

## Residents' Perception on Environmental Impacts of Urban Informal Enterprises in Ibadan, Nigeria

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### Abstract

The need of this paper came as a realization that literature are extensive on the contribution of urban informal enterprises to nation economy without given adequate attention to its associated negativities on sociocultural environment. Against this background, the paper analyses the perception of residents on environmental impacts of Urban Informal Enterprises in Ibadan Nigeria. Using systematic sampling technique, a total number of one thousand, six hundred and thirty eight (1638) questionnaire were administered to residents in low medium and high residential quarters. An interval of 2 was used to select residential unit in each quarter. Six indices were developed and Likert scale rating was used to measure resident's perception on the effects of UIES on the environment. The average weight of such gave each index and this was subjected to Correlation Analysis to examine the effects and relationship between UIEs and indices on perceived environmental effects. The result of analysis show that the way operators dispose their waste makes the environment dirty. This recorded highest agreement index of RAI 4.14, followed by waste from UIE litters the streets (RAI 4.12) and deface the environment (RAI 3.90), high level of noise from operators (RAI 3.85), waste releases offensive odor (RAI 3.78) shops built on open spaces disturb flow of water (RAI 3.69) and also block drainage channel (RAI 3.60) The result of correlation analysis reveals that physical characteristic index (PCI), behavioral characteristic index (BCI), environmental characteristic index (ECI), land use characteristic index (LUCI), and economic characteristic index (ECCI) have impact on the environment. This supports the observed negativities associated with the subject on the environment. The paper therefore recommends formulation of policies and legislative measures that will cater for proper waste management from this sector. This will further promote sustainability of Nigerian cities.

**Keywords:** Urban Informal Enterprises, Environment, Sustainability, Waste

### 1. Introduction and Background to the Study

The dilemma of unprecedented increase in urbanization resulting largely from population migration will continue to get worse and thus pose detrimental effects on the urban environment and living conditions of the entire populace particularly in developing nations. This challenge is seriously mounting pressure on the government such that it has become a major nerve-racking issue to policy maker and yet it has not received adequate research attention it deserves. Consequently, there is an increasing concern in the International Development Community about swift and unprecedented increase in population and urbanization and its consequential effects which has not received the attention it deserves from policy makers and practitioners alike Sethuraman, (1997). This phenomenon is also evident in publication of the United Nations Development Programme (UNDP 1993), World Bank and several bi-lateral donor agencies.

One of the underlying factors of unprecedented urbanization is massive movement of the populace (i.e poor, poor poor) from rural settlements and other lesser city to the urban areas. This is because of most these migrants are socioeconomically impoverished and thus often switch over to engaging in informal sector enterprises as a means to sustain their livelihood and have better living standard. This has a greatly spurred the proliferation of informal enterprises in major cities of developing countries and their consequent environmental degradation. However, the key explanatory factor for this spontaneous growth of Urban Informal Enterprises (UIEs) is undoubtedly the progressive emasculation of the formal economy ([http. //www.geocities.com/transport](http://www.geocities.com/transport)). This observation (i.e. unprecedented urbanization, infiltration of urban informal enterprises) is likewise perceptible in Ibadan cosmopolitan region; thus justifying the choice of the study area. The choice of Ibadan city as the study area is justified because it was recognized as one of the megacities in Nigeria birth by urbanization. It is also the fifth largest city in Nigeria in terms of population after Kano, Lagos, Kaduna and Katsina (Population and Housing Census 2006) and third largest in terms of spatial extent in Africa after Cairo and Johannesburg (Udo, 1994). It is the most populous state capital in South Western Nigeria. It is a pre-colonial urban centre where urbanism as a way of life predates European colonization of the country. These characteristics of the city have attracted numerous informal operators who seek employment to sustain their livelihood. The rapid population increase in the city is also enhanced by its commercial function. This has undeniably encouraged the

proliferation of urban informal enterprises.

A close link exists between urbanization/population increase, poverty, employment (either through informal or formal job creation) and environment. There is also an overwhelming evidence to suggest that urban poverty and informal employments are closely related (Sethuraman, 1997; Ijaiya 2002). It has also become increasingly clear that if poverty is reduced through the creation of employment, the income will rise and consequently environmental condition will improve. However, unless the level of urban poverty is significantly reduced there is little chance of reversing the negativities associated with environmental degradation.

Environmental degradation is a product of many anthropogenic activities of man. These include indiscriminate felling of trees, pollution of different types and magnitude, indiscriminate disposal of waste among other related causes. Environmental degradation arising from indiscriminate disposal of waste, from amorphous development of informal enterprises is a major characteristics of metropolitan cities of the world and in particular developing nations where population growth, as well as the rate of urbanization is very rapid and alarming (Abolade 2012). This has continued to threaten the environment (Adeboyejo and Faniran 1999) most especially from indiscriminate disposal of waste of various component and sources. The quantity of waste generated by hawkers/vendors and other operators of informal enterprises from the operational procedures is not only belittering the environmental landscape but its consequential impacts on the environment are enormous. The enormity of this challenge, borne out of indiscriminate and poor management of this waste is a major environmental upheaval. The infiltration of informal sector has turned out to be an environmental debacle (Okeke 2000). He argues further that its resultant effects include: health hazard, environmental pollution and filthy or insanitary condition of the environment and sometimes outbreak of diseases. Against this background, Onyechere 2011 maintained the need to carry out research to determine the rate of its accompany environmental degradation. On the contrary, there is a shortfall in number of researches particularly the impacts on the environment in which it operate. This is yet to be given adequate investigation empirically (Sethuraman 1997, Onyebueke 2000). Rather, attention has been concentrated on creating and improving the regulations policies of the environment, simplifying business registration, property rights, conducive labour law, productivity access to credit, among other policies to formalize the economy, but only few or none of the policies addresses its implication on the environment. Evocative programmes on sustainable development, particularly in cities need to focus and pay concerted attention on Urban Informal Activities especially its detrimental effects on environment in order to ensure a holistic approach to creating a sustainable environment. These will go a long way to facilitate conducive and aesthetically pleasing environment.

Against this background of poor attention of researcher to environmental negativities of UIEs and as a follow up to paper on Urban Air Pollutant: The bane of Urban Informal Enterprises in Ibadan Nigeria (Abolade and Adeboyejo 2013), the paper focuses on residents perception on environmental impacts of UIEs in Ibadan Nigeria. This is the major purview of this paper

## 2. Materials and Methods

Multistage method of sampling was employed for collection of primary information.

For questionnaire administration stratified and systematic random sampling techniques was employed for the research. The existing spatial structure of Local Government Areas in the region was used.

The inventory of localities or communities in each of the local government areas was compiled from National Population Commission. The localities within each of LGAs were further stratified into three residential densities: high, medium, and low residential densities. The residential densities: high, medium and low show variation in population density, socio-economic and environmental characteristics among other variables that describe the study area. This method of sampling is more appropriate and applicable for this particular study. Again, it allows each unit of investigation equal chance of being chosen in a complete list or file of population (Blalock 1959, Singleton et al, 1989 and Afon, 2005).

Fifty percent (50%) of the localities in each LGA in Ibadan metropolitan region were selected while twelve and half percent (12.5%) of localities in other LGAs in the suburb were equally selected and adopted for the survey. The reason for this variation is consequent on the fact that more informal activities are concentrated in the metropolis or "Ibadan core" compared to suburban areas or 'Ibadan less city'. Again, it is justified because it is a good representation of the total localities in the metropolis and villages in the suburb. This selection further enhanced the objectivity of the questionnaire distribution within the selected areas.

For the purpose of this study, it is hypothesized that population size affects land use as well as distribution of informal enterprises (Cohen, 2004.) Also hypothesized is a linear relationship between traffic volume and concentration of informal enterprise hence transport system and informal enterprises are intricately connected (Adedibu and Jelili 2005). That landuse type and intensity affect concentration of urban informal enterprises (Ijaiya, 2004) and close link exist between proliferation of informal activities and urban economy. Consequent on these assumptions and for the purpose of the field survey especially within Ibadan metropolis, roads within

localities where the traffic is concentrated, localities with highest population size, and residential quarters with highest intensity of land use were selected for the sample. While in the suburb, localities with major commercial center or market were selected for survey. This is based on the fact that not all localities have concentration of informal enterprises. It was also observed during the reconnaissance survey that some LGAs such as Egbeda, Ona Ara, Lagelu are predominantly agrarian communities.

To determine the sample size for survey, the population size of each local government for 2006 population census Figure were extracted from National Population Census (NPC) and adopted for sampling (see table3.3). Based on the variations in population size of the eleven LGAs and in view of the fact that population density in each residential density differs, 0.08% of the population size in each LGA was determined and employed. The, total number of one thousand, six hundred and thirty eight (1638) to residents around areas where informal enterprises are carried out were successfully completed and returned for analysis. For the categories of residents in residential densities selected, the questionnaire was distributed in ratio 3: 2: 1 for residents in high, medium, and low residential densities respectively. This method is in line with the generally believed pattern of population distribution within residential areas as employed by Adeboyejo and Onyeneruru (2002).

Using systematic sampling technique, questionnaires were administered to various residential densities with special attention to houses that are not used for informal enterprises but that are close to the vicinity where informal enterprises are practiced. This is purposive because it is believed that these categories of residence will provide information on environmental negativities of the sector without any bias. Systematic sampling technique was adopted for the three categories of residential quarters and operators of informal activities on road axis. An interval of 2 was used to select residential unit in each quarter This was done by selecting the first one resident in the first building selected randomly and subsequent units at interval of 3<sup>rd</sup>, 5<sup>th</sup> and 7<sup>th</sup> as the case may be were chosen from the complete list of the population in Ibadan region.

To examine resident's perception on the effects of informal enterprises on the environment, indices were developed. These are: Acceptability index (i.e. IIEA) to examine its level of agreement by residents as it affects the environment. This was measured through likhert scale range from Not agreed at all (1), Not Agreed (2), Somewhat Agreed (3), Agreed (4), Very much agreed (5). The average weight of such gave each index and this was subjected to Correlation analysis to examine the effects and relationship between urban informal enterprises and indices on perceived environmental effects. This is defined and summarized in Table1. All these measurement showed a reflection of how residents perceived the effects of the subjects on the socio-cultural environment.

**Table 1: Devised Indices for Measurement of Perceived Impact on Environment**

Variable name	Meaning of the variable	Description
PCI	Physical Characteristics/ structural condition of the shop	Nature of the shop, type of materials used in building it, condition of the structures, Design of structure, availability of facilities.
ECI	Environmental Characteristics of operations by products conditions of areas where the activities is being carried out	Method of waste disposal, Level of noise generated, pollution types, method of building shop
BCI	Behavioral Characteristics	A sanitation practice, method of advertising by operators, risk to neighbourhood, disrupts environmental safety.
ECCI	Economic Characteristics of the operators	Impact on economy of the area in terms of employment provision ,number of apprentice employed, how it generates income etc
OPCI	Operational/Production Characteristics	Ways of rendering of services, like Hair dressing, shoe making repairs, grinding, use of generator, use of harmful chemicals that generates offensive odour.
LUCI	Land use Characteristics	Ways shops are built on road setbacks /open spaces, Approval status of structures, compliance with planning rules

Author's compilation (2011)

### 3: Result and Discussion:

#### 3.1. Impacts of Urban Informal Enterprises on Socio Cultural Environment

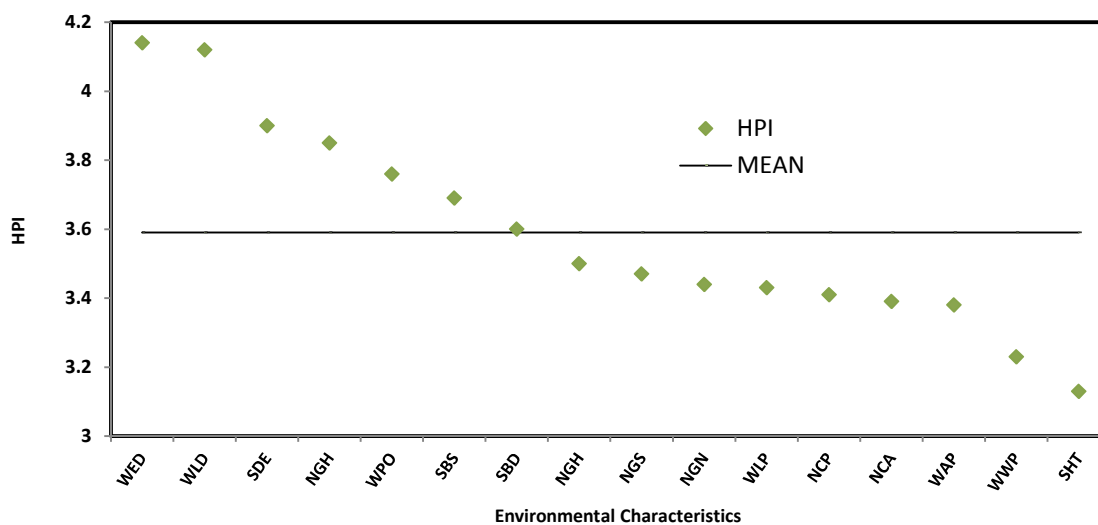
The mean (RAI) score on opinion of residents on the environmental characteristics of urban informal enterprises

is shown in Table 2. The scores were derived by assigning weights to variables ranging from very agreed as 5 point to not agree at all as 1 point using likert scale. The summation of each item was divided by the number of respondents in each item. It is revealed from the table that a larger proportion (78.26%) of respondents (1283) agreed that the way urban informal enterprises operators disposes their waste makes the environment dirty. This response recorded the highest RAI index of 4.14. This implies that the residents perceived filthiness of the environment as the most important environmental negativity associated with the UIE operations. This observation also supports the opinion of respondents who claimed that waste litters the street with RAI index of 4.12 and that UIE deface the environment with RAI index 3.90. The opinion of respondents who supported that urban informal enterprise generates high level of noise recorded RAI of 3.85, this could probably be because the way operators advertise their product especially when heavy machine and other appliances that generate heavy noise are employed is not acceptable to residents. This follows a decreasing order of perception in the levels of agreement for instance, waste produces offensive odour (RAI 3.78); shops built on open spaces disrupt flow of water (RAI 3.69); shops block drainage (RAI 3.60). Variables with lower RAI than mean include noise generated disturb sleep (RAI 3.47), noise generated causes land pollution (RAI 3.44), and waste generated causes land pollution (RAI 3.43). However, most residents did not agree that shops are used as hide out for criminals. The standard deviation score recorded is 0.288 while the variance 10.08225 and coefficient of variation is 7.98%.

**Table 2. Perceived Impacts of Urban Informal Enterprises on Environment**

ENVIRONMENTAL CHARACTERISTICS	VA	A	SA	NA	NA	SWV	TOTAL	RAI	$(X-\bar{X})$	$(X-\bar{X})^2$
	5	4	3	2	1					
Waste makes environment dirty	607	675	220	77	4	6553	1583	4.14	0.55	0.3025
Wastes litters streets	619	682	220	80	6	6649	1607	4.12	0.55	0.3025
Shops Deface environments	443	720	290	146	8	6265	1607	3.90	0.31	0.0961
Noise generated in the neighbourhood is high	381	758	329	138	8	6208	1614	3.85	0.26	0.0676
Waste produces offensive odour	236	845	337	118	9	5816	1545	3.76	0.17	0.0289
Shops built on spaces disrupt flow of water	291	740	394	181	10	5969	1616	3.69	0.1	0.01
Shops Block Drainage	270	721	429	184	13	5902	1638	3.60	0.01	0.01
Noise generated Causes Headache	175	697	442	226	10	5451	1550	3.52	-0.07	0.0049
Noise generated disturbs sleep	161	581	583	172	10	5232	1507	3.47	-0.12	0.0144
Noise generated causes Nuisance	200	506	645	192	16	5359	1559	3.44	-0.15	0.0225
Waste disposed caused land pollution	317	440	657	147	13	5623	1638	3.43	-0.16	0.0256
Noise Causes pollution	194	443	667	192	9	5136	1505	3.41	-0.18	0.0324
Noise causes Annoyance	154	517	641	198	13	5170	1523	3.39	-0.20	0.04
Waste disposed caused air pollution	177	345	616	172	14	4471	1324	3.38	-0.21	0.0441
Waste disposed caused water pollution	132	412	666	289	20	4904	1519	3.23	-0.36	0.1296
Shops are used as hide out of thieves	147	532	423	477	46	5132	1675	3.13	-0.43	0.1849

**Source: Author's Field Survey (2011)**



WED=Waste Makes Environment Dirty	WLD =Waste Litters Streets	NGH=Noise Generated is High
SDE =Shop Deface Environment	WPO = Waste Produces Offensive Odour	
SBD =Shops Block Drainage	NGCH = Noise Generated Causes Headache	
NGS =Noise Generated Disturbs Sleep	NCP = Noise Causes Pollution	
NGN =Noise Generated Causes Nuisance	WLP=Waste Causes Land Pollution	
NCA Noise Causes Annoyance	SHT = Shops Used as Hide out by Thieves	
W AP =Waste Disposed Causes Air Pollution	WWP Waste Disposed Caused Water Pollution	
SBS =Shops Built on Spaces Disrupts flow of Water		

**Figure 1: Scatter Diagram of Environmental Characteristics Index**

Source: Author’s Field Survey (2011)

### 3.2. Urban Informal Characteristics Index and Perceived Environmental Impact

The result of correlation analysis to examine effects and relationship between UIEs and indices on perceived environmental effects {Physical Characteristic Index (PCI), Behavioural Characteristic Index (BCI), Operational Characteristic Index (OPCI) Environmental Characteristic Index (ECCI), Land Use Characteristic Index (LUCI) and Economic Characteristic Index (ECCI)} reveals that Environmental characteristic Index (0.815), Land Use Characteristic Index (0.698), and Operational Characteristic Index (0.602) have high positive coefficient suggesting they were highly perceived as having negative impacts on environment compared to Behavioural Characteristic index (BCI), Economic Characteristic Index (ECI) and Physical Characteristic index with seemingly low but positive coefficient (0.457 0.373 and 0.369). Thus, with reference to all the indices, as concentration of urban informal enterprises increases, the impact is also perceived to increase. Furthermore the result also shows p value of 0.00. This is less than 0.05 ( $p < 0.05$ ) which implies that urban informal enterprises were perceived to have impacts on the sociocultural environment. The implication of this is that all the null hypothesis ( $H_0$ ) for index set for measurement of environmental effect of the subject under study was rejected and alternative is accepted ( $H_1$ ). This supports the observed negativities of the subject on the environment. However, economic characteristics index were perceived to have positive impact but low on the urban economy, particularly in the aspect of provision of employment opportunities and skill development through apprenticeship. This is summarized in Table 3.

**Table 3: Correlation between Urban Informal Characteristic Indices and Perceived Environmental Effect (PEE)**

Characteristic Indices and Perceived Environmental Effect Index		
	r-value	P value
PCSI vs. PEE	0.369 **	0.000
BCI vs. PEE	0.457**	0.000
ECI vs. PEE	0.815**	0.000
OPCI vs. PEE	0.602**	0.000
LUCI vs. PEE	0.698**	0.000
ECII vs. PEE	0.373**	0.000

\*\* Significant at 95% confidence level  
 Source: Author’s Computation (2011)

#### 4: Conclusion and Recommendation:

The findings of this paper have presented the opinions of residents on the impacts of Urban Informal Enterprises on the sociocultural environment in Ibadan cosmopolitan region. A larger proportion of respondents agree that it has momentous impact on the environment. These findings can be extended to other states of the country since the characteristics of enterprises and operational procedures are similar. However, what may differ are the opinions of residents on the level of impacts. Nevertheless it is perceptible that the urban Informal Enterprises contributes to environmental degradation particularly in the areas indiscriminate dumping of waste and its management techniques. Hence the paper has also drawn the attention of writers by providing empirical data on its contribution to environmental problem. Against this background, the paper recommends formulation of policies and legislative measures that will cater for proper waste management from this sector. This will further promote sustainability of Nigerian cities.

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