Statistical Analysis of Citizen’s Personal Income Tax Compliance in Lagos State, Nigeria

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Abstract
This study focused on tax compliance in Lagos State, Nigeria among employees that are gainfully employed. A survey design was adopted for collecting data with a self - designed questionnaire administered among residents of Shomolu Local Government Area. The instrument was validated by experts and through a pilot study and the Cronbach’s Alpha reliability coefficient was 0.834. A two - stage sampling technique was used to select 344 respondents of which 318 were completed, returned and used. The data thus collected were analysed using descriptive statistics, Spearman’s correlation and Chi-square tests with the aid of Statistical Package for Social Sciences (SPSS). The result showed that tax compliance was 74.9% and there is significant positive relationship between taxpayers’ tax compliance (TTC) and the revenue generation (RG) in Lagos (p < 0.05), tax morale (TM) (p < 0.05) and taxpayer’s confidence in legal system (TCL) (p < 0.05). However, a significant negative relationship exists between taxpayers’ tax compliance (TTC) and tax rate (TR) (p < 0.05). It is therefore concluded that a high tax morale and high taxpayers’ confidence in the legal systems will enhance their tax compliance which in turn will lead to higher revenue generation in Lagos. It was recommended that Government should boost the morale of tax payers through accountability and efficient utilisation of taxpayers’ fund in providing qualitative education, free and affordable healthcare and good roads; implement the available laws to enhance taxpayers’ confidence in the legal systems and reduce existing tax rates to enhance tax compliance among the citizenry.

Keywords: Tax Compliance, Tax Morale, Revenue, Taxpayers’ Confidence, Spearman’s correlation

DOI: 10.7176/JESD/10-22-14
Publication date: November 30th 2019

1. Introduction
It is widely acknowledged that people do not like paying taxes especially in developing countries (Alm & Martinez-Vazquez, 2003) as a result of mismanagement of public fund by public administrators. Tax is a compulsory contribution to state revenue levied by the government on individual’s income and business profits or value added to the cost of qualifying goods, services and transactions. Taxpayers in such regions fail to comply with their country’s existing tax laws and administrators also do not enforce such laws because they are not accountable nor faithful in the handling of public trust. Tax non - compliance is the failure of taxpayer to meet tax obligations whether intentionally or unintentionally occurs through failure to file tax returns, misreporting taxable income, misreporting of allowable deductions from taxable income or tax due such as exemptions, deductions, tax credit, tax evasion, etc. (Kirchler, 2007; Roth, et al., 1996). The most obvious consequence of tax non - compliance is the loss of tax revenue to government and this limits funds for execution of projects. In addition, tax non - compliance creates inequality among the people because both horizontal and vertical equity are affected (Alm & Gomez, 2008). Tax non - compliance is a universal phenomenon hindering efficient tax revenue productivity in both developing and developed countries (Alabede, et al., 2011; Chau & Leung, 2009). The growing responsibility of government coupled with its shrinking revenue made the issue of tax non – compliance, mostly, tax evasion and avoidance persist as the core focus of strategic decisions in most developed and developing countries. Hence, tax non - compliance have attracted research efforts in the recent past had produced a number of models which help understand tax compliance behaviour of taxpayers and led to conclude that economic, social, psychological and cultural factors are influencing tax compliance (Alabede, et al., 2011; Anyadiuba, et al., 2012).

Low tax compliance is serious problem in many developing countries because it restricts the capacity of government to raise revenue for developmental purposes (Braithwaite & Braithwaite, 2000). Government is more likely to put in place developmental programmes for the enhancement of the living standard of the people the more revenue it receives. The problem addressed in this study is to determine the effect of taxpayers’ tax morale on their compliance with tax policies of government as a useful avenue for revenue generation. The specific objectives include to determine the effect of tax compliance on the revenue generation in Lagos state, examine the relationship between tax rates and tax compliance, determine the effect of taxpayers’ morale on their tax compliance and determine the effect of taxpayers’ confidence in legal system on their tax compliance.

2. Methodology
This section explained the methods adopted in this study to determine the rate of tax compliance in Nigeria, using Lagos State. A cross-sectional survey design was adopted as data were collected from the target population through questionnaire. The data used were obtained from fully employed residents of Shomolu Local Government Area in Lagos State. A cross-sectional survey design was adopted as data were collected from the target population through questionnaire. The data used were obtained from fully employed residents of Shomolu Local Government Area in
Lagos State using a self-constructed questionnaire to obtain the required information. A two-stage sampling technique was used for the selection of the locality studied and actual respondents in the study. A sample size of 344 taxpayers from Shomolu Local Government Area of Lagos State were sampled purposively and supplied information needed in the questionnaire. The collected data was analysed descriptively using frequency distributions and Spearman’s rank correlation coefficient and effects measured using chi-square analysis with the aid of Statistical Package for Social Sciences (SPSS 23). The Pearson Chi-Square Test ($\chi^2$) is a statistical test applied to sets of categorical data to evaluate how likely it is that any observed difference between the sets arose by chance. It tests a null hypothesis stating that the frequency distribution of certain events observed in a sample is consistent with a particular theoretical distribution. The Chi-Square test statistic is given as:

$$\chi^2 = \sum \sum \frac{(O_f - E_f)^2}{E_f}$$

Where: $O_f$ is the observed frequency and $E_f$ is the expected frequency.

3. Results

The results were obtained from three hundred and eighteen (318) questionnaires fully completed and returned out of the three hundred and forty-four (344) administered resulting in 92.4% response rate.

| Variable                      | Category            | Frequency | Percent |
|-------------------------------|---------------------|-----------|---------|
| Gender                        | Male                | 140       | 44.0    |
|                               | Female              | 178       | 56.0    |
|                               | Total               | 318       | 100     |
| Age group                     | 18-29               | 109       | 34.2    |
|                               | 30-39               | 108       | 34.0    |
|                               | 40-49               | 67        | 21.1    |
|                               | 50 and above        | 32        | 10.1    |
|                               | Non – response      | 2         | 0.6     |
|                               | Total               | 318       | 100     |
| Highest educational level     | No formal education | 11        | 3.5     |
|                               | O’level             | 46        | 14.5    |
|                               | ND/ NCE             | 73        | 23.0    |
|                               | HND/BSC             | 118       | 37.1    |
|                               | MBA/ MSc            | 25        | 7.9     |
|                               | PhD                 | 34        | 10.7    |
|                               | Professional certificate | 8     | 2.5     |
|                               | Non – response      | 3         | 0.9     |
|                               | Total               | 318       | 100     |
| Marital status                | Married             | 148       | 46.5    |
|                               | Single              | 167       | 52.6    |
|                               | Others              | 2         | .6      |
|                               | Non – response      | 1         | .3      |
|                               | Total               | 318       | 100     |
| Religion                      | Christian           | 171       | 53.8    |
|                               | Muslim              | 135       | 42.5    |
|                               | Traditional         | 12        | 3.8     |
|                               | Total               | 318       | 100     |
| Working status                | Govt./public        | 96        | 30.2    |
|                               | Private/Industry    | 83        | 26.1    |
|                               | Self – employed     | 137       | 43.1    |
|                               | Non – response      | 2         | 0.6     |
|                               | Total               | 318       | 100     |
| Income capacity               | Below 50,000        | 180       | 57.6    |
|                               | 50,000 – 80,000     | 72        | 22.6    |
|                               | 80,000 – 110,000    | 24        | 7.6     |
|                               | Above 110,000       | 36        | 11.3    |
|                               | Non – response      | 6         | 1.9     |
|                               | Total               | 318       | 100     |

The distributions of socio-demographic characteristics of respondents in table 1 shows that 44.0% of the
taxpayers are male while 56.0% are female. Also, 34.2% of the taxpayers are below 30 years, 55.1% are between 30 and 50 years, 10.1% are above 50 years while 0.6% did not state their age. It shows that only 3.5% of the taxpayers have no formal education, 14.5% attended O’level certificate, 60.1% attended tertiary education, 18.6% are holders of postgraduate certificate and only 2.5% have professional certification while 0.9% did not answer. In addition, 46.5% of them are married, 52.6% are single while 0.6% did not respond. It shows that 53.8% of taxpayers are Christians, 42.5% are Moslems while only 3.8% are traditionalist. Furthermore, 30.2% are government/public organisation employees, 26.1% are employees in private organisation/industry, 43.1% are self-employed while 0.6% did not state their work affiliation. Lastly, 57.6% of the respondents earn below #50,000 monthly, 22.6% had an average monthly income between #50,000 and #80,000, 7.6% earned between #80,000 - #110,000 monthly and 11.3% earn above #110,000 as average monthly income while 1.9% did not state their monthly income. Approximately, the average monthly income earned by the taxpayers is #52,307.69 (sd = #37,371.08).

Table 2 shows that 61.3% believed they are satisfied with mode of tax collection adopted in Nigeria, 60.7% agreed that income generated from tax revenue has been impressive, 70.1% agreed that provision of social amenities such as education, health care centre, good road etc. by government encourage me to pay tax, 66.9% agreed that the legal system adopted encourage them to pay tax and 76.3% agreed that weak enforcement discourages tax payer not to comply with the payment of tax.

Table 2: The factors that motivate taxpayers to pay tax in Nigeria.
Table 3: Factors that serve to improve tax compliance in Nigeria.

| Factors                                                                 | SD  | D  | U  | A  | SA |
|------------------------------------------------------------------------|-----|----|----|----|----|
| Government needs to tackle corruption and make tax collector independent| 4.1 | 1.0| 2.9| 32.5| 59.6|
| Government need to train officers responsible for tax collection       | 1.9 | 1.6| 1.3| 33.2| 62.0|
| Moderate tax should be levied on the low - income earner                | 2.8 | 0.6| 3.2| 31.3| 62.0|
| Government should educate people on the importance of tax to our economy| 2.2 | 0.9| 1.9| 32.0| 63.0|
| Provision of job opportunities will encourage people to comply with duty| 1.3 | 0.9| 2.2| 31.1| 64.2|
| Provision of social amenities encourage me to pay my tax               | 2.5 | 3.2| 1.6| 35.2| 57.5|
| Public enlightenment campaign of tax payment need be created by the    | 2.9 | 1.3| 3.8| 34.3| 57.8|
| government to enhance tax payment.                                     |     |    |    |     |     |
| Government should introduce tax system that will favour the poor masses| 1.9 | 1.0| 1.6| 28.0| 67.5|

Table 3 above shows that 92.1% of the taxpayers concurred that government needs to tackle corruption and make tax collectors independent, 95.2% agreed that government needs to train tax collection officers, 93.3% agreed that moderate tax should be levied on the low - income earners in order to encourage people to pay tax regularly and 95.0% agreed that government should educate people/public on the importance of tax to economic development. Also, 95.3% agreed that provision of job opportunities will encourage people to comply with duty levied on them, 92.7% believed that provision of social amenities will encourage the masses to pay their tax. 92.1% agreed that public enlightenment campaign of tax payment need be created by government to enhance tax payment and 95.5% reinforced that government should introduce tax policy, such as progressive tax system, that will be in favour of the poor masses.

3.1 Hypothesis testing

H0: There is no significant relationship between Tax Compliance and research variables

Table 4: Correlation coefficient between tax compliance and research variables

| Variables                               | r   | Std. Error | t   | Sig.  |
|-----------------------------------------|-----|------------|-----|-------|
| Government Revenue Generation           | 0.718| 0.032      | 18.312| <0.001*|
| High income tax rate                    | -0.134| 0.057      | -2.395| 0.017*|
| Tax Morale                              | 0.589| 0.042      | 12.945| <0.001*|
| Confidence in Legal Systems             | 0.427| 0.051      | 8.377 | <0.001*|

*Based on normal approximation.

Table 4 revealed that the spearman’s rank correlation coefficient between tax compliance and government revenue is 0.72 (p < 0.05). This implies that a high tax compliance will result in high government revenue. It is therefore concluded that there is a very strong, significant positive relationship between tax compliance and the government revenue generation in Nigeria. This signified that the regular payment of tax significantly and positively impacts on the growth of government’s internally generated income. It also shows that the spearman’s rank correlation coefficient between tax rate and tax compliance is – 0.134. We therefore conclude that there is a weak significant negative relationship between tax rate and tax compliance (p < 0.05). This implies that high tax rate levied on individual’s results. In addition, it revealed that the spearman’s rank correlation coefficient between tax morale and tax compliance is 0.589. It is therefore concluded that there is a strong, significant positive relationship between tax morale and tax compliance (p < 0.05). This implies that the provision of social amenities such as health care centre, good road, education etc. which are means to raise taxpayers’ morale encourage them to comply with payment of tax. Lastly, it also revealed the spearman’s rank correlation coefficient between taxpayer’s confidence in legal system and tax compliance is 0.427. It is concluded therefore that there is weak, significant positive relationship between taxpayer’s confidence in legal system and tax compliance (p < 0.05). This implied that confidence in the legal systems put in place by government encourage taxpayers to pay tax.

Table 5: Tax compliance across demographic characteristics

| Characteristics            | Chi square value | df | p-value |
|----------------------------|-----------------|----|---------|
| Gender                     | 0.003           | 1  | 1.000   |
| Age group                  | 12.400          | 3  | 0.006   |
| Marital Status             | 0.053           | 1  | 0.897   |
| Religion                   | 0.893           | 2  | 0.640   |
| Highest educational qualification | 17.799    | 4  | 0.001   |
| Work Sector                | 15.670          | 2  | <0.001  |
| Employee’s Income category | 4.989           | 3  | 0.173   |

Table 4 shows that proportion of compliance was significantly different only among the age categories, highest educational qualification and employees’ work sector (p < 0.05). It shows that higher proportion of government/ public employees (89.6%) pay tax followed by self – employed (70.8%) while least compliant are...
private/industry employees (66.3%). Among the age categories, employees 50 years and above are more compliant (90.6%), followed by age 30 – 39 years (79.6%), 40 – 49 years (77.6%) while the least compliant are employees below 30 years (64.2%). Lastly, Postgraduate holders are more compliant (89.8%), followed by graduates (75.9%), professionals (75.0%), and the least compliant were those with no formal education (54.5%) and O’level holders (56.5%).

4. Discussion
The findings suggest that there are various reasons and facilitating factors for tax compliance in the Lagos State. In order to develop methods and instruments for fighting tax non-compliance among the taxpayers, it is important to foremost establish a broad understanding of the different reasons underlying these problems.

Firstly, it was found that there is significant positive relationship between tax compliance and the revenue generation of government in Nigeria. This implied that where citizens regularly pay their tax, there will significant growth in the internally generated income of the government, i.e., increase in tax compliance tends to increase government revenue. This agreed with the findings of Ocheni (2015) and Okoye, et al. (2012) that revenue generation and tax compliance are positively correlated. Secondly, a significant negative relationship between tax rate and tax compliance (p < 0.05) was established from the study. This implies that the higher the tax rate levied on taxpayers, the lower the level of tax compliance among the taxpayer. This finding was in line with observations in literature that high tax rate discourages taxpayers from paying tax or is disincentive to tax compliance (Ojo & Oladipo, 2017; Okoye, et al., 2012; Ocheni, 2015). This is pertinent because tax payment reduces the available fund that could be channeled into other areas of demand in life and business. Furthermore, therefore, one can conclude that there is significant positive relationship between tax morale and tax compliance. Where there is high tax morale, taxpayers will be more tax compliant and vice versa. This finding was agreeable with the positions of (Okoye, et al., 2012; Anichebe, 2010; Nzotta, 2007). The accountability of government, and effective utilisation of taxpayers’ contribution in provision of social amenities such as health care centre, good road, education etc. will encourage taxpayer to comply with prompt and full payment of tax. Lastly, conclude that there is significant positive relationship between taxpayer’s confidence in legal system and tax compliance. Taxpayers’ confidence in the operating legal systems put in place by government to prosecute evaders, deter corruption among tax officials, up – to – date tax laws and proper reporting systems encourage tax compliance agreeing with (Okoye, Akenbor, & Obara, 2012; Anyadiuba, Erargbhe, & Kennedy, 2012).

5. Conclusion
Reforming tax policies and strengthening tax administrations in developing countries like Nigeria is crucial to establish a ‘level playing field’ in tax matters between developing countries’ administrations and well-informed taxpayers. Based on the analysis result and the findings the following conclusions were made: It is therefore concluded that tax policy like progressive tax should be adopted in the country in order to encourage compliance of tax payment. This system tends to apportion tax charges according to the weight of individual earning. It is concluded that government should put solid enforcement in place in order to encourage taxpayer to comply with tax payment. Appropriate law enforcement will deter tax defaulters and enhance internally income generated by government from local level to federal level because tax compliance has significant effect on tax revenue generated. Finally, it is concluded that the decreasing current tax rate will significantly encourage taxpayers’ responses to pay tax.

6. Recommendation
Based on the analysis and findings the following recommendations were suggested: For a better tax administration, adequate machinery should be put in place and strengthened. The corrupt tax official should be discipline and remove, the tax collection mechanism used by tax officials must be free from corruption and embezzlement. The Federal Government, state governments and local governments should urgently fully modernise and automate all its tax system, improve tax payer convenience in the assessment and payment process whilst at the same time entrenching effective and modern human resource management practices in the tax authorities.

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