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Framework of Property Rating Practice for Financing Neighborhoods Facilities Provision in Bauchi Metropolis Nigeria

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Abstract: *The deplorable condition of neighbourhood facilities in Bauchi metropolis persists, while the initiative aimed at raising local revenue to maintain and redevelop the local facilities has not been implemented. Property rating is one of the most stable source of local revenue, which if harnessing can finance the provision and maintenance of community infrastructures. This study has examined the existing condition of neighbourhood facilities and evaluated the most significant factors that militated against the implementation of property rating. The study has collected quantitative data, and used SPSS for reliability and exploratory factor analysis; and applied Structural Equation Modelling (SEM) with Analysis of Moment Structure (AMOS) for the analysis of the measurements and the structural models. The results showed that 'Over-Reliance on Crude Oil Revenue' and 'Poor Taxation System' are the most important factors hindering the implementation of property rating. And that the 'Lack of Political Will' is a factor that remarkably influenced the condition of the neighbourhood facilities in the study area. In conclusion the study has proposed Land area-based assessment for rating valuation, using Google Earth/Map for area measurement. The proposed framework was envisaged to be cost-effective in rating valuation. It was recommended that the government should diversify revenue sources from oil-based to harness all the avenues like property rating at the municipal level. Future studies should find out, apart from 'Over Reliance on Crude Oil Revenue' and 'Poor Taxation System', whether some other factors do militate against the implementation of the property rating in the study area.*

Keywords: *Property Rating, Implementation, Neighbourhood Facilities, Bauchi, Nigeria*

INTRODUCTION

The provision of the neighbourhood facilities in both urban and sub-urban centres is very essential in boosting the social, economic and educational activities of the entire community (Abbass, 2007); neighbourhood facilities entail all life-supporting socio-economic amenities and services, like roads, hospitals, schools, sports facilities, sewages and sanitation services and financed by property tax, as in Slack & Bird (2014), 73% of the municipal revenue in the USA, and up to 100% of the local revenue in Ireland is generated by the property

rating; and in the City of Minneapolis, the property tax contributed 22% of the $1.3 billion revenue in 2016 (The city of Minneapolis, 2016); therfore the provision and maintenance are inevitable for a viable community welfare system (Kasim, 2011; Gibberd, 2014); and the neighbourhood facilities have been characterized by the enormous deficiency in the study area. The municipal authorities in Nigeria have been constitutionally mandated to mobilize financial grants and internally generated revenue to improve the welfare of the local people by providing infrastructure, facilities and service delivery like health centres, primary and adult education, market stalls, roads, sanitation, abbatoir inspection services, veterinary clinics, drainages, and so on (Oviasuyi, *et al.,* 2010).

The municipal councils in Nigeria relied on the federal and state governments for finances (Adeyemo, 2005); 20% of the federal government revenue was allocated to municipal authorities in 1991, and in 2003 about 80% of the municipal revenue came from the federal government (Jumare, 2014), however, the meagre municipal revenue like motor park and market stalls fees are accrued to the municipal council; thus, the Municipal councils have three (3) known sources of revenue namely; - federal/state governments' monthly allocation, internally generated revenue and grants; Direct allocation from the federal government which is always the highest, nevertheless not sufficient to finance the local communities in terms of the development and maintenance of the neighbourhood facilities, while the two other sources are grossly inadequate; in 1997 about 91% of the municipal revenue came from the federal government's direct alloaction, while 8% was generated from the internal revenue, and only 1% came from the other grants (Adedokun, 2004). This has raised pessimism on the degree of the autonomy of Municipal councils.

The federal government on the other hand relied heavily on the crude oil revenue from the international market as the crude oil accounts for about 90% of Nigeria's total exports, and as a result remits more than 75% of budgetary revenues (Salami, 2011; Adamu, 2015; Ademola *et al.,* 2015). Global recession associated with the plummet in the crude oil price, and the other domestic issues, reduced Nigeria's oil export and revenue (Ross, 2003; Rano, 2009; Chris *et al.,* 2015; Suberu *et al.,* 2015), thus, the federal funding to both states and local governments also reduced significantly, thereby compelling each tier of the government to find alternative revenue sources; the scenario became imminent in municipal councils due to very low revenue generating capacity; thus, the municipalities relied on the federal government for finances (Olalekan, 2015).The property rates for instance were unpopular, underutilized and had less than 0.6% contribution to GDP (Baba et al., 2016). Hence, there was a need to revive property rate as a potential local revenue source (Norregaard, 2013).

Due to low revenue generation and dwindling federal/state grants, the general living condition could be described as deplorable as the lack of provision and maintenance of some basic facilities in the metropolis affected the economic growth and development; in Mairiga & Saleh (2009), the inadequate provision of maternal healthcare facilities resulted in maternal death; Emeasoba & Ogbuefi (2013) indicated poor road maintenanace as a major cause of road traffic accidents; and according to the African Development Bank Group (2000), the water instalation facilities in Bauchi metropolis were hampered by the lack of the operation cost that led to the infrequent servicing of the installation facilities which culminated to irregular water supplies. These scenarios had tremendous negative repercussion on the living conditions of people.

The accumulation of heaps of refuse by the road sides posed health risks and the occurrence of accidents in some neighbourhoods (Lawal & Garba, 2013); the metropolis was characterized with unsafe dumping of refuse, littering, poor sanitation, irregular evacuation and poor waste management (Bogoro & Babanyara, 2011; Gani *et al.,* 2012; Bogoro *et al.,* 2014). Though, according to (Baba, Kasim, Aliyu & Mammadi, 2017) who revealed that the property rating does not directly impact on public healthcare services but revenue raised by PRP can improve the local sanitation and curb diseases.

The decline in federal finance to municipal authorities and the indirect allocation of fund to municipal authorities have weakened the effort of the local government to maintain the existing local facilities, and develop the new ones (Agbani & Ugwoke, 2014; Nwogwugwu & Olusesi, 2015); and the most internal revenue

sources have not been harnessed, for instance, the property taxation has not been implemented in the metropolis (Muhammad & Ishiaku, 2013), as a result of that, the metropolis was faced with the administrative problem bordering finance and the provision of local infrastructures. Gibberd (2014) argued that the neighborhood facilities will be better managed and maintained if an initiative is in place at the local community level to finance its development and maintenance.

Statutorily state governments in Nigeria have been empowered to establish frameworks for the property rating at the municipal level, as such, the Bauchi State Tenement Edict of 2007 as the existing legal instrument provided for property rating lacked the framework or structure for rating to operate in the metropolis, thus, the property rating was only enshrined in the State Edict but has not been implemented, even though it is the most viable and reliable source of revenue at the local level (McCluskey & Plimmer, 2007; Salmaso, 2014).

This study examined the existing condition of neighbourhood facilities, and identified the most significant factors that militated against the implementation of the property rating, and furthermore developed a relationship between the identified factors and the existing condition of neighborhood facilities, and finally proposed a cost-effective framework of property rating for financing neighbourhood facilities in the study area

Literature Review

Property rating is synonymous to 'tenement rating' and 'property taxation' (Johnson *et al.,* 2005; Bauchi State Ministry of Justice, 2007; Ogunba, 2013; Babawale, 2013); however, real properties liable for rating are termed as *hereditaments* (Kuye, 2002; Johnson *et al.,* 2005). This form of tax is 'ad valorem' in that, the tax is calculated on the basis of the value of the property, this however, gives the impression that, the higher the value of a property liable for rating, the higher the tax payable (Jacobus, 2010). Property rating has been defined as an instrument used by municipal authorities to generate revenue for the purpose of maintaining neighbourhood infrastructure and facilities (Ogbuefi, 2004).

Property rating is one of the most important and potential internally generated revenue for municipal councils (Cozmei & Onofrei, 2012), countries across the world have keen interest on this local tax, and over 130 countries levied tax on real property (Drebbia *et al.,* 2002). However, Dillinger (1991) argued that, the property taxation would hardly generate significant revenue needed to defray the cost of the development and maintenance of the neighbourhood facilities. In a study on the non-implementation of property rating in Bauchi metropolis, it was indicated that the property rating has no direct influence over Community Healthcare delivery, but the services financed by the property rating like community sanitation and sewage cleaning have the tendencies to mitigate the incidence of diseases like cholera. Thus, a fully institutionalized rating practice could avert the outbreak of diseases (Baba, *et al.,* 2017).

Neighbourhood facilities comprise of a variety of social services whose provision is crucial for the socio-economic life of the people, inevitably communities require a wide spectrum of social amenities like road networks, water, telecommunications, schools, hospitals, sanitation and so on, in order to sustain lives (Kasim, 2011).

This form of tax which has been designed to be administered quinquennially in Nigeria (Kuye, 2002), has been regarded as the most stable tax levied on the ownership not the occupation of real properties (Oyegbile, 1996; Ogbuefi, 2004); though, has not been implemented in Bauchi metropolis of Nigeria (Muhammad & Ishiaku, 2013). Even Bauchi State Government, in its Tenement Rating Law Cap 156 of 2007, has made each Local Government Area the rating authority for that local territory having the power to levy and administer the rates (Bauchi State Ministry of Justice, 2007); furthermore, (Baba, Kasim, Alhaji, Sule, Maje & Aliyu, 2016) have identified "Over-Reliance on Crude Oil Revenue" and "Poor Taxation System" as the major factors that impeded the implementation of the property ratings in the study area. While the tax account of about 50% of the municipal revenue in Belgium, France, Mexico, more than 73% in the USA; about 90% of total

municipal revenue in Canada and New Zealand, and up to 100% of the local revenue in UK and Australia was from rating (Bird & Slack, 2003; Slack, 2011).

A well implemented property rating has the potential to finance community infrastructure, as the impact of property taxation is significant on the Gross Domestic Product (GDP) in many countries, the tax contributed up to 3% of GDP in Canada, United Kingdom and United States (Slack, 2011), in (Bahl *et al.* 2008), the property rating contributed up to 2.1% of GDP in some countries of the Organisation for Economic Cooperation and Development (OECD); In (Norregaard, 2013) less than 0.5% was contributed to GDP in African countries.

Property Rating Approach

The property rating exercise entails the collection of vital data for rating valuation, the data collection is achieved manually, and involves a rigorous process of determining the rateable value of a property within a given municipal area (Kuye, 2002); this includes an in-depth reconnaissance survey to perform the manual identification, enumeration, measurement of land area or improvement thereon or both; this is one of the tedious works that involves taking detailed information manually on each property, leading to the computation of the rate liability, and compilation in the valuation list (Kuye, 2002).

Kuye (2002) further outlined some requirements of manual rating exercise as follows; Special recruitment and orientation of auxiliary staff depending on the size and complexity of the task; zoning of the municipal area into small units of working areas or operation zones, for the ease of assessment, number of zones depending largely on the size of the municipal area and the availability of workers as well as working materials; the calculation of rateable value and compilation of valuation list. This process is repeated quinquennially, in order to accommodate the changing property value, new owner and altered property, which will eventually produce the 'tone of valuation list'. The requirements and process mentioned above are necessary in value-based rating valuation.

The manual exercise is hindered by the problem of inaccessibility of some properties due to cultural and religious factors; also conducting internal measurements is equally tedious, and may appear to defy the privacy of the occupants, thus bedevil the smooth administration of rating valuation. However, in (Bird and Slack, 2003; Plimmer and McCluskey, 2010; Connolly and Bell, 2010), the land-area rating assessment did not require any information on the value of the land and the value of the improvement, but required only the total land area in m^2; this was established by the manual measurements of the subject property, as the improvements were not considered in the area assessment.

Bird & Slack (2003) posited that the area-based assessment is a rating approach where the property rate charge is ascribed per square metre of the total area of the land or per square metre of the improvement (building) area, or the combination of the both. Plimmer & McCluskey (2010) added that the area-based assessment is simple in terms of the data collection, has low cost of administration, is faster, can operate in the absence of the property market information, and is cheaper and simple to understand, thus there could be no argument due to the factual nature of the tax base. The advantages have obviated the need for the large number of the skilled and auxiliary valuation staff as well as the need for the periodic reassessment (Plimmer & McCluskey (2010).

In the light of the above, this study was poised to explore the use of Google Earth/Map in conducting the identification, enumeration and measurement remotely without physical visit to the subject property, thus, obviating the problem of inaccessibility of some properties due to the cultural and religious beliefs. Even though, the area-based procedure has failed to recognize and satisfy the horizontal and vertical equity; it also failed to reflect the spatial differences which location offers to different properties (Bird and Slack, 2003); also according to Plimmer & McCluskey (2010), the system also distorted the land markets as it did not reflect the scarcity value of the land and buildings; as a result it discouraged the most productive and efficient use of lands; but this approach in rating assessment is relatively simple, cost-effective, can operate with few

technical staff, and is appropriate in the absence of the functional property market (Bird & Slack, 2003; Plimmer & McCluskey, 2010).

Google earth and Google map are both equipped with measurement tools that can remotely measure the distance between two or more points and can remotely measure an area of land (Hu & Dai, 2013). In (Kumar, *et al.,* 2015), these remote sensing tools can measure large expanse of land areas that are not easily accessible in short time, at relatively lower costs, and hence provide a headway to land area assessment for the purpose of rating valuation. Figure 1 shows a chart for the two main bases of the assessment. Google Earth/Map vast application encompassed all the land, used information readily obtained from the Google Maps API and XML, the Web map service was harmonized with the internet, computer and GIS technology; the Google Maps API and XML were used to build a system of regional land use information and integrated Google Maps data and the user data (Zhang *et al.,* 2010).

Condition of Neighbourhood Facilities

The condition of neighbourhood facilities in Nigeria, in terms of physical and functional attributes can be envisaged as unsatisfactory; Adewale *et al* (2015) linked neighbourhood satisfaction to the provision of community facilities and services. Owoeye and Omole (2012) linked poor housing environment to the lack of neighborhood facilities and services. In Abbass (2007), most rural and suburban areas were characterized by poor road networks, failed national telecommunication system, poor sanitation and without adequate electricity. Other community problems included inadequate water supply and public leisure centres. In Udo (2007) the poor condition of some local facilities in Nigeria was attributed to the total absence of maintenance programme.

Many infrastructural facilities in the study area were in poor state of repair; according to (Zailani *et al.,* 2014) the abattoirs in the metropolis did not have the functional operating facilities, the general condition was deplorable. None of the slaughter houses in the study area has satisfied the minimum requirements of an abattoir. The conventional standard requires a lairage, hygienic slaughter area, functional refrigerators, a safe disposal of contaminated meat and waste products, quarantine facilities, offal, gut and tripe sections; hide and skin, laboratories, offices and veterinary officers (Alimentarious, 2005).

Tentative Factors Militating against the Implementation of Property Rating Practice in Bauchi Metropolis, Nigeria.

The study has reviewed existing literature, and identified four key factors that militated against the implementation of property rating practice in the study area (Table 1).

Table 1. The Factors Militating against the Implementation of Property Rating Practice. Source: Literature Survey, 2014

	Identified Factors	Author's Name	Date
1.	Lack of political will (LPW)	McCluskey et al., 2002 in Babawale Muhammad & Ishiaku; McCluskey & Franzsen Olawande & Ayodele Fjeldstad & Heggstad, Franzsen Jolaoso et al., Petio World Bank.	2013 2013 2005 2011 2012 2002 2013 2013 1996
2.	Over-reliance on oil revenue (ORCOR)	Elisa & Timothy; Oseni World Bank	2008 2013 1996
3.	Corruption (C)	World Bank. Jumare Jolaoso *et al.,* Fjeldstad & Heggstad,	1996 2014 2013 2012

4.	Poor taxation system (PTS)	Jumare Babawale Aluko Olawande & Ayodele Babawale & Nubi	2014 2013 2005 2011 2011

The identified factors were significant to the implementation of property rating in Bauchi metropolis, numerous studies have established a link between the implementation of property taxation and the identified factors.

The key factors that hinder the implementation of the property rating practice illustrated in Table 1 have addressed one of the major goals of this research, and have provided the basis to establish relationship between the most significant factor(s) and the existing condition of the neighbourhood facilities; which further lead to the proposed framework of the property rating practice in the study area. Under each identified factor, the corresponding sub-themes served as areas of investigation, and constituted the items of measurement in the questionniare. The sub-themes are given in Table 2 below.

Table 2. Themes of the area of investigation

	Identified Factors	**Sub-themes**
The most significant factors militating against the implementation of property rating practice for financing neighbourhood facilities provision in Bauchi metropolis of Nigeria	Lack of political will	Implementation (Property rating)
		Tax edict
		System (Taxation)
		Scheme (Taxation benefit)
	Over-reliance on oil revenue	Crude oil
		Local revenue
		Facilities (Neighbourhood)
		Cost of neighbourhood facility
	Corruption	Corruption
		Extent of corruption
		Tax evasion
		Local Service
		Community Development
	Poor taxation system	Framework (Property Rating)
		Assessment (Tax Rate)
		Tax Base
		Object (Physical Estate)
		Property Ownership
		Assessment transparency

The study has also reviewed a property tax valuation model for Lagos state and developing countries by Babawale (2013), the model was designed to address the shortcomings of the existing system; Olawande & Ayodele (2011) and Babawale & Nubi (2011) have faulted the existing taxation system called the *Land Use Charges, 2001* imposed in Lagos state.

Research Hypothesis

The following hunch of hypotheses were stated in order to ascertain whether or not the identified factors significantly militated against the implementation of property rating practice in the study area. A hypothesis provides a basis for inference as according to Fraenkel and Wallen (2009) hypothesis enables the researcher to think deeply about the possible outcomes of the study. As such apart from answering the research questions, the outcome should respond to the stated hypotheses based on the prior evidence established in the research (Fraenkel & Wallen, 2009). In this study, nine hypotheses were stated and tested using the quantitative data collected during the research survey.

H_1: 'Lack of political will' significantly affects the implementation of PRP.

H_2: 'Over-reliance on crude oil revenue' significantly affects the implementation of PRP.
H_3: 'Corruption' significantly affects the implementation of PRP
H_4: 'Poor taxation system' significantly affects the implementation of PRP.
H_5: 'Property Rating Practice significantly affects Neighbourhood Facilities Provision.
H_6: 'Lack of political will' significantly affects the existing condition of Neighbourhood Facilities in the study area.
H_7: 'Over-reliance on crude oil revenue' significantly affects the existing condition of Neighbourhood Facilities in the study area.
H_8: 'Corruption' significantly affects the existing condition of Neighbourhood Facilities in the study area.
H_9: 'Poor taxation system' significantly affects the existing condition of Neighbourhood Facilities in the study area.

Research Methodology

The research methodology emanated from the review of existing theory on the subject matter, the study has identified some factors that militated against the implementation of property rating practice, as shown in Table 1 above; and the corresponding sub-themes as areas of investigation has been shown in Table 2 above. In order to test the significance of the factors, a number of hypotheses were stated (2.4 above). A questionnaire was composed according to the sub-themes, in closed-ended pattern and 5-Level-Likert scale for field survey. Given the short time available for data collection, a cross-sectional survey was used, instead of the longitudinal survey. The cross-sectional survey can allow data to be collected at one point in a time with a view to study attitudes, practices and community problems (Creswell, 2012), the information on attitudes and local practices were better collected by means of the observation of the phenomenon, and this therefore made the study more of positivism, and used quantitative data, as in (Fraenkel & Wallen, 2009), this was also consistent with deductive reasoning (Saunders *et al.* 2016).
A pilot study was necessary in the new research area where the measurement items were newly developed, to determine how respondents perceive the questions as well as to find new ideas and the best approach for the study (Bell, 2005; Ary *et al.* 2010). 10% of the sample size required 38 questionnaires to be distributed for the pilot test, as in Johanson and Brooks (2010). Using systematic sampling of 'N' represented the entire population and 'n' represented the sample size, while 'K' was the sample interval, the sample of 380 respondents were drawn systematically and equally from the population; once the first unit of sample was selected, the subsequent units were determined and picked at 105 Kth interval (Ary *et al.* 2010; Saunders *et al.* 2016). Thus, 380 questionnaires were distributed, and 358 were retrieved for the analysis, and 24 contained unengaged responses and potential outliers, thus the sample was reduced to 334.
The population comprised of twelve (12) neighbourhoods of 39,675 units of houses across the metropolis which was adopted from (Bogoro & Babanyara, 2011). The units of houses were considered because the property rating as a tax was levied on the ownership or occupation of the real properties (Kuye, 2002; Johnson *et al.* 2005); therefore, houses as real estate constituted what is called the 'tax object' in the realm of the property rating, and also in Nigerian context only the property owners are rated but the property occupiers' (tenants) are not made liable to pay property tax (Kuye, 2002). In the study done by (Krejcie & Morgan, 1970), a sample of 380 represented a population of 40,000 (this figure was close to 39,675).

The development of the instrument for data collection

There were four exogenous variables namely; - 'lack of political will', 'over-reliance on crude oil revenue', 'corruption' and 'poor taxation system'; and two endogenous variables; - 'property rating practice' and 'neighbourhood facilities provision'. Each of these variables had a number of measurement items formulated through the theoretical reviews to measure the constructs in this research.

Data Analysis and Presentation.

The data analysis in this study involved responses from 334 respondents. The data were coded and saved in a software compatible for social science statistical analysis (IBM SPSS Statistics Version 22) where the descriptive statistics, reliability analysis and exploratory factor analysis were conducted. Furthermore, using Structural Equation Modeling (SEM) with Analysis of Moment Structures (AMOS graphics), confirmatory factor analysis (measurement model) and structural measurement model were analysed, as (CFA) was prerequisite to the Structural Model (Awang, 2014). The collected data indicated that 60% of the respondents reported the condition of neighbourhood facilities as poor.

The most significant factors militated against the implementation of the property rating practice for financing neighbourhood facilities provision in the study area.

The analysis of the identified factors identified the most significant factors that impeded the implementation of the property taxation in the study area. The identified factors were; - lack of the political will (LPW); over-reliance on crude oil revenue (ORCOR); corruption (C); and poor taxation system (PTS), which formed the exogenous (independent variables).

Reliability Analysis

The data collected were subjected for the reliability analysis to test the internal consistency of the measurement items according to their factors, using the Cronbach's Alpha. Good reliability value was obtained within the range of 0.7 to 0.95 (Gliem & Gliem, 2003; Gencturk *et al.* 2010; Tavakol & Dennick, 2011). However, Awang (2014) established that an Alpha value of 0.50 has been acceptable for a new scale of measurement that has not been tested or used in previous research studies. Table 3 below indicates that the items in the preliminary analysis have achieved the required internal consistency, as the reliability values fell within the range of 0.7 to 0.95. Which paved the way for further analysis.

Table 3. Reliability Analysis

S/N	Factors	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
1.	Lack of Political Will (LPW)	0.950	0.950	4
2.	Over Reliance on Crude Oil Revenue (ORCOR)	0.953	0.954	3
3.	Corruption (C)	0.914	0.913	5
4.	Poor Taxation System (PTS)	0.935	0.935	6
5.	Property Rating Practice (PRP)	0.857	0.857	4
6.	Neighbourhood Facilities Provision (NFP)	0.940	0.940	6
Total Items				28

Exploratory Factor Analysis (EFA)

The first exploratory factor analysis carried out has indicated a good sampling adequacy (Table 4) with the Kaiser-Meyer-Olkin (KMO) value of .871; in (Field, 2005; Pallant, 2010) a sample was adequate if KMO > 0.5. Bartlett Test of Sphericity was significant at $p < .05$ (Pallant, 2010). The output in communalities explained the extent of variance in each item in the component, and the communality value < 0.3 explained that the item did not fit well with the rest of the items (Pallant, 2010). Total variance explained 72.7% of the extracted six factors

Table 4. The Kaiser-Meyer-Olkin (KMO) Bartlett Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.871
Bartlett's Test of Sphericity	Approx. Chi-Square	8119.666
	df	406
	Sig.	.000

There was no cross loading on the pattern matrix and the items suitably loaded on their underlying factors thereby the convergent validity was achieved, thus, the measurement items were refined and reduced to 29 of the most relevant items that loaded on their underlying factors (Table 5).

Table 5. Exploratory Factor Analysis (EFA)

Pattern Matrix						
Items	factor					
	1	2	3	4	5	6
mtce						
repair						
infrastructure						
road						
sanitation						
sewage						
assessment						
taxbase						
framework						
object						
ownership						
transparency	.877					
development	.877					
service	.861					
evasion	.833	.865				
extentcorruption	.828	.861				
corruption	.822	.853				
scheme		.847				
system		.829	.903			
implementation		.791	.898			
taxedict			.882			
crudeoil			.809	.942		
local			.643	.911		
facilities				.883	.944	
cost				.878	.941	
reliance					.918	.853
politics					-.688	.774
revenuesource						.747
welfare						.732

Confirmatory Factor Analysis (CFA)

In Byrne (2010) RMSEA < .05 indicated good fitness. Furthermore, RMSEA value ranging from .034 to .062 also indicated a good degree of precision (Byrne, 2010). The revised measurement model with 28 items of measurement, has achieved absolute level of fitness indices (Table 6)

Table 6. Confirmatory Factor Analysis

Category Name	Index Name	Level of Acceptance	Index Value	Comment
Parsimonious Fit	Chisq/df	< 3	1.543	Required level achieved
Incremental Fit	TLI	> 0.90	0.973	Required level achieved
Incremental Fit	CFI	> 0.90	0.977	Required level achieved
Incremental Fit	NFI	> 0.90	0.937	Required level achieved
Absolute Fit	GFI	> 0.90	0.903	Required level achieved
Absolute Fit	RMSEA	< 0.08	0.040	Required level achieved

One item was deleted, and the modification of indices was suggested for the need to co-vary some items in order to attain the required fitness. Hence, e25 and e26, e15 and e18, e8 and e11 were co-varied as shown in

Figure 1. Furthermore, this measurement model was modified to the structural model, in order to test the stated hypotheses.

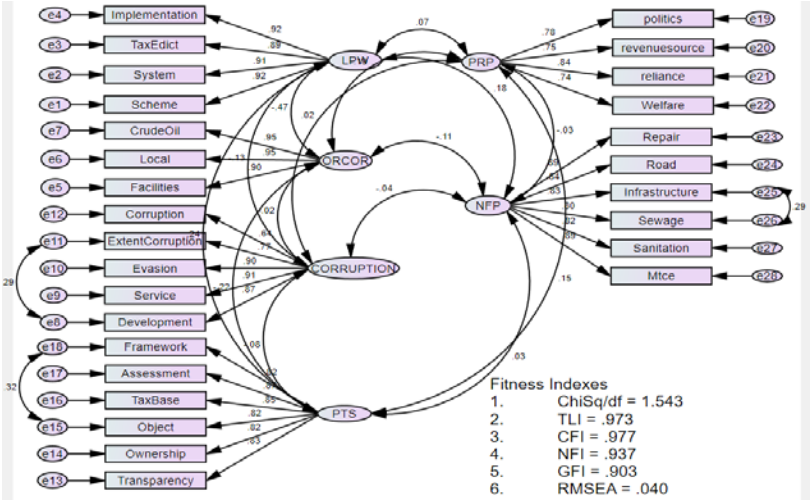

Figure 1. Measurement Model

Structural Model

The relationship among the latent variables was explicitly explained in the structural model, thus, the structural model tended to indicate the extent by which a given variable directly or indirectly had causal effects or influence on other variables (Byrne, 2010). The fitness of the structural model in figure 2 below has achieved the acceptable requirements, as illustrated in Table 7.

Table 7. Estimates for the Structural Model

Path	Unstandardized Estimates	Standard Error	Critical Ratio	P-Value	Remark
LPW - PRP	-0.032	0.056	-0.570	0.568	Rejected
ORCOR - PRP	**-0.160**	**0.62**	**-2.571**	**0.010**	**Fail to reject**
Corruption - PRP	0.017	0.052	0.320	0.749	Rejected
PTS - PRP	**0.110**	**0.055**	**2.012**	**0.044**	**Fail to reject**
PRP - NFP	-0.052	0.075	-0.696	0.486	Rejected

Using the field data, the most significant factors that militated against the implementation of the property rating practice in the study area have been determined. To adequately achieve the aforementioned goal, a number of hypotheses were formulated in line with the identified factors, these research hypotheses have been stated below:

H_1: 'Lack of Political Will' significantly affects the implementation of PRP.

H_2: 'Over-reliance on Crude-oil Revenue' significantly affects the implementation of PRP.

H_3: 'Corruption' significantly affects the implementation of PRP.

H_4: 'Poor Taxation System' significantly affects the implementation of PRP.

H_5: 'PRP' significantly affects Neighbourhood Facilities Provision

From Table 7 above, it can be discerned that 'Lack of Political Will' with p-value of 0.568, threshold $p < 0.05$ and 'Corruption' with p-value 0.749, threshold $p < 0.05$ did not significantly affect the implementation of 'Property Rating Practice' while 'Over-reliance on Crude Oil Revenue' with p-value 0.010 (threshold $p < 0.05$) and 'Poor Taxation System' with p-value 0.044 (threshold $p < 0.05$) both significantly affected the implementation of 'Property Rating Practice', in the study area, therefore H_1 and H_3 were rejected while H_2 and H_4 were said to have been accepted. The question of whether the property rating practice significantly

affected the neighbourhood facilities provision was not supported by the field data collected, and it was analysed where the p-value was 0.486 (threshold $p < 0.05$), as shown on the path diagram on Figure 2.

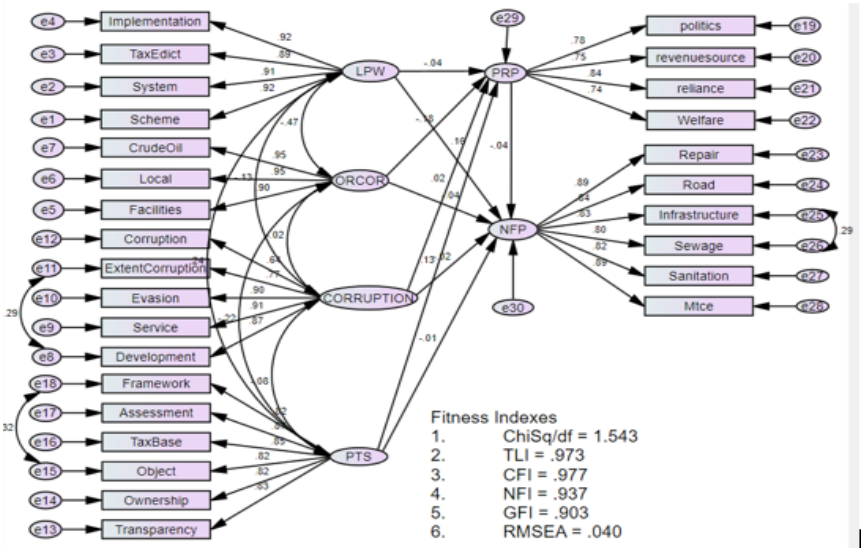

Figure 2. Structural Model

Table 8 below concisely summarized the propositions stated in the research hypothesis; and H_1, H_3 and H_5 were rejected while H_2 and H_4 were accepted. With reference to the research hypothesis two, "over-reliance on crude oil revenue was strongly significant and constituted a great impediment to the implementation of property rating practice, indications from some studies like Adamu, 2015; Ademola *et al.,* 2015; African Development Bank Group, 2015 showed the impact of ORCOR was enormous and it affected all the local sources of revenue.

Table 8. Summary of Hypothesis Testing

No.	Hypothesis	Results
H_1	'Lack of Political Will' significantly affects the implementation of PRP	Not supported
H_2	'Over-reliance on Crude-oil Revenue' significantly affects the implementation of PRP	Supported
H_3	'Corruption' significantly affects the implementation of PRP	Not supported
H_4	'Poor Taxation System' significantly affects the implementation of PRP	Supported
H_5	PRP significantly affect neighbourhood facilities provision	Not supported

The Relationship between the Most Significant Factors and existing Condition of Neighbourhood Facilities in the study area.

The field data explored the relationship between the most significant factors and the condition of neighbourhood facilities (Figure 3). To adequately achieve this, a number of hypotheses were formulated in line with the identified factors, these research hypotheses were:

H_6: 'Lack of Political Will' significantly affects the existing condition of the neighbourhood facilities

H_7: 'Over-Reliance on Crude Oil Revenue' significantly affects the existing condition of neighbourhood facilities.

H_8: 'Corruption significant affects the existing condition of neighbourhood facilities.

H_9: 'Poor Taxation System significantly affects the existing condition of neighbourhood facilities.

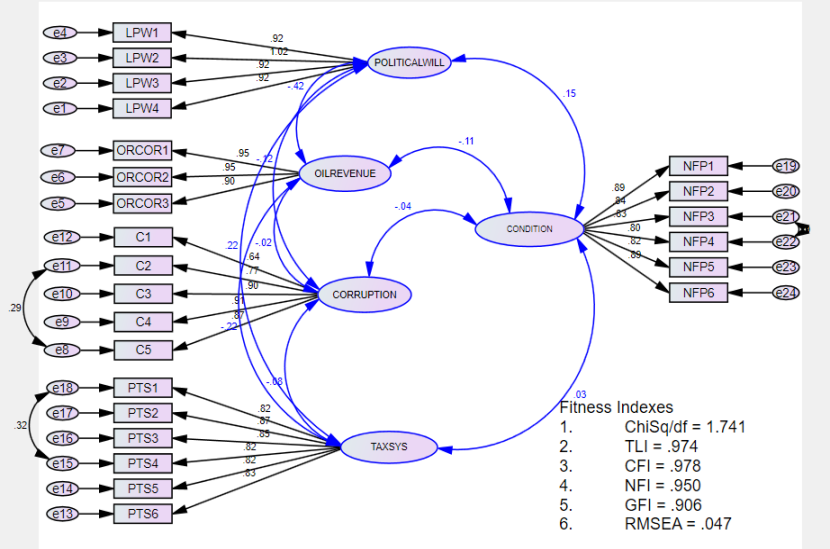

Figure 3. Confirmatory Factor Analysis to Measure the Relationship between the most Significant Factors and existing Condition of Neighbourhood Facilities in the study area.

The fitness indexes and the path diagram showed the ChiSq/df = 1.741 which was < 5.0; RMSEA = 0.047 which was < 0.08. TLI was 0.974; CFI was 0.978; NFI was 0.950 and GFI was 0.906 which were greater than 0.90 level of acceptance. Having satisfied the requirements for the measurement model, the path diagram was modified to make the structural model. On the structural model presented on Figure 4 below, the strength of relationship among the variables was established enabling testing of hypotheses numbered H_6, H_7, H_8 & H_9 above.

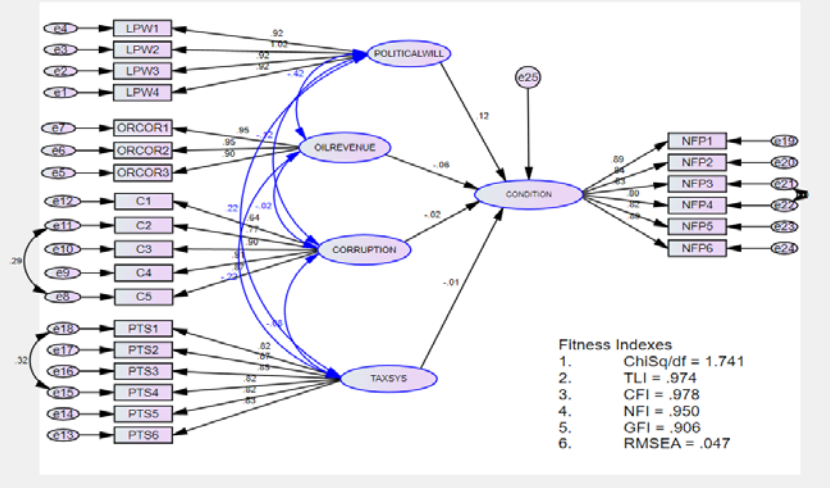

Figure 4. The Structural Model Analysing the Relationship between the Identified Factors and the Condition of Neighbourhood Facilities in the study area.

Among the independent variables only 'Lack of Political Will' was found to have significant effects on the condition of neighbourhood facilities in the study area with p-value of 0.039 based on the threshold $p < 0.05$ as explained in Table 9 below. Thus, H_6 was accepted. The 'Over-Reliance on Crude Oil Revenue' had no significant impact on the condition of neighbourhood facilities with p-value of 0.326; while 'Corruption' also had no significant impact on the condition of neighbourhood facilities with p-value of 0.693; the 'Poor Taxation

System' equally did not significantly affect the condition of neighbourhood facilities with p-value of 0.827; based on threshold $p < 0.05$; thus, H_7, H_8 & H_9 were rejected.

Table 9. Estimates of the Relationship between the Identified Factors and the Condition of the Neighbourhood Facilities in the study area

Path	Unstandardized Estimates	Standard Error	Critical Ratio	P-Value	Remark
Political Will-Condition of NF	**0.118**	**0.057**	**2.060**	**0.039**	**Fail to reject**
Oil Revenue- Condition of NF	-0.068	0.069	-0.981	0.326	Rejected
Corruption- Condition of NF	-0.024	0.061	-0.394	0.693	Rejected
Tax System- Condition of NF	-0.014	0.064	-0.218	0.827	Rejected

The summary of the hypothesis depicting the relationship between the identified Factors and the condition of neighbourhood facilities in the study area has been presented in Table 10.

Table 10. Summary of the Hypothesis Testing

No.	Hypothesis	Results
H_6	Lack of Political Will significantly affect the existing condition of neighbourhood facilities	**Supported**
H_7	Over-Reliance on Crude Oil Revenue significant affect the existing condition of neighbourhood facilities	Not supported
H_8	Corruption significant affect the existing condition of neighbourhood facilities	Not supported
H_9	Poor Taxation System significant affect the existing condition of neighbourhood facilities	Not supported

The Proposed Framework of Property Rating Practice for Financing Neighbourhood Facilities Provision in The Study Area.

This study proffered a framework of property rating practice for the study area; following the review of an existing framework of property rating, derived from the best theories and international practices, to arrive at new rating valuation approach proposed for Lagos State in the South-west of Nigeria, called the 'Property Tax Valuation Model for Developing Countries' by Babawale (2013). The model sought to design a framework incorporating simplicity, equity, cost-effectiveness, transparency and the characteristics of the local property market; simplicity as a cannon of taxation was more realizable in land area-based rating than in value-based rating

This study sought to establish a fast and simple means of rating assessment using Google Earth/Map for remote land-area measurement. The value-based assessment was accompanied with periodic reassessment to take care of volatility in the value of property which culminated to change in the payable tax, given the fact that this tax was *ad valorem* (Olawande & Ayodele, 2011; Salmaso, 2014; Grover *et al.* 2015); the procedures involved in value-based assessment has been often rigorous and conducted by manual measurement (Kuye, 2002), thus, require adequate manpower, cost, and time.

The area-based assessment is mainly suitable where the functional property market is lacking (Plimmer & McCluskey, 2010). In this situation, the records of recent transaction in real property was not available and there were no comparable properties to take reference, thus, appraisers resorted to land area measurements only as a means to establish the payable rate, as in Central and Eastern Europe (Plimmer & McCluskey, 2010). The local property market in the study area was characterized by the lack of active property market, with inadequate number of valuation firms and experts and inconsistent cadastral data in the Land Registry Unit in the metropolis (Bukohwo & Emmanuel, 2014), these therefore call for the land area-assessment, as applied in Central and Eastern Europe, Chile, Kenya, Tunisia (Plimmer & McCluskey, 2010).

The application of technology is a better option for cost-effective taxation, as indicated in (World Bank, 2006). The proposed framework for PRP is presented in Figure 5 below.

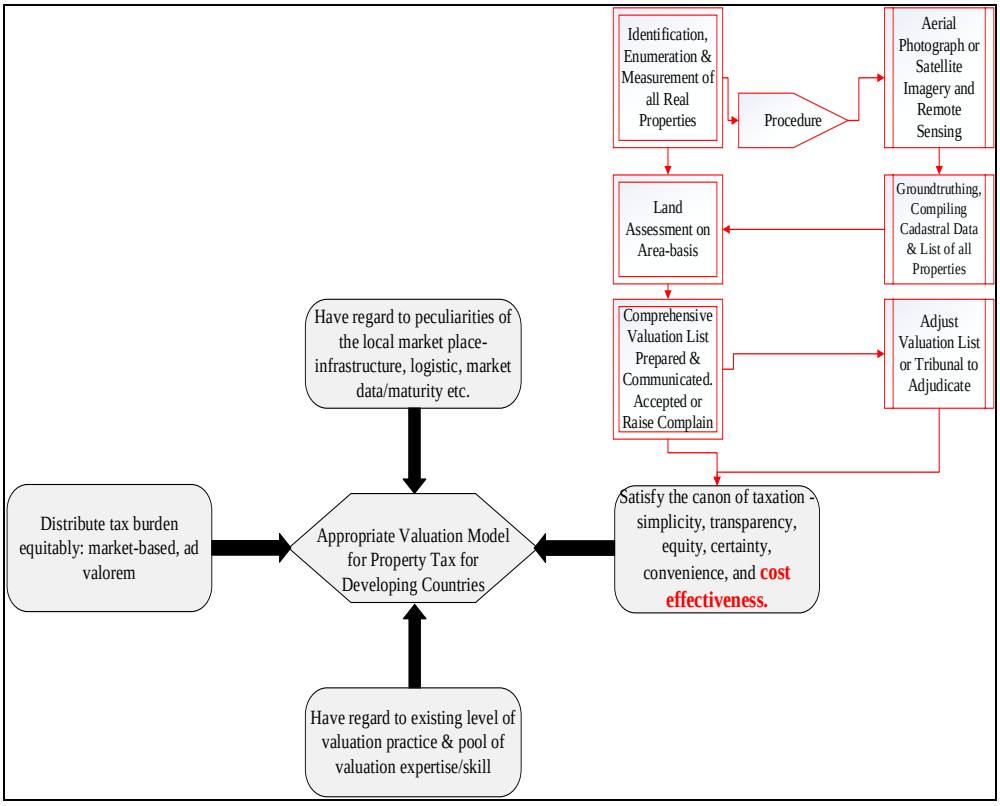

Figure 5. Proposed Framework of Property Rating Practice.

This framework has been focussed on just area-based land taxation because, tax on the improvements has the tendency of discouraging real estate development, repair and maintenance (Dye & England, 2010), and furthermore taxing on the local residential buildings which people toiled to build in the study area, may trigger vehement resistance. This framework was designed to be easier, faster, and cost-effective, and was operated with few experts.

Discussion

Recent literatures have indicated the 'lack of the political will' among the key factors that impeded the implementation of PRP in many developing countries; different scenarios exist in Bauchi metropolis of Nigeria, in them, a legislative instrument had been provided for property rating in the State Tenement Edict of 2007, however there was no attempt to implement the practice. The 'lack of political will' that was reported as one of the factors that affect the implementation of PRP, has been repudiated based on the empirical data collected and analysed in this study as can be seen in Tables 7 and 8.

The revenues from property taxation have been generally low in transitional and developing countries due to many reasons like poor tax administration, incomprehensive cadastral records, and poor assessment (Bird & Slack, 2003), this may in oil-riched nations inspire 'Over-reliance on crude Oil Revenue' (ORCOR) and total neglect to other sources of revenue like the property rating in Nigeria, as crude oil accounts for about 90% of Nigeria's total exports, thereby remitting more than 75% of budgetary revenues (Ademola *et al.* 2015). This scenario has been confirmed by the analyzed data, and it was reported that ORCOR had significant effects on PRP, acknowledging that over-reliance on oil affected PRP implementation, thus H_2 was supported. As in (the U.S. Energy Information Administration, 2015; Adamu, 2015; Ademola *et al.* 2015; African Development Bank Group, 2015), it could be implied that huge oil revenue has superseded other revenue sources in Nigeria, and inclusive property taxation.

The Prevalence of corruption has constituted great impediments to all the sectors in the economy and retards developments; an empirical study by Adenike (2013) revealed that the corruption per employee exerted negative impact on the output per employee in Nigeria. This in turn affected Nigeria's GDP. However, the data collected in Bauchi metropolis for the purpose of this research found that there was no connection between the prevalence of the corruption and the implementation of PRP in the study area, therefore H_3 was not supported. However, the overall effects of the corruption in Nigeria has been far from being insignificant as the lack of neighborhood infrastructure and mismanagement of resources is pervasive. It may be difficult to indicate a direct effect of corruption on PRP, but the indirect effect cannot be easily ruled out.

The overall taxation system was expected to have a significant role to play in shaping the pattern of the property rating, that incidentally this form of tax was not accorded with the high level of importance. The National Tax Policy of 2012 had only made a mere mention of the property rating, but declined to emphasize it. It further clarified that both the state and the local government taxes were not being harnessed to yield the optimum revenue; as for instance, from 2003 to 2008, the revenue generated by some states in Nigeria was only 10% of their total revenue (Federal Ministry of Finance, 2012). This explained the extent of neglect of the local sources of revenue. This scenario corresponded to the hypothesis that poor taxation system affects the implementation of PRP, and based on the empirical data collected for this study H_4 was therefore supported. The results indicated that 'the lack of political will' had a significant relationship with the condition of the neighborhood facilities in the study area.

The new framework proposed in this study was designed to be simple and relatively not expensive by switching from a system which involved the manual property identification, inspection, rigorous measurement, and assessment as an advanced way of collecting data using Google Map/Earth (Christou *et al.,* 2014). In addition to being fast, simple and cost-effective area-based rating assessment, as it operates with relatively few experts and requires the data only on the land area, thereby cutting down the attendant costs involved in manual rating which includes: large number of manpower needed for reconnaissance survey, identification, enumeration, measurements, mobility and wages.

In countries where real property market is not active, there is a lack of information on the real estate transactions, as well as the lack of adequate experts to perform the field work, it has been often resorted to the area-based assessment for rating (Plimmer & McCluskey, 2010); in Hungary, the determination of payable rate (on buildings and idle land) is based on self-assessment, to be verified by the authority; and the basis of assessment is property size and not the market value (Bird & Slack, 2003), this essentially means that the rating approach is area-based and not value-based; as in Tunisia, rental value tax is based on square meters submitted by an owner in a 'Self-Declaration Form' to be verified by the municipal authorities, however, most municipalities do not verify, due to the hectic nature of the work and perhaps the cost factor (Bird & Slack, 2003). Self-assessment does not require experts and it is adopted mainly in poor nations. In many instances, self-assessment is rarely effective as some property owners do not solemnly comply. Against this background, the study proposed a framework for faster area-based assessment using Google Map/Earth.

The study proposed area-based assessment for Bauchi metropolis due to the inactive property market and the lack of adequate data on real estate transactions, this is backed by the fact that area assessment attracts less cost of administration (Plimmer & McCluskey, 2010); furthermore, the proposed framework employed Google Map/Earth for remote area measurement without physical visit to the subject property, this will further cut down the cost in that certain rigorous parts of the exercise like; - the need for adequate expert Valuers and auxiliary staff. Property identification, physical inspection, enumeration, and measurement are remotely performed by Google Map/Earth tools, thus obviating enormous cost and making the exercise more viable and easy to implement. In addition, value-based rating must be accompanied with periodic reassessment at short intervals to take care of volatile property value. Area-based rating provides a hedge against periodic reassessment.

Conclusion

Property rating is not in practice in Bauchi metropolis, and the 'Over Reliance on Crude Oil Revenue' by all the three tiers of government, and 'Poor Taxation System' are the leading impediments hindering the implementation of property rating in the metropolis; and as a result, Property rating does not have influence over 'Neighbourhood Facilities Provision'. If property taxation is implemented and positioned according to the peculiar local customs and economic realities, it can augment the local revenues and enhance the social welfare. From the analysis of the empirical data, the proposition that 'Lack Political Will' has significant impact on the implementation of property rating was not supported, on the other hand it had a significant effect on the existing condition of the neighbourhood facilities in the study area. In conclusion, the consideration for the best pattern of rating in the study area was dependent on some local realities as discussed earlier, thus the study has proposed a framework of PRP or financing NFP in the study area.

Limitations

Area-based rating can only operate smoothly in developing and transition countries. Advanced nations may find area-based rating systems ineffective, and they may generate very low revenue compared to the value-based ones, this is mainly due to the fact that the properties in the cities in developed nations attract very high capital and rental values. And since value-based tax is determined on the basis of value, it means that the higher the value of a property, the higher the tax, hence advanced countries resort to ad valorem tax as it considers fluctuations in value. The government of India had poised for property tax reforms to make the system more robust. Remittance from property tax in Poland decreased recently, and this was linked to the existing area-based rating assessment system, as a result of that, tax reform commenced in 1994 aimed at switching to the complete ad valorem tax (Bird & Slack, 2003). The situation in Poland and other Central and Eastern European countries reflected the scenario in developing and transition countries.

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