Pakistan Journal of Social Sciences 5 (9): 918-926, 2008
ISSN: 1683-8831

Impacts of Transport Negative Externalities in Urban Centres of Developing Economy: A Psychosocial Analysis

Adebambo Olayinka Somuyiwa
Department of Management Science, Transport Management Unit,
Ladoke Akintola University of Technology, P.M.B. 4000, Ogbomoso, Nigeria

Abstract: Most of the transport negative externalities that characterised most developing economy due to their unplanned, uncoordinated and unmanaged transport scenarios require attentions of Regional and Transport economists, Planners and other allied disciplines. It is in the light of this, that the study examines a psychosocial analysis of this phenomenon in developing economy like Nigeria. The study through some descriptive and analytical statistical techniques, based on predominantly primary data, recommends among others, that design and management should enhance the sanitary and aesthetic condition of the transport infrastructure, accompanied with compensation for those living within a particular radii from the road in any neigbourhood.

Key words: Negative, externalities, psychosocial, transport, hedonic price, economy

INTRODUCTION

Transport, no doubt, has played significant roles in socio economic and political facets of mankind. However, the attention of scholars and various stakeholders in the transport and allied disciplines should be on the negative externalities of this wheel of civilization. Most prominent of all these negative externalities is "congestion". Congestion, according to Ogunsanya (1983), can be described as a situation, which arises as a result of many vehicles struggling to use the same road at the same time.

Similarly Adenle (1981), noted that traffic congestion problem becomes so manifest when measure in terms of delays, which can be defined as the time lost by vehicle due to traffic friction that are likely to be caused by other vehicle's inefficiencies or ineffectiveness as in the case of breakdowns, accidents, parking and Maneuvering problems, that all subsumed in structural pattern in traditional areas of the cities and the unplanned growth and haphazard landuse and distributions that could have been enhanced by technology.

Albeit, it has been observed that people tend to accept technology principally because of benefits derived from the technology (Starr, 1969; Fischhoff *et al*., 1981; Fraidensburg, 1988). This goes to confirm that the acceptability of any technology is a function of its benefits, as well as its desire of risk on the host community. For instance, several implications flow from the transport within cities, as most has negative influence on the residential neighbourhood.

Smith (1977) opined that an externality exists when an activity generates side effects not reflected in costs or prices. Externalities can produce benefits that enhance individual well-being and also costs in the form of disutilities, but it is negative externalities, which attract most attention. This environmental disamenity could be serious, especially in a purely residential setting (like part of study area). This is because, they have indirect effects on property values and this could be serious, considering that in a purely residential, house values and rental values play a prominent role in the allocation mechanism of transport infrastructure.

In the light of this, the study attempts a psychosocial analysis of transport negative externalities of urban center in Nigeria, with a view of examining the perception of people towards these externalities/disamenities, in relation to stress, health and anxiety of resident of this area. Equally to examine the impact of these externalities on their various property in terms of plot size, types of building number of floors and others.

Study area: Ikeja, the capital of Lagos State of Nigeria lies on Lat 6.5°N and Log 3.3°N. It is situated at an altitude of 30-100 m above the sea level with a fairly undulating landscape. Ikeja is strategically located and serves as an important gateway to many neighbouring states adjoining

Lagos State. Its strategic location as a major urban center between important towns and cities such as Abeokuta, Ilaro, Lagos sland, Ijebu-Ode, Sagamu and Ibadan, has generated considerable amount of socio-economic activities, which have attracted heavy traffic and a lot of development.

The study area covers an area of about 320 km^2 and mostly occupied by the Aworis. The town serves triple roles. Apart from being the state capital, it serves as Divisional Headquarter of Ikeja Local Government area. It is also, the administrative hub of the state government. Ikeja became a popular location because of its good accessibility/connectivity to land based transport through road and rail, such as Agege motor road, Obafemi Awolowo way, Mobolaji Bank Anthony way (former Airport Road) and Agege rail line.

On the transport system, there is a mixed vehicular traffic, cars, buses and lorries are operated by the private individuals, as both private and commercial transport service. They operate along Awolowo way, Oregun road and secretariat-Alausa route, Allen Avenue/Opebi road, Mobolaji Bank Anthony way, Oba-Akran Road, Akilo street, ACME road and Adeniji Jones avenue and many others. It is interesting to note that all these routes are used as avenues for internal traffic circulation. For instance, Alade market which is a prominent commercial site in the study area, is bounded by both Awolowo way and Allen Avenue is indeed a significantly traffic attractor in the area.

Customers often park on the road kerbs and roadsides and consequently, spreading on the road and resulting into traffic congestions, delays and frustrations to city dwellers and tangentially increasing environmental damage to the community.

Conceptual issues: The write-up is linked to 2 fundamental areas of transport enquiry community perception of and response to, negative externalities associated with transport infrastructure that lead to congestion/pollution. Basically, facility impact assessments have focused on the effect of changes in population, employment and economic activities associated with construction and operation. Although, there are derth of theories in transport, for the study of perception-based impacts, however, recent development in cognate disciplines of psychology and economics have made it possible to incorporate techniques that will correct this misconception by incorporating public perceptions into projections of direct and indirect impacts from negative externalities of transport infrastructure.

There are 3 important models that appraise elements of the psychological and behavioural processes that generate psychosocial and economic impacts as a result of perceived risk of transport negative externalities. The first, psychometric model is an off shoot of attitudinal scale development that gives pointer to impact potential by highlighting the relative intensity of risk perception and aversion. In a related vein, there are 2 economic models available, these are: Contingent valuation that is relevant as an excinte measure of impact based on survey responses to a hypothetical situation, such as negative externally of transport facilities, at a given distance from the respondent's residence. The other, hedonic price model, is an ex post measure that is useful at estimating the value of location characteristics, such as transport facility, proximity, that affect local wages and primarily land/house, prices/values (Olorunfemi, 2003).

The discipline of psychology has produced many techniques for evaluating attitudes, including both survey and experimental approaches that all incorporates information process and decision making under certainty (Slovic *et al*., 1990; Toun and Freeman, 1990) such psychometric surveys generally have a structure that elicits respondents' perceptions or reveals their thought processes by requiring respondents to rank alternatives or choose among alternative outcomes. Psychometric models have been applied to diverse topics, such as consumer decision-making, adaptations to natural hazard risks and aversion to noxious facilities. In the same token, the economic theory have developed techniques of evaluation of items (within the environment) such as Noise, odour, gesthetics etc which is same way affects an individuals enjoyment of life or utility.

Economist argue that, it is possible to measure the value of a desirable item by looking at how much an individual is willing to pay for it (Turner *et al*., 1994). For instance, individuals do not purchase lower levels of road noise or views without highways. Therefore, economists have sought to value such "goods" by looking at individual's purchases of other items, which secure lower noise levels or reduced views of roads. Such a techniques is known as hedonic pricing (Freeman, 1979) that has frequently been applied via the property market. In other words, contingent valuation is the term applied to the techniques of valuation is the term applied to the technique of asking people to place monetary values on goods or environmental changes for which no market exists. It usually, involves questions about the amount that a household would be willing to pay for an

improvement in environmental quality or be willing to accept for a decrease in quality (Nieves, 1993; North and Griffini, 1993). The contingent valuation method depends upon individual responses to contingent situations posited in artificial or experimental markets (Mitchel and Carson, 1989).

It is interesting to note that while contingent valuation studies have been used to value a variety of environmental resources and changes in their quantity or quality, few have involved transport negative externalities.

The hedonic price model first suggested by Court (1987), provides a calculus for dealing with the heterogeneity of a class of differentiated commodities. The thrust of the model according to Arimah and Adinnu (1995) is to sub-divide each commodity into as many separated components as are deemed necessary, in order to reflect adequately the existing quality differentials and threat search subdivision as a separate product. The theoretical underpinnings of the hedonic price can be gleaned from the works of and Olorunfemi (2003). It is pertinent to note that developed a theoretical model for the structural analysis of hedonic prices that examines a relationship between housing values (such as rents, owners estimate of value, sales or appraised value) denoted by P as expressed below and a set of attribute indexed from a to n that characterized the dwelling units Z (Arimah and Adinnu, 1995).

$$P(Z) = P(Z_1 Z_2 \ldots\ldots Z_n) \quad (1)$$

In furtherance to this, the housing attributes generally consists of structural attributes (number of rooms, plot size, floor space etc) denoted by S, neighbourhood/environmental attributes (school, quality, noise, air pollution levels, conditions of adjoining roads, etc) denoted by N and locational attributes which cover distance to the CBD, as well as, other employment and activity nodes, which are denoted by L.

Nieves *et al.* (1992) equally observed that, Hedonic models use price data for a related market to measure the value of environmental goods (or bad) that are not themselves traded in markets, this providing an estimate of the implicit value that people ascribe to the environmental characteristics. Most applications of hedonic methods have analysed single-family residence prices, although, there have been a few studies involving rental housing prices and also wages.

In line with the above, the hedonic approach assumes that consumers perceive goods as bundles of features and that goods with all possible combinations of the features are available in the market. For housing, the relevant features are attributes such as age of structure, number of rooms, lot size, garage, fireplaces, neighbouring characteristics and environmental conditions such as crime rate, climate and access to recreational opportunities. The implicit value of each of these attributes can be measured by regression analysis of the attribute of the price is interpreted as a representative households willingness to pay for an additional unit of that attribute (Olorunfemi, 2003).

Hedonic methods have been found to produced relatively consistent results across locations (Freeman, 1979) and studies of area-wide environmental conditions have found that many have statistically significant effects on price levels in the market analysed. However, Olorunfemi (2003) quoting Mcdelland, pointed out that risk assessment by individual sellers may have little impact upon housing prices compared to the risk perceptions of the entire neighbourhood. Contrary to this, as the neigbourhood becomes more concerned with the negative externalities, home prices are likely to decline, to some extent the market experiences as self-fulfilling prophecy.

Model of environmental stress and coping: Psychologists and clinicians ascertained that the psychological and social responses to possible environmental logical have many similarities to those seen in natural disasters and emergencies. For both, event-related stress leads to transient disturbances, in many people and serious disorders such as anxiety and depression in a few. In otherwords, "normal people reacting normally to an abnormal situation" However, chronic stress can be associated with life living in area of vehicular congested/polluted zones and can be accompanied by "long-lasting elevations in blood pressure, evidence of changes in immune-system function, persisting symptoms of post-traumatic stress disorder (e.g., Hyperarousal, frequent and bother-some in intrusive thoughts about the accident and avoidance of reminders of it)" (Baum and Flemming, 1993).

Sequel to this, increasing attention is now being turned to the psychological impact of exposure defined as a complex of distress; dysfunction and disability manifested in a wide range of psychological, social an

behavioural outcomes as a consequence of actual or perceived environmental contamination (Baum *et al*., 1985).

One useful approach for investigating environmental risk and reaction is environmental stress and coping theory traditionally, risk has been measured using psychometric, quantitative risk assessment measure. Baum *et al*. (1985) defined environmental stress as a process by which environmental events threaten, harm or challenges an organisms existence or well being and by which the organism responds to this threat Coping on the other hand, is a complex process, influenced by both personality characteristics (Bolger, 1990) situational demands (Heim *et al*., 1993) and the social and physical characteristics of the setting (Mechanic, 1978).

A useful psychological model of response to environmental stress is that provided by Lazarus and Folkman (1984), It contends that response to environmental stress is divided into two stages: Primary appraisal, where by the individual perceives an environmental stress or as a threat, harm, or a challenge; and secondary appraisal whereby one of two coping strategies is selected-(Problem-focused coping and Emotion focused coping). The occurrence of environmental stress, the experience of psychological effects and the choice of coping response are dependent upon four types if mediating factors, relating to the stressor, the individual (Evans and Jacobs, 1982; Sims and Habumann, 1983), the social network (Edelstan, 1988); the wider community system (Edel-stan, 1988). Moreover, it involves interactive process whereby the mediating factors not only influence psychological effects but equally responds to each other.

MATERIALS AND METHODS

In an attempt to chose the road/area that of experience congestion within the study area, a bench mark of 750 Vph had been used in the case of 6.6-10 m road for a two way road. The vehicle in question comprises of car, Taxi, Minibus, Bus, Lorry/trailer and motorcycle. Hence, 14 valuation zones that contain various roads/street that are proned to congestion within the study areas were selected. The property valuation data were collected on the study area from the Lagos State valuation office. The valuation zones as well as the roads/streets are presented in the Table 1.

No doubt, the large number of property that is along the road under study made for difficulty to cover all because of limited fund and time. Also, the sample size is based on the statistical belief that where a small sample is selected randomly from a large population the result will always give a true representation of the area. Similarly, previous researches (Aluko, 1996; Arimah and Adinnu, 1995) utilized 1% in their studies, <1% was utilized by Olokesusi (1994) and Havlicek (1985) equally, Olorunfemi (2003) used 3%. Based on all these, the research work adopted 5% of all the property. The questionnaire adopted includes socio economic characteristics, environmental concerns of negative externalities, impact of transport infrastructure on the property value along the roads/streets and general economic responses of the respondents to transport infrastructure and other related questions.

In each of the selected houses, only one household was interviewed and the actual respondent in each case was the household head.

Table 1: Zonal delimination of roads sampled in Ikeja local government area

Ikeja local govt.	Valuation zones	Areas	Number of property	Sampled (%)
	1	Adeniyi Jones, Aromire Av. Obafemi Awolowo way, Ojora Av. Etc	1207	60
	2.	Aba Johnson Cresent, Abimbola Lane, Adeniyi Jones (Part) Kudeti Str. Talabi Str. Etc	409	21
	3.	Abiodun Sobajo Str. Bale Str. Isheri Rd. Obafemi Awolowo way, New Iseri Rd. etc.	322	16
	4.	Ado-odo Str. Bello Str. Babaponmile Str. Mobolaji Bank Anthony way, Valley views Cl. Concord way etc	737	37
	5.	ACME Rd, Akilo Rd, Cocoa Rd, Metal Box Rd, Alh. Damson Str. Etc.	40	2
	6.	Adekunle Fajuyi Cresent, Adeniyi Jones AV. Isreal Adebayo Cl. Olutoye Cresent. Etc.	99	5
	7.	Oba Akran Rd, Adeniyi Jones Av. Ayodele Diyan Str. Etc.	39	2
	8.	Airport Rd, Akerele Str. Araromi Str., Herbert Macaulay Str. Ikorodu Rd, GRA. Etc.	1196	60
	9.	Aderibigbe Shita Str. Airport Rd, Anishere Sye, Omole Str. Shony Highway Bank Anthony	1406	70
	10.	Akinkoye Shogunle Str. Mobolaji Bank Anthony way, Olowu Str. Balogun Str. Unity Rd, etc.	1038	52
	11.	Bashiru Oweh Str, Harold Sodipo Cre. Ipodo Rd, Medical Rd, Police College, Ikeja etc.	771	39
	12.	Akin Osiyemi Str. Allen AV. Community Rd, Shomoye Tejuosho Str. Etc.	1582	79
	13.	Ajanaku Jagun Str. Folusho Alade Str. Idowu Lane, Opebi Rd. etc	879	44
	14.	Abiodun Jagun Str. Isheri RD, wempo Rd, Ogba Rental Market.	1619	81
		Total	11344	568

Sources: Lagos state valuation office, Ikeja (2007), Author's computation (2008)

RESULTS AND DISCUSSION

Hedonic models have been commonly used to value disamenities such as air pollution concentration levels, risks associated with congestion, flood plain or earthquake zone locations and proximity to noxious facilities. In valuing impacts, the hedonic approach estimates the net value of the presence of a disamenity including its effects on employment and other socio-economic characteristics of residents/inhabitants of an area, as highlighted in Table 2.

These variables were used to provide general profile of the respondents and subsequently used as independent variables in some of the statistical analyses in the study. The table reveals that the mean value of the Age of the head of household is 35.62, while the standard deviation is 12.14. This indicates that almost all the respondents were adults who could speak authoritatively on behalf of their family. Similarly, the length of stay in the house is 7.65. This equally shows that most of the respondents have relatively stayed at these places for a long period of time. In other words have the knowledge of the area and could easily rate the neighbourhood relatively to being excellent, good, fair or poor and equally as a function of distance to the infrastructure, type of house and other determinants as highlighted in Table 2.

Similarly, in line with one of the objective of this study; to evaluate major environmental concerns of negative externalities. The psychological assessment of the affected residents showed increased worry and perceived decreases in social support.

Biological testing equally showed changes indicative of chronic stress and testing also showed greater occurrence of depression, anxiety and somatic symptoms in the exposed population versus the control population. Although, psychological impacts are known to occur at different levels of social organization, these may include emotional (e.g., worry, concern, anger, loss of control, gint, etc) behavioural (e.g., task performance, help seeking an daratic (e.g., depression) effects.

All these are including with health risk perception, which plays an ongoing role in the public response to environmental exposures (Elliott, 1998; Kaspersen *et al*., 1988). Essentially, relationships between an environmental contaminant and health are mediated by perception of the "exposure" which are in turn influenced by a host of individual and contextual factors (Kaspersen *et al*., 1988) public opinion literature indicates firstly, that worries and concern about environmental and health has increased steadily over the past 2 decades and secondly, the increase is associated with widely publicised environmental disasters (Elliott, 1998).

Table 2: Variable list description of socio-economic characteristics of respondents

Variable	Description	Mean∞	SD
LEREA	Length of stay in the area	2.48	0.64
LEHOUST	Length of stay in the house	7.65	0.94
AGEH	Age of head of household	35.62	12.14
EDUC	Level of Education	3.09	0.84
NUPHO	Number of persons in the household	1.82	0.92
ROCO	Condition of the road	2.43	0.62
THOUST	Type of house	3.07	0.91
INCOME	Income of respondents	2.34	2.40
STARES	Status of residence	7.19	5.77
DROAD	Distance to road	2.75	0.85

Source: Computer analysis based Author's Field Survey (2008)

Table 3: Variable list description of major environmental concerns of negative externalities

Variable	Description
NOISE	Noise
POLLUT	Pollution
ODOUR	Odour
ACCIN	Accidents/injury
HEANA	Headache/nausea
CHIDIS	Children diseases
PSYDIS	Psychological disturbance
SKIRR	Skin Irritation
ROCO	Condition of roads

Source: Author's Field Work 2008

Table 4: Descriptive statistics for variable of the major environmental concerns of negative externalities

Variables	Mean	SD
Noise	45.79	14.72
Pollution	33.24	10.11
Odour	32.63	10.08
Accidents/injury	7.19	5.72
Headaches/nausea	20.15	7.13
Children diseases	3.34	1.97
Psychological disturbance	19.17	6.77
Skin irritation	2.47	0.92

Source: Computer analysis based on Author's Field Survey (2008)

The psychosocial in this regard focused mainly on worries and anxiety about health of the resident. These concerns were more frequently mentioned among residents closer to the infrastructures. In the same token, major health concerns about transport infrastructure were identified, as major environmental concerns of negative externalities (Table 3).

It is interesting to note that condition of Roads (ROCO) is a surrogate for transport infrastructure and tangentially for negative externalities, consequently, is dependent variable. The rationale is predicated on the fact that, the more road is accessible the more is prone to all aforementioned environmental factors.

Table 4 reveals the descriptive statistics for variables of the major environmental concerns.

Based on this Table, Noise has highest value at mean and standard deviation, which indicates that, is the most prominent environmental factor that affects these

Table 5: Correlations co-efficients between the dependent and independent variables

	NOISE	POLLU	ODOUR	ACCIN	HEANA	CHIDIS	PSYDU	SKIRR	ROCO
NOISE	1.000	0.634	0.230	0.0142	0.512	-0.142	0.512	-0.012	0.712
POLLUT		1.000	0.621	0.2120	0.563	0.551	0.514	0.322	0.621
ODOUR			1.000	0.3220	0.442	0.518	0.336	-0.212	0.582
ACCIN				1.0000	-0.217	-0.114	0.222	-0.311	0.216
HEANA					1.000	0.661	0.526	0.012	0.531
CHIDIS						1.000	0.021	0.121	0.481
PSYDIS							1.000	0.318	0.526
SKIRR								1.000	0.324
ROCO									1.000

Source: Computer Analysis based on Author's Field Work (2008)

Table 6: Regression coefficients and order of importance of the explanatory variables

	b	Std coeff.	Beta error B	Level of expl.	Prob	F-value	T-value
NOISE	12.73	0.85	0.37	27.14	0.040	311.11**	14.90**
POLLU	8.72	1.23	0.22	15.41	0.832	224.22**	6.57**
ODOUR	7.64	0.94	0.14	8.60	0.443	190.24**	5.77**
HEANA	5.54	1.24	0.06	6.36	0.002	163.49**	4.28**
PSYDIS	5.10	0.84	0.05	5.14	0.133	143.21**	3.84**
CHIDU	3.94	0.78	0.02	2.35	0.753	127.41**	1.26
SKIRR	-0.81	0.88	-0.03	0.81	0.878	104.26**	1.10
ACCIN	1.96	1.08	0.01	0.61	0.000	99.50**	0.69

Constant 29.846, No of cases = 568, **Significant at 0.01 level, **Significant at 0.05 level, Source: Computer analysis, based on Author's Field Work 2008

respondents. This is followed by pollution, while skin irritation with 2.47 and 0.92 as mean and standard deviation, respectively brought up the rear. In Table 5 however, the correlation co-efficient between ROCO (condition of roads) and noise is very high (0.712). This shows that there is high and positive linear relationship between these variables. Implicit therefore, the more a road is accessible the more the noise environmental negative externalities.

However, there is a very low relationship between, Odour and Roco, this is that the stench in the neighbourhood, if at all, it comes from congestion, might not be directly connected to it, because of the relative low sanitation going on in these areas, coupled with the fact that is an industrial areas. Table 6, equally reveals regression coefficients and order of importance of the explanatory variables with Noise, pollution and odour, taking first, second and third, respectively.

Similarly, in terms of the order of importance of the independent variables in explaining the variation in the criterion, the beta coefficients (i.e. the standardized partial slope, which guarantees that measurement unit of the independent variable are comparable when we are interested in the relative effect of the independent variables (Lewis-Beck, 1980; Oyesiku, 1995). In Table 6, accident and injury was the least.

In a related manner, the impact of transport infrastructure on property value was analysed using hedonic analysis. This is with a view to determining the kind of stigma on the property. Stigmas are an adverse public perception that is often intangible or not quantifiable. This is predicated on the fact that, stigma on property value may become or remain discounted, even after the real health and physical disamenities are removed.

Two possible causes of this stigma are uncertainty and inertial (also called "Path dependence" or hysteretic). Inertial reflects a hypothesized uncertainty regarding permanent change in how people perceive a neigbourhood and how much they are willing to pay for property in the neighbourhood. For instance, a situation in which transport infrastructure reduces property values to the point where they become affordable to lower-income families and less attractive to higher-income families. This occurrence would lead to a permanent shift in the social structure and house prices of the neighbourhood. Although, there may be same recovery, new market price equilibrium would occur at a lower value. This is a temporary environmental problem may permanently change the character of the neighbourhood.

Hence, the variables that were used for the regression are specified with descriptive statistics in Table 7 with distance of building to transport infrastructure (Road) (DINFR X_6) having the highest as means and standard deviation with 7.18 and 6.19, respectively.

It is interesting to note that, monthly housing rent (MRENT) (Y) represented the dependent variable and is expressed as current exchange value of America dollars ($) to Naira.

Hence, the regression equation is then specified as follows:

Table 7: Impact of transport infrastructure on property value (using hedonic analysis)

Explanation and descriptivestatistics of variables	Means	SD
Monthly housing rent (MRENT) (Y)	3.00	0.86
Age of building (AOB) (X_1)	2.44	0.83
Type of building (TOB) (X_2)	2.61	0.89
Number of floors (NUMof) (X_3)	2.42	0.81
Number of bathroom (NUMOB) (X_4)	3.09	1.46
Plot size (PSIZE) (X_5)	2.31	1.35
Distance of building to transport infrastructure (DINFR) (X_6)	7.18	6.19
Number of person in the household (NOHOLD) (X_7)	5.62	3.11
Distance of work place by head of household (DWORK) (X_8)	3.09	2.47
Number of bathrooms in the house (NOBATH) (X_9)	3.02	4.75
Accessibility to neigbourhood facilities (ACENEF) (X_{10})	1.68	0.83

Source: Authors field survey (2008)

Table 8: Hedonic regression results for transport infrastructure imapct on property value

Variable	B co-efficient	SE of b	Beta weight	T-value
AOB	1.4460	0.319	0.312	4.535**
TOB	0.7280	0.319	0.312	3.751**
NUMOF	0.4950	0.242	0.153	3.056*
NUMOB	0.0493	0.317	0.121	2.557*
PSIZE	0.3290	0.226	0.103	2.459
DINFR	0.1740	0.257	0.048	0.677
NOHOLD	0.1180	0.237	0.034	0.486
DWORK	-0.0230	0.083	-0.022	-0.283
NOBATH	0.0770	0.273	-9.121	0.254
ACTNEF	2.5700	0.395	0.210	0.261

Constant = 3.521, Multiple R = 0.7755, R2 = 60.14%, F-values = 15.049**, *Sig. At 0.05 level of significance, **Sig at 0.01 level of significance, Source: Author's Field Work (2008)

$$L_n(MRENT) = b_1L_n(AOB) + b_2L_n(TOB) + b_3L_n(NUMOF) + b_4L_n(NUMOB) + b_5L_n(PSIZE) + b_6L_n(DINFR) + b_7L_n(NOHOLD) = b_8L_n(DWORK) + b_9L_n(NOBATH) = b_{10}L_n(ACTNED)$$

This is further reflected in Table 8 with multiple R for all the variables as 0.7755 while the overall contributions of all the independent variables (X_1-X_{10}) to be 60.14%.

This is equally significant at 0.01 level of significance for F-values. The implication of this will be discussed at the concluding part of the write-up.

CONCLUSION AND RECOMMENDATION

There exists substantial literature relating to negative impact of transport infrastructure from many parts of the world. However, empirical studies of the subject matter are raise in Nigeria urban areas. Furthermore, much less is known about individual and community level impacts around existing facilities. This research therefore presented the results of a comparative analysis of negative externalities of transport infrastructure in urban areas.

This research has shown that there are variations in impacts among residents around the transport infrastructure (Roads). The effects of these infrastructures are not expected to be uniformly circular since a host of socio-economic and environmental factors combine to determine the ultimate direction and extent of any potential transport infrastructural impacts. However not surprisingly, research showed that there is a negative gradient of major impact categories, especially environmental and health, away from the highway. In other words, the further from the highways, the weaker to impact of the negative externalities factors associated with the transport infrastructure. It is not surprising then that level of perceived negative impact was high among residents closer to the highway.

Analysis further showed that the presence, of the road and its associated environmental impacts is an important factor contributing to respondents' willingness to pay for any environmental (quality) improvement in their neigbourhood. In other words, houses closer to the road supposed to attract lower rental values. This is not true in all cases. The results of the hedonic regression show that R-value is fairly high for all the zones as highlighted in the preceding sections.

Again, proximity to road is negatively capitalized into property values. Pragmatic, design and proper transport management within the urban areas can only redress this situation. Such design and management should enhance the sanitary and aesthetic condition of the transport infrastructure, accompanied with compensation for those living within particular radii from the road in any neighbourhood.

All those effects will go along way to ensure that transport infrastructure in Nigeria urban areas are environmentally benign. This, in turn, will ameliorate the negative impacts of the transport infrastructure within the urban area. In otherwords, the findings of this study contribute to two bodies of literature. The first is the literature related to the sitting of transport infrastructure (Road). It also contributes to the transports environmental stress literature.

REFERENCES

Adenle, J.A., 1981. Factors Militating Against Free Flow of Traffic in Metropolitan Lagos. Transportation in Nigerian National Development. In: S.D. Onakomaiya (Ed.). NISER, Ibadan.

Aluko, E.O., 1996. Location and Neighbourhood effects on urban housing values, case study of Metropolitan Lagos, Unpublished Ph.D Thesis, Department of Geography, University of Ibadan.

Arimah, B.C. and I.F. Adinnu, 1995. Market Segmentation and the impact of land fills on Residential Property Values: Emperical Evidence f rom an African city. Netherlands J. Housing and the Buil. Environ., 29 (2): 257-170.

Baum, A. and I. Fleming, 1993. Implication of psychological Accidents. Am. Psycol., 48 (6): 665-72.

Baum, A. and R. Fleming and J.E. Singer, 1985. Understanding Environmental Stress: Strategies for Conceptual and Methodological Integration. In: Baum, A. and J.E. Singer and Earl Baum (Eds.). Adv. Environ. Psychol., Associated, New Jersey, pp: 5.

Bolger, N., 1990. Coping as a personality process. A prospective study. J. Personality Soc. Psychol., 59: 525-537.

Court, A.T., 1987. Hedonic Price Indexes with Automoibile examples. In Research Reports in Urban and Regional Planning Florida State University Tallahassee, Florida.

Edelstan, M.R., 1988. Contaminated Communities, Westview Press, Boulder, Co.

Elliott, S.J., 1998. A comparative analysis of public concern over solid waste licrators. Waste Manage. Res., 16 (4): 351-364.

Evans, G.W. and S.V. Jacobs, 1982. Air Pollution and Human Behavior. In: Evans, G.W. (Ed.). Environ. Stress, Cambridge University Press, Cambridge, pp: 105-132.

Fischhoff, B.S., P. Lichtenstan, S.L. Slovic, Derby and R.L. Keeway, 1981. Acceptable Risk, Cambridge University Press, New York.

Fraidensburg, 1988. Perceived Risk, Real Risk; Soc. Sci. Art of Probabilistic Risk Assessment Sci., 242: 42-53.

Freeman, A.M., 1979. Hedonic Prices, Property Values and Measuring Environmental Benefits: A survey of the issues. Scand. J. Econ., 32: 154-173.

Havlicek, J., 1985. Impacts of Sold waste Disposal sites on Property Values. In: Tolley G.S. and J. Havlick (Eds.). Environmental Policy: Solid waste Ballinger, 7 Cambridge Massachusetts.

Heim, E., K. Augustine, L. Schaffner and L. Valach, 1993. Coping with Breast Cancer Overtime and Situation. J. Psychosomatic Res., 37: 523-542.

Kaspersen, R.E., O. Renn, P. Slovic, H.S. Brown, J. Emel, R. Globle, J.X. Kasperson and S. Ratick, 1988. The Social Amplification of Risk: A Conceptual Framework. Risk Anal., 18 (1): 177-187.

Lazarus, R. and S. Folkman, 1984. Stress Appraisal and Coping. Springer New York.

Lewis-Beck, M.S., 1980. Applied Regression: An Introduction Sage University Paper series on Quantitative Application to Social Sciences, Sage Publications, Beverly Hills.

Mechanic, D., 1978. Students Under stress: A study in the social Psychology of Adaptation: Madison: University of Wisconsin press.

Mitchel, R.C. and R.T. Carson, 1989. Using surveys to value Goods: The Contingent Valuation method. Resources for the future. Inc Washington. D.C.

Nieves, L.A., L. Himmerlberger, C. Patride and H. White, 1992. Negotiated compensation for solid waste. Disposal facility siting: An analysis of the wisconsin experience. Risk Anal., 12 (4): 46-58.

Nieves, L.A., 1993. Economic Impact of Noxious Facilities Incorporating the effects of risk Aversions. Risk Anal., 13 (4): 35-46.

North, J.H. and C.C. Griffin, 1993. Water source as a Housing Characteristic: Hedonic Property Valuation and Willingness to pay for water. Water Resour. Res., 29 (7): 212-223.

Ogunsanya, A.A., 1983. The Human Factor in Urban Traffic Congestion in a Developing Environment. The case study of Lagos, A paper presented at the Third World Conference on Transport Research: Hamburg.

Olokesusi, F., 1994. Impact of the Ring Road Solid Waste Disposal Facility in Ibadan Nigeria. NISER Monograph Series No. 3.

Olorunfemi, F.B., 2003. Socio-Economic Impacts of Location of Noxious Facilities in Urban Areas, The case of Landfills in Lagos Metropolis. Unpublished Ph.D. Thesis, Department of Geography, University of Ibadan.

Oyesiku, K.O., 1995. Understanding Multiple Regression Analysis HEB Publishers, Lagos.

Starr, C., 1969. Social Benefit versus Technological Risk, Science, 165: 1232-1238.

Sims, J.H. and D.D. Habumann, 1983. Educational Programs and Human Response to Natural Hazards. Environ. Behav., 2: 165-189.

Slovic, P., M. Layman and J. Flynn, 1990. Images of a Place and Vacation Preferences: Implications of the 1989 Surveys for Assessing the Economic Impacts of A Nuclear Waste Respository in Nevada.

Smith, D.M., 1977. Human Geography: Welfare Approach Arnold Publishers, pp: 89-93.

Tonn, B.E. and K. Freeman, 1990. Knowledge-Based Representations of Risk Beliefs. Risk Analysis, 10: 169-184.

Turner, R.K., D.W. Pearce and T.J. Bateman, 1994. Environmental Economics: An Elementary Introduction. Hemel Hempstead. Harvester Wheatsheaf.