

HEALTH AND SOCIOECONOMIC IMPLICATIONS OF RELIANCE ON GASOLINE-GENERATORS FOR BUSINESS ACTIVITIES IN IBADAN, NIGERIA

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ABSTRACT

Nigeria's crises of development are more evident in her persistently poor electric power regime. This paper focuses on the consequences of use of gasoline generators as alternative source of energy among business operators in Ibadan. Data were collected from 543 questionnaire responses, 15 In-depth Interviews and 6 Focus Group Discussions. Findings revealed that 83.6 percent of the respondents often utilized gasoline generators and 76.8 percent could not do without it. While the respondents perceived headache, cough, catarrh and respiratory tract infection as major health consequences, reduction in profit (33.7 percent) and low sales/service delivery (25.2 percent) were identified as negative economic effects of reliance on generators. Their coping strategies included regular medical check-up, nose-mask and bulk sales. Intensifying efforts at stabilizing electric power supply will go a long way to improving the health and socio-economic conditions of small and medium scale entrepreneurs and ultimately sustainable development.

Keywords: Development Crises, Poor Electric Power Supply, Business Environment, Small and Medium Scale Entrepreneurs, Coping Strategies, Sustainable Development.

BACKGROUND

Inadequate electric power supply is one of the major challenges undermining Nigeria's development efforts. The centrality of this problem is such that virtually all facets of human activities are impacted negatively by it and explains high rate both of unemployment and non-sustainability of existing business outfits. In order to break even, a large majority of business operators depend almost solely on gasoline generators notwithstanding the health and socioeconomic consequences (Akande and Owoyemi, 2008; Adenikinju, 2007, Mbamali, Stanley and Zubairu 2012; Offiong, 2003). While the pollution effect may not be very pronounced in spacious business environments, in congested locations such as markets and shopping malls, the manifest health consequences are evident.

In Ibadan for instance, the *Agbowo* Shopping Complex, which is popular for its nearness to Nigeria's premier university, only presents a paradox of wealth creation and vulnerability to medical conditions such as respiratory tract infections, asthma among others. It is also a classic example of distorted aesthetic splendour occasioned by continual depreciation and degradation resulting in individual and collective insensitivity to public property. As the population of urban centres increases, overcrowding, informal settlements and irregular business spaces and moral decadence occasioned by the survivalist instinct overshadows the sense of decency among many inhabitants of these cities (Dodman *et al.* 2013; Mitlin & Satterthwaite 2012). Overcoming these challenges in Nigerian urban environments has been hampered by persistently poor electric power supply which acts as a disincentive to effective adjustment among relevant individuals.

Although efforts at transforming the power sector are now both political campaign and strategic socioeconomic development issues in Nigeria, Mbamali *et al.* (2012) noted that only about 40 percent of Nigerians may have access to fairly regular supply of electricity after the transformation. Thus, considering Adenikinju's (2007) observation, a few years earlier, that the installed capacity of Nigeria's electricity can only serve 30% of the national requirement, it could then be stated that the expected improvement in the power sector will be marginal. The import of this situation is unmistakable and suggests that reliance on gasoline generators by a large majority of Nigerians will take longer than envisaged.

For the most part, while the advantages of these generators are often emphasized particularly with regard to supporting businesses, little or no attention is paid to the concomitant health related individual risk factors and vulnerabilities and the economic demerits. In year 2000 alone, about 1.6 million lives were lost as a result of indoor air pollution resulting from generator fumes (Mbamali *et al.* 2012). Therefore, the purpose of this paper is three-fold: (1) examine the extent to which business operators in the study area depend on generators for their activities; (2) investigate people's perception about the likely health and socioeconomic consequences of persistent generator use; and (3) document the strategies adopted by respondents towards coping with the situation. The paper argues that these health and socioeconomic factors related to gasoline generator use has implications for sustainable development in Nigeria.

THEORETICAL/CONCEPTUAL FRAMEWORK

In this section, we present two theoretical perspectives in order to examine the issues pertaining to use of generators in public places in Ibadan, southwest Nigeria and the likely effects on attaining sustainable development. We follow an

eclectic approach by adapting relevant aspects of the Functionalist Theory and Health Belief Model (HBM) to our analysis. With reference to the works of Talcott Parsons and Robert Merton, the functionalist perspective emphasizes the functions of parts in maintaining the whole system by acknowledging the interdependence of component units. As a corollary, dislocation of any of the parts will not only affect it, but also the entire system. This necessary integrative feature of society was well represented in Parsons' analysis on Adaptation, Goal Attainment, Integration and Latency, commonly known as the AGIL model (Haralambos and Holborn 2004). The functionalist theory also recognizes the likelihood of dysfunction which undermines effectiveness of individuals and groups in discharging specific roles. Typically, irregular supply of electricity is an ingredient of underdevelopment characteristic of less industrialised societies. Overcoming this major challenge would require some level of ingenuity to reduce the inherent social, economic, health and psychological effects to appreciable degree.

By this model, Parsons highlights the underlying currents behind systemic equilibrium that finds expression in four major components. At the macro-society level, *Adaptation* is related to a community's ability to adjust to changes without, at the same time, infringing on the collective aspirations of the group. However, at the micro-individual level, adapting to very limited electric power supply needed to operate business outfits effectively would require alternative source of energy particularly for activities that depend wholly on electric power such as barbing and hairdressing salon, photocopying, cyber cafe and laundry businesses among others. Thus, without adjusting to the power situation in Nigeria by relying on gasoline generators, these businesses are not only vulnerable to displacement by competing agencies but also stand the risk of folding up; a situation that would likely push operators back into the already saturated Nigerian labour market. Recourse to personal electric generation thus becomes a rational business decision necessary for the survival of businesses that depend on electric power.

The second component of the AGIL model which focuses on Goal Attainment (Ritzer 2008) deals with efforts at achieving the primary aim of establishing a business which, for the most part, is hinged on profit maximization. As such, one of the basic and legitimate ways of maintaining stability in businesses that are built around electric energy is to provide for alternative source of electric power. Indeed, in a place like Nigeria where a large majority of the people are already poor, shutting up businesses will lead to further impoverishment of the populace. For instance, poverty level in the country is not only generally high, as a large number of people live on less than Two-Dollars per day (Osain 2011), but also institutionalized by the ruling class through corruption and appropriation of surplus values that further marginalize the powerless majority (Nwokocha 2013; Erinosh 2011).

The Health Belief Model, employed as the second perspective for explaining the relationship between use of electric generators and the consequences on socioeconomic and health status of business operators, is hinged on the prospective actor's assessment of an intended action. Rosenstock, Strecher and Becker (1988) noted that a health-related action would likely be taken on three conditions: if the actor feels that a negative health condition can be avoided; has a positive expectation that by taking a recommended action, s/he will avoid a negative condition; and believes that s/he can successfully take a recommended health action. However, the model recognizes that individuals are motivated to act on the basis of their understanding of the situation as it relates to their perception of susceptibility, severity, benefits and barriers (Rosenstock 1974; Becker, Radius & Rosenstock 1978).

Part of the reasons why most business operators that rely on gasoline generators de-emphasise the health consequences of inhaling carbon monoxide include ignorance about the actual effects of exposure to these pollutants, a feeling of inevitability of such a condition in the context of notoriously poor electricity supply and their perception of non-vulnerability. The situation is complicated in a crowded business environment where even if a business operator decides to take recommended actions such as prioritising proper ventilation and situating the machine in a location where noise generation is minimal, pollution from other parts of the market undermines such efforts. Hence, the perception of meaninglessness of an intended precautionary measure, due to the collective contribution to the pool of risk factors among operators, acts as a disincentive for required action even among operators that understand inherent vulnerabilities arising from generator-related pollution (perceived barrier). In addition, given that the health consequences of noise and air pollutions may take long to manifest in some instances, the perception of likely severity is blurred and taken for granted. The conceptual framework that follows synthesizes the theoretical perspectives employed in explaining the phenomenal dependence on gasoline generators and the implications among business operators in the thematic study location.

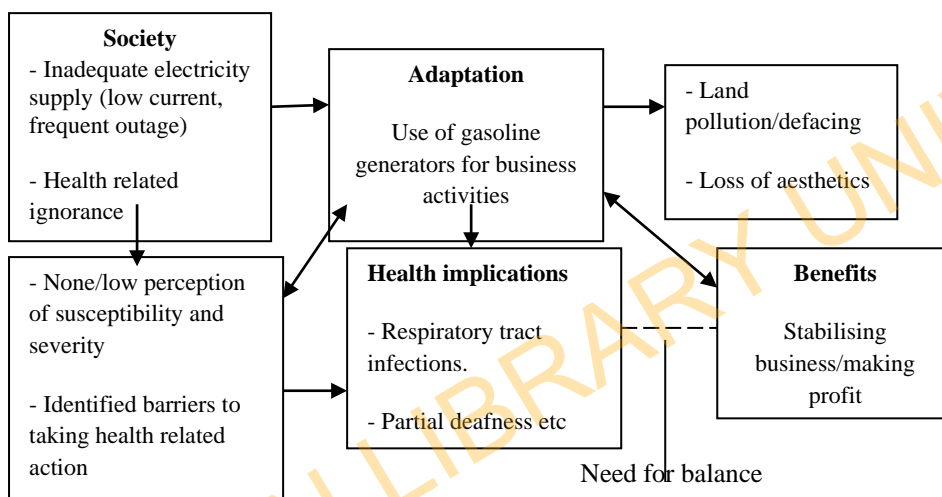


Figure 1: Conceptual Framework
Source: Nwokocha & Taiwo 2014

What exists in society defines the goal that individuals pursue and the means of attaining it. In this case, inadequate supply of electricity exemplified in low electric current and/or incessant power outage as well as the non-perception of inhalation of carbon monoxide as a risk factor explains recourse to gasoline generators. Figure 1 shows that use of these generators is associated with both positive and negative consequences which could be balanced in order to minimized the burden of vulnerability on one hand, while increasing stability of businesses through improvement in profits on the other. Although benefits were identified in the above framework at the individual business operative level, it undermines sustainable development at the macro-society and country level. Indeed, the financial cost of maintaining the generators, the environmental depreciation effect and the health challenges associated with inhalation of carbon-dioxide are enormous and antithetical to development.

MATERIALS AND METHODS

The study was carried out in Ibadan Southwest Nigeria. Ibadan was the capital of the defunct Western Region, 1946-1967, and later the capital of Oyo State from 1976 till date (Afolayan 1994). As the 2006 census indicated, Oyo State had a population of 5,591,589 and an estimated annual population growth rate of 3.4 percent (Official Gazette of the Federal Government of Nigeria 2007). Ibadan covers an estimated total area of approximately 103.8km, which makes it one of the largest cities in West Africa (Areola 1994). Ibadan is inhabited mainly by the Yoruba but has a mixture of people from various ethnic groups in Nigeria (Tade and Aderinto 2012). Ibadan ranks among West African cities that are increasing by over 100,000 inhabitants annually (United Nations 2014).

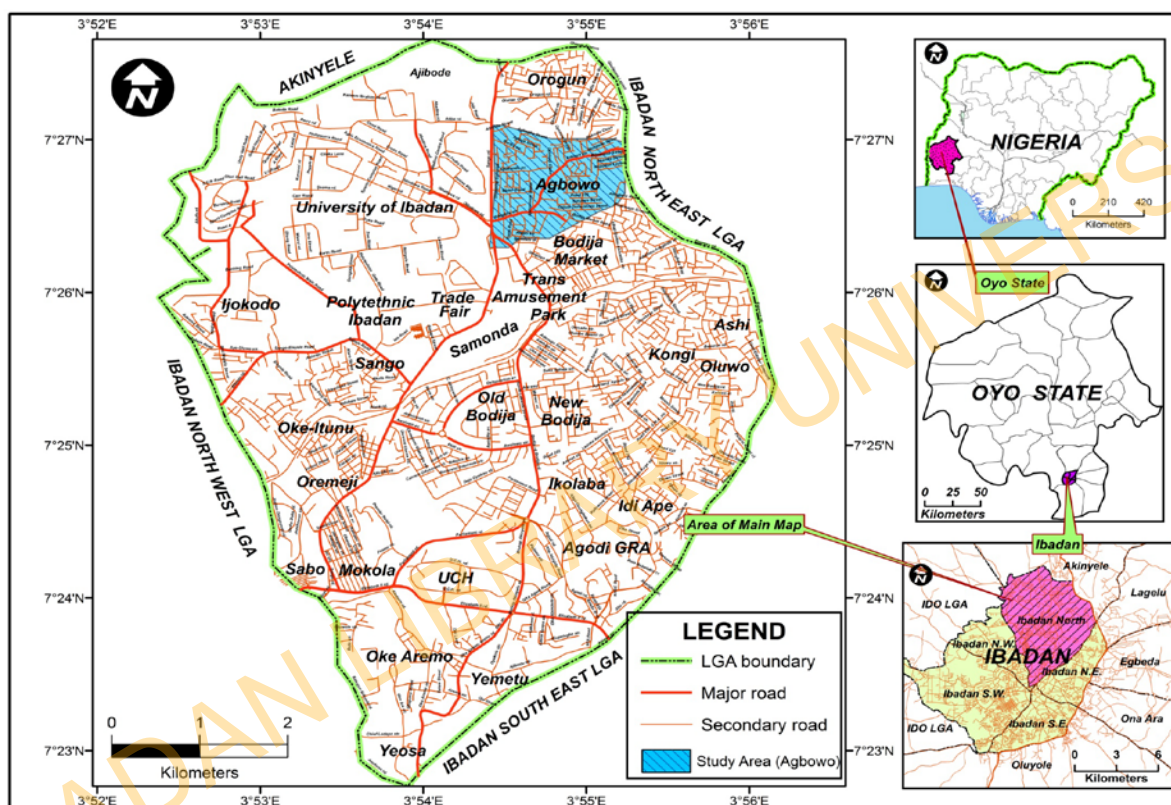


Figure 2: Map showing the Study Area

Although the industrial sector is not as developed as that of Lagos or Kano, there are many small and medium entrepreneurs, traders and artisans in the city (Okafor & Amayo 2006). The Agbowo shopping complex located directly in front of the University of Ibadan, which is arguably the most respected higher institution of learning in Nigeria witnesses high volume of business transactions. It is also a melting pot of cultures. To a very large extent, the activities of traders and service providers in the complex and its immediate environs are unregulated, contrary to what obtains in various markets in the city.

The cross-sectional survey research design was adopted. Study population consisted of both male and female entrepreneurs who are involved in sale of goods and provision of services like textiles, stationery materials, daily needs, hair dressing saloons, tailoring and all forms of computer operations within and around Agbowo shopping complex. The

study employed a combination of qualitative and quantitative techniques. Data collection included 543 copies of a questionnaire schedule administered on small business operators who were purposively selected on the basis of ownership/involvement in business outfit that relies on generators; 15 in-depth interviews were conducted among business owners; and six Focus Group Discussions with business owners, operators and customers.

Questionnaires were administered to elicit information on the socio-demographic characteristic of respondents, perceived health hazard related to pollution and the implications of over reliance on gasoline generators. Both IDIs and FGDs probed into deeper issues pertaining to coping with the socioeconomic, aesthetic and health consequences of reliance on these generators. Ethical considerations were observed throughout this research. Respondents and participants' voluntary and informed consent was sought prior to involvement in the exercise. The right to withdraw from the study at any point in time and/or withhold some information perceived as impinging on their privacy was guaranteed. The principle of anonymity was fully respected to the extent that no aspect of the responses could be traced to any of the subjects among others.

Qualitative data analysis involved the use of ethnographic summaries and manual content analysis. The procedure began with the translation and transcription of tape recordings of IDIs and FGDs. These were followed by the examination and, later thematic isolation of various responses from in depth interviews, which complemented questionnaire survey. Quantitative data, on the other hand, were edited and cleaned to eliminate inconsistencies that could undermine validity and reliability. Data generated from pre-coded, open-ended and fixed choice questions were entered using Microsoft Access Software in order to minimize data entry error and to ensure effective data management. These data were finally exported and analysed using the Statistical Package for Social Sciences (SPSS) at univariate and bivariate levels to indicate percentages and test of associations.

RESULTS

A large majority of males (65.7 percent) participated in the study relative to their female counterparts. While most of the respondents (39.3 percent) belong to 21-30 age category, those age 31 and above constitute 20.4 percent of the total. However, as high as about 27 percent did not indicate their ages. Table 1 also shows that respondents who were single at the time of this study comprised over 72 percent of the total; 26 percent of the respondents are married. About 76 percent are Christians as against 23 percent that are Muslims. The table reveals that only 1.5 percent of the respondents had primary school education or did not have any form of formal education. Over 87 percent have at least secondary school education with as high as 58 percent having some form of tertiary education to indicate high literacy level among these respondents. This figure is far higher than the national average of 11.7 percent as indicated in current demographic and health survey (NDHS 2013).

Table 1: Socio-demographic Characteristics of respondents (N=543)

<i>Characteristics</i>	<i>Frequency</i>	<i>Percentages</i>
Sex		
Male	357	65.7
Female	186	34.3
Age in Group		
16-20	75	13.5
21-25	110	20.3
26-30	103	19.0
31-35	51	9.4
36-40	29	5.3
41-45	15	2.8
46 +	16	2.9
No response	144	26.5
Marital status		
Single	393	72.4
Married	141	26.0
Separated/divorced	2	0.4
Widowed	3	0.6
Cohabiting	2	0.4
Religion		
Christianity	413	76.1
Islam	124	22.8
Traditional	3	0.6
Others	2	0.4
Highest Educational Level		
No Formal	6	1.1
Primary	2	0.4
Secondary	161	29.7
Tertiary	315	58.0
Others	51	9.4
No response	8	1.5
Ethnic Groups		
Yoruba	415	76.4
Igbo	93	17.1
Hausa	3	0.6
Others	31	5.7
No response	2	0.3
Type of Business		
Food Business	4	0.7
Daily needs/items (variety of goods)	187	34.4
Computer Services	191	35.2
Teaching and Training activities	89	16.4
No response	58	5.7

With regard to ethnic composition, slightly more than 76 percent are Yoruba followed by Igbo respondents (17.1 percent). Table 1, in addition, indicates that 35.2 percent of the respondents are involved in computer related services followed by those that trade in daily needs, including perishable and non-perishable items, constituting 34.4 percent.

Table 2 shows that about 84 percent of the respondents reported using generators often to suggest inadequate supply of electricity in the area. The approximately 14 percent that reported rarity of use are likely those whose business activities do not depend largely on electricity for sustenance. However, as high as 77 percent stated that they cannot do business without electric generators.

Table 2: Respondents' use of electric generator and reasons (N=543)

<i>Responses on frequency of utilizing electric generators and reasons</i>	<i>Frequency</i>	<i>Percentage</i>
Rate of electric generator use		
• Very often		
• Often	340	62.6
• Rarely	114	21.0
• No response	74	13.6
	15	2.8
Can do without using electric generator		
• Yes	113	20.8
• No	417	76.8
• No response	13	2.4
Reasons for relying on electric generator		
• Unstable electricity supply	310	57.1
• To keep work going	120	22.0
• Status symbol	58	10.7
• Others	55	10.1

As Table 2 also reveals, the reasons for reliance on gasoline generators include unstable electricity supply and quest to sustain business (79 percent). Interestingly, about 11 percent stated that use of generator was a kind of status symbol, which has to do with ego rather than as a rational business decision. Table 3 which shows respondents' perceived health hazards resulting from the use of generators indicates that 61.3 percent identified headache; cough and catarrh (42.7 percent) and tiredness (28.9 percent)

Table 3: Perceived major health hazards of using electric generator (N=543)

<i>Respondents' perceived health hazards associated with use of electric generators</i>	<i>Frequency</i>	<i>Percentage</i>
Headache	333	61.3
Fever	98	18.0
Tiredness	157	28.9
Partial deafness	102	18.8
Cough and catarrh	232	42.7
Body pains	84	15.5
Irritation of the eyes	107	19.7
Respiratory tract infection	108	19.9
Asthma	75	13.8
Others	16	2.7

This catalogue of respondents' perceived hazards ascribed to use of gasoline-generators is a clear indication of some level of awareness about the possible inherent health consequences. However, an IDI respondent stated that the use of

generators can only aggravate some illness conditions and not necessarily cause them, and largely depends on the kind of generator used. He stated that:

Operating a very big generator is more challenging due to the resultant body pain as one pulls the rope to kick-start it, tiredness, headache or even irritation of the eyes... some people experience cough and catarrh after inhaling black smoke for some time. But, I do not think that exposure to carbon monoxide inhaled from these generators can cause asthma, or respiratory tract infection... rather, among people that already have such conditions, exhaust fumes may trigger or aggravate them.

Although the veracity of the respondent's position, regarding causation and/or aggravation which are purely medical issues, are outside the purview of this paper, the important thing is the recognition by the respondent of inherent negative consequences. An FGD participant added:

Apart from partial deafness, headaches and body pains which I feel can result from pulling the rope of these generators, I do not think there are other health problems related to that... the main problem I see in using gasoline generators in this place is that people are unwittingly subjected to shouting to be heard and/or straining their ears to hear others due to the large number of generators that is operated at the same time. To be sure, aside the fact that noise pollution is not healthy, it also undermines effective communication necessary for a conducive business environment and the concomitant bargaining process.

By emphasizing both the health and social aspects of the hazards related to use of generators in a market environment, the participant attempted to present a holistic picture of the implications. However, the discussant downplayed the issue of air pollution and the effect of carbon monoxide inhalation, which for most people are the most critical factors in analyzing the health impact of these generators. Thus, as Table 4 reveals, apart from the respondents that identified taking pain-relievers (37 percent) as a major coping strategy against the effects of generator use in their business environment, about 34 percent others suggested use of nose-cover/filter, which is directed at ameliorating the impact of carbon-monoxide on the respiratory system.

Table 4: Coping mechanisms adopted by respondents (N=543)

Coping mechanisms	Frequency	Percentages
With health problems		
Use of nose cover/filter	219	33.6
Use protective eye glasses	50	7.7
Undertake regular medical check-ups	115	17.6
Take pain relievers	241	37.0
All of the above	25	3.8

Perhaps, respondents that recommended regular medical check-up (17.6 percent) believe that notwithstanding the strategies that individuals are employing, health care providers are better placed to give informed medical advice and care. None of the respondents identified relocation to another business area with less number of generators as a coping strategy. Upon further inquiry, an FGD participant stated what appears to represent the opinion of most other discussants:

It is difficult to think about relocating from this shopping centre to some other place in town for several reasons... the place booms especially when students are around; it is more secure and cases of massive fire incidents are rare as result of the structure of the complex. Moreover, a lot of people have over the years built a network of clientele, which is not likely to be guaranteed upon relocation. For these and other reasons, most of us keep readjusting to different challenges peculiar to this environment.

These social and economic reasons for sticking to the business location against the backdrop of the catalogue of consequences are seemingly plausible but suggest that the health impact of exposure to various manifestations of pollution are not fully appreciated by the victims themselves. Table 5 highlights views of respondents on the socioeconomic consequences of reliance on generators which were viewed both negatively and positively. For instance, 21.2 percent noted its beneficial effect on customers and neighbours; 16.6 percent stated that use of such generators does not have effects on stakeholders. Some of the respondents however identified negative consequences such as noise pollution (23 percent); setting businesses back (2.9 percent) occasioned by high cost of running these generators; and defacing the physical environment (26 percent).

Table 5: Socio-economic implications of dependence on electric generators (N=543)

<i>Respondents' views on the socio-economic implications of electric generator use</i>	<i>Frequency</i>	<i>Percentage</i>
Social Implications		
• Noise pollution	125	23.0
• Causes friction and rift with neighbours	55	10.1
• Sets businesses back (cost of maintenance)	16	2.9
• Benefits customers and neighbours	115	21.2
• Has no effect	90	16.6
• Defacing the environment	141	26.0
Effects on Communication		
• Negatively affects hearing	91	16.8
• Voice strain/ shouting	85	15.7
• Noisy setting	51	9.4
• No negative effect on communication	117	21.5
• Others	115	21.2
Economic Implications		
• Increases cost /Reduces profit	183	33.7
• negatively affects sales	137	25.2
• positively affect sales	30	5.5
• No idea/not thought about it	143	26.3
• No effect	50	9.2

The economic consequences of generator use identified by respondents include reduction in profit (33.7 percent) and negative effect on sales (25.2 percent). Conversely, about 6 percent of the respondents stated that generator use affected their businesses positively. Over 35 percent either did not think about the effect or stated that use of gasoline generators does not have effect on their businesses. Indeed, the perception of effects or none depends on several ideational and contextual factors such as ignorance, record keeping practices and health seeking behaviour among others. Thus, varying opinions were presented regarding the consequences of generator use. As an IDI respondent stated:

I normally do not need a generator apart from illuminating my shop for prospective customers to see clearly the goods I have in stock. This is especially the case when it is dark and non-use of generators will automatically translate to none or severe reduction in sales. However my profit margin reduces if generator is used given that the cost of running it impacts heavily on profits.

Respondents who operate businesses like cybercafé, photocopying/printing, electronics among some others noted the inevitability of electricity for their activities unlike those whose primary purpose for using such generators is illumination and can be done without in some instances. An FGD participant noted the negative impact on the aesthetic value of the environment:

This shopping complex has lost its aesthetic value from what we learnt it used to be. The fumes from these generators have defaced the environment completely, the floor is in a mess ... the walls and interlocking stones are painted black from generator wastes from used oil and exhaust fumes... when I started business here five years ago, the complex was as filthy despite its architectural prominence.

The above point was not mentioned until the discussant presented what seemed to represent the majority opinion on the matter, to suggest that people in the study area did not emphasize much about the environmental effects of generator use as they did for the health and economic aspects. One of the IDI respondents elaborated on the effect of gasoline generator use:

The cost of fuelling generator reduces our daily profits compared to when there is constant power supply... unfortunately we can hardly add the cost of fuelling to the amount of goods and services due to the stiff competition with those that have access to fairly stable electricity. The irony of the situation is that in some instances we use the generator throughout the day to be in business. Hence, except we do a lot of printing for customers (economics of scale), we hardly break even.

The above point is underscored by the huge amount of money spent monthly on maintaining such generators by some of the respondents. As Table 6 shows, 12 percent of the respondents stated that they spend over N20,000 (\$135) monthly for such maintenance. Approximately 62 percent parted with less than that amount each month.

Table 6: Cost of maintaining a generator per month (N=543)

Monthly maintenance cost	Frequency	Percentages
<N500	32	5.9
N501-N5000	244	44.9
N5001-N10000	58	10.7
N10001-N20000	49	9.0
N20001-N30000	27	5.0
N30001 and above	38	7.0
No idea	55	10.1

About 10 percent of the respondents did not have an idea of how much it takes them to maintain the generators. Business operators that spend N500 or less on generators are probably those whose need for it is tangential. As a hair dresser stated in an IDI:

We use generator mainly to dry customers' hair ... virtually all other activities we embark upon such as braiding, pedicure and manicure, fixing of weave-on, eyelashes and nails do not require use of generators except at night for illumination. Ironically, the latter are more profitable than hair drying even though we charge almost twice the amount when the generator is used.

From the foregoing, the decision to utilise gasoline generators to support business activities is dependent on several factors including the kind of business operated, overhead cost of operation, level of competition and perceived impact on business outfit.

DISCUSSION

Results of this study have shown clearly that gasoline generators are essential components of competitive business engagement in Nigeria characterised by epileptic supply of electricity. Although over 75 percent of the respondents reported that generator-use is inevitable in their businesses, virtually everybody in the study area makes use of these generators albeit not at the same level of importance. Two scenarios are deducible from the above context. First, improving the power sector will reposition business operators for greater engagements that may find expression in economics of scale and diversifications that could reduce wastages related to non-recycling of by-products. Second, in order to forestall overdependence on generators, business operators as a matter of necessity may be persuaded, by prevailing economic circumstances, to ingeniously expand their business activities with the aim of generating multiple incomes. In the latter sense, apart from increasing the profit-base of the innovator, the advantage of multi-skilling, de-differentiation and global competitiveness consistent with the postmodern era cannot be overemphasized.

Respondents' views on the effects of generator use for businesses varied. For instance, while some stated that it affected sales and profits negatively as huge amounts spent on servicing these generators could have been put to other uses to grow their business, others had a contrary opinion. Those who linked generator use to positive effect did so from the point of view of the role it plays in sustaining businesses compared to a situation where even with irregular supply of electricity operators insist on forgoing it. As a corollary, businesses that depend on electric energy are better-off with alternative power supply, in a place like *Agbowo-Ibadan* with a characteristic poor electricity history, than without. There is also a possibility for business operators to over-hike their prices as a means of defraying the expenses on these generators especially among those whose competitors are far away from the location. In such a case, higher profit may be recorded than in a situation of more regular electric supply.

Awareness of the health hazards associated with use of generators is high among respondents probably due to their high literacy level with most having had tertiary school education (58 percent). Although a catalogue of perceived consequences such as headache, body pain, irritation of the eyes, inhalation of carbon monoxide, loss of aesthetics among others were identified, there is a clear indication of disparity between what respondents know about the effects of generator use and what they do. We note that using nose cover, eye glasses, regular medical check-up and pain relievers are mere palliatives and do not undermine exposure of these stakeholders to real or imagined vulnerabilities patterning to generator use in a choky environment such as the study area. Interestingly, neither of the respondents contemplated relocating to other business areas in the city where exposure would be minimal nor the possibility of exploring other sources of power with less negative impact on the environment and health of individuals and sustainable development. Such insensitivity may have resulted from the fear of losing clients upon relocation and the uncertainty of change.

RECOMMENDATIONS AND CONCLUSION

The research clearly reveals that electric power supply in the study area, as is the situation in other locations in Nigeria, is characteristically poor with negative impacts on business and sundry activities and by extension development. Hence, massive improvement of the power sector is a critical factor in sustaining medium and large scale enterprises. We not

only recommend immediate privatization of the sector for efficiency, minimization of wastage and sustainability but also prioritization of other more environmentally friendly alternatives such as turbine, solar and inverters by stakeholders.

In addition, energy-users should be sensitized, by relevant agencies, on the advantages of upholding the culture of maintenance by ensuring that electric materials and equipment are protected against vandalism and theft. It is also suggested that an effective monitoring system be put in place to promptly detect weak and malfunctioning components of power installations for repairs or replacement before they degenerate into bigger challenges that would be more difficult to rectify. It is also important to discourage overload of electric systems with heavy equipment without authorization by certified professionals; such act of ignorance accounts for long-term damages and/or drastic drop in energy supply thereby necessitating recourse to use of these generators.

We suggest that instead of allowing business operators in the study location to use generators without any form of regulation, the relevant local authority should constitute a regulatory agency charged with the responsibility of ensuring environmental protection. It should be empowered to prosecute offenders in community courts where appropriate sanctions would be pronounced for infractions. However, doing this effectively requires that authorities create the necessary environmental conditions for its success. For instance, constructing a common pool where certified generators would be kept and serviced routinely will lead to minimization of noise, land and air pollution and repair of these generators as and when necessary. Indeed, several people in Nigeria remember to service and/or repair their generators only when the latter pack-up thus contributing needlessly to incomplete combustion and avoidable pollution.

The entire issue points to a weak and challenging power sector that has undermined the capacity of Nigerians to fully realise their inherent potentials. The limitations imposed by the notoriously epileptic power supply are more visible in the shrinking of small business communities whose members are rather opting for menial jobs such as commercial motor-cycle riding, scavenging among other risky but less electric-power demanding activities. To be sure, making meaningful strides in development is only realizable in a relatively power stable environment as is the case in most other societies, where it is now taken for-granted. Without such stability, efforts at keying into the global entrepreneurial movement by Nigerians will remain largely elusive given that over ninety percent of activities related to goods and services in competitive economies depend, directly or indirectly, on electric power.

REFERENCES

Afolayan, A.A. (1994). "Population". In M.O. Filani, F.O. Akintola and C.O. Ikporukpo (Editors), *Ibadan Region*. Ibadan: Rex Charles Publication. Pp. 123-135.

Akande, T. and Owoyemi, J. (2008). "Awareness and Attitude to Social and Health Hazards from Generator Use in Ayigba, Nigeria". *Medwell Journal. Research Journal of Medical Sciences*. Vol. 2. No. 4. Pp. 185 – 189.

Areola, O. (1994): "The Spatial Growth of Ibadan City and its impact on the rural Hinterlands". In M.O. Filani, F.O. Akintola and C.O. Ikporukpo (Editors), *Ibadan Region*. Ibadan: Rex Charles Publication. P.99

Becker, MH., Radius, SM. and Rosenstock, IM. (1978). 'Compliance with a Medical Regimen for Asthma: a test of the health belief model', *Pub Health Rep* 1978; 93: 268-277.

Dodman, D; Brown, D; Francis, K; Hardoy, J; Johnson, C. and Satterthwaite, D. (2013). "Understanding the nature and scale of urban risks in low-and middle-income countries and its implications for humanitarian preparedness, planning and response". International Institute for Environment and Development – *Human Settlements Discussion Paper Series: Climate Change and Cities 4*.

Erinsho, O. (2012). The Social Dimension of Nigeria's Democratic Process. *The Nigerian Journal of Sociology and Anthropology*, 10: 1-8.

Federal Republic of Nigeria. (2007). *Official Gazette (FGN)*. Lagos: Federal Government Press.

Haralambos, M.; Holborn, M. and Heald, R. (2004). *Sociology: Themes and Perspectives, sixth edition*. London, Collins.

Ibitoye F. and Adenikinju A. (2007). Future Demand for Electricity in Nigeria. *Applied Energy*, 84:492-504.

Mbamali, I; Stanley, A.M and Zubairu, I.K. (2012). "Environmental, Health and Social Hazards of Fossil Fuel Electricity Generators: A Users' Assessment in Kaduna, Nigeria". *American International Journal of Contemporary Research*, 2(9).

Mitlin, D. and Satterthwaite, D. (2012). *Urban Poverty in the Global South: Scale and Nature*. Abingdon: Routledge.

National Population Commission (NPC) [Nigeria] and ICF Macro. 2014. *Nigeria Demographic and Health Survey 2013*. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.

Nwokocha, E.E. (2013). "Implications of Gender Inequity for achieving the Millennium Development Goals by 2015: Is Nigeria really making Progress?" *The Nigerian Journal of Sociology and Anthropology*.11(2).

Offiong, A. (2003). "Assessing the Economic and Environmental Prospect of Standby Solar Powered System in Nigeria". *Journal of Applied Sciences and Environmental Management*. Department of mechanical Engineering, University of Uyo, Nigeria. Vol. 7, No. 1. Pp 37-42.

Okafor, E.E. and Amayo, E.O. (2006). "Parents and their Coping Strategies in Nigeria: A Study of Selected working Mothers". *International Journal of Sociology of the Family*, 32(1):87-111

Osain, M.W. (2011). The Nigerian Health care System: Need for Integrating Adequate Medical Intelligence and Surveillance Systems. *Journal of Pharmacy and BioAllied Sciences* 3(4): 470-478.

Ritzer, G. (2008). *Sociological Theory, seventh edition*. New York: McGraw-Hill.

Rosenstock, I. (1974). 'Historical Origins of the Health Belief Model. *Health Education Monographs*. Vol 2, No 4.

Rosenstock, IM; Strecher, VJ; and Becker, MH. (1988). Social Learning Theory and the Health Belief Model. *Health Educ & Beh*, (15):175-183.

Tade, O. and Aderinto, A.A. (2012). "Factors Influencing the Demand for Domestic Servants in Oyo State, Nigeria". *International Journal of Child, Youth and Family Studies*, 4(1): 521-545.

United Nations (2014). "The state of African Cities, 2014: Re-imagining sustainable urban transitions". *UN-Habitat*.

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