



## Assessment of Informal Sector Activities and Its Impacts on the Physical Environment of Abakiliki Metropolis, Ebonyi State, Nigeria

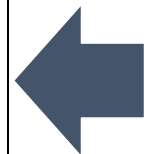
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*This research focused on the assessment of informal sector activities and its impacts on the physical environment of Abakiliki Metropolis, Ebonyi State, Nigeria. Objectives pursued included determining the nature, types and level of informal sector activities in Abakiliki metropolis; determining the major drivers of informal sector activities within the metropolis and analyzing the impacts of informal sector activities on the physical environment of Abakiliki metropolis, Ebonyi state, Nigeria. The study employed the survey research design where a total number of 399 respondents were selected for the study. Structured questionnaire instrument, interview and personal observation facilitated in the gathering of information. Collected data were presented and analyzed using tables, percentages, means, bar chart and the hypothesis was tested using Chi-Square test. Findings from the study revealed that motorcycle operation; food vending, street trading, wheel barrow/carting pushing among others constituted the types and nature of informal sector activities prevalent in Abakiliki Metropolis with all recording high levels. The study also revealed that that lack of adequate market to accommodate traders; high inflation rate; illiteracy; high tax on businesses; high cost of business registration; increased regulation of formal businesses; quest for higher income; unemployment; poverty; lack of adequate entrepreneurial education among others where drivers to engage in informal sector activities in the study area. The study also revealed that pollution; defacing of the environment; illegal conversion of residential buildings to commercial; reduced value of residential/neighbourhood properties; congestion on highways among others was major impacts of informal sector activities on the physical environment of Abakiliki Metropolis. Major recommendation of the study states that the state and federal government should as a matter of urgency commence initiatives to formalize most of the informal sector activities in Abakiliki Metropolis. This can be achieved through tax wafers, grants and access to finance. This would go a long way in regulating and controlling the proliferation of these activities in the study area.*



ABSTRACT

**Keywords:** Informal Sector Activities; Physical Environment; Street Trading; Abakiliki Metropolis; Marxian Economic Theory; Pollution

## **Introduction**

The recent report by the International Labour Organization (ILO) revealed that the proportion of the urban work force engaged in informal sector activities is highest in sub-sahara Africa and account for more than 50% of urban employment in two thirds of countries surveyed in 1999 (Nwaka, 2020). This according to researchers is been aggravated majorly by the rapid rise of urbanization, increasing poverty, population growth and lack of meaningful employment opportunities (Onyenechere, 2017).

The informal sector as a described by scholars refers to a special category of income generating activities or services or settlements practices that are relatively unregulated or uncontrolled by the state or formal institutions (Sanusi, Madayese and Idowu, 2015). According to the World Bank Report (2018), the informal sector activities have been categorized into two types of labour market activities. The first one comprises of coping strategies which are casual jobs, temporary jobs, unpaid jobs, subsistent agriculture and multiple job holdings. The second has to do with the unofficial earning strategies which are tax evasion, avoidance of labour regulations and other government institutional regulations, none registration of the company and also underground activities: crimes such as prostitution, drugs and corruption activities not registered by the government (Kaium, Parag and Saiful, 2015). Similarly, Lawanson (2016) viewed the informal sector as another sector outside the normal organized formal sector that provides employment and sustenance through engaging in a variety of activities such as street trading, hawking, vulcanizing, local manufacturing and cobbling.

The informal sector functions in employment creation, reduction in the rate of crime and other vices and most importantly poverty alleviation by providing income to unskilled and semi-skilled workers who otherwise would be unemployed. The informal sector employs a majority of the labour force in many countries. In the advanced countries of North America, Western Europe and China, the incidence of informal sector activities is the smallest as compared to other regions of the world employing only 10% of total labour (Vanek et al, 2014). In the United States of America, the prevailing weak labour market conditions since the Great Recession along with the recent emergence of web-based applications have facilitated a variety of informal earning opportunities in the country (Bracha and Burke, 2014). A recent survey by Bracha and Burke (2014) on informal work activities in the United States found out that roughly 44% of respondents participated in one form of informal activity or the other. These informal sector activities range from handy man jobs, babysitting, cobblers and burger flipping.

In China, the informal sector is the bane of the sustenance of the country's teeming population most especially migrants from rural areas. Recent studies showed that 80% of the labour force of the informal; sector are migrants who engage in activities like street trading, hawking and cart pushers (Onyenechere, 2017). Going further, the Asian Development Bank (ADB) and Bangladesh Bureau of Statistics (BBS) conducted a labour force survey (LFS) prior to 2010 and observed that 89% of the total employment was in the informal sector economy with 76% of urban job markets in the informal business contributing to 40% of total gross economic value added to Bangladesh in 2010 (Asian Development Bank and Bangladesh Bureau of Statistics, 2016).

In Africa, the informal sector accounts as the biggest employer of the region's unemployed population. In fact, the term 'informal sector was first used by the International Labour Organization in 1972 in its report on Kenya. Previous studies on the informal sector (Fidler and Webster, 2016; Ferej, 2017) are evidences of the importance of service employment for urban economies and the also touch upon the issue of absorbing retrenched labour. Working or trading in the informal sector provides some form of livelihood not only for the out-of-work rural migrants but for the retrenched urban dwellers as well. In Egypt, the rate of informal sector activities which included barter of goods and services, mutual self-help and street trading reached 35% of GDP in 1997-2006 (Abbas, 2019). Following this development, the Egyptian government in 2015 announced several initiatives to integrate the informal economy into the country's formal economy through the introduction of tax breaks and other incentives. The informal sector has been a strong supporter of the Egyptian economy, providing job opportunities and additional income for low-income people such as teachers and civil servants.

In South Africa, the high rate of unemployment and poverty mean that most people who work informally do so as a last resort. A recent study on entrepreneurial activity in metropolitan areas and 83% in rural areas is driven by a

need for basic survival with many placing their hope in the informal economy (Driver, Wood, Segal and Herrington, 2016). The informal sector of South Africa spans across sectors like manufacturing, construction, trade and transportation (Statistics South Africa, 2014; Labour Force Survey, 2015).

In Nairobi, Kenya, due to high magnitude of unemployment, thousands of the residents invaded the city's unplanned open spaces and road reserves to operate informal commercial activities (Gasu, Ibrahim and Yakubu, 2020). The informal sector accounts for 95% of the country's businesses and entrepreneurs which accommodates both unskilled and semi-skilled labour (Amenya, 2017). In Nigeria, the informal sector unfolded conspicuously after the Structural Adjustment Programme (SAP) was introduced which eventually led to mass retrenchment of formal sector workers. Characteristically, a large percentage of the victims found solace in informal sector employment which appeared as the immediate solution to the economic crisis that was prevalent at that time (Oshinowo, 2017).

The informal sector is made up of small-scale businesses of which street trading constitutes a very high proportion of the total population which is estimated at about 60% in 2015 (Nigeria Bureau of Statistics, 2016). However, it should be borne in mind that the greater number of opportunity seekers that migrate to Ebonyi state especially Abakiliki Metropolis in search of high paying jobs and a better quality of life are mostly unskilled and unemployable and mostly end up in the informal sector of the economy.

The ability of the informal sector economy to contain a teeming population of the unemployed into the labour force has posed a significant challenge to environmental health and urban land use planning and management (Adeyinka, et al., 2016). Adeyinka et al (2016) further opined that the challenge of the unemployed is borne out of the capacity of the sector to generate land use problems like sprawl problems, incongruous land uses, building alterations, the menace of temporary structures, alteration of land use functions, open space conversions, land degradation, pollution, defacing of the natural environment, flooding and unwanted road accidents.

The role of the informal sector in providing employment and complementing the formal sector should not be trivialized when considering its effects on the physical urban environment. It is against this background that this study was embarked on to assess the informal sector activities and its impacts on the physical environment of Abakiliki Metropolis, Ebonyi State, Nigeria.

### **Statement of the Research Problem**

In many cities of the modern world, challenges to urban and environmental management can be attributed to a particular driving force with the current increase in technological advancement, high unemployment rate, poverty and development of towns. The state of the environment has become similar to its current economic and political conditions rapidly developing into a crisis situation. This negative situation has exacerbated into various forms of environmental problems ranging from pervasive and health impairing pollution, indiscriminate discharge of pollutants into rivers and lakes, land degradation, siltation of rivers and farm lands, loss of biodiversity and others. As opined by Gabriel, et al. (2019), there exist a lot of problems associated with informal sector activities and environmental health and management.

In Abakiliki metropolis, one of the fastest growing capital cities of Southeastern Nigeria and Nigeria at large boost a large chunk of informal sector activities (Nwofe, 2015). The continued proliferation and existence of these activities can be attributed to the high rate of poverty, unemployment and most of all the lack of proper land use/town planning by the appropriate authorities. In the study area especially the old and new kpiri-kpiri areas and suburban informal settlements of the metropolis (Amike-Aba, Ntezi, Oroke-onuha, off mile 50 layout, Agbaja unuphu, Nkwagu, Onu-ebonyi and Nkaleke-unuphu), the practice of informal sector activities seems to have no bounds. The activities as engaged by residents and migrants range from the sale of used clothes, hawking, street trading, auto mechanics and vulcanizing, food vending, motorcycle and tricycle operations, cart and wheelbarrow pushing among others. These activities and more have posed serious challenges on the urban environment. Firstly, informal sector activities devalue the existing land use. This is evident in the fact that informal sector presents an introduction of commercial and industrial/service industries into residential estates and dwellings. This has resulted in a disharmonious urban

spatial organization of incompatible land uses which in turn devalue the land and houses within the neighbourhood as the aesthetic value and the use of land are compromised.

Secondly, the activity of informal sector operators greatly defines modern land use alteration. The alterations made by the informal sector operators are not approved by constituent authorities whose mandate is to properly oversee the policies and operations of land use and its management in a well-defined administrative environment. This is no mincing words that most informal activities are located on pavements or road reserves and building frontages which are in non-conformity with planning regulations such as building lines.

Furthermore, informal sector activities in Abakiliki metropolis greatly encourages land use conversions with outmost disregard for existing planning policies, guide lines as well as regulations. These activities tend to change the buildings and neighbourhoods thereby bringing out a different physical neighbourhood character from that envisaged by planners. Consequently, this result in a conflict with planning authorities where such authorities have the resources to resist such inconsistency and unapproved alterations.

Lastly, informal activities and their impacts on the physical environment of Abakiliki metropolis have constituted major threats to the health and well-being of urban life. This has resulted in the outbreak of diseases, flooding, pollution of all types, land degradation among others. This thus creates the main challenge of how to support and regulate the informal sector in order to promote productivity and income for the poor and at the same time ensure a safe, healthy and socially acceptable environment in Abakiliki metropolis. This research therefore is timely as it sought to study the informal sector activities and its impacts on the physical environment of Abakiliki metropolis, Ebonyi state, Nigeria. It would go a long way to help create a balance between economy and the state of the physical environment in the study area. Specific objectives pursued in this study included to determine the nature, types and level of informal sector activities in Abakiliki metropolis; determine the major drivers of informal sector activities within the metropolis and analyze the impacts of informal sector activities on the physical environment of Abakiliki metropolis, Ebonyi state, Nigeria.

### **Research Hypothesis**

The underlisted hypothesis would be tested at 0.05 level of significance:

The impacts of informal sector activities on the physical environment of Abakiliki metropolis are not statistically significant.

### **Literature Review**

#### **Theoretical framework**

Despite the term 'informal sector' stemming from an analysis of African urban economies, the ensuing theoretical frameworks will be assessed for better understanding of the informal sector activities in this research.

#### **Marxian Economic Theory**

Marxian economic theory otherwise called the "political economy approach" tends to search out the experiences of those oppressed, marginalized, victimized and exploited by capitalism, including poor families and exploited children. This approach has historical undertones in that it offers a materialistic analysis of the Nigerian society (historical materialism) and conflict in human society, which play a role in the formulation of social-economic strata (Ake, 2018). This approach identifies two classes of people: those with the means of production and those without (the working class). The social relations of production tend to be oppressive and exploitative. Those who own the means of production, the bourgeoisie or the dominant class, misappropriate the labour and products of the working class given that they are only interested in the accumulation of wealth. This creates an unbearable situation for the working class, who often has to send their children into the labour force so that they can engage in activities that will generate income to supplement what is already earned and help to sustain the family. The Nigerian economy,

which is the base structure of society, reflects the consequences of this conflict including unemployment, poverty, insecurity, and inequality.

This can be attributed to the country's incorporation of the capitalist mode of production, which has rendered Nigerians dependent on western powers. Prior to the colonial era, Nigerians were able to provide food and other basic necessities for their families. Following colonialism, there was a shift from local economies and sufficiency to the world economy, where Nigerians consume what they do not produce and are dependent on the global capitalist market to meet their needs. The disarticulation of the Nigerian economy accounts for the inability of Nigerian to develop a firm and solid economic base capable of sustaining all citizens. In the socio-political sphere, the general attitude of public office holders is a demanding one. The retrenchment exercise carried out in government establishments by the ruling class seeks to ensure that the gap between the ruling class and the ruled is maintained. Thus, political economy approach, therefore explains the state of the ruled class, their acceptance of defeat, their inability to provide for their families, and consequently in their bid to survive, the use of their children as economic assets. This approach calls for governmental provision of equality in the distribution of goods and services. Should this be the case, over time class distinction would disappear and production would become concentrated in the hands of the majority of the nation. Global powers would lose their relevance and class antagonism would fade (Ake, 2018).

The informal economy is seen as largely assisting in capitalist accumulation. Although more recent literature often does not address these debates directly, these differences essentially remain. In understanding Roadside trading, attention should be drawn on the workings of the state and provide an interesting method for assessing the impact this has on those working informally. Attention should be drawn on the fact that those working informally cannot be considered in isolation but must be seen in terms of their position within the wider economy. An average trader is seen as a working class (the proletariat) which, in Marx view are oppressed because its' members though numerically superior, are paid below their labour productivity. As seen, an average roadside trader is the proletariat while the consuming population is the bourgeoisie (the ruling class).

### **Central Place Theory**

Central place theory outlines the logic of systems of central places, focusing particularly upon the numbers, sizes, activities, and spatial distribution of such places and their associated regions. The notion of "central place" may be explained as follows; a chief function of country villages and towns is to be centres for their rural surroundings as well as mediators between local commerce and the outside world.

Larger cities play a similar role with respect to systems of smaller villages and towns, which we find in the larger places goods and services that the local country villages and towns are too small to supply. Thus, villages, towns, and cities serve in a structural relationship as central places for tributary regions. Central place theory is fundamentally concerned with the patterns through which wholesale, retail, service, and administrative functions, plus market-oriented manufacturing, are provided to consuming populations. Thus, it can also be designated as the theory of urban trade and institutions or the theory of location of tertiary production. As such, it complements the theory of agricultural production originally formulated by Von Thunen, and the theory of location of industry (1826), which has its roots in the work of Alfred Weber (1950). There is a strong relationship between this theory and the roadside trading as an activity, as traders are seen along the major centres of settlement trading varieties of goods. The essence of location to these traders is that, centres of cities and settlement facilitates sales because it is the zone of population convergence; where goods have highest maximal demand and consumption.

## **Conceptual Framework**

In this subheading, various concepts as related to the topic under consideration were reviewed.

### **The Concept of Informal Sector**

Sethuraman (2014) defines the informal sector as small-scale units engaged in the production and distribution of goods and services. Obadan et al. (2016) refer to informal economic activities as the informal sector and Lubell (2014) refer to it as micro- enterprises. The above-mentioned researchers applied this concept in their studies of urban areas. For a study that wants to analyze the informal economic activities of urban areas and their impact on the environment, the informal sector concept provides a very useful framework. However, in this study the operational definition of the informal sector will be “all income -generating activities with the exclusion of those that involve contractual and legally regulated employment”.

It usually comprises manufacturing, service/repair and trade (small scale distribution) activities which affect the environment positively by their products and negatively with their by-products. What is produced, marketed, and gains patronage in the economic landscape needs to be sustained

Becker (2016) defines the informal sector as the unregulated, non-formal portion of the market economy that produced goods and services for sale or for other forms of remuneration. In effect, the term informal economy as, it is often used to denote informal sector, refers to all economic activities by workers and economic units that are not covered or are insufficiently covered by formal arrangements. The informal economy is largely characterized by: low entry requirements in terms of capital and professional qualifications; small scale of operations; skills often acquired outside of formal education; and, labour-intensive methods of production and adapted technology.

Due to observed heterogeneous nature of the informal economy, numerous definitions have been elaborated according to different classifications in terms of activity, employment category, location of actors, and income and employment enhancing potential. The International Conference of Labour Statisticians (2014) defined the informal sector or economy to consist of units engaged in the production of goods and services with the primary objective of generating employment and incomes to the persons involved. These units typically operate at a low level of organisation, with little or no division between labour and capital as factors of production and on a small scale. Going further, Oberay et al, (2015) and International Labour Organization (2014) identified the informal sector as comprising of enterprises or work with growing market demand that reflect high income-elasticity of demand, such as tourism services, and those that reflect low income-elasticity of demand, such as barbing services.

In Nigeria, the Central Bank of Nigeria (CBN) and Nigeria Institute for Social and Economic Research (NISER) collaborative workshop in 2014 defined the informal sector as that which operates without binding official regulations, as well as one who operates under official regulations that do not compel rendition of official returns on its operations or production process. This definition serves as our operational definition for the present analysis. It is therefore noteworthy that the informal employment is comprised of both self-and wage-employment that are usually not recognized, regulated, or protected by legal or regulatory frameworks (Amin, 2015).

### **Informal Sector in Selected Countries**

The informal sector employs a majority of the labour force in many countries. The South Asian region hosts the largest informal sector, with about 82% of total labour employed by the sector. Sub-Saharan Africa and South-Eastern Asia are closely matched at 66% and 65% of total labour employed. The informal sector employs 51% of total labour in Latin America. Eastern Europe has the smallest informal sector incidence relative to the above regions employing only 10% of total labour (Vanek et al., 2014).

Ghana and India are ranked as having the world’s largest informal sectors representing 86% and 83.5% respectively, of total workforce. Bolivia, also has a large informal sector employing 75% of total labour force (ILO, 2014). According to World Bank (2014), between 20% and 80% of non-agricultural employment in developing countries are provided

by the informal sector. Furthermore, between 25% and 40% of the annual output of developing countries in Africa and Asia are generated by the informal sector as of 2013 (World Bank, 2014). The following section will discuss the informal sector in selected countries such as Ghana, Bolivia and India.

### ***Ghana***

Ghana's informal sector took off in the early 1970s when the country experienced massive economic decline. Jobs were cut in the formal sector and the informal sector acted as a safety basket for most Ghanaians enabling them to survive extreme poverty in the urban areas (Barwa, 2015). The share of total employment provided by the public sector has continued to decrease from about 13% in 1992, to 9.4% in the late 1990s, 9% in 2006 and 6.3% as of the latest (2010) population census. In Ghana, the economy is not developing fast enough to cater for the increase in population growth and rapid rural-urban migration. This has led to the labour force growing faster than the availability of formal jobs (Aryeetey, 2019). The incapacity of the formal sector to absorb the available labour has pushed the majority of people into informal activities, either in formal settlements or in slums. Ghana's large informal sector robs the economy of potential revenue for development projects as the informal sector pays little or no tax.

Ghana's informal sector does not adhere to government regulations hence they are constantly neglected by policymakers. Worse of all, they are constantly haunted by decongestion exercises carried out by municipal authorities. As seen in the "habitat" characteristic above, most informal businesses operate illegally on government or private lands, hence when municipal authorities carry out eviction projects, these informal operators lose millions of Ghana cedis (Osei-Boateng & Ampratwum, 2016).

The operators mostly lose their tools, materials and workshops and have to wait to find another vacant land to start their businesses all over again. Aryee (2017) discusses the interrelatedness of Kumasi's informal sector to formal sector businesses. The study revealed that the majority of the informal sector's primary and intermediate inputs emanate from the formal sector. Inputs for economic activities such as welding, blacksmithing, carpentry, tailoring, woodcarving, leatherwear and carpet weaving are provided by the formal sector. The interrelatedness also comes to the fore when the informal sector provides cheap wage goods and services for the urban population.

### ***Bolivia***

Bolivia is a South American country bordered by Brazil, Paraguay, Chile, Argentina and Peru. It has a population of about 10.72 million and a GDP of \$33.2 billion as of 2014 (World Bank, 2016). Despite being a lower middle-income country, Bolivia is one of the poorest countries in Latin America. Income inequality between different population groups (indigenous and non-indigenous) continue to be evident in Bolivia, as there are high levels of rural poverty. Bolivia is a socially diverse country with a high representation of an indigenous population.

Poverty is found to be highly correlated with the indigenous population (Gigler, 2019). Bolivia is ranked as the 113rd country out of 187 regarding the United Nations Development Programme's Human Development Index. About 60% of the population is currently living below the poverty line and poverty levels are worse in the rural areas, where about three out of four persons live in poverty (IFAD, 2015). About 75% of Bolivia's GDP comes from the informal sector. Furthermore, in urban areas, the informal sector accounts for 80% of total jobs (Hernani-Limarino et al., 2016). Bolivia is found to be mainly a natural resource exporting country (Vargas and Garriga, 2015). The country exports natural resources and imports intermediate and finished products. The lack of productive capacity makes room for little formal employment, making the informal sector a necessary alternative for the poor.

### ***India***

India is also a lower-middle income Asian country with a population of about 1.21 billion people and accounts for more than 17% of the world's population. The country is the world's second most populous country after China and is expected to overtake China in 2025 (Census of India, 2016; Government of India, 2015). India's GDP was \$1.88 trillion as of 2013 (World Bank, 2015). The agricultural sector of India, which employs the majority of the labour

force (49%), contributes the least to GDP (14%) whereas the services sector (27%) which employs the least amount of labour, contributes the most (58%) to GDP (Institute for Human Development, 2014). The main export products of India include petroleum products representing 20.1% of total exports in the 2013/14 financial year, engineering goods (19.7%), chemical and related goods (14%), gem and jewellery (13.1%), agricultural and allied products (10.3%) and other products (22.8%). Import products consisted mainly of petroleum crude and products (36.7%), gold, silver, pearls and precious stones (12.7%), machinery (10%), electronic goods (6.9%) organic and inorganic chemicals (4.7%) and other products making up 29% (Prasad, Sathish and Singh, 2014).

The ILO ranks India as having the world's largest informal sector, with about 83.5% of total workforce engaged in informal activities, while the Institute for Human Development, (2014) sets the percentage of informal sector workers in India at 92% as of 2014. The reason for such high informality figures may be due to the fact that, about half of formal sector workers in India also work in the informal sector. They often work as part time workers to augment income (Naik, 2019).

The majority of workers in the informal sector usually have low earnings and no social protection. India's total workforce as per National Sample Survey Office's survey conducted in 2011-12 put the country's total labour force at 470 million. The informal sector plays a major role in India's economy; its contribution was about 46% of non-agricultural Gross Value Added in 2008 (ILO, 2014).

Rural poverty is a major problem in India, as 80% of rural population and 64% urban population were considered as calorie poor as of 2005. Qualitative surveys conducted also conclude that most Indian rural dwellers see themselves as poor (World Bank, 2014). Migration is the major cause of urbanisation in India as people from the countryside move to the major cities in search of a better life (Misra and Alam, 2014). The 2011 population census showed that, 31% of Indians live in urban areas. This urbanisation figure was below the global figure of 54%. However, India's urbanisation rate is estimated to reach 814 million people by 2050. Although India is fast becoming urban, the rural population will also grow substantially to about 804 persons by 2050 (Bhagat, 2014).

### **Informal Sector and the Menace of Pollution**

In recent years pollution control is considered as one of the most important among all the policy measures facing the policy makers of the developing countries. Pollution is perhaps an unavoidable accomplice of economic growth and development. Development fosters higher consumption demand, larger population size (due to a lower death rate) and a high standard of living, generating more discharges to the environment in the form of smoke, scraps, wastes and garbage causing greater pollution. At the same time, people of a developed nation usually demand higher standards of living atmosphere. As the absorbing capacity of nature is already saturated, pollution cannot be allowed to increase infinitely since it poses a serious threat on the entire living world. Thus, a possible solution to this problem is a trade-off between pollution level and economic growth.

Most countries have taken significant movements to protect environment, and the developed ones have successfully been able to combat pollution to a large extent. But for the developing countries, a major problem in regulating environmental standards is the persistence of an informal sector.

The informal sector constitutes a large part of the manufacturing and service sectors. On the basis of the works of Agenor (2016), Cole and Sanders (2015), Majumdar (2014), we find that informal sectors provide most of the employment in most of the developing countries. Empirical evidence (see for example, Papola (2014), Romatet (2016), Joshi and Joshi (2016) also suggests that the urban informal sector units mostly produce intermediate inputs for the formal manufacturing sector on a subcontracting basis. It also suggests that this sector is a major source of environmental pollution. For example, in the city of Kolkata, India leather tanning process is handled by the informal sector. Similarly, for the garments industry the dyeing of garments is done by the informal sector participants on a subcontracting basis. Both tanning and dyeing pollute the environment considerably. Thus, it can be argued that one major reason behind the environmental degradation in the developing countries with expansion of economic activity is the wide prevalence of the urban informal sector. Usually, legislative authorities adopt two major types of environmental regulation, namely, command and control and economic incentives. In case of command and control,



the regulator specifies the steps to control pollution after collecting the necessary information regarding the polluter. Economic incentives can take the form of pollution fees, marketable permits and liability.

Although these methods can be implemented for the formal sectors in developed countries, the unregistered informal manufacturing units cannot be forced or induced to internalize the environmental costs inflicted on the society due to two reasons. First, these units are unregistered, geographically dispersed and it is quite difficult to identify them. Hence, they cannot be kept under the surveillance of the regulating authority. Secondly, the informal sector units with a nominal capital base cannot afford to pay pollution fees or install pollution abating equipment. However, the significant amount of pollution created by them cannot be left unattended.

Billar and Quintero (2015) have examined leather tanneries in Bogota, Colombia. In addition to tanneries they identify the metalworking, electroplating, and textile industries, automobile repair shops, and brick manufacturing as typical informal sector activities causing severe contamination. Blackman and Bannister (2016) have presented the results of an econometric analysis of the diffusion of propane among informal 'traditional' brick-makers in Cd. Juárez, Mexico and suggested that community pressure applied by private-sector trade and neighborhood organizations can generate strong incentives for informal firms to adopt clean technologies. Blackman (2019) has developed a list of feasible environmental management policies.

Among the many alternatives, one of the possible solutions may be to target the formal sector with the capability of bearing the external costs. Most of the informal sector products are used as intermediate goods by the formal sector (for example, in shoe industry, garment industry, etc.). This is particularly beneficial for the formal sector since labor is cheap in the informal sector and due to absence of labor legislation laws, labor can be fully exploited. Now, if the formal sector is made to pay for its use of the output of the polluting informal sector, it may work as an indirect incentive to reduce informal sector production, generating less pollution.

### **Empirical Review and Research Gap**

The views of different researchers on the topic were reviewed in this subsection. Gabriel, et al. (2019) examined the effect of informal sector activities on land use management within Auch, Edo State, Nigeria. A simple random sampling technique was used for the survey. Findings revealed that only 8% of the respondents had tertiary education, 19% were into farming, 37% artisans; most of the residential buildings have been converted into mixed use among others. Based on the findings, the research recommends the utmost need for adequate preparing planning documents that must guide orderliness, the need for insistence of appropriate planning approval and permission in compliance with the zoning principles as approved by a gazette planning document for such area, just to mention a few.

Onwe (2015) investigated the role of the Informal Sector in Development of the Nigerian Economy. Findings from the study revealed that the traditional or informal sector is continuously expanding in developing countries, and has been serving as a 'safety belt' in providing employment and income to the teeming poor; secondly, informal sector activities, often described as unrecognized, unrecorded, unprotected, and unregulated by the public sector are no longer confined to marginal activities but also included profitable enterprises in manufacturing activities; third, the informal sector is largely characterized by low entry requirements, small-scale operations, skills acquired outside of formal education, and labour-intensive methods of production; fourth, the informal sector is defined according to different classifications in terms of activity, employment category, location of actors, and income and employment enhancing potential. The paper recommends as follows: (i) emphasis on the informal sector's role in Nigeria's development policies; (ii) making data on the informal sector available for in-depth analysis; (iii) thinking in the direction of inclusion of the informal sector in national income accounting; (iv) financial and technical support of identifiable informal-sector activities such as, retail trade, small-scale home-based manufacturing activities, and services; and, (v) need for scholars to understand existing gaps in the economic use of the informal sector in Nigeria and other African countries.

Gasu, Ibrahim and Yakubu (2020) appraised the Informal Commercial Activities in Osogbo, Osun State Nigeria. The study utilized questionnaire administration in areas with significant informal activities using random sampling

technique. A total of 102 and 182 at 10% were chosen from a total of 1,020 and 1,815 identified residents and informal commercial operators respectively. Frequency and percentages as well as correlation analysis were used to analyze the data collected. The study reveals that trading accounted for the highest informal commercial activities (62.96%) while exposure to severe weather (29.01%) were what respondents considered the riskiest encounter. Waste generation (3.7) was the highest ranked factor that negatively impacted on the environment while O-Traffic which ranked (3.3) was the most effective tool in the management of informal commercial activities. The study concluded by recommending that informal operators should be recognized and integrated into the city's main stream planned commercial activities.

Ogundahunsi et al. (2015) noted in a field survey carried out in some geographical areas of Osogbo in Osun State that every "suitable" and "available" land space is converted to the use that suits the business activity thus resulting in the erection of shops, kiosks, workshops and other temporary structures without formal approval.

Luther-King (2016) conducted a study on informal economic activities in Ghana using Kumasi and Accra. The study revealed that avoidance of government regulation, luxury of working in one's time and the quest for higher income were motivations in engaging in informal sector activities. The study also found out that insufficient skills and business knowledge, infrastructural challenges, difficulty in assessing credit, lack of tools and materials, security problems, poor communication and social networking were constraints to formalizing the informal sector. The study therefore recommended that policy makers come up with suitable financing strategies to assist slum operators in order to help in formalization.

Several literatures have revealed the importance of informal sector activities and its impact on the economy and the physical environment. Gabriel, et al. (2019) examined the effect of informal sector activities on land use management within Auchi, Edo State, Nigeria. Onwe (2015) investigated the role of the Informal Sector in Development of the Nigerian Economy. Gasu, Ibrahim and Yakubu (2020) appraised the Informal Commercial Activities in Osogbo, Osun State Nigeria. Ogundahunsi et al. (2015) investigated informal sector activities in geographical areas of Osogbo in Osun State while Luther-King (2016) conducted a study on informal economic activities in Ghana using Kumasi and Accra. Little or no research had focused on the assessment of the effects of informal sector activities on the physical environment of Abakiliki Metropolis, Ebonyi State, Nigeria. This study therefore sought to fill this gap in literature. The study will try to examine the types and nature of informal sector activities in the area, its level, drivers and impacts on the physical environment of Abakiliki metropolis.

## **Materials and Methods**

### **Study Area**

#### **Location**

Abakiliki is the capital city of Ebonyi State in southeastern Nigeria, located 64 kilometres (40 mi) southeast of Enugu (Dale, 2014). It has coordinates of 6°20'N and 8°06'E. It is bounded to the north by Izzi and Ebonyi Local Government areas; to the East by Ezza North; to the west by Cross River state and to the south by Ikwo and Ezza Sotuh Local government areas (Figure 1).

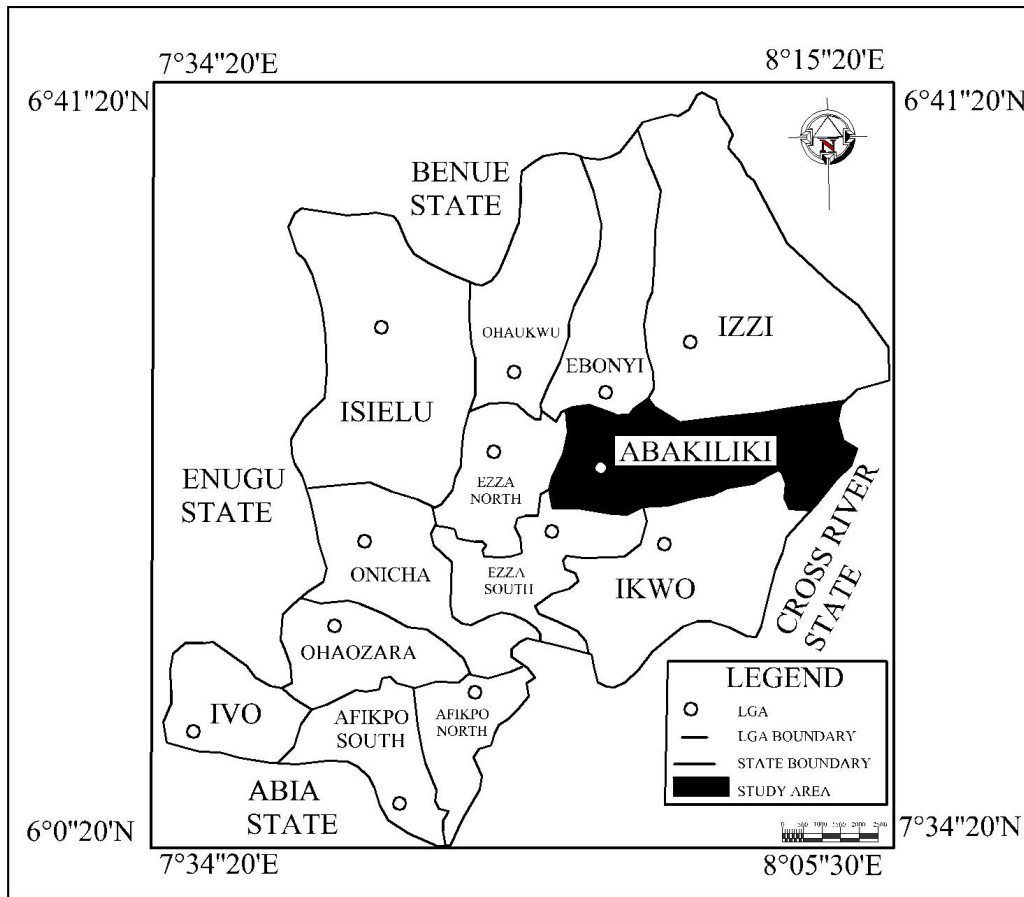


Figure 1: Map of Ebonyi State showing Abakaliki, the Study Area  
Source: Researchgate, 2016

### Brief History

The name Abakaliki originally means 'Aba Nkaleke' and is the name of a community in Izzi land (Nkaleke) (Dale, 2014). Abakaliki was an important center for the slave trade in the 17th century (Orji, 2016). The slave trade continued in the area with Aro raids into Abakaliki and surrounding areas through the 18th century. The inhabitants are primarily members of the Igbo nation. It was the headquarters of the Ogoja province before the creation of the Southeastern State in 1967.

### Physiography and Climate

The relief of the area is generally undulating and no location exceeds 400 m above-sea-level. A major relief structure is hills formed by the pyroclastic bodies. No trend has been established by previous research (Ofoegbu and Amajor, 2014) of these conical shaped hills and other residual hills that spread sporadically within the area. The predominant shale has favoured the low erodability of the lithology, resulting in absence or near absence of deep cut valleys and erosion channels. The major river that drains the area is the Ebonyi River and its tributaries; Udene and Iyiokwu Rivers. Both tributaries are perennial and usually overflow their banks at the peak of the rains. Stunted trees and pockets of derelict woodland exist where the lithology has undergone high degree of laterization. Elsewhere, typical characteristics of the tropical rain forest are displayed; multitude of evergreen trees, climbing plants, parasitic plants that live on the other plants, and creepers.

Two main seasons exist in the Abakaliki area, the dry season which lasts from November to March and the rainy season which begins in April and ends in October with a short period of reduced rains in August commonly referred

to as “August break” (Aghamelu, Nnabo and Ezeh, 2017). Temperature in the dry season ranges from 20 to 38°C, and results in high evapotranspiration, while during the rainy season temperature ranges from 16 to 28°C, with generally lower evapotranspiration. The average monthly rainfall ranges from 31mm in January to 270 mm in July, with the dry season experiencing much reduced volume of rainfall unlike the rainy season, which has high volume of rainfall. Average annual rainfall varies from 1,500 to 1,650 mm. These climatic conditions are responsible for the development of thick lateritic soils in the area.

### **Geology and Hydrogeology**

The Abakaliki metropolis is, geologically, underlain by the Abakaliki Shale Formation of the Asu River Group (Reyment, 2015). The Asu River Group sediments are predominantly shales, and localized occurrences of sandstone, siltstone and limestone intercalations (Ofoegbu and Amajor, 2014). It was generally believed to have started depositing in the mid-Albian period and was deposited within the lower (or southern) Benue Trough, southeastern Nigeria. The geology of the Abakaliki metropolis is emplaced in these Asu River Group sediments are intermediates to basic intrusive, extrusives and pyroclastics (Ofoegbu and Amajor, 2014; Tijani et al., 2016). The group has average thickness of about 2000 m and rests unconformably on the Precambrian Basement (Benkhelil et al., 1989).

The Abakaliki Shale Formation, which has an average thickness of about 500 m, is dominantly shale, dark grey in colour, blocky and non-micaceous in most locations. It is deeply folded, faulted and fractured by the series of tectonic activities which has acted on the rocks (Ezeh and Anike, 2019). This has given the shales the ability to house groundwater at economic quantity in some areas, while its nature as aquiclude still exist other parts and fracturing is not pronounced. It is calcareous (calcite-cemented) and deeply weathered to brownish clay in the greater part of the formation. The major part of the Abakaliki metropolis is underlain by aquiclude; except in locations or zones where secondary aquiferous conditions were made possible by syn-and post depositional circumstances. The syn-depositional circumstance is the occurrence of lenses of sandstone or siltstone beds, while the post depositional circumstances include weathering, fracturing or shearing, and volcanic intrusions. The zones are recharged mostly in the peak of rainy season and by surface waters in the area. The major river that drains the area is the Ebonyi River and its tributaries: Udene and Iyiokwu Rivers. Both tributaries are perennial and usually overflow their banks at the peak of the rains.

### **Major Economic Activities**

The major economic activity within the Abakaliki area is subsistence agriculture. Statistics show that more than 60% of the population is engaged in it. One of the main cash crops grown is rice. This has necessitated setting up of rice milling industries in the Abakaliki area. The available land for agriculture is fertile and supports rice and cassava cultivation. The main industries in the area, apart from rice milling industry, are quarrying and rock crushing. Lead-zinc mining occurs around Enyigba and Ameka; in the outskirts of Abakaliki metropolis. The traffic comprising mainly of heavy-duty vehicles, resulting from the transportation of agricultural produce and other economic activities, mount pressure on the existing road and highway networks in the area.

### **Population**

The last known population of Abakaliki was 915,438 (year 2019). This was 0.253% of total Nigerian population. If population growth rate would be same as in period 2006–2015 (+15.31%/year), it is estimated that the population of Abakaliki as at 2021 is about 1,179,280 (Dale, 2014).

### **Ethnic Composition**

Abakaliki is generally populated by the Igbo people. Abakaliki is predominantly populated by the Northeastern Igbo of the Afikpo-Abakaliki axis. Abakaliki is also use to refer to people of old Abakaliki political block comprising Ohaukwu-Ishieli-Izzi-Ezza-Ikwo.

## **Infrastructure**

Abakaliki lies at the intersection of the Enugu, Afikpo and Ogoja Roads (Dale, 2014). Abakaliki also hosts a federal hospital, which has largely contributed to the affordability of public healthcare delivery in the city and the state. There has been a massive infrastructural development ongoing in the urban center; these include road construction, shopping malls and market places, trans-Sahara fly-over bridges at presco and spera-in-deo junctions amongst others.

## **Religion**

Abakaliki people like other southeastern Nigerians are predominantly Christians. Other religious faith like Traditionalist and Islam are practiced by handful of the natives as well as non-natives from other parts of the country. Roman Catholic, Presbyterian, Anglican and other Pentecostal missions are the dominant Christian faiths. On March 1, 1973, the city was made the seat of the Roman Catholic Diocese of Abakaliki (Dale, 2014).

## **Methods**

The study employed the survey research design. For this study, the chosen design assisted the researcher in elucidating vital information from operators, residents, town planners among others on the impacts of informal sector activities on the physical environment of Abakaliki metropolis. Structured questionnaire instrument facilitated the gathering of information. The utilized questionnaire was well-structured, open-ended and worded in simple English language for easy understanding by the respondents. The respondents were to choose from a list of options their desired answers while in some cases, they were meant to indicate multiple answers. One set of questionnaire was administered across the area of study. Section A of the questionnaire contains items meant to acquire demographic data of the respondents like sex, age, marital status, educational background, occupation, years of residence in the area, income level and number of persons living in the household. Section B focused on acquiring information on the types and nature of informal sector activities in the study area. The instrument also helped in eliciting required data on the level, major drivers and impacts of these activities on the physical environment of Abakaliki metropolis. Purposive and simple random sampling techniques were employed for the study. Purposive sampling entailed that only indigenes of the selected areas of Abakaliki were available for sampling. Simple random sampling ensured that respondents were chosen randomly thereby giving no room for bias. On this wise, 399 questionnaire were administered in Abakaliki metropolis. Collected data were presented and analyzed using tables, percentages, means, bar chart and the hypothesis was tested using Chi-Square test.

## **Findings**

### **Demographic Data of Respondents**

Table 1 shows that majority (66%) of respondents were males while 34% were females. Hence male respondents participated more in the study than female respondents.

Table 1 also indicated that majority (48%) of respondents were between the age bracket of 36-65, 27% were between 19-35 years, 13% between 66 years and above while 12% were between 0-18 years. The result implies that majority of respondents and Abakaliki Metropolis residents were in their most active and productive years of their lives.

Table 1 also showed that majority (74%) of respondents was married, 18% were single, 6% were either widows or widowers while 2% were divorced. The result therefore indicates that majority of the respondents had the responsibility to cater for their dependents has been married comes with responsibilities.

On the educational background of the respondents, Table 1 revealed that 66% of respondents acquired higher education (undergraduates, graduates and post graduates). 27% acquired secondary education; 4% acquired primary education while 3% had no formal education. The result shows that majority of the respondents and in turn

residents of Abakiliki Metropolis were literates. The result further shows the relevance of education in the daily life of an individual.

Table 1 indicated that majority (41%) of respondents were civil servants; 29% were self-employed; 26% were students while 4% were unemployed. The result therefore implies that majority of the respondents had meaningful engagements in one activity or the other.

On the income level of the respondents, Table 1 showed that majority (76%) of respondents earned between N100,000-499,999; 17% earned between N500,000-999,999; 4% earned between N1,000,000 and above while 3% earned between N0-99,999. The result goes to show that majority of the respondents and residents of the study area were middle income earners.

Table 1 indicated that majority (47%) of respondents had lived 21 years and above in the study area; 26% had lived between 16-20 years, 17% had lived between 0-5 years; 6% had lived between 6-10 years while 4% had lived between 11-15 years in Abakiliki Metropolis.

Table 1 also reveals that majority (44%) of respondents had 5 persons in their household, 25% had 4 persons; 15% had 3 persons; 13% had 6 persons while 2% had 7 persons and above. The result therefore showed that majority of the respondents had dependent to cater for and as such should be out of the home. This can therefore be attributed to the reason for them being outside as at the time of questionnaire administration.

Table 1: Demographic data of respondents in Abakiliki Metropolis (N=374)

Variable	Frequency	Percentage
<b>Sex</b>		
Male	246	66
Female	128	34
<b>Age</b>		
0-18	45	12
19-35	102	27
36-65	180	48
66 and above	47	13
<b>Marital status</b>		
Single	69	18
Married	276	74
Divorced	5	2
Widow(er)	24	6
<b>Educational Background</b>		
No formal education	10	3
Primary education	15	4
Secondary education	102	27
Higher education	247	66
<b>Occupation</b>		
Student	96	26
Self-employed	110	29
Civil servant	152	41
Unemployed	16	4
<b>Income Level (per annum)</b>		
0-99,999	10	3
100,000-499,999	286	76
500,000-999,999	62	17
1,000,000 and above	16	4

<b>Years of living in the area</b>		
<b>0-5</b>	65	17
<b>6-10</b>	23	6
<b>11-15</b>	14	4
<b>16-20</b>	96	26
<b>21 and above</b>	176	47
<b>Number of persons in Household</b>		
<b>3</b>	56	15
<b>4</b>	96	26
<b>5</b>	166	44
<b>6</b>	49	13
<b>7 and above</b>	7	2

Source: Researcher's Survey, 2024

### **Nature, Types and level of Informal Sector Activities in Abakiliki Metropolis**

Table 2 shows the nature and type of informal sector activities prevalent in Abakiliki Metropolis. From the analysis, results showed that majority (98%) of the respondents indicated motorcycle/tricycle operation; 96% indicated food vending/restaurants/joints/bars; 95% indicated street trading/hawking; 92% indicated wheel barrow/carting pushing; 83% indicated barbing/hair dressing saloon; 80% indicated tailoring/garment making/weaving; 79% indicated prostitution/hard drugs/corruption; 71% indicated waste picking; 69% indicated cobbling while 68% indicated roadside mechanics/vulcanizing. This result conforms to the findings of Lawanson (2016), Bracha and Burke (2014) and Onyenechere (2017) who asserted that the informal sector provides employment and sustenance through engaging in a variety of activities such as street trading, hawking, vulcanizing, local manufacturing, cobbling among others.

**Table 2: Response on the Prevalent Informal Sector Activities in Abakiliki Metropolis**

<b>S/N</b>	<b>Activity</b>	<b>Frequency</b>	<b>Percentage (%)</b>
1	Street trading/hawking	356	95
2	Motorcycle/tricycle operations	367	98
3	Barbing/hair dressing saloons	312	83
4	Food vending/restaurants/joints/bars	358	96
5	Wheel barrow/cart pushing	345	92
6	Roadside mechanics/vulcanizing	254	68
7	Tailoring/garment making/weaving	298	80
8	Prostitution/hard drugs/corruption	296	79
9	Waste picking	265	71
10	Shoe Cobbling	257	69
11	Others (specify)	-	-

Source: Researcher's Survey, 2024

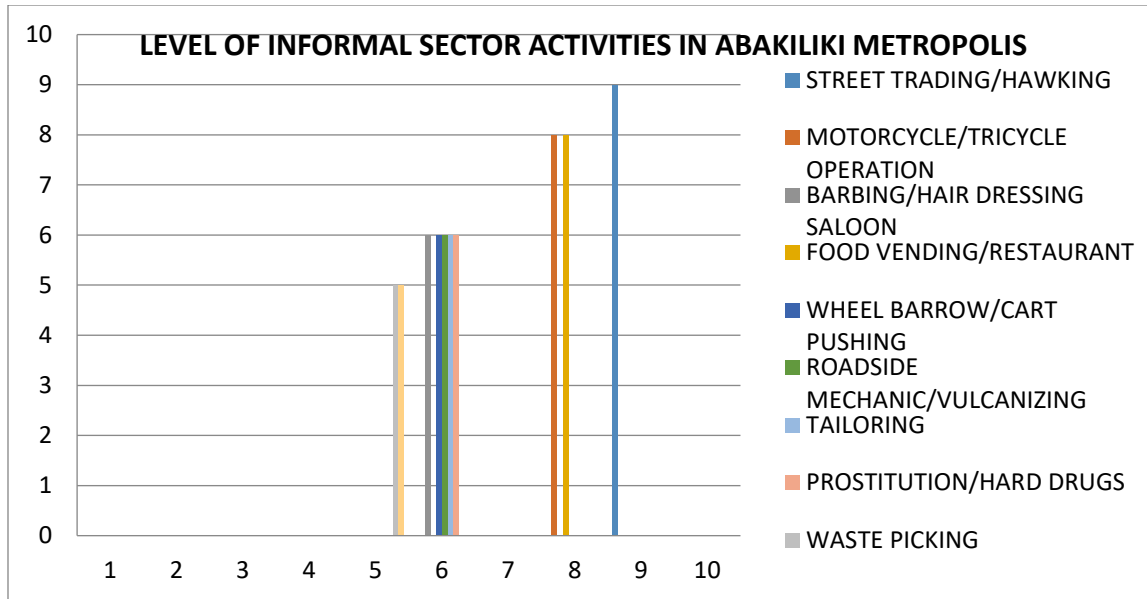


Figure 2: The level of informal sector activities in Abakiliki Metropolis

**Major Drivers of informal sector activities in Abakiliki Metropolis**

Table 3 reveals the major drivers of informal sector activities in Abakiliki Metropolis. From the results obtained, it shows that all 13 identified drivers were significant in the study area as they all recorded mean scores above 1.5. These drivers include lack of adequate market to accommodate traders (m=2.85); high inflation rate (m=2.84); illiteracy (m=2.83); high tax on businesses (m=2.82); high cost of business registration (m=2.82); increased regulation of formal businesses (m=2.81); quest for higher income (m=2.81); unemployment (m=2.78); poverty (m=2.74); lack of adequate entrepreneurial education (m=2.74); lack of proper town planning regulations (m=2.76); lack of basic infrastructure in rural areas (m=2.62); internal migration (m=2.57) and non-availability of capital (m=2.45). This result is in conformity with that of Asunogie et al (2019) and Luther-King (2016) who averred that quest for higher income, unemployment, high poverty rate, avoidance of government tax among others were major drivers for one’s involvement in the informal sector activities.

**Table 3: Contributing factors to the proliferation of informal sector activities in Abakiliki Metropolis**

S/N	Contributing factors	Significance			M	RM
		3	2	1		
1	Poverty	285	82	7	2.74	Sig.
2	Unemployment	308	49	17	2.78	Sig.
3	Lack of finance	210	124	40	2.45	Sig.
4	Lack of basic infrastructure in rural areas	254	98	22	2.62	Sig.
5	Illiteracy	325	35	14	2.83	Sig.
6	High tax on businesses	324	34	16	2.82	Sig.
7	High cost of business registration	314	54	6	2.82	Sig.
8	Lack of adequate markets to accommodate traders	328	35	11	2.85	Sig.
9	Quest for higher incomes	309	49	16	2.81	Sig.
10	Lack of adequate entrepreneurial education	295	62	17	2.74	Sig.
11	Internal migration	245	98	31	2.57	Sig.
12	Lack of proper town planning regulations	299	61	14	2.76	Sig.
13	Increased regulation in the formal economy	317	42	15	2.81	Sig.
14	High inflation rate	327	35	12	2.84	Sig.

Keys: 3: Significant; 2: Indifferent; 1: Not Significant

Source: Researcher’s Survey, 2024



**Impacts of Informal Sector Activities on the Physical Environment of Abakiliki Metropolis**

Table 4 reveals the impacts of informal sector activities on the physical environment of Abakiliki Metropolis. Results showed that all identified indices of the activities had significant negative impacts on the physical environment of the study area as they recorded mean scores above the benchmark of 1.5. Notable among these indices include pollution (m=2.94); defacing of the environment (m=2.90); illegal conversion of residential buildings to commercial (m=2.88); reduced value of residential/neighbourhood properties (m=2.84); congestion on highways (m=2.80); poor sanitary and health conditions (m=2.89); improper waste disposal (m=2.79); flooding and erosion (m=2.78) and land degradation (m=2.78). This finding is in tandem with that Gasu et al (2020) and Asunogie et al (2019) who posited that illegal conversions, building alterations, neighbourhood devaluation and waste disposal pollution among others were major effects of informal sector activities on the physical environment.

Table 4: Environmental impacts of informal sector activities in Abakiliki Metropolis

S/N	Options	Significance			M	RM
		3	2	1		
1	Congestion on highways due to reduction of road width	320	32	22	2.80	Sig.
2	Foul odour from Improper waste disposal	305	58	11	2.79	Sig.
3	Flooding and erosion	314	38	22	2.78	Sig.
4	Poor sanitary and health conditions	341	25	8	2.89	Sig.
5	Dilapidation of infrastructure	318	47	9	2.83	Sig.
6	Defacing of the physical environment through the release of chemicals, lubricants, waste	347	18	9	2.90	Sig.
7	Illegal conversion of residential buildings to commercial	334	35	5	2.88	Sig.
8	Pollution (air, water, land, noise)	352	20	2	2.94	Sig.
9	Land degradation	306	54	14	2.78	Sig.
10	Reduced value of residential/neighbourhood properties	328	32	14	2.84	Sig.

Source: Researcher’s Survey, 2024

**Testing of Hypothesis**

The null and alternative hypotheses are stated thus:

- H<sub>0</sub>:** The impacts of informal sector activities on the physical environment of Abakiliki metropolis are not statistically significant.
- H<sub>1</sub>:** The impacts of informal sector activities on the physical environment of Abakiliki metropolis are statistically significant.

In order to test the above hypothesis, values from tables 4.4 on environmental impacts of informal sector activities in Abakiliki Metropolis was inputted into the computer with the software (Statistical Package for Social Sciences) and the Chi-Square results below and data on Appendix II were obtained. Chi-Square output obtained using a significant level of 0.05 at a df of 36 are presented below:

Table 5: Chi-Square Results from the test Hypothesis

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	85.712 <sup>a</sup>	36	.000
Likelihood Ratio	82.264	36	.000
Linear-by-Linear Association	.501	1	.479
N of Valid Cases	650		

Source: Chi-Square test, 2024

Chi-Square Value = 85.712  
 p Value = .000  
 Level of significance (α) = 0.05

**Decision Rule:**

Reject  $H_0$ , if p value is less than level of significance and accept  $H_0$  if otherwise.

**Conclusion:**

p value = .000

Level of significance = 0.05

Therefore,  $H_0$  is rejected because p value (.000) is < (less than) level of significance which is 0.05.

**Implication:**

The implications of this result is that the null hypothesis ( $H_0$ ) was not accepted, which states that the impacts of informal sector activities on the physical environment of Abakiliki metropolis are not statistically significant and  $H_1$  is accepted which states that the impacts of informal sector activities on the physical environment of Abakiliki metropolis are statistically significant. Therefore, it is concluded that the impacts of informal sector activities on the physical environment of Abakiliki metropolis are statistically significant.

**Conclusion**

Based on the research findings, the study concludes that, the emergence of informal sector activities in any urban area is a function of the rate of developmental growth of opportunities and avenue for earning income by a population of the society that is not under gainful employment of a formal agency. The growth of informal sector activities is a function of the pace at which social and economic developmental growth are springing up, which in turn has positive impact on rental value of the affected properties in the area but negative index for the housing stock within the said area.

However, it appears that relevant agencies of the land management system have failed in the regulation of the spatial interaction of the land use of the informal sector that is dependent on the formal sector for survival. Thus, whatever is desired by a land owner is right. This explains the ugly trend that exists currently in the study area as land use change resulting from influential factors that allow informal sector activities to thrive being an inevitable occurrence associated with emerging major urban city centres like the study area.

The nature and pattern of such land use dynamism has to be appropriately monitored and regulated by putting in place effective checks to curb adverse impacts and maintain planning orderliness by appropriate agency that is competent and qualified by law to do so.

**Recommendations**

In line with the findings and conclusion of this study, the following recommendations were made:

1. The state and federal government should as a matter of urgency commence initiatives to formalize most of the informal sector activities in Abakiliki Metropolis. This can be achieved through tax wafers, grants and access to finance. This would go a long way in regulating and controlling the proliferation of these activities in the study area.
2. Provision of infrastructures and amenities like market spaces, roads, electricity, increased investment in education facilities, easy access to credit and proper town planning regulations and adherence would help to discourage people from going into informal sector activities in Abakiliki Metropolis, Ebonyi state and Nigeria at large.
3. Imposition of heavy fines and charges on informal sector businesses would go a long way in reducing these activities which in turn would significantly reduce the negative impacts of these activities on the physical environment of Abakiliki Metropolis, Ebonyi state and Nigeria at large.
4. The government should enact laws and policies that favours formal businesses, reduce irrelevant regulations of the formal sector and ensure that formal businesses thrive through access to finance, grants among others. This would encourage informal sector actors to push for formalization thereby reducing the

high rate of proliferation of informal sector activities. This would largely reduce the negative impacts of these activities on the physical environment of Abakiliki Metropolis, Ebonyi state and Nigeria at large.

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**APENDIX I**  
**Result from CHI-Square Test**

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
IMPLICATIONS * IMPACT	22880	100.0%	0	.0%	22880	100.0%

IMPLICATIONS \* IMPACT Cross tabulation

			IMPACT			Total
			LOW	MODERATE	HIGH	
IMPLICATIONS	CONGESTION	Count	102	227	815	1144
		Expected Count	161.2	184.7	798.0	1144.0
	IMPROPER WASTE DISPOSAL	Count	148	163	833	1144
		Expected Count	161.2	184.7	798.0	1144.0
	OBSTRUCTION OF DRAINAGES	Count	114	159	871	1144
		Expected Count	161.2	184.7	798.0	1144.0
	POOR SANITARY AND HEALTH CONDITIONS	Count	192	111	841	1144
		Expected Count	161.2	184.7	798.0	1144.0
	DILAPIDATION OF INFRASTRUCTURE	Count	72	129	943	1144
		Expected Count	161.2	184.7	798.0	1144.0
	DEFACING OF THE PHYSICAL ENVIRONMENT	Count	75	170	899	1144
		Expected Count	161.2	184.7	798.0	1144.0
	ILLEGAL CONVERSIONS	Count	148	193	803	1144
		Expected Count	161.2	184.7	798.0	1144.0
	POLLUTION	Count	173	142	829	1144
		Expected Count	161.2	184.7	798.0	1144.0
	LAND DEGRADATION	Count	222	162	760	1144
		Expected Count	161.2	184.7	798.0	1144.0
	REDUCED VAUE OF RESIDENTIAL PROPERTIES	Count	158	98	888	1144
		Expected Count	161.2	184.7	798.0	1144.0
Total		Count	3225	3694	15961	22880
		Expected Count	3225.0	3694.0	15961.0	22880.0