An Examination Of The Size Of Personal Income Tax Gap In Kaduna State, Nigeria

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Abstract: The paper was aimed to examine the size of personal income tax gap in Kaduna State, Nigeria. The paper relied on the primary source of data. 422 confidential questionnaires distributed randomly to the respondents (taxpayers), were analysed. The paper employed paired sample statistics to estimate the size of personal income tax gap in Kaduna State, where personal income tax paid by the respondents were compared with the potential personal income tax payable under a perfectly tax compliant environment. The empirical result obtained, revealed the existence of statistically significant personal income tax gap in Kaduna State. Additionally what the state generated as personal income tax revenue, represent 13.85 and 9.68 percent of the personal income tax that the state can generate in a perfectly income tax compliant environment on average and general respectively. The paper recommended the simplification of tax compliance processes, reduction in compliance cost may increase tax compliance and reduce the size of the personal income tax gap; and the level of tax payer’s education should be strengthened, door to door tax campaign should extend to rural areas and each of the clusters of small businesses, and local languages should be included in media tax education campaign.

Key words: Personal Income Tax, Tax Gap, Tax Evasion and Paired Sample Statistic, Survey Method.

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I. INTRODUCTION

Taxation is an important tool, which generate revenue to the government, in return the government uses the resources it generates from taxation to provide public products such as roads, schools, hospitals, security, etc. Taxation programs can also be used to redistribute income, correct market failure, encourage consumption of merit goods, discourage consumption of demerit goods, and internalise externalities. Furthermore at macro level taxation can bring desirable macro-economic effects (such as full employment, price stability and balance of payment equilibrium) and avoid undesirable macro-economic effects (such as inflation, unemployment etc.) in an economy. Taxes are crucial for mobilizing revenue to fund public services, infrastructure and other development and poverty reduction goals. Taxes are also crucial “for building the accountability of states to their citizens, and reduce inequality by redistributing wealth” (Tax Justice Network and Christian Aid, 2014). The ability of the governments in Nigeria at all level to provide adequate basic amenities is hampered by their inability to generate sufficient tax revenue. One of serious challenges facing many states governments in Nigeria, is to collect taxes as prescribed by relevant tax laws of the country.

Tax revenues are major and important income sources for governments in most countries. Sufficient tax revenues make many government projects possible and help elected officials and politicians to remain in office longer if the government implements programs and projects demanded by the public. Additionally, the collection of appropriate tax revenues can help to stabilize the economy by ensuring less dependency on government borrowing. In today’s globalizing economic environments, there is increasing demand for a variety of public services and programs. However, the rate of increase in the tax revenues to finance these public services and programs falls short of the necessary public spending. The potential tax revenue of a country based on its legal or tax law is much larger than the tax revenues that are actually collected. Due to the lack of full tax compliance, government budgets are rarely balanced in most countries, and the gap between revenue and spending is increasing (Yalama and Gumusi, 2013).

According to the National Bureau of Statistics report (2016), the average tax revenue to GDP ratio of Nigeria is 6.1%, what the Nigerian Minister of Finance describes as one of the lowest ratios in the world and unacceptable. She further explained that one of the reasons for the low ratio is tax gap, which was caused by tax evasion (Adeosun, 2017). The average tax revenue to GDP ratio in the developed world was approximately
35%. In the developing countries, it was approximately 15%, and in the poorest of these countries, the group of low income countries, tax revenue was just 12% of GDP (OECD, 2015).

McKerchar and Evans (2009), taxpayer non-compliance is a continual and growing global problem that is not readily addressed yet, there are many indications that developing countries are hardest hit. Firm evidence on the extent of such practices is naturally hard to come by. But anecdotal evidence from different countries indicates that half or more of the taxes that could be collected remain uncollected and/or unaccounted for due to a combination of tax evasion, avoidance, tax exemptions and corruption. In recent years, the academic and political debate on development finance and development aid has raised the issue that tax avoidance and tax evasion as one of the factors that undermine the ability of developing countries to finance their public sectors. This view is based, among other things, on the perception that the shadow economy in these countries is larger than in the developed world. According to Fjeldstad, Herzenberg and Hoem (2012), erosion of the tax base has detrimental fiscal effects and there are at least four reasons for concern. First, revenue losses from non-compliance are critical in the context of substantial budget deficit. Secondly, tax evasion may have harmful effects on economic efficiency in general and income distribution in particular because the effective tax rates faced by individuals and firms may differ due to different opportunities for evasion; third, underground economic activities are often the other face of tax evasion and the expansion of these may affect implementation and outcomes of economic policies. Finally, evasion and citizens’ disrespect for the tax laws may go together with disrespect for other laws and contribute to undermine the legitimacy of government. Consequently, tax evasion can have unintended negative effects on a society, undermining the purpose and outcomes of the formal tax system.

According to Murphy (2017), UK’s HM Revenue & Customs, measures tax gaps more often than any other tax authority in the world, their reason for doing so, is to provide a useful tool for understanding the relative size and nature of non-compliance. What is rarely discussed is the significance of that issue: the relationship between the tax gap and austerity as a feature of political economic policy is, for example, an issue that almost solely arises in popular political commentary (Murphy, 2015). In addition to tax revenue loss considerations for a government, any tax gap analysis has to also consider the implications for the rule of law, the austerity narrative and the provision of public services within the public sector as well as the consequences for market risk, investment, productivity and growth in the private sector and issues relating to both economic and social inequality (Murphy, 2017). Danquah and Osei-Assibey (2016) said that considering the high tax evasions and avoidance within the informal sector of many developing countries, widening the tax net to generate more revenue without resorting to increasing tax rates, will be a catalyst for economic growth. This is because many developing countries like Ghana suffer from huge financing gaps/constraints that inhibit public sector investment expenditures in productive sectors of the economy like roads, energy and educational infrastructure among others.

Warren (2018), tax gap estimation is important not just because its highlights potential revenue loss through administration issues, but because it can demonstrate how legislated tax design intent can be compromised through its implementation and administration. It also highlights inequities arising from not every one paying their share of the untended tax burden. According to Raczkowski and Mroz (2016), it is so vital to be able to estimate the tax gap, so that it may serve as some sort of control measure in the process of public governance, which would allow to perform analyses and take countermeasures in order to safeguard the State Treasury’s financial interest. The size – and in particular growth – of the tax gap is also a signal that the socioeconomic policy is erroneous and must be fixed so that business activity can regain its economic and legal character. The tax gap other than minimal (around 5% of the GDP), Past and current administrators of Kaduna State have insisted that one of the explanations for the government failure to provide adequate basic amenities, is insufficient tax revenue or existence of tax gap as a result of tax evasion in the state. However many people in the state have the opinion that there is no tax gap in the state, because people pay their taxes as at when due. The people further argued that the state government and tax officials are the ones embezzling the tax revenue generated in the state. It is the aim of this paper to empirically examine the size of Personal Income Tax Gap in Kaduna State, Nigeria.

II. REVIEW OF LITERATURE

2.1 Conceptual Literature Review

2.1.1 Tax Gap

Villos (2012), a tax gap may arise either because of assessment risk or collection risk. Assessment risk is the difference between tax that is due and tax actually assessed by the tax authorities as owing by the taxpayer. This includes the gap attributable to taxpayers underreporting their income and not lodging their tax returns. The major portion of the tax gap is caused by assessment risk (around 90% of the overall tax gap in developed economies). Collection risk is the difference between tax payments received and tax actually
assessed by the taxpayer. In the US, this difference is largely caused by accidental non-compliance and employers’ failure to withhold income and employment taxes.

Danquah and Osei-Assihey (2016), defined tax gap as the difference between tax revenues collected and those that would be theoretically expected to be collected in the absence of any evasion or late payment. Another approach which is commonly used by authors in identifying the tax gap is by first defining the ‘hidden economy’ or ‘hidden income’ - income that is earned but is hidden from the tax authorities and, usually, official statisticians – and then the hidden income is multiplied by a suitable tax rate to obtain the tax gap. (Giles, 1999).

Usually, a distinction is made between the gross tax gap and the net tax gap. Thus, the gross tax gap is the difference between tax liability in any year and the amount of tax that is paid voluntary and on time. Whilst the net tax gap is the gross tax gap in any tax year less payments of that year’s tax liability that come in later through either voluntary late payments or enforcement activities of the tax authorities. However, payments of interest and penalties associated with late payments or underreported tax liability are not counted in either the gross or net tax gap measures. The gross tax gap has three components — non-filing, underreporting of tax owed, and underpayment. The three components are mutually exclusive and add up to the total tax gap. The non-filing gap is the tax not paid on time by taxpayers who have a legal requirement to file a tax return, but do not file on time. The underreporting gap is the tax owed by taxpayers who file returns on time, but underreport the amount of tax they owe. The underpayment gap is the loss of revenue owed by taxpayers who file returns on time, but do not pay their reported tax due on time (Toder, 2007; Mazur and Plumley, 2007). It is also worthy to note that even though the tax gap is usually studied within the context of the underground economy (informal economy), it is not synonymous with the latter; there might be some overlapping. The underground economy in some respects comprises illegal activities which are not considered in the estimation of the tax gap (Mazur and Plumley, 2007).

According to Murphy (2014), The tax gap is made up of three parts: Tax debt (non-collection; tax that is not paid by someone who knows that they owe it, but who doesn’t pay, or delays payment), Tax avoidance (tax that is lost when a person claims to arrange their affairs to minimise tax within the law), and Tax evasion (tax lost when a person or company deliberately and unlawfully fails to declare income that they know is taxable or claims expenses that are not allowed).

2.1.2 Underground/ Shadow Economy

Greenidge (2009) defines the underground economy as any economic activity that does not appear in the statistics of the National Income and Gross Domestic Product (GDP). This definition presumes that, even legal economic activities that were not report to authority is part of underground economy. The shadow economy includes all market-based legal production of goods and services that are concealed from the government primarily to avoid payment of income, value added or other taxes; to avoid payment of social security contributions; and to avoid having to meet certain legal labor market standards, such as minimum wages, maximum working hours and safety standards (Schneider 2014).

2.2 Theoretical Literature Review

Measuring the tax gap is a challenging task due to the fact that the phenomenon is difficult to observe and precise data is inadequate. This challenge is further compounded by the lack of the necessary high-quality data particularly in developing countries (GIZ Sector Programme Public Finance, Administrative Reform, 2010). According to Villos (2012), Attempts to quantify the tax gap can be divided into macro and micro approaches.

2.2.1 Macro Approaches to Tax Gap Estimation

Macro methods rely on macro indicator variables like monetary and physical input demand, or on information from national and financial accounts, to determine the overall size of the tax gap.

(a) The Currency Demand Methods

The currency demand method is based on the concept that dishonest taxpayers largely transact in cash in order to avoid leaving detectable traces. This model suggests the degree to which activities are shifted into the unofficial sector could be determined by the level of taxation, the complexity of the tax system, GDP per capita and the interest rate on savings deposits. Accordingly, this model is based on calculating the ‘excess’ demand for currency to estimate the size of the tax gap and explaining this by reference to these indicators, (Cagan, 1958).

Monetary Macro Approach Model cannot be suitable for estimating tax gap in Kaduna State, because most of its assumptions are applicable to a country not a state. The currency demand of Kaduna State cannot easily be isolated from the currency demand of Nigeria as a whole for the purpose of tax gap estimation. Therefore this model cannot be reliable for the estimation of tax gap in Kaduna State.
2.2 Empirical Literature Review

Artavanis, Morse, and Tsoutsoura (2016), employ a clever research design that takes advantage of household micro data from one of ten large banks in Greece to estimate the extent of underreported income for self-employed Greek workers by type of occupation. The result revealed that these professions (doctors, lawyers, engineers and scientists, and accountants and financial service agents) reported income is less than half of true income as inferred by the bank. Another study was conducted by Nnesirionye and Ihendinibu (2016) to estimate the value and trends of unrealized tax revenue resulting from underground economic activities in Nigeria. Macro-economic (time series) data for the period 1980 -2013 extracted from the Central Bank of Nigeria statistical bulletin and National Bureau of Statistics were used. The estimation procedures adopted followed Tanzi (1980) model, and the formulated hypotheses tested using correlation and simple regression techniques. The results show that Nigeria lost a total of N38, 357.3 billion in tax revenue over the period with an average of aboutN1, 128.2 billion per annum as a result of underground activities in the country. The resulting trend indicates a steady growth from 1980 with N8.2 billion to an all height peak of N5, 048 billion in 2005, and dropping to about N2, 095 billion in 2013.

Danquah and Ossi-Assibey (2016), in a study that attempts to estimate the tax gap within the informal sector and also to investigate determinants of the propensity to pay tax among non-farm informal enterprises in Ghana. Using the sixth round of the Ghana Living Standards Survey, the tax gap was estimated by computing the difference between the potential and the actual annual tax payments. A logistic regression method was used to ascertain the determinants of the propensity to pay tax whilst an Ordinary Least Square (OLS) procedure was used to estimate the factors that explain the tax gap. The study finds that the country’s informal sector has the
potential to pay GH₵327,899,384.00 as taxes. However, the actual tax paid in a year per our estimation is GH₵100,093,092.00. Thus the estimated national tax loss is GH₵ 227,806,292.00 per annum. Comparing the actual tax paid to the revenue generated by enterprises within the informal sector indicates that the actual tax paid represents just about 0.54% of their total revenue in a year. Paulus (2015), conducted a study to investigate the Estonian private-sector employees’ tax compliance. Using a dataset that links information from tax forms to a more comprehensive household survey, he estimates the extent of underreporting of income by employees whose income is subject to third-party reporting. The result revealed that both the employee and the employer have an incentive to coordinate and underreport income: the employer gains from owing lower payroll taxes and can also credibly lower reported revenue to save on value-added tax liability. Additionally, that about 20 percent of private-sector employees in Estonia underreport income.

Retselisitsoe (2015), conducted a study to empirically analyse the macroeconomic factors that enhance revenue gap in South Africa using the multivariate cointegration techniques for the period 1965 to 2012. The results from the cointegration analysis indicate that the revenue gap in South Africa is negatively associated with the level of imports while positively related to external debt and underground economy. The results from the Granger causality test also show that there is a unidirectional causality running from imports and underground economy to revenue gap, while revenue gap on the other hand is found to Granger-cause national income and external debt in South Africa.

Harremi (2014), estimates the tax gap for the Balkan region for the 2011 and 2012 fiscal years by employing the MIMIC estimation procedure. The findings reveal that the informal economy made up 33% and 32.61% of the GDP of the region in 2011 and 2012 respectively. Also, the tax gap for the 2011 and 2012 fiscal years were 34.89% and 27.35% respectively. Serbia recorded the highest tax gap (46%) whilst Greece had the lowest tax gap (17.6%) in the 2011 fiscal year. In 2012, the tax gap for Serbia was still the highest (44%) whilst Croatia posted the lowest tax gap (17%). Nalishebo and Halwampa (2014) conducted a study to investigate the extend of Pay As You Earn (PAYE) tax gap in Zambia. Using data from the nationally representative 2010 Living Conditions and Monitoring Survey (LCMS). The research found that potentially uncollected PAYE for self-employed and paid employees amounts to 6.7 % of GDP and 40.3% of the total tax revenue.

Novysedlák and Palkovičová (2012), estimates of the total tax loss and the tax gap for value added tax for the Slovakian economy using calculations based on both output tables and on nominal GDP net of the items not subject to VAT. The results demonstrate that the total VAT loss in 2010 reached €2.3 billion, which represents 3.5% of GDP. From the total VAT loss, the tax administration was able to capture and identify less than 30%. The remaining 70% represents the tax gap, i.e., the tax liability which had not yet been identified. Similarly Asante (2012) attempts to provide estimates of the size of the underground economy and estimates of tax evasion between 1990 and 2010 in Ghana. By using the Stock-Watson Dynamic Ordinary Least Squares (DOLS) estimate for currency demand. The result indicates that on the average, the underground economy accounts for 48% of the official GDP. Also, the estimated evaded tax ranges from 4% to about 14% of the official economy.

III. METHODOLOGY

3.1 Theoretical Framework

The paper adopted Micro Survey Method of tax gap estimation as its theoretical framework. Micro Survey Method entails issuing questionnaires to taxpayers or interviewing them, through a random process with a view to understand the actual tax paid and potential tax payable.
3.2 Source of Data
The paper relied on primary source of data, which confidential questionnaire was distributed to the respondents.

3.3 Technique of data analysis
The paper requires the employment of Paired Sample t-test to analyse the data. Paired sample t-test is a tool that has been used to compare the means of two populations whose elements are related.

3.4 Population of the Study
The population of the paper, are the potentials tax payers of Kaduna State, both registered and unregistered. The Executive chairman of Kaduna State Internal Revenue Service (KADIRS), Ahmed (2017), said that the state had 3 to 4 million potential tax payers, but expressed regret that only about 400,00 were in KADIRS revenue net. To avoid sampling error the research will adopt 4 million as the population size of the paper.

3.5 Sample Size
The paper used Taro Yamane Method (1967), to determine the sample size of the study. The formula is given as:
\[ n = \frac{N}{1+ N (e^2)} \]
Where:
\( n \) = Sample Size
\( N \) = Population of the study.
\( e \) = Error Margin (0.05 was adopted)
\[ n = \frac{4,000,000}{1+ 4,000,000 (0.05)^2} = 400. \]
Therefore the sample for the paper is 400 taxpayers.

3.6 Sampling Technique
The paper used Stratified Random Sampling to collect the samples; the study population was first divided into groups of elements called strata, such that each item in the population belongs to one and only one stratum. For the purpose of this paper the stratum are Federal Government, State Government, Local Government and private Sector. The technique is used when element within each stratum are as much as alike (Homogenous). After the strata are formed, a simple random sampling is taken from each stratum.

IV. RESULT AND DISCUSSION
About 547 confidential questionnaires were distributed to the respondents, but 482 were returned and 422 were successfully cleaned and analysed.

4.1 Tax Gap Estimation
With a view to estimate an accurate tax gap in Kaduna State, paired sample statistics was employed to compare the potential tax payable with the actual tax paid. The results are shown in the following tables.

<table>
<thead>
<tr>
<th>Table 1 Paired Samples Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>422</td>
</tr>
</tbody>
</table>

Author’s Computation (2018), using SPSS Version 22.0
Potential Tax Payable (POTTAX), means the tax that a taxpayer should pay to the government, under a hypothetical perfectly tax compliant environment. While Actual Tax Paid (ACTTAX) is the tax practically paid to the government by a taxpayer.
Paired sample statistics is best applied when the variables of interest are paired (Highly correlated) based on the result from table 1, the correlation coefficient (r) is 0.921 which means that variables are strongly correlated.

<table>
<thead>
<tr>
<th>Table 2 Paired Sample Mean and Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>8.103102E5</td>
</tr>
<tr>
<td>8.721517E4</td>
</tr>
</tbody>
</table>

Author’s Computation (2018), using SPSS Version 22.0
The paired sample statistic result from table 2, indicates that the mean of Potential Tax Payable (POTTAX) is 8.103102E5 (₦34, 934.66) which is more than the mean of Actual Tax Paid (ACTTAX) 8.721517E4(₦5, 785.86) this suggest that on the average, actual tax paid by tax payers in Kaduna State is less than the potential tax that the state can generate in a perfectly tax compliant atmosphere. The result further revealed that every potential taxpayer in Kaduna State is expected on the average to pay N34, 936.66 as income for 2017 Fiscal Year.

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>7.813991E5</td>
<td>1.284011E2</td>
<td>2.5012113E2</td>
<td>26.71</td>
<td>421</td>
<td>0.0000</td>
</tr>
<tr>
<td>Lower</td>
<td>2.5702874E5</td>
<td></td>
<td>2.5702874E5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>2.5702874E5</td>
<td></td>
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</tr>
</tbody>
</table>

The result implied that personal income tax gap in Kaduna State based on the statistical evidence.

Based on the Paired Sample Statistics result, there is significant statistical evidence to affirm the existence of personal income tax gap in Kaduna State. The result further revealed that, what the state practically collected as personal income tax revenue on average represent 16.56 percent of the personal income tax that the state can generate in a tax compliant environment. Since there are 4 billion potential tax payers in the state, if the state can be able to collect on average ₦34, 934.66 from every potential tax payer, then it could have generated ₦139, 738,640,000 (₦139.738,640 billion) as income tax for 2017 Fiscal Year. According to the National Bureau of Statistic report (2018), the state generated ₦26.530, 562,880.89 (₦26.530652 billion) as Internally Generated Revenue (IGR) in 2017 Fiscal Year. While the Executive Chairman of Kaduna State Internal Revenue Service (KDIRS), Ahmed (2008), said that 51 percent (₦13, 530,587,069.25) of the IGR represent taxes. That means the state generated practically ₦13, 530,587,069.25 (₦13.53 billion) as income tax in 2017 Fiscal Year, which represent 9.68 percent of the gross potential income tax that the state could generated in 2017 Fiscal Year. This mean the state lost ₦126, 208,052,930.746 of income tax in 2017 Fiscal Year. The implication of the empirical evidence is that people are evading tax in Kaduna State and the impact of the tax evasion is statistically significantly affecting tax revenue generation in the state.

Moreover, the study also revealed that, among the factors that lead to the large income tax gap in the state are: high compliance cost, inadequate taxpayers education, inadequate competent tax officials that can detect sophisticated means of concealing taxable income by tax defaulters.

V. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion
Evidence obtained from the empirical results revealed the existence of personal income tax gap in Kaduna State. Additionally what people are paying as personal income tax in Kaduna State, represent only 13.85 and 9.68 percent of potential personal income tax payable in the state on average and general respectively.

5.2 Recommendations
The empirical results obtained, suggest the following as a means of reducing the size of personal income tax gap and consequently improving income tax revenue generation in Kaduna State.
1. The State government should do more to simplify tax compliance process, reduction in compliance cost may increase tax compliance and reduce the size of the personal income tax gap.
2. The level of tax payer’s education should be strengthened, door to door tax campaign should extend to rural areas and each of the clusters of small businesses, and local languages should be included in media tax education campaign.
3. The revenue authority staffs training should encourage, so that they can be able to detect sophisticated means of concealing taxable income by tax defaulters.

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4. Economic deterrence measures should also be strengthened, so as to offset any economic benefit due from tax evasion.
5. The remuneration and other conditions of service of the tax officials, should be improved, improving the remuneration and the condition will increase the cost of connivance and may offset any benefit from the connivance.

REFERENCES


