure further differentiates spatial opportunity. Inner-city areas are characterised by dense, highly connected street grids that support intense pedestrian movement, while peripheral districts exhibit wider roads, longer blocks, and lower connectivity (Atewe & Egharevba, 2022). Highly connected environments increase opportunities for casual encounters and impulse transactions. These conditions directly inform the study's focus on accessibility as a key determinant of informal commercial clustering.

The road network plays a decisive role in structuring commercial intensity. Major corridors such as Akpakpava Road, Uselu–Lagos Road, Airport Road, and the Benin–Agbor Expressway carry heavy daily traffic volumes (Egharevba & Edohen, 2025). Junctions, bus stops, and intersections along these routes function as focal points for pedestrian accumulation and waiting time. Over time, repeated occupation at these points leads to the formation of recognisable unplanned commercial nodes, making them ideal sites for examining the persistence and growth of spontaneous commercial centres.

https://doi.org/10.65760/sjgs.v4.i2.2

© DEPARTMENT OF GEOGRAPHY, SOKOTO STATE UNIVERSITY, SOKOTO

Volume 4, Issue 2, August 2026 Edition

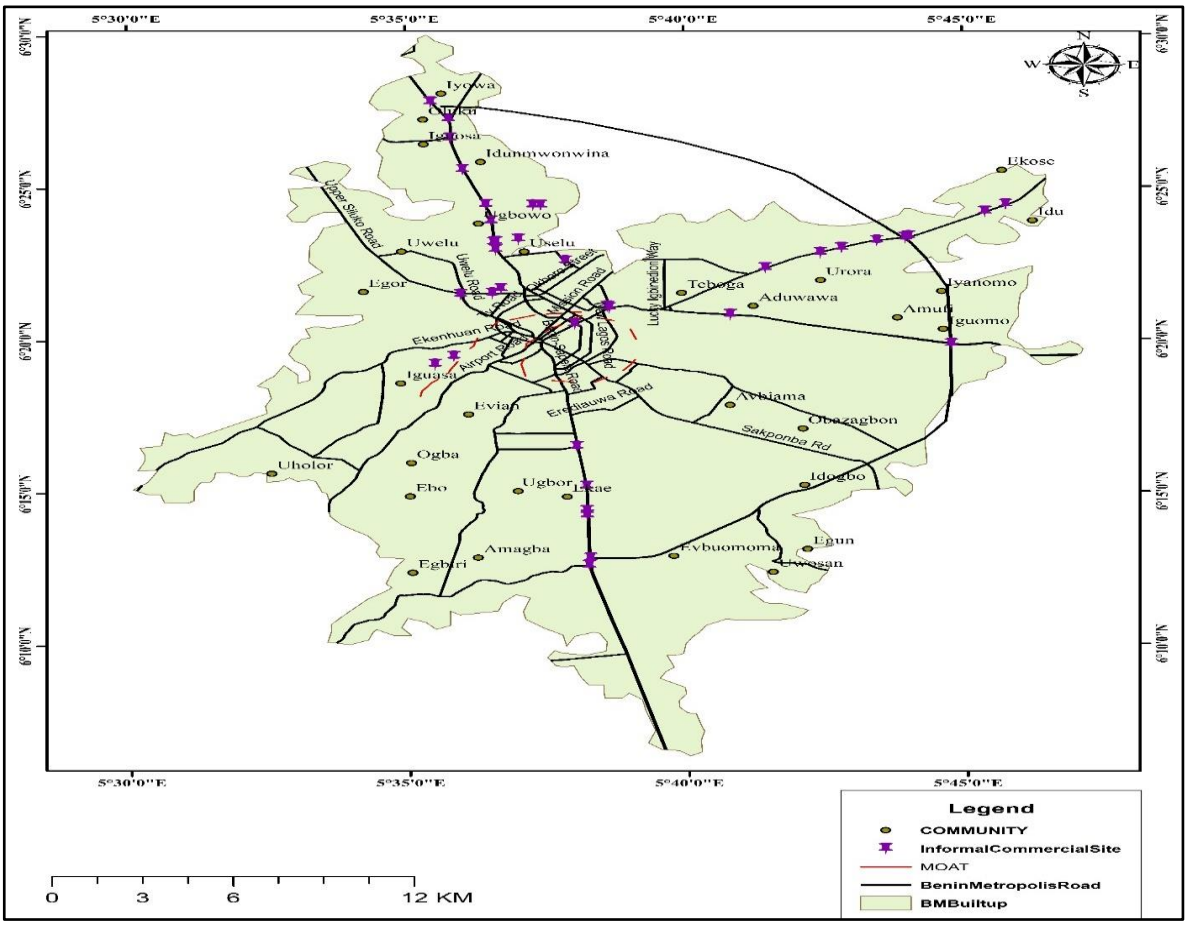

Figure 2: Benin Metropolis showing Informal Commercial Centres
Source: Author, based on Google Earth and OpenStreetMap, (2026).

Land-use patterns across Benin Metropolis are predominantly mixed, especially in older neighbourhoods (Aiworo, 2018; Agheyisis, 2023). Residential buildings frequently incorporate ground-floor shops and kiosks, while vacant plots, setbacks, and roadside verges provide flexible spaces for informal occupation. Public transport nodes, including motor parks, terminals, and informal loading points, further intensify pedestrian flow and commercial opportunity. Socio-spatial inequality shapes regulatory outcomes, with stronger control in high-income areas and greater tolerance of informal livelihoods in low- and middle-income districts. These contrasts allow the study to interrogate how governance, accessibility, and everyday practice interact to shape informal commercial outcomes.

The combination of layered urban morphology, differentiated street connectivity, mixed land use, and transport-driven movement systems creates multiple accessibility gradients across Benin Metropolis. The study therefore focuses on corridors, intersections, and neighbourhoods with high connectivity and human movement. These locations provide the clearest empirical basis for addressing the research questions on location choice, persistence, and planning implications of spontaneous commercial centres.

https://doi.org/10.65760/sjgs.v4.i2.2

Methodology

The study adopted a survey research design to examine factors associated with informal commercial appropriation of urban space in Benin Metropolis. Primary data were collected from informal traders using a structured questionnaire containing both closed-ended and open-ended questions. Closed-ended items generated quantitative information on socio-economic characteristics, locational factors, accessibility conditions, and spatial preferences, while open-ended items captured respondents' explanations of motivations, challenges, and everyday practices.

A total of 410 copies of a questionnaire were administered to traders operating across 46 selected informal commercial locations. The locations were purposively selected on the basis that they were informal commercial centres situated away from established or traditional markets. This criterion was used to reduce possible market spill-over effects and facilitate examination of factors associated with the independent emergence and development of informal commercial clusters. Table 1 presents the distribution of questionnaires across sampled locations.

Table 1: Distribution of Questionnaire Across Selected Informal Commercial Appropriation Locations in Benin Metropolis

S/N	Location	Number of Questionnaire Shared
1	Dawson Junction	8
2	Oil Mill Junction	6
3	Ewah Road Junction	8
4	Afro Slaughter Junction	11
5	Trade Fair Junction	10
6	First Upstairs Junction	12
7	Agbor Road Bypass	12
8	Evbareke Junction	5
9	Adolor Junction	12
10	Uwasota Junction	10
11	Universal Junction	10
12	19th Street Junction	12
13	UBTH Back Gate Federal Road	12
14	Peanut Junction	6
15	Igbinaduwa Junction	8
16	Akhigbe Junction	6
17	Agip Junction Sapele Road	12
18	Sapele Road Bypass	12
19	Ogheghe Junction	12
20	Lagos Road Bypass	12
21	Oluku	12
22	Uhunkun Junction	8
23	Aibalegbe Junction	10
24	Newton Street Ekosodin	12
25	Edo Street, Ekosodin	12
26	Ekosodin Junction	6
27	Federal Road Junction	6
28	Evbuekoi Junction	8
29	Wahala Junction, Egba	6

https://doi.org/10.65760/sjgs.v4.i2.2

30	Divine Grace Junction, Egba	8
31	Okpagha Junction	8
32	Speed FM Junction	6
33	Pipeline Junction	8
34	Auchi Road Bypass	12
35	Idokpa Junction	6
36	RCC Ehor, Sapele Road	6
37	Osamuyi Junction	12
38	UNIBEN Small Gate Shuttle Carpark	8
39	Upper Uwa Junction	6
40	Erie Junction	6
41	First East Circular Junction	6
42	Opposite Palm House Sapele Road	8
43	Vegetable Junction	12
44	Etete Junction	10
45	Iyase-Igbe Way Junction	6
46	Estate Gate Irihiri	6
Total		**410**

Source: Author's Fieldwork, 2026.

Within the selected locations, an adaptive systematic sampling approach was used. Sampling initially selected every second trader and subsequently every fourth trader along identified corridors to maintain spatial spread. Proportional density controls were applied to reduce overrepresentation of heavily congested locations. In high-density areas, fixed sampling intervals were maintained across defined spatial segments, while lower-density but spatially extensive corridors were sampled to ensure adequate spatial coverage. The procedure was intended to improve comparability across locations and reduce density-related sampling bias.

The study examined informal commercial appropriation through three principal outcomes: location choice, trader concentration, and persistence of occupation. Location choice refers to the spatial position of informal trading activity, including intersections, corridors, and street edges. Concentration refers to the density of informal traders within particular locations, while persistence refers to the duration of occupation combined with reported continuity of trading activity at the current location.

The explanatory variables comprised socio-economic, accessibility, spatial, governance, and every day-practice dimensions. Socio-economic variables included employment status, income level, and migration status. Accessibility variables included traffic volume, pedestrian flow, road connectivity, and visibility. Spatial variables covered land-use mix, proximity to transport nodes, and street morphology. Governance variables included enforcement frequency, regulatory encounters, and tolerance levels, while everyday-practice variables included repetition of use, negotiation strategies, and spatial routines.

Variables were measured through questionnaire items aligned with the objectives of this paper. Socio-economic characteristics were recorded largely as categorical responses. Perceived accessibility and traffic intensity were measured using structured response categories, while governance variables were measured through reported frequencies of regulatory encounters. Everyday practices were captured through categorical responses and supporting open-ended

https://doi.org/10.65760/sjgs.v4.i2.2

responses. Persistence was operationalised using the length of time traders had occupied their current location together with reported continuity of activity.

Data analysis began with descriptive statistics to summarise respondents' socio-economic characteristics, trading activities, and spatial attributes. Chi-square tests were used to examine associations between categorical variables, including trader characteristics, location-related variables, and reported challenges. Pearson chi-square tests were used to examine associations between trader challenges and local government area, years in trading, and business type. Cramer's V and Phi were used to assess the strength of association. Multivariate regression models were used to examine the combined influence of socio-economic, accessibility, and governance variables on informal commercial outcomes.

For location-choice motives, multinomial logistic regression was employed. The model included age, marital status, education, household size, average monthly income, business type, and other specified respondent characteristics as predictors. For reported increases in trader activity, binary logistic regression was used with spatial and regulatory-economic factors as explanatory variables. Associations between trader challenges and local government area, years in trading, and business type were examined using Pearson chi-square tests and measures of association.

The trader-level observations were nested within 46 commercial locations. The analysis nevertheless treated individual observations as independent. The manuscript acknowledges that multilevel modelling or cluster-adjusted estimation could provide a more refined treatment of potential intra-location similarity. Results are therefore interpreted with caution regarding statistical independence and wider generalisation. Table 2 summarises the dependent and independent variables used in the analysis and their operational meanings.

Table 2: Definition of Study Variables

Variable Category	Variable	Description
Dependent	Location choice	Spatial position of informal trading activity (intersection, corridor, street edge)
Dependent	Concentration	Density of informal traders at specific locations
Dependent	Persistence	Duration of occupation at the current location combined with reported continuity/increase of trading activity at that location
Independent	Socio-economic factors	Employment status, income level, migration status
Independent	Accessibility factors	Traffic volume, pedestrian flow, road connectivity, visibility
Independent	Spatial characteristics	Land-use mix, proximity to transport nodes, street morphology
Independent	Governance factors	Enforcement frequency, regulatory encounters, tolerance levels
Independent	Everyday practices	Repetition of use, negotiation strategies, spatial routines

Source: Author's Fieldwork, 2026.

Results

Table 3 presents an overview of the socio-demographic and economic attributes of respondents involved in unplanned commercial activities in Benin Metropolis. It highlights key characteristics relating to gender, age structure, marital status, educational attainment, duration of engagement in

https://doi.org/10.65760/sjgs.v4.i2.2

commercial activities, type of business operated, and average monthly income. These variables provide essential background for understanding the profile of traders and for interpreting subsequent analyses on factors influencing location decisions, growth dynamics, and planning challenges.

Table 3: Socio-Demographic, Economic and Locational Characteristics of Respondents

Variable	Category	N	%
Gender	Male	184	44.9
	Female	226	55.1
Age Group (years)	21–30	19	4.6
	31–40	70	17.1
	41–50	201	49.0
	51–60	113	27.6
	61–70	7	1.7
Marital Status	Single	31	7.6
	Married	298	72.7
	Divorced	18	4.4
	Widowed	63	15.4
Level of Education	No formal education	18	4.4
	Primary school	60	14.6
	Secondary school	210	51.2
	Tertiary education	78	19.0
	Vocational training	44	10.7
Years in Commercial Activity	1–8	233	56.8
	9–16	170	41.5
	17–24	6	1.5
	33–40	1	0.2
Type of Business	Food vendor	90	22.0
	Clothing and apparel	164	40.0
	Electronics	96	23.4
	Mobile accessories	9	2.2
	Food stuffs	20	4.9
	Artisan services	9	2.2
	Hairdressing/Barbing	15	3.7
	Others	7	1.7
Average Monthly Income (₦)	20,000–44,000	12	2.9
	44,001–68,001	204	49.8
	68,002–92,002	148	36.1
	92,003–116,003	30	7.3
	116,004–140,004	16	3.9
Reason for Location Choice	Proximity to customers	116	28.3%
	High foot traffic	37	9.0%
	Affordability of space	30	7.3%
	No need for formal permits	3	0.7%
	Availability of open spaces	172	41.9%
	Recommendations from other traders	46	11.2%
	High vehicle traffic	6	1.5%

Source: Author's Computation, 2026.

Table 3 shows that respondents are largely adults within the economically active age bracket, and most are engaged in trading as a long-term means of livelihood. The dominance of married

https://doi.org/10.65760/sjgs.v4.i2.2

respondents suggests that unplanned commercial activities function primarily as household-support strategies rather than temporary survival options. Educational attainment is concentrated at the secondary level, indicating moderate human capital that may restrict access to formal employment while still supporting informal entrepreneurship. Business activities are varied, with clothing and apparel, electronics, and food vending forming the major lines of trade. Income levels fall mainly within low-to-middle ranges, reinforcing the role of economic necessity in shaping participation in informal commerce.

Beyond socio-demographic characteristics, Table 1 also reveals that location choice is strongly influenced by spatial opportunity and market accessibility. The prominence of open spaces highlights the importance of physical vacancy in enabling spontaneous commercial occupation. Proximity to customers and recommendations from other traders further indicate that customer concentration and social networks play meaningful roles in shaping locational behaviour. High foot traffic and affordability of space reinforce the relevance of movement patterns and cost considerations in site selection. Conversely, the relatively low emphasis on absence of formal permits and high vehicle traffic suggests that regulatory avoidance and vehicular flow are less decisive than immediate spatial opportunity and pedestrian presence.

In summary, Table 3 depicts a stable, economically motivated trading population whose socio-economic attributes and spatial preferences collectively explain the emergence, persistence, and everyday functioning of unplanned commercial centres in Benin Metropolis.

Predictors of Informal Commercial Appropriation of Urban Space

To examine the association between socio-economic and spatial variables and traders' location choices, multinomial logistic regression was used. The analysis also tested the hypothesis that these variables were not significantly associated with location choice in Benin Metropolis. The dependent variable represented the dominant reported reason for selecting the current trading location. Predictors included residence, income, marital status, education, age, household size, business type, and years in operation. Appendices 1 to 4 provide the model-fitting information, pseudo-R-square, likelihood ratio test, and parameter estimates. Table 4 summarises the significant predictors.

Table 4: Summary of Significant Predictors from Multinomial Logistic Regression on Location Choice

Predictor Variable	Chi-square	Df	Sig.
Age Group of Respondent	43.956	28	.028
Marital Status	231.000	21	.000
Level of Education	46.172	28	.017
Household Group Size	44.217	28	.026
Average Monthly Income	48.100	28	.010
Type of Business	79.119	49	.004

Source: Author's Computation, 2026.

The model significantly improved on the intercept-only specification ($\chi^2 = 311.655$, $p < .001$), confirming that the socio-economic variables jointly influenced traders' location-choice motives. The Nagelkerke pseudo-R^2 indicates moderate explanatory strength, suggesting that location choice is partly structured by socio-economic conditions, while contextual and situational factors explain the remaining variation. Only significant predictors were interpreted, with their differing effects showing how household circumstances and livelihood pressures shape spatial decisions.

https://doi.org/10.65760/sjgs.v4.i2.2

The results indicate that unplanned commercial centres in Benin Metropolis are spatially patterned through interactions between socio-economic pressures and spatial opportunities. This supports the Political Economy perspective, which links informal commerce to exclusion from formal labour and commercial systems (Hart, 1973; Castells, 1977; Harvey, 1985), while the moderate effect size highlights the continuing importance of everyday negotiation and local context. Age had a modest significant effect, with younger traders favouring foot traffic and customer proximity, while older traders valued stability and peer guidance. This reflects Everyday Urbanism, where routine practices and accumulated experience influence spatial behaviour (Crawford, 1999; Bromley, 2000), and agrees with Onolaja (2020), although the effect appears weaker than in highly mobile megacities.

Marital status had a comparatively strong association, with married traders favouring stable locations and single traders seeking exposure and turnover. This highlights household responsibility as an organising influence and supports interpretations of informal trading as a household survival strategy (Yakubu, 2018; Agheyisi, 2023), alongside Lefebvre's (1996) notion of everyday claims to urban space. Education exerted a moderate influence, as less-educated traders tended towards open, loosely regulated spaces, while more-educated traders placed greater emphasis on accessibility and proximity. This suggests constraint rather than preference, consistent with evidence that limited education restricts access to formal premises (Bakare, 2023; Bank of Industry, 2022) and with Everyday Urbanism's emphasis on knowledge and competence in negotiating space (Crawford, 1999).

Household size also had a moderate effect, with larger households prioritising affordability and space, while smaller households sought customer exposure. This supports evidence that household dependency increases cost sensitivity (Rakodi, 2014; Yakubu, 2018), while Accessibility Theory explains continued clustering near movement nodes despite cost pressures (Hansen, 1959; Ayo-Odifiri, 2022). Income significantly shaped location motives, with lower-income traders occupying marginal or freely available spaces and higher-income traders favouring high-traffic corridors. This reflects the distinction between necessity- and opportunity-driven informality (Bromley, 2000; Watson, 2009), while revealing a more stratified response than studies assuming uniform exposure-seeking behaviour.

Business type exerted a strong differentiated influence, with consumable-based traders prioritising foot traffic and service-oriented traders requiring space and peer networks. This challenges assumptions of uniform informal spatial behaviour (El-Banna, 2014) and supports demand-sensitive location patterns reported in Benin and Lagos (Akiyode, 2017; Bakare, 2023). The weaker effects of age and education may reflect entrenched informal networks and shared constraints within Benin Metropolis. However, regulatory enforcement, tenure insecurity, and episodic displacement were not captured and may explain some remaining variation.

Generally, spontaneous commercial centres are socially organised economic landscapes shaped by household pressures, trader characteristics, and accessibility. Political Economy explains structural drivers, Everyday Urbanism captures routine negotiation, Accessibility Theory explains movement-based opportunities, while Right-to-the-City frames these locations as claims to urban participation (Lefebvre, 1996; Harvey, 2008). Planning interventions should therefore account for these interacting forces when regulating or integrating informal commercial systems.

Limited Influence of Spatial and Regulatory-Economic Factors on the Growth of Informal Commercial Locations in Benin Metropolis

https://doi.org/10.65760/sjgs.v4.i2.2

Reported increases in trader activity, indicated by changes in trader numbers and spatial concentration, formed the dependent variable. Predictors included customer proximity, foot traffic, space affordability and availability, vehicle traffic, customer accessibility, low rent, absence of formal permit requirements, and freedom to expand or relocate. Appendices 5 to 8 provide the Omnibus test, model summary, Hosmer-Lemeshow test, and parameter estimates. Table 5 summarises the predictors of increased trader activity.

Table 5: Summary of Predictors of Increased Trader Activity at Informal Commercial Locations

Predictor	B	SE	Wald χ^2	df	p	OR	95% CI for OR
Proximity to customers	0.106	0.645	0.027	1	.870	1.11	[0.31, 3.94]
High foot traffic	1.762	0.647	7.407	1	.006	5.83	[1.64, 20.72]
Affordability of space	-0.795	1.146	0.482	1	.488	0.45	[0.05, 4.27]
Accessibility to customers	0.340	0.365	0.866	1	.352	1.41	[0.69, 2.87]
No need for rent payments	2.636	1.209	4.759	1	.029	13.96	[1.31, 149.18]
No formal permits required	-18.740	19967.397	0.000	1	.999	0.00	[0.00, —]
Freedom to expand or relocate easily	0.464	0.504	0.847	1	.357	1.59	[0.59, 4.27]
Availability of open spaces	-0.701	0.570	1.513	1	.219	0.50	[0.16, 1.52]
Constant	-1.296	0.697	3.458	1	.063	0.27	—, —

Source: Author's Computation, 2026.

Note. OR = odds ratio; CI = confidence interval. Model $\chi^2(8) = 26.19$, $p = .001$; -2LL = 285.66; Nagelkerke $R^2 = .116$. Hosmer–Lemeshow $\chi^2(7) = 4.52$, $p = .718$.

Table 5 presents the summary of the binary logistic regression results for increased trader activity at informal commercial locations. The model was statistically significant, $\chi^2(8) = 26.19$, $p = .001$, with a Nagelkerke R^2 of .116 (Appendix 6), indicating modest explanatory power. The Hosmer-Lemeshow test (Appendix 7) also indicated acceptable model fit, $\chi^2(7) = 4.52$, $p = .718$. A Nagelkerke R^2 of 0.116 indicates that the logistic regression model has modest explanatory power, with the included predictors collectively accounting for about 11.6% of the variation in increased trader activity. This suggests that factors such as foot traffic and operating costs influence trader concentration, but other factors not included in the model, such as trader networks, enforcement practices, transport access, and customer demand, may account for much of the remaining variation.

Only high foot traffic and low operating costs significantly predicted increased trader concentration. Locations with heavy pedestrian movement were nearly six times more likely to attract additional traders, while locations with minimal operating costs were almost fourteen times more likely to experience increased concentration. These findings indicate that market-related factors exert stronger influences than general spatial availability or regulatory conditions.

The importance of pedestrian movement supports Accessibility Theory, which links movement and connectivity with economic opportunity (Hansen, 1959). It also reflects Everyday Urbanism, where routine movement patterns shape the appropriation and commercialisation of urban space (Crawford, 1999; Bromley, 2000). Similarly, the strong effect of low operating costs reinforces Political Economy interpretations of informal commerce as a response to exclusion from formal land and regulatory systems (Hart, 1973; Castells, 1977; Harvey, 1985). This is consistent with Nigerian evidence that traders favour locations with minimal rent, fees, and enforcement costs, even where spatial quality is poor (Bakare, 2023; Bank of Industry, 2022).

Proximity to customers, affordability of space, and accessibility were not independently significant after controlling for foot traffic and operating costs. Their weak effects suggest that traders may experience these factors indirectly through pedestrian flows and operating expenses. Regulatory

https://doi.org/10.65760/sjgs.v4.i2.2

variables, including absence of permits and freedom to relocate, were also non-significant, indicating that regulatory permissiveness alone does not explain increased trader concentration in Benin Metropolis.

The model's modest explanatory power suggests that informal commercial growth also reflects factors not captured here, including trader networks, displacement histories, informal negotiations with authorities, and changing enforcement patterns. Overall, increased trader concentration is primarily associated with intense pedestrian movement and minimal operating costs. The findings therefore connect Accessibility Theory, Political Economy, and Everyday Urbanism by linking exposure, cost pressures, and everyday livelihood practices. Planning responses should consequently address movement patterns and operating costs alongside regulatory measures.

Challenges Faced by Traders in Informal Commercial Locations

Trader challenges were examined across spatial and social contexts using the Kruskal–Wallis H test. The analysis tested whether challenges differed by local government area, business type, and duration of engagement in informal commercial activities. These variables served as the grouping factors, while reported challenges formed the outcome.

Table 6: **Variation in Challenges Faced by Traders Across Location, Experience, and Business Type**

Category	Group	Harassment	Poor Waste Mgmt	Poor Sanitation	Competition	Insecurity	Lack of Infrastructure	Traffic Congestion	Total
LGA	Oredo	2	19	9	46	3	15	1	95
	Egor	3	8	9	25	9	20	0	74
	Ovia North East	8	11	13	45	14	18	3	112
	Uhunmwonde	3	18	8	28	4	4	2	67
	Ikpoba-Okha	1	13	6	30	2	8	2	62
Years in Trading	1–8	9	22	26	107	23	42	4	233
	9–16	8	47	19	61	8	23	4	170
	17–24	0	0	0	6	0	0	0	6
	33–40	0	0	0	0	1	0	0	1
Business Type	Food Vendor	3	13	10	40	8	15	1	90
	Clothing & Apparel	7	44	15	70	7	19	2	164
	Electronics	4	8	14	37	8	23	2	96
	Mobile Accessories	0	0	1	3	2	2	1	9
	Food Stuffs	1	3	2	8	2	2	2	20
	Artisan Services	2	0	1	3	3	0	0	9
	Hairdressing/Barbing	0	1	2	8	1	3	0	15
	Others	0	0	0	5	1	1	0	7

Source: Author's Computation, 2026.

Note. Values are frequencies. Total sample size = 410

https://doi.org/10.65760/sjgs.v4.i2.2

Table 7: Chi Square Tests of Association Between Trader Challenges and Spatial and Social Characteristics

Dimension	χ^2 (Pearson)	Df	p	Likelihood Ratio χ^2	p	Linear-by-Linear χ^2	P
LGA of commercial centre × Challenges	40.55	24	.019	42.96	.010	1.41	.235
Years in trading × Challenges	46.75	18	< .001	42.00	.001	8.00	.005
Type of business × Challenges	66.31	42	.010	61.08	.029	3.49	.062

Source: Author's Computation, 2026.

Note. Pearson chi-square values are reported. Some cells had expected counts below five, which warranted cautious interpretation of results.

Table 8: **Measures of Association Between Trader Challenges and Spatial and Social Characteristics**

Dimension	Phi	p	Cramer's V	p
LGA of commercial centre × Challenges	.314	.019	.157	.019
Years in trading × Challenges	.338	< .001	.195	< .001
Type of business × Challenges	.402	.010	.164	.010

Source: Author's Computation, 2026.

Note. Phi and Cramer's V values indicate the strength of association between categorical variables. N = 410.

Table 6 shows that competition was the most frequently reported challenge, particularly in Oredo and Ovia North East. Poor waste management and infrastructure deficits were also prominent, especially in Egor and Ovia North East, while insecurity and harassment were less common but more concentrated in Ovia North East. These spatial differences indicate that trader challenges vary across informal commercial contexts, consistent with studies linking high-accessibility clustering to competition and uneven infrastructure and sanitation deficits (Bromley, 2000; Akiyode, 2017; Bakare, 2023; Adeyinka et al., 2006; Olajoke & Adeboyejo, 2013; Egharevba & Edohen, 2025).

Challenges also varied with trading experience. Traders with one to eight years of experience reported the highest incidence of competition, poor sanitation, insecurity, and infrastructure deficits, while those with nine to sixteen years reported similar but slightly lower levels. Traders with longer experience reported fewer challenges, possibly reflecting survivorship or adaptive coping strategies developed over time. This pattern supports Everyday Urbanism and informal livelihoods scholarship on how experience facilitates spatial adaptation and reduces vulnerability (Rakodi, 2014; Yakubu, 2018; Crawford, 1999).

Business type further differentiated exposure to challenges. Clothing and apparel traders and electronics vendors reported the highest competition and infrastructure-related problems, whereas food vendors experienced notable sanitation and waste management challenges. Artisan services and hairdressing reported fewer challenges overall, although insecurity and competition persisted. These differences support evidence that sectoral characteristics shape operational constraints (Bakare, 2023; Ayo-Odifiri, 2022) and challenge assumptions of uniform risks across informal traders (El-Banna, 2014).

Table 7 confirms significant associations between trader challenges and LGA, $\chi^2(24) = 40.55$, $p = .019$; years in trading, $\chi^2(18) = 46.75$, $p < .001$; and business type, $\chi^2(42) = 66.31$, $p = .010$. The null hypothesis was therefore rejected, indicating that constraints vary systematically by location, trading experience, and economic activity. However, some cells had low expected counts, requiring cautious interpretation (Geurs & van Wee, 2004; Wu & Pang, 2025). Table 8 shows small to moderate

https://doi.org/10.65760/sjgs.v4.i2.2

associations for LGA (Cramer's V = .157, p = .019), years in trading (Cramer's V = .195, p < .001), and business type (Cramer's V = .164, p = .010), with trading experience showing the strongest association. The relatively low frequency of harassment and insecurity contrasts with studies emphasising regulatory pressure and may reflect negotiated tolerance or normalised enforcement in Benin Metropolis (Schoenecker, 2026; Farah, 2026).

Informal commercial centres function as uneven risk environments where location, trading experience, and business type shape exposure to constraints. Accessibility attracts traders but intensifies competition, while experience may reduce vulnerability through adaptation. Political Economy explains structural inequality, Right-to-the-City addresses claims to urban space, Everyday Urbanism captures adaptive practices, and Accessibility Theory explains concentration around movement nodes (Hansen, 1959; Crawford, 1999; Bromley, 2000; Bakare, 2023).

Conclusion

Informal commercial appropriation in Benin Metropolis is structured, predictable, and socially embedded, concentrating where pedestrian flows, low operating costs, and trader characteristics intersect. Challenges differ across location, experience, and business types, highlighting the need for differentiated intervention. Recognising traders as stable economic actors enables governance strategies that balance inclusion, spatial order, and environmental management. Policy and planning should shift from blanket suppression toward evidence-based zoning, modular commercial spaces, and participatory regulation. By doing so, urban authorities can harness informal commerce as a productive and manageable component of city life rather than treating it as a problem to eradicate.

References

Adebayo, A. A., & Dada, O. T. (2021). Informal economy and urban space management in Nigerian cities. *Urban Studies Research*, 2021, 1–12. https://doi.org/10.1155/2021/xxxxxx

Adeyinka, S. A., Omisore, E. O., Olawuni, P. O., & Abegunde, A. A. (2006). *An evaluation of informal sector activities and urban land use management in south western Nigeria*. In *Proceedings of the XXIII FIG Congress: Shaping the Change* (TS 35-02). International Federation of Surveyors (FIG). http://fig.net/resources/proceedings/fig_proceedings/fig2006/papers/ts35/ts35_02_adeyinka_etal_0641.pdf

Agheyisi, J. E. (2023). Temporary use of urban vacant spaces: A pro-poor land use strategy in the Global South. *Journal of Urban Affairs*, *47*(3), 978–1002. https://doi.org/10.1080/07352166.2023.2213830

Aiworo, B. A. (2018). Analysis of land use types along major transport axis in the Benin metropolis. *Journal of Environmental Sciences and Resources Management, 10*(2), 76–91. https://www.cenresinjournals.com/wp-content/uploads/2020/01/Page-76-911192.pdf

Akiyode, A. H. (2017). *Spaces of the informal economy: Reimagining street trading through accessibility distribution analyses in Lagos* (Doctoral thesis, Cardiff University). ORCA, Cardiff University. https://orca.cardiff.ac.uk/id/eprint/109875/17/PhD%20Thesis%20-%20Akolade%20H%20Akiyode%20-%20SansSig.pdf

Atewe, A. F. and Egharevba, J. O. (2022). The determinants of market patronage in Benin City, Nigeria. *South-South Journal of Humanities and International Studies*. 5(3): 55-72

https://ssjhis.org/wp-content/uploads/2023/07/6.-The-Determinants-of-Market-Patronage-in-Benin-City-Nigeria.pdf

Axinte, L. F. (2015). *Formalising the informal: Temporary use of vacant spaces* (Master's thesis, Erasmus Mundus 4Cities Master Course in Urban Studies). 4Cities. https://www.4cities.eu/wp-content/uploads/2016/06/MAthesis_4Cities_AXINTE_LORENA_Cohort_6.pdf

Ayo-Odifiri, S. O. (2022). Accessibility factor in the patronage of markets in Benin City, Nigeria. *International Journal of Innovation Scientific Research and Review*, 4(2), 1032–1043. https://www.researchgate.net/publication/360972849_Acessibility_factor_in_the_patronage_of_markets_in_Benin_City_Nigeria

Azunre, G. A., Amponsah, O., Takyi, S. A., Mensah, H., & Braimah, I. (2022). Urban informalities in sub-Saharan Africa (SSA): A solution for or barrier against sustainable city development. *World Development*, 152, Article 105782. https://doi.org/10.1016/j.worlddev.2021.105782

Bakare, G. O. (2023). *Urban renewal and the livelihoods of the urban poor in the slum community of Makoko, Lagos Nigeria* (PhD thesis). University of Glasgow. https://theses.gla.ac.uk/84246/3/2023BakarePhD.pdf

Bank of Industry. (2022). *Economic development through the Nigerian informal sector: A BOI perspective*. https://www.boi.ng/economic-development-through-the-nigerian-informal-sector-a-boi-perspective/

Bromley R (2000). Street vending and public policy: a global review. *International Journal of Sociology and Social Policy*, Vol. 20 No. 1-2 pp. 1–28, doi: https://doi.org/10.1108/01443330010789052

Brown, A., Lyons, M., & Dankoco, I. (2010). Street traders and the emerging spaces for urban voice and citizenship in African cities. *Urban Studies*, 47(3), 667–683. https://www.scribd.com/document/794072096/brown-et-al-2010-street-traders-and-the-emerging-spaces-for-urban-voice-and-citizenship-in-african-cities-1

Chase, J., Crawford, M., & Kaliski, J. (2008). *Everyday urbanism* (2nd ed.). Monacelli Press.

Chen, M. A. (2012). The informal economy: Definitions, theories and policies. *WIEGO Working Paper No. 1*. Women in Informal Employment: Globalizing and Organizing. https://www.hks.harvard.edu/publications/informal-economy-definitions-theories-and-policies

Ciroma, C. C., Magaji, S., & Jafaru, Y. (2025). *Barriers to the formalisation of informal employment in Nigeria*. *International Journal of Innovative Finance and Economics Research, 13*(4), 104–114. https://www.seahipublications.org/wp-content/uploads/2025/10/IJIFER-D-9-2025.pdf

Crawford, M. (1999). Blurring the boundaries: Public spaces and private life. In J. Chase, M. Crawford, & J. Kaliski (Eds.), *Everyday urbanism* (pp. 22–35). Monacelli Press. https://www.scribd.com/document/506378974/Crawford-Blurring-the-Boundaries

Dadi,W., Simie, N., & Mulugeta, M. (2024). The Dynamics of Urbanization and Its Effects on Rural Livelihoods: Evidence from Adama City and Adama Rural District, Ethiopia, *Chinese Journal of Urban and Environmental Studies*, Vol. 12, No. 02, 2450012. https://doi.org/10.1142/S234574812450012X

Deppisch, S., & Yilmaz, M. C. (2021) The Impacts of Urbanization Processes on Human Rights. *Current Urban Studies*, **9**, 355-375. doi: 10.4236/cus.2021.93022

Dewi, S., Susanti, R., & Wungo, G. (2023). Informal Space Utilization Shifting post-Urban Revitalizationin the Semarang Old City. *Indonesian Journal of Geography, 55*(1), 78-87. /*doi:http://dx.doi.org/10.22146/ijg.68744*/ doi:https://doi.org/10.22146/ijg.68744

Egharevba, J. O. (2025a). Spatial patterns and wellness impacts of LPG stations in Egor LGA, Nigeria. *African Journal of Social and Behavioural Sciences (AJSBS)*. 15(3) 1531-1558. https://journals.aphriapub.com/index.php/AJSBS/article/view/3167

Egharevba, J. O. (2025b). From Traditional to Smart: Embedding Human-Centric Principles into Urban Facility Planning for Inclusive Development in African Cities. *J. Urban Dev. Manag.*, 4(2), 120-140. https://doi.org/10.56578/judm040204

Egharevba, J. O. and Asikhia, M. O. (2018). A trend analysis of the utilisation of post offices in Benin City, Edo State, Nigeria. *Nigerian Research Journal of Engineering and Environmental Sciences* 3(2): 868-877 ISSN 2635-3342. http://rjees.com/abstract/a-trend-analysis-of-the-utilisation-of-post-offices-in-benin-city-edo-state-nigeria

Egharevba, J. O. and Edohen, P. O. (2023). Assessment of Recreational Aquatic Facilities in Benin Metropolis, Nigeria. *African Journal of Geographical Sciences*. 4(1) 18-30 ISSN: 2786-9741. https://www.academia.edu/117523728/Assessment_of_Recreational_Aquatic_Facilities_in_Benin_Metropolis_Nigeria

Egharevba, J. O. and Edohen, P. O. (2025). Exploring the economic and environmental influence of street trading in Benin Metropolis: A relational analysis. *Journal of Acdemic Research in Economics* 17(1) 64-78, Spiru Haret University, Faculty of Law and Economics, Romania. http://www.jare-sh.com/downloads/mar_2025/egharevba.pdf

Egharevba, J. O. and Osakue, P. V. (2024). Analysis of accessibility and utilisation of aquatic facilities in Benin Metropolis, Nigeria. *The quint: an interdisciplinary quarterly from the north.* 17 (2) 116-156, University of Manitoba, Canada. https://www.researchgate.net/publication/390948420_Analyses_of_Accessibility_and_Utilisation_of_Aquatic_Facilities_in_Benin_Metropolis_Nigeria or https://www.ucn.ca/wp-content/uploads/2024/08/The-Quint-v16.3.pdf

Egharevba, J. O., & Atewe, F. A. (2024). Insecurity and the Coping Strategies of Residents in Benin Metropolis, Nigeria. *Ghana Journal of Geography*, *16*(3), 108–119. https://doi.org/10.4314/gjg.v16i3.11

El-Banna, S. M. A. F. (2014). *Urban management of informal commercial public spaces* (Unpublished doctoral (or master's) thesis). Cairo University, Faculty of Engineering, Urban Design and Community Development. https://www.academia.edu/33457066/Urban_Management_of_Informal_Commercial_Public_Spaces

Endalew, T. A. (2022). Determinant factors for the expansion of informal settlement in Gondar city, Northwest Ethiopia, *Journal of Urban Management*, 11(3) 321-337, ISSN 2226-5856, https://doi.org/10.1016/j.jum.2022.04.005

Ewnetu, B. M., & Seo, B. K. (2025). *Governance of urban informal settlements in Africa: A scoping review*. *Heliyon, 11*(10), Article e43441. https://doi.org/10.1016/j.heliyon.2025.e43441

Farah, I. (2026). The Legitimacy Trap: Street Vending Heterogeneity and Selective Enforcement in San Francisco. *International Journal of Urban and Regional Research*, published by John Wiley & Sons Ltd on behalf of Urban Research Publications Limited. DOI:10.1111/1468-2427.70052 https://onlinelibrary.wiley.com/doi/pdf/10.1111/1468-2427.70052

Geurs, K.T. and Van Wee, B. (2004). Accessibility Evaluation of Land-Use and Transport Strategies: Review and Research Directions. Journal of Transport Geography, 12, 127-140. https://doi.org/10.1016/j.jtrangeo.2003.10.005

Hansen, W.G. (1959). How accessibility shapes land use, *Journal of the American Institute of Planners*, 25, 73–76. https://doi.org/10.1080/01944365908978307

Hart, K. (1973). Informal income opportunities and urban employment in Ghana. *The Journal of Modern African Studies*, 11(1), 61–89. doi:10.1017/S0022278X00008089.

Harvey, D. (2008). The Right-to-the-City. *New Left Review*, 53, 23–40. https://www.taylorfrancis.com/chapters/edit/10.4324/9780429261732-35/right-city-david-harvey

Ingram, D.R. (1971) The Concept of Accessibility: A Search for an Operational Form. Regional Studies, 5, 101-107. https://doi.org/10.1080/09595237100185131

Iqbal, A., & Khurshid, N. (2024). Unraveling urban informality: the dynamics of value and space appropriation at pedestrian bridges in Islamabad, Pakistan. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 1–28. https://doi.org/10.1080/17549175.2024.2416105

Laguerre, M. S. (1994). *Informal Space. In: The Informal City*. 27-45 Palgrave Macmillan, London. https://doi.org/10.1007/978-1-349-23540-7_2

Lara-Hernandez, J. A., & Melis, A. (2017). *Understanding the temporary appropriation in relationship to social sustainability*. University of Portsmouth. https://pure.port.ac.uk/ws/files/8856885/Understanding_the_temporary_appropriation.pdf

Lawanson, T., Sawyer, L., and Olalekan, D. (2025). Lagos: City report. ACRC Working Paper 2025-32. Manchester: African Cities Research Consortium, The University of Manchester. Available online: www.african-cities.org

Lefebvre, H. (1996). *Writings on cities* (E. Kofman & E. Lebas, Trans.). Blackwell. https://chisineu.wordpress.com/wp-content/uploads/2012/09/lefebvre-henri-writings-on-cities.pdf

Lehmann, S (2023), "The unplanned city: public space and the spatial character of urban informality". *Emerald Open Research*, Vol. 1 No. 5 pp. No Pagination Specified, doi: https://doi.org/10.1108/EOR-05-2023-0007

Lindell, I. (Ed.). (2010). *Africa's informal workers: Collective agency, alliances and transnational organizing in urban Africa* (1st ed.). Zed Books. https://www.bloomsbury.com/us/africas-informal-workers-9781848134522/

López, J. W. P., Narváez, A. R. A., and Nuñez, W. A. N. (2022). Informal Economy In Urban Public Space And Its Impact On Mobility, Income And Public Transport. *Webology,* 19(3) 2099-2119 https://repository.ucc.edu.co/server/api/core/bitstreams/46fa5c68-ee52-4377-b50a-5a2f069ac971/content

Mitullah, W. V. (2003). *Street vending in African cities: A synthesis of empirical findings from Kenya, Cote d'Ivoire, Ghana, Zimbabwe, Uganda and South Africa*. World Development Report Background Paper. Washington DC: World Bank. https://www.scirp.org/reference/referencespapers?referenceid=1598172

Olajoke, A., & Adeboyejo, A. T. (2013). *Urban informal enterprises and space utilization in Ibadan, Nigeria*. *World Environment, 3*(3), 85–93. https://doi.org/10.5923/j.env.20130303.03

Onolaja, O. A. (2020). *The nexus of informal trading and the built environment: A case study of Lagos, Nigeria* (MPhil thesis, Nottingham Trent University). Nottingham Trent University. https://irep.ntu.ac.uk/id/eprint/51575/1/OLUWASEUN%20ONOLAJA%20thesis_MPHIL.pdf

Othman, A. B. (2021). *An assessment of the determinants of choice of location for informal economic activities in Ilorin urban area* (Master's thesis, Ahmadu Bello University). Ahmadu Bello University Institutional Repository. https://teras.ng/api/asset/document/22ba400c-ce9b-4d50-b82c-29055ed8d801

Pizzo, B. (2022). *Le droit à la ville*, 1968: Reading Lefebvre's *The Right-to-the-City* in Planning Perspective. In: Perrone, C. (eds) Critical Planning and Design. The Urban Book Series. Springer, Cham. https://doi.org/10.1007/978-3-030-93107-0_18

Qi, J., Mazumdar, S., & Vasconcelos, A. C. (2024). Understanding the relationship between urban public space and social cohesion: A systematic review. *International Journal of Community Well-Being, 7*(2), 155–212. https://doi.org/10.1007/s42413-024-00204-5

Rakodi, C. (2014). Urban livelihoods: Issues emerging from research and policy. *Habitat International*, 41, 1–9. https://doi.org/10.1016/j.habitatint.2013.06.001

Schoenecker, A. (2026). Street Vending and the Right to the City (1st ed.). *Routledge*. https://doi.org/10.4324/9781003605980

Ubogu, A. E., Laah, J. G., Udemezue, C. E., & Bako, A. R. (2011). Determinants of the Locational Decisions of Informal Sector Entrepreneurs in Urban Zaria. *Journal of Geography and Geology*, 3(1) 215-226, https://doi.org/10.5539/jgg.v3n1p215

United Nations, Department of Economic and Social Affairs, Population Division. (2025). *World Urbanization Prospects: The 2025 revision, online edition*. United Nations. https://population.un.org/wup/

Wang, R., Shang, W., & Zhang, G. (2025). Research on the influence of spontaneous commercial space on the commercial vitality of historical and cultural districts. *Scientific Reports, 15*, 10443. https://doi.org/10.1038/s41598-025-94712-9

Watson, V. (2009). The planned city sweeps the poor away… Urban planning and 21st century urbanisation. *Progress in Planning*, 72(3), 151–193. https://doi.org/10.1016/j.progress.2009.06.002

World Population Review. (2026). *Benin City population 2026*. https://worldpopulationreview.com/cities/nigeria/benin-city

Wu, H., & Pang, C. (2025). Heterogeneity of Influencing Factors for Informal Commercial Spaces in Communities from the Perspective of Right to the City: A Case Study of Harbin. *Sustainability*, *17*(23), 10462. https://doi.org/10.3390/su172310462

Yakubu, K. N. (2018). Evaluation of access to space for informal economic activities in Zaria urban area. *Journal of Environmental Planning and Management, 13*(2), 36–44. https://www.researchgate.net/publication/328509573_EVALUATION_OF_ACCESS_TO_SPACE_FOR_INFORMAL_ECONOMIC_ACTIVITIES_IN_ZARIA_URBAN_AREA

Appendix 1

Model Fitting Information

Model	Model Fitting Criteria -2 Log Likelihood	Likelihood Ratio Tests Chi-Square	df	Sig.
Intercept Only	1097.196			
Final	785.541	311.655	217	.000

Source: Author's Computation, 2026.

Appendix 2

Pseudo R-Square

Cox and Snell	.535
Nagelkerke	.564
McFadden	.258

Source: Author's Computation, 2026.

Appendix 3

Likelihood Ratio Tests

Effect	Model Fitting Criteria -2 Log Likelihood of Reduced Model	Likelihood Ratio Tests Chi-Square	df	Sig.
Intercept	785.541[a]	.000	0	.
Resident Location is same as Location of Commercial Centre	792.774[b]	7.233	7	.405
Gender of the Respondent	796.365[b]	10.824	7	.147
Age Group of the Respondent	829.497[b]	43.956	28	.028
Marital Status	1016.541[b]	231.000	21	.000
Level of Education	831.713[b]	46.172	28	.017
Household Group Size	829.758[b]	44.217	28	.026

https://doi.org/10.65760/sjgs.v4.i2.2

© DEPARTMENT OF GEOGRAPHY, SOKOTO STATE UNIVERSITY, SOKOTO

Volume 4, Issue 2, August 2026 Edition

up How Long you been involved in this commercial activity	815.578[b]	30.037	21	.091
what is your group average monthly income from this business	833.641[b]	48.100	28	.010
Type of Business	864.660[b]	79.119	49	.004

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

b. Unexpected singularities in the Hessian matrix are encountered. This indicates that either some predictor variables should be excluded or some categories should be merged.

Source: Author's Computation, 2026.

Appendix 4

Parameter Estimates

Why did you choose this location for your business[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B) Lower Bound	Upper Bound
Proximity to customers	Intercept	7.733	8814.163	.000	1	.999			
	[Resident Location is same as Location of Commercial Centre=1.00]	-6.376	544.571	.000	1	.991	.002	.000	.[b]
	[Resident Location is same as Location of Commercial Centre=2.00]	0[c]	.	.	0	.	.	.	.

https://doi.org/10.65760/sjgs.v4.i2.2

	[Gender of the Respondent= 1.00]	13.171	714.318	.000	1	.985	525181.524	.000	.[b]
	[Gender of the Respondent= 2.00]	0[c]	.	.	0	.	.	.	.
	[Age Group of the Respondent= 1.00]	-8.475	4227.780	.000	1	.998	.000	.000	.[b]
	[Age Group of the Respondent= 2.00]	-9.553	2050.105	.000	1	.996	7.102E-5	.000	.[b]
	[Age Group of the Respondent= 3.00]	-6.643	1865.118	.000	1	.997	.001	.000	.[b]
	[Age Group of the Respondent= 4.00]	-18.691	1832.680	.000	1	.992	7.628E-9	.000	.[b]
	[Age Group of the Respondent= 5.00]	0[c]	.	.	0	.	.	.	.
	[Marital Status=1.00]	-7.220	1094.274	.000	1	.995	.001	.000	.[b]
	[Marital Status=2.00]	-7.583	1121.171	.000	1	.995	.001	.000	.[b]
	[Marital Status=3.00]	-22.359	1029.662	.000	1	.983	1.948E-10	.000	.[b]
	[Marital Status=4.00]	0[c]	.	.	0	.	.	.	.

https://doi.org/10.65760/sjgs.v4.i2.2

	[Level of Education=1.00]	-22.964	994.515	.001	1	.982	1.063E-10	.000	.[b]
	[Level of Education=2.00]	-6.808	901.034	.000	1	.994	.001	.000	.[b]
	[Level of Education=3.00]	-9.207	601.578	.000	1	.988	.000	.000	.[b]
	[Level of Education=4.00]	-7.121	1033.156	.000	1	.995	.001	.000	.[b]
	[Level of Education=5.00]	0[c]	.	.	0	.	.	.	.
	[Household Group Size=1.00]	23.538	1392.885	.000	1	.987	16686834672.695	.000	.[b]
	[Household Group Size=2.00]	22.332	1107.588	.000	1	.984	4995278482.667	.000	.[b]
	[Household Group Size=3.00]	32.073	1182.755	.001	1	.978	84934064406042.170	.000	.[b]
	[Household Group Size=4.00]	30.830	1140.940	.001	1	.978	24508669948093.832	.000	.[b]
	[Household Group Size=5.00]	0[c]	.	.	0	.	.	.	.
	[up How Long you been involved in this commercial activity=1.00]	12.334	8140.356	.000	1	.999	227262.123	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[up How Long you been involved in this commercial activity=2.00]	14.578	8136.159	.000	1	.999	2144087.228	.000	.[b]
	[up How Long you been involved in this commercial activity=3.00]	12.645	7779.165	.000	1	.999	310354.016	.000	.[b]
	[up How Long you been involved in this commercial activity=5.00]	0[c]	.	.	0	.	.	.	.
	[what is your group average monthly income from this business=1.00]	.759	1458.677	.000	1	1.000	2.135	.000	.[b]
	[what is your group average monthly income from this business=2.00]	14.298	1183.739	.000	1	.990	1620025.095	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[what is your group average monthly income from this business=3.00]	.644	1360.577	.000	1	1.000	1.904	.000	.[b]
	[what is your group average monthly income from this business=4.00]	6.437	1476.853	.000	1	.997	624.499	.000	.[b]
	[what is your group average monthly income from this business=5.00]	0[c]	.	.	0	.	.	.	.
	[Type of Business=1.00]	1.145	3117.437	.000	1	1.000	3.144	.000	.[b]
	[Type of Business=2.00]	7.484	3110.352	.000	1	.998	1779.005	.000	.[b]
	[Type of Business=3.00]	-14.376	3122.036	.000	1	.996	5.711E-7	.000	.[b]
	[Type of Business=4.00]	-12.335	2600.556	.000	1	.996	4.395E-6	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Type of Business=5.00]	-.835	3288.929	.000	1	1.000	.434	.000	.[b]
	[Type of Business=6.00]	-22.900	3266.011	.000	1	.994	1.134E-10	.000	.[b]
	[Type of Business=7.00]	-13.499	3240.032	.000	1	.997	1.373E-6	.000	.[b]
	[Type of Business=8.00]	0[c]	.	.	0	.	.	.	.
High foot traffic	Intercept	26.660	8098.137	.000	1	.997			
	[Resident Location is same as Location of Commercial Centre=1.00]	-6.157	544.571	.000	1	.991	.002	.000	.[b]
	[Resident Location is same as Location of Commercial Centre=2.00]	0[c]	.	.	0	.	.	.	.
	[Gender of the Respondent=1.00]	13.302	714.318	.000	1	.985	598161.024	.000	.[b]
	[Gender of the Respondent=2.00]	0[c]	.	.	0	.	.	.	.
	[Age Group of the Respondent=1.00]	13.371	5911.371	.000	1	.998	641344.396	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Age Group of the Respondent= 2.00]	11.565	4612.279	.000	1	.998	105359.023	.000	.[b]
	[Age Group of the Respondent= 3.00]	14.029	4533.084	.000	1	.998	1237433.758	.000	.[b]
	[Age Group of the Respondent= 4.00]	2.123	4519.834	.000	1	1.000	8.359	.000	.[b]
	[Age Group of the Respondent= 5.00]	0[c]	.	.	0	.	.	.	.
	[Marital Status=1.00]	-10.261	1094.275	.000	1	.993	3.495E-5	.000	.[b]
	[Marital Status=2.00]	-7.770	1121.171	.000	1	.994	.000	.000	.[b]
	[Marital Status=3.00]	-20.357	1029.662	.000	1	.984	1.443E-9	.000	.[b]
	[Marital Status=4.00]	0[c]	.	.	0	.	.	.	.
	[Level of Education=1.00]	-21.719	994.516	.000	1	.983	3.694E-10	.000	.[b]
	[Level of Education=2.00]	-5.564	901.034	.000	1	.995	.004	.000	.[b]
	[Level of Education=3.00]	-9.269	601.579	.000	1	.988	9.428E-5	.000	.[b]
	[Level of Education=4.00]	-6.231	1033.156	.000	1	.995	.002	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Level of Education=5.00]	0[c]	.	.	0	.	.	.	.
	[Household Group Size=1.00]	22.554	2233.907	.000	1	.992	6240198158.613	.000	.[b]
	[Household Group Size=2.00]	20.984	2068.082	.000	1	.992	1298206540.984	.000	.[b]
	[Household Group Size=3.00]	30.301	2109.293	.000	1	.989	14443461115862.111	.000	.[b]
	[Household Group Size=4.00]	29.173	2086.134	.000	1	.989	4672648428764.546	.000	.[b]
	[Household Group Size=5.00]	0[c]	.	.	0	.	.	.	.
	[up How Long you been involved in this commercial activity=1.00]	-25.063	8256.859	.000	1	.998	1.304E-11	.000	.[b]
	[up How Long you been involved in this commercial activity=2.00]	-21.946	8252.722	.000	1	.998	2.944E-10	.000	.[b]
	[up How Long you been involved in this commercial activity=3.00]	-37.257	7926.456	.000	1	.996	6.597E-17	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[up How Long you been involved in this commercial activity=5.00]	0[c]	.	.	0	.	.	.	.
	[what is your group average monthly income from this business=1.00]	-13.873	1557.855	.000	1	.993	9.439E-7	.000	.[b]
	[what is your group average monthly income from this business=2.00]	13.523	1183.739	.000	1	.991	746600.163	.000	.[b]
	[what is your group average monthly income from this business=3.00]	-.175	1360.577	.000	1	1.000	.840	.000	.[b]
	[what is your group average monthly income from this business=4.00]	3.948	1476.853	.000	1	.998	51.808	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[what is your group average monthly income from this business=5.00]	0[c]	.	.	0	.	.	.	.
	[Type of Business=1.00]	.015	3117.437	.000	1	1.000	1.015	.000	.[b]
	[Type of Business=2.00]	4.112	3110.352	.000	1	.999	61.078	.000	.[b]
	[Type of Business=3.00]	-16.643	3122.037	.000	1	.996	5.918E-8	.000	.[b]
	[Type of Business=4.00]	-15.439	2600.557	.000	1	.995	1.972E-7	.000	.[b]
	[Type of Business=5.00]	.485	3288.929	.000	1	1.000	1.625	.000	.[b]
	[Type of Business=6.00]	-24.165	3421.050	.000	1	.994	3.201E-11	.000	.[b]
	[Type of Business=7.00]	-14.855	3240.032	.000	1	.996	3.538E-7	.000	.[b]
	[Type of Business=8.00]	0[c]	.	.	0	.	.	.	.
Affordability of space	Intercept	-5.028	11137.716	.000	1	1.000			

https://doi.org/10.65760/sjgs.v4.i2.2

	[Resident Location is same as Location of Commercial Centre=1.00]	-7.254	544.571	.000	1	.989	.001	.000	.[b]
	[Resident Location is same as Location of Commercial Centre=2.00]	0[c]	.	.	0	.	.	.	.
	[Gender of the Respondent=1.00]	13.310	714.319	.000	1	.985	603203.917	.000	.[b]
	[Gender of the Respondent=2.00]	0[c]	.	.	0	.	.	.	.
	[Age Group of the Respondent=1.00]	-2.638	4560.978	.000	1	1.000	.072	.000	.[b]
	[Age Group of the Respondent=2.00]	9.398	2638.833	.000	1	.997	12061.194	.000	.[b]
	[Age Group of the Respondent=3.00]	12.842	2497.834	.000	1	.996	377807.874	.000	.[b]
	[Age Group of the Respondent=4.00]	1.195	2473.707	.000	1	1.000	3.304	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Age Group of the Respondent= 5.00]	0[c]	.	.	0	.	.	.	.
	[Marital Status=1.00]	-7.038	1094.274	.000	1	.995	.001	.000	.[b]
	[Marital Status=2.00]	-8.511	1121.171	.000	1	.994	.000	.000	.[b]
	[Marital Status=3.00]	-22.387	1029.663	.000	1	.983	1.894E-10	.000	.[b]
	[Marital Status=4.00]	0[c]	.	.	0	.	.	.	.
	[Level of Education=1.00]	-21.134	994.516	.000	1	.983	6.633E-10	.000	.[b]
	[Level of Education=2.00]	-5.963	901.035	.000	1	.995	.003	.000	.[b]
	[Level of Education=3.00]	-8.024	601.579	.000	1	.989	.000	.000	.[b]
	[Level of Education=4.00]	-5.596	1033.156	.000	1	.996	.004	.000	.[b]
	[Level of Education=5.00]	0[c]	.	.	0	.	.	.	.
	[Household Group Size=1.00]	-7.511	1256.780	.000	1	.995	.001	.000	.[b]
	[Household Group Size=2.00]	4.138	884.588	.000	1	.996	62.701	.000	.[b]
	[Household Group Size=3.00]	13.635	977.064	.000	1	.989	834642.066	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Household Group Size=4.00]	14.634	926.006	.000	1	.987	2266611.399	.000	.[b]
	[Household Group Size=5.00]	0[c]	.	.	0	.	.	.	.
	[up How Long you been involved in this commercial activity=1.00]	11.064	10738.240	.000	1	.999	63834.359	.000	.[b]
	[up How Long you been involved in this commercial activity=2.00]	11.824	10735.060	.000	1	.999	136482.148	.000	.[b]
	[up How Long you been involved in this commercial activity=3.00]	-2.583	10493.292	.000	1	1.000	.076	.000	.[b]
	[up How Long you been involved in this commercial activity=5.00]	0[c]	.	.	0	.	.	.	.
	[what is your group average monthly income from this business=1.00]	.816	1458.677	.000	1	1.000	2.262	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[what is your group average monthly income from this business=2.00]	13.348	1183.739	.000	1	.991	626580.199	.000	.[b]
	[what is your group average monthly income from this business=3.00]	-1.449	1360.577	.000	1	.999	.235	.000	.[b]
	[what is your group average monthly income from this business=4.00]	6.177	1476.853	.000	1	.997	481.657	.000	.[b]
	[what is your group average monthly income from this business=5.00]	0[c]	.	.	0	.	.	.	.
	[Type of Business=1.00]	14.002	3199.680	.000	1	.997	1204806.248	.000	.[b]
	[Type of Business=2.00]	20.789	3192.778	.000	1	.995	1068091494.096	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Type of Business=3.00]	-1.570	3204.162	.000	1	1.000	.208	.000	.[b]
	[Type of Business=4.00]	.168	2698.598	.000	1	1.000	1.183	.000	.[b]
	[Type of Business=5.00]	-.295	3391.674	.000	1	1.000	.745	.000	.[b]
	[Type of Business=6.00]	6.260	3322.627	.000	1	.998	523.095	.000	.[b]
	[Type of Business=7.00]	1.727	3319.239	.000	1	1.000	5.626	.000	.[b]
	[Type of Business=8.00]	0[c]	.	.	0	.	.	.	.
No need for formal permits	Intercept	126.482	26386.741	.000	1	.996			
	[Resident Location is same as Location of Commercial Centre=1.00]	13.216	584.030	.001	1	.982	548952.154	.000	.[b]
	[Resident Location is same as Location of Commercial Centre=2.00]	0[c]	.	.	0	.	.	.	.
	[Gender of the Respondent=1.00]	-10.424	871.085	.000	1	.990	2.971E-5	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Gender of the Respondent= 2.00]	0[c]	.	.	0	.	.	.	.
	[Age Group of the Respondent= 1.00]	15.269	8218.873	.000	1	.999	4279531.515	.000	.[b]
	[Age Group of the Respondent= 2.00]	75.125	7341.092	.000	1	.992	42292961113406950000000000000000000.000	.000	.[b]
	[Age Group of the Respondent= 3.00]	57.568	7276.902	.000	1	.994	10033081122850874000000000.000	.000	.[b]
	[Age Group of the Respondent= 4.00]	67.934	7259.158	.000	1	.993	31878957050333880000000000000.000	.000	.[b]
	[Age Group of the Respondent= 5.00]	0[c]	.	.	0	.	.	.	.
	[Marital Status=1.00]	15.751	1276.856	.000	1	.990	6930241.152	.000	.[b]
	[Marital Status=2.00]	-25.418	1291.579	.000	1	.984	9.146E-12	.000	.[b]
	[Marital Status=3.00]	3.534	1174.058	.000	1	.998	34.260	.000	.[b]
	[Marital Status=4.00]	0[c]	.	.	0	.	.	.	.
	[Level of Education=1.00]	-23.736	1298.283	.000	1	.985	4.917E-11	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Level of Education=2.00]	-26.245	1095.343	.001	1	.981	3.997E-12	.000	.[b]
	[Level of Education=3.00]	-50.035	683.002	.005	1	.942	1.862E-22	.000	.[b]
	[Level of Education=4.00]	-4.881	1127.199	.000	1	.997	.008	.000	.[b]
	[Level of Education=5.00]	0[c]	.	.	0	.	.	.	.
	[Household Group Size=1.00]	-72.334	2385.039	.001	1	.976	3.852E-32	.000	.[b]
	[Household Group Size=2.00]	-50.342	2093.394	.001	1	.981	1.371E-22	.000	.[b]
	[Household Group Size=3.00]	-40.861	2097.198	.000	1	.984	1.797E-18	.000	.[b]
	[Household Group Size=4.00]	-107.746	2306.011	.002	1	.963	1.608E-47	.000	.[b]
	[Household Group Size=5.00]	0[c]	.	.	0	.	.	.	.
	[up How Long you been involved in this commercial activity=1.00]	-115.653	26999.801	.000	1	.997	5.923E-51	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[up How Long you been involved in this commercial activity=2.00]	-133.448	26999.452	.000	1	.996	1.108E-58	.000	.[b]
	[up How Long you been involved in this commercial activity=3.00]	-135.295	26903.639	.000	1	.996	1.746E-59	.000	.[b]
	[up How Long you been involved in this commercial activity=5.00]	0[c]	.	.	0	.	.	.	.
	[what is your group average monthly income from this business=1.00]	-34.147	2301.864	.000	1	.988	1.480E-15	.000	.[b]
	[what is your group average monthly income from this business=2.00]	-2.916	1595.653	.000	1	.999	.054	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[what is your group average monthly income from this business=3.00]	-16.112	1759.541	.000	1	.993	1.006E-7	.000	.[b]
	[what is your group average monthly income from this business=4.00]	48.353	1767.989	.001	1	.978	9992108632514806000000.000	.000	.[b]
	[what is your group average monthly income from this business=5.00]	0[c]	.	.	0	.	.	.	.
	[Type of Business=1.00]	1.648	3627.137	.000	1	1.000	5.199	.000	.[b]
	[Type of Business=2.00]	-9.891	3584.216	.000	1	.998	5.062E-5	.000	.[b]
	[Type of Business=3.00]	9.902	3664.870	.000	1	.998	19972.476	.000	.[b]
	[Type of Business=4.00]	-49.719	3364.703	.000	1	.988	2.554E-22	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Type of Business=5.00]	-61.805	3790.327	.000	1	.987	1.440E-27	.000	.[b]
	[Type of Business=6.00]	-27.798	4006.829	.000	1	.994	8.463E-13	.000	.[b]
	[Type of Business=7.00]	-33.296	3963.677	.000	1	.993	3.464E-15	.000	.[b]
	[Type of Business=8.00]	0[c]	.	.	0	.	.	.	.
Availability of open spaces	Intercept	8.875	8482.570	.000	1	.999			
	[Resident Location is same as Location of Commercial Centre=1.00]	-6.373	544.571	.000	1	.991	.002	.000	.[b]
	[Resident Location is same as Location of Commercial Centre=2.00]	0[c]	.	.	0	.	.	.	.
	[Gender of the Respondent=1.00]	12.374	714.318	.000	1	.986	236519.761	.000	.[b]
	[Gender of the Respondent=2.00]	0[c]	.	.	0	.	.	.	.
	[Age Group of the Respondent=1.00]	-5.006	4227.780	.000	1	.999	.007	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Age Group of the Respondent= 2.00]	-7.064	2050.106	.000	1	.997	.001	.000	.[b]
	[Age Group of the Respondent= 3.00]	-3.547	1865.119	.000	1	.998	.029	.000	.[b]
	[Age Group of the Respondent= 4.00]	-15.427	1832.680	.000	1	.993	1.995E-7	.000	.[b]
	[Age Group of the Respondent= 5.00]	0[c]	.	.	0	.	.	.	.
	[Marital Status=1.00]	-8.748	1094.274	.000	1	.994	.000	.000	.[b]
	[Marital Status=2.00]	-8.550	1121.171	.000	1	.994	.000	.000	.[b]
	[Marital Status=3.00]	-21.149	1029.662	.000	1	.984	6.533E-10	.000	.[b]
	[Marital Status=4.00]	0[c]	.	.	0	.	.	.	.
	[Level of Education=1.00]	-24.204	994.515	.001	1	.981	3.078E-11	.000	.[b]
	[Level of Education=2.00]	-7.955	901.034	.000	1	.993	.000	.000	.[b]
	[Level of Education=3.00]	-10.615	601.578	.000	1	.986	2.454E-5	.000	.[b]
	[Level of Education=4.00]	-8.180	1033.156	.000	1	.994	.000	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Level of Education=5.00]	0[c]	.	.	0	.	.	.	.
	[Household Group Size=1.00]	8.298	1223.058	.000	1	.995	4016.007	.000	.[b]
	[Household Group Size=2.00]	6.698	884.587	.000	1	.994	810.932	.000	.[b]
	[Household Group Size=3.00]	15.875	977.063	.000	1	.987	7841020.849	.000	.[b]
	[Household Group Size=4.00]	15.837	926.006	.000	1	.986	7549267.094	.000	.[b]
	[Household Group Size=5.00]	0[c]	.	.	0	.	.	.	.
	[up How Long you been involved in this commercial activity=1.00]	26.938	7808.595	.000	1	.997	500141033775.495	.000	.[b]
	[up How Long you been involved in this commercial activity=2.00]	28.352	7804.220	.000	1	.997	2056482559784.554	.000	.[b]
	[up How Long you been involved in this commercial activity=3.00]	27.535	7431.296	.000	1	.997	908272468538.972	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[up How Long you been involved in this commercial activity=5.00]	0[c]	.	.	0	.	.	.	.
	[what is your group average monthly income from this business=1.00]	-2.478	1458.677	.000	1	.999	.084	.000	.[b]
	[what is your group average monthly income from this business=2.00]	12.698	1183.738	.000	1	.991	327210.786	.000	.[b]
	[what is your group average monthly income from this business=3.00]	-.988	1360.577	.000	1	.999	.372	.000	.[b]
	[what is your group average monthly income from this business=4.00]	4.156	1476.852	.000	1	.998	63.817	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[what is your group average monthly income from this business=5.00]	0[c]	.	.	0	.	.	.	.
	[Type of Business=1.00]	2.871	3117.437	.000	1	.999	17.661	.000	.[b]
	[Type of Business=2.00]	9.038	3110.352	.000	1	.998	8413.723	.000	.[b]
	[Type of Business=3.00]	-12.327	3122.037	.000	1	.997	4.431E-6	.000	.[b]
	[Type of Business=4.00]	-11.925	2600.556	.000	1	.996	6.625E-6	.000	.[b]
	[Type of Business=5.00]	1.891	3288.929	.000	1	1.000	6.627	.000	.[b]
	[Type of Business=6.00]	-5.823	3243.503	.000	1	.999	.003	.000	.[b]
	[Type of Business=7.00]	-11.784	3240.032	.000	1	.997	7.623E-6	.000	.[b]
	[Type of Business=8.00]	0[c]	.	.	0	.	.	.	.
Recommendations from other traders	Intercept	-18.086	4801.531	.000	1	.997			

https://doi.org/10.65760/sjgs.v4.i2.2

	[Resident Location is same as Location of Commercial Centre=1.00]	-6.121	544.571	.000	1	.991	.002	.000	.[b]
	[Resident Location is same as Location of Commercial Centre=2.00]	0[c]	.	.	0	.	.	.	.
	[Gender of the Respondent=1.00]	12.926	714.318	.000	1	.986	410899.298	.000	.[b]
	[Gender of the Respondent=2.00]	0[c]	.	.	0	.	.	.	.
	[Age Group of the Respondent=1.00]	-1.692	3652.485	.000	1	1.000	.184	.000	.[b]
	[Age Group of the Respondent=2.00]	9.726	722.031	.000	1	.989	16740.968	.000	.[b]
	[Age Group of the Respondent=3.00]	12.600	424.630	.001	1	.976	296520.871	.000	.[b]
	[Age Group of the Respondent=4.00]	.779	.000	.	1	.	2.180	2.180	2.180

https://doi.org/10.65760/sjgs.v4.i2.2

	[Age Group of the Respondent= 5.00]	0[c]	.	.	0	.	.	.	.
	[Marital Status=1.00]	-8.772	1094.274	.000	1	.994	.000	.000	.[b]
	[Marital Status=2.00]	-8.990	1121.171	.000	1	.994	.000	.000	.[b]
	[Marital Status=3.00]	-21.909	1029.662	.000	1	.983	3.055E-10	.000	.[b]
	[Marital Status=4.00]	0[c]	.	.	0	.	.	.	.
	[Level of Education=1.00]	-23.447	994.515	.000	1	.981	6.565E-11	.000	.[b]
	[Level of Education=2.00]	-9.104	901.034	.000	1	.992	.000	.000	.[b]
	[Level of Education=3.00]	-10.906	601.578	.000	1	.986	1.835E-5	.000	.[b]
	[Level of Education=4.00]	-8.101	1033.156	.000	1	.994	.000	.000	.[b]
	[Level of Education=5.00]	0[c]	.	.	0	.	.	.	.
	[Household Group Size=1.00]	21.601	1903.508	.000	1	.991	2406125811.691	.000	.[b]
	[Household Group Size=2.00]	20.510	1705.862	.000	1	.990	807871989.091	.000	.[b]
	[Household Group Size=3.00]	30.082	1755.598	.000	1	.986	11600007363911.572	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Household Group Size=4.00]	29.362	1727.703	.000	1	.986	5645043530871.298	.000	.[b]
	[Household Group Size=5.00]	0[c]	.	.	0	.	.	.	.
	[up How Long you been involved in this commercial activity=1.00]	12.705	2232.012	.000	1	.995	329250.605	.000	.[b]
	[up How Long you been involved in this commercial activity=2.00]	14.141	2226.740	.000	1	.995	1385112.323	.000	.[b]
	[up How Long you been involved in this commercial activity=3.00]	12.964	.000	.	1	.	426951.933	426951.933	426951.933
	[up How Long you been involved in this commercial activity=5.00]	0[c]	.	.	0	.	.	.	.
	[what is your group average monthly income from this business=1.00]	-2.088	1458.677	.000	1	.999	.124	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[what is your group average monthly income from this business=2.00]	11.685	1183.738	.000	1	.992	118766.114	.000	.[b]
	[what is your group average monthly income from this business=3.00]	-3.013	1360.577	.000	1	.998	.049	.000	.[b]
	[what is your group average monthly income from this business=4.00]	1.949	1476.853	.000	1	.999	7.019	.000	.[b]
	[what is your group average monthly income from this business=5.00]	0[c]	.	.	0	.	.	.	.
	[Type of Business=1.00]	14.141	3190.886	.000	1	.996	1384405.569	.000	.[b]
	[Type of Business=2.00]	19.977	3183.965	.000	1	.995	473952631.631	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Type of Business=3.00]	-1.217	3195.380	.000	1	1.000	.296	.000	.[b]
	[Type of Business=4.00]	-11.619	2739.338	.000	1	.997	8.990E-6	.000	.[b]
	[Type of Business=5.00]	13.880	3358.630	.000	1	.997	1066799.429	.000	.[b]
	[Type of Business=6.00]	5.484	3314.159	.000	1	.999	240.732	.000	.[b]
	[Type of Business=7.00]	-.819	3310.762	.000	1	1.000	.441	.000	.[b]
	[Type of Business=8.00]	0[c]	.	.	0	.	.	.	.
High vehicle traffic	Intercept	-16.006	19927.702	.000	1	.999			
	[Resident Location is same as Location of Commercial Centre=1.00]	-6.753	544.573	.000	1	.990	.001	.000	.[b]
	[Resident Location is same as Location of Commercial Centre=2.00]	0[c]	.	.	0	.	.	.	.
	[Gender of the Respondent=1.00]	-.120	850.371	.000	1	1.000	.887	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Gender of the Respondent= 2.00]	0[c]	.	.	0	.	.	.	.
	[Age Group of the Respondent= 1.00]	-1.839	4289.498	.000	1	1.000	.159	.000	.[b]
	[Age Group of the Respondent= 2.00]	-28.095	2154.388	.000	1	.990	6.289E-13	.000	.[b]
	[Age Group of the Respondent= 3.00]	-35.466	1971.047	.000	1	.986	3.957E-16	.000	.[b]
	[Age Group of the Respondent= 4.00]	-47.345	1940.382	.001	1	.981	2.744E-21	.000	.[b]
	[Age Group of the Respondent= 5.00]	0[c]	.	.	0	.	.	.	.
	[Marital Status=1.00]	-20.630	1332.177	.000	1	.988	1.098E-9	.000	.[b]
	[Marital Status=2.00]	22.748	1281.350	.000	1	.986	7574821322.302	.000	.[b]
	[Marital Status=3.00]	-4.696	1469.743	.000	1	.997	.009	.000	.[b]
	[Marital Status=4.00]	0[c]	.	.	0	.	.	.	.
	[Level of Education=1.00]	-25.544	3729.026	.000	1	.995	8.058E-12	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Level of Education=2.00]	-15.807	1021.6 91	.000	1	.988	1.365E-7	.000	.[b]
	[Level of Education=3.00]	1.388	629.84 7	.000	1	.998	4.008	.000	.[b]
	[Level of Education=4.00]	-40.582	1100.1 63	.000	1	.971	2.373E-18	.000	.[b]
	[Level of Education=5.00]	0[c]	.	.	0	.	.	.	.
	[Household Group Size=1.00]	9.541	1369.6 43	.000	1	.994	13917.987	.000	.[b]
	[Household Group Size=2.00]	-2.936	1080.5 74	.000	1	.998	.053	.000	.[b]
	[Household Group Size=3.00]	-7.650	1227.8 87	.000	1	.995	.000	.000	.[b]
	[Household Group Size=4.00]	-13.578	1254.8 52	.000	1	.991	1.268E-6	.000	.[b]
	[Household Group Size=5.00]	0[c]	.	.	0	.	.	.	.
	[up How Long you been involved in this commercial activity=1.00]	6.370	19649. 363	.000	1	1.000	583.877	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[up How Long you been involved in this commercial activity=2.00]	8.683	19647.625	.000	1	1.000	5901.412	.000	.[b]
	[up How Long you been involved in this commercial activity=3.00]	22.717	19545.591	.000	1	.999	7343940684.277	.000	.[b]
	[up How Long you been involved in this commercial activity=5.00]	0[c]	.	.	0	.	.	.	.
	[what is your group average monthly income from this business=1.00]	-26.586	1732.242	.000	1	.988	2.844E-12	.000	.[b]
	[what is your group average monthly income from this business=2.00]	33.214	1313.600	.001	1	.980	265913106302759.940	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[what is your group average monthly income from this business=3.00]	20.598	1474.950	.000	1	.989	882350098.969	.000	.[b]
	[what is your group average monthly income from this business=4.00]	3.402	1707.613	.000	1	.998	30.026	.000	.[b]
	[what is your group average monthly income from this business=5.00]	0[c]	.	.	0	.	.	.	.
	[Type of Business=1.00]	3.233	3244.795	.000	1	.999	25.356	.000	.[b]
	[Type of Business=2.00]	30.118	3237.833	.000	1	.993	12024691046360.684	.000	.[b]
	[Type of Business=3.00]	21.252	3281.691	.000	1	.995	1697440591.341	.000	.[b]
	[Type of Business=4.00]	1.345	2894.794	.000	1	1.000	3.837	.000	.[b]

https://doi.org/10.65760/sjgs.v4.i2.2

	[Type of Business=5.00]	14.426	3425.913	.000	1	.997	1841169.388	.000	.[b]
	[Type of Business=6.00]	26.218	5785.470	.000	1	.996	243492247462.194	.000	.[b]
	[Type of Business=7.00]	2.061	3356.455	.000	1	1.000	7.858	.000	.[b]
	[Type of Business=8.00]	0[c]	.	.	0	.	.	.	.

a. The reference category is: Others.

b. Floating point overflow occurred while computing this statistic. Its value is therefore set to system missing.

c. This parameter is set to zero because it is redundant.

Source: Author's Computation, 2026.

Appendix 5

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	26.193	8	.001
	Block	26.193	8	.001
	Model	26.193	8	.001

Source: Author's Computation, 2026.

Appendix 6

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	285.664[a]	.062	.116

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Source: Author's Computation, 2026.

https://doi.org/10.65760/sjgs.v4.i2.2

© DEPARTMENT OF GEOGRAPHY, SOKOTO STATE UNIVERSITY, SOKOTO

Volume 4, Issue 2, August 2026 Edition

Appendix 7

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	4.522	7	.718

Source: Author's Computation, 2026.

Appendix 8

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	Why did you choose this location for your business (Proximity to customers)(1)	.106	.645	.027	1	.870	1.112	.314	3.936
	Why did you choose this location for your business (High foot traffic)(1)	1.762	.647	7.407	1	.006	5.825	1.637	20.724
	Why did you choose this location for your business (Affordability of space)(1)	-.795	1.146	.482	1	.488	.451	.048	4.265
	What advantages do you enjoy by operating at this location (Accessibility to customers)(1)	.340	.365	.866	1	.352	1.405	.687	2.873
	What advantages do you enjoy by operating at this location (No need for rent payments)(1)	2.636	1.209	4.759	1	.029	13.964	1.307	149.177
	What advantages do you enjoy by operating at this location (No formal permits required)(1)	-18.740	19967.397	.000	1	.999	.000	.000	.
	What advantages do you enjoy by operating at this location (freedom to expand or relocate easily)(1)	.464	.504	.847	1	.357	1.590	.592	4.271

https://doi.org/10.65760/sjgs.v4.i2.2

	Why did you choose this location for your business (Availability of open spaces)	-.701	.570	1.513	1	.219	.496	.162	1.516
	Constant	-1.296	.697	3.458	1	.063	.274		

a. Variable(s) entered on step 1: Why did you choose this location for your business (Proximity to customers), Why did you choose this location for your business (High foot traffic), Why did you choose this location for your business (Affordability of space), What advantages do you enjoy by operating at this location (Accessibility to customers), What advantages do you enjoy by operating at this location (No need for rent payments), What advantages do you enjoy by operating at this location (No formal permits required), What advantages do you enjoy by operating at this location (freedom to expand or relocate easily), Why did you choose this location for your business (Availability of open spaces).

Source: Author's Computation, 2026.

Acknowledgements

The author acknowledges the informal traders who participated in the study and contributed their time and information during data collection.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.