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An Exploratory Analysis of Individual Taxpayers' Compliance Behaviour in Nigeria: a Study of Demographic Differences and Impact

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Abstract

Tax noncompliance is a phenomenon, which has attracted attention of policy makers as well as researchers over the years. In an attempt to reverse this phenomenon, researchers had identified demographic factors as most important factors having effect on tax compliance behaviour. However, most of these researchers conducted their studies in the developed economies. To further the understanding of tax noncompliance phenomenon in the developing economies, this study analyses the differences in individual taxpayers' compliance behaviour across demographic variables using the data extracted through a survey of individual taxpayers in Nigeria. The data were statistically treated using ANOVA technique. The results indicate statistically significant differences in taxpayers' compliance behaviour across demographic variables of age grouping, income level, employment status and ethnicity. This finding suggests that these demographic factors significantly affect taxpayers' compliance behaviour in Nigeria. Accordingly, policy makers must pay attention to these demographic factors in reversing the phenomenon and reawaking the spirit of compliance among individual taxpayers in Nigeria.

Keywords: Tax compliance, Demographic, Culture, Nigeria.

1. Introduction

Citizens are obliged to make financial contribution in form of tax payment to the government. Apart from representing important sources of revenue to the government of most countries, taxation is a useful fiscal tool for stablising national economy as well as redistributing the national wealth.

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However, taxation can only perform these important functions efficiently where taxpayers are willing to comply with tax laws of a country. But it is widely acknowledged that some people do not like paying taxes (Alm, Martinez- Vazguez and Schneider, 2003), and because of this reason, some portion of the taxpayers may fail to comply with a country's tax laws. Tax noncompliance is the failure of taxpayer to meet tax obligations whether the act is done intentionally or unintentionally and this may occur through failure to file tax returns, misreporting taxable income or misreporting of allowable subtractions from taxable income or tax due such as exemptions, deductions, tax credit etc (Kirchler, 2007; Roth, Scholz &Witte, 1996).

The most obvious consequence of tax noncompliance is the loss of tax revenue to government and this limits funds for execution of projects (Frazoni, 2000; Wenzel, 2005). In addition, tax noncompliance creates inequality among the people because both horizontal and vertical equity are affected (Alm, Bahl & Murray, 1992; Fjeldstad & Semboja, 2001; Alm & Gomez, 2008).

Tax noncompliance is a universal phenomena hindering efficient tax revenue productivity in both developing and developed countries (Alabede, Zaimah & Idris, 2011; Chau & Leung, 2009). For instance, the lastest statistics from United States (US) Internal Revenue Service (IRS) indicates that federal taxes not paid voluntarily and on time (tax gap) was $450 billion in 2006 and this represents about 30% increase over $345 billion tax gap of 2001 (IRS, 2012). In developing countries, statitical evidence suggests that as much as US$ 285 billion tax revenue was lose annually due to tax noncompliance (Cobham, 2005).

As the responsiblity of government is growing rapidly and finance is shrinking, the issue of tax noncompliance particularly tax evasion and avoidance remain the main focus of policy makers in most developed and developing countries. For this reason, tax nocompliance phenomena has been attracting great research efforts in the past four decades (Wenzel, 2005).

These research efforts produced a number of models aimed at understanding compliance behaviour of taxpayers and scholars have concluded that economic, social, psychological and cultural factors are influencing tax compliance (Allingham & Sandmo, 1972; Jackson & Millron, 1986 ; Alm, 1991).

Of these factors, the demographic characteristics of the taxpayers are considered to play important role in compliance behaviour of taxpayers (Devos, 2007; Torgler, 2003).

Because of the important role of demographic factors in understanding taxpayer compliance behaviour, a number of studies have investigated the influence of demographic factors on taxpayers (Birch, Peter & Sawyer, 2003; Devos, 2007, 2008; Mason & Cavin, 1978; Richardson, 2004 etc)

However, most of these studies like other researches on tax compliance are conducted in the developed countries especially US, Australia and Canada. But literature suggests the need for more studies on tax compliance in developing economies (Andreoni, Erard & Feinstein, 1998; Chau & Leung, 2009; Fuest & Riedel 2009). As for Nigeria, empirically, nothing much is known about the demographic difference of taxpayers compliance as well as influence of demographic factors on taxpayers' behaviour. A study on demographic factors and taxpayers' compliance behaviour is imperative because tax noncompliance is a serious challenge furstrating efficient and effective income tax administration in Nigeria (Alabede et al., 2011). To illustrate severity of the problem, the record of Federal Inland Revenue Service (FIRS) indicates 654 tax cases were audited in 2008 and this resulted to ₦ 92.2billion revenue collection (FIRS, 2009).

Therefore, this present study contributes to tax compliance literature by providing further empirical evidence about the influence of demographic background on taxpayers' compliance behaviour. Other than that, the study contributes to the literature by way of bridging the research gap in tax compliance between developing and developed countries. By revealing statistically significant difference in tax compliance behaviour across age groupings, income levels, employment status and ethnicity, this study provides an evidence indicating that demographic factors are important determinants of tax compliance behaviour in developing countries just as in the developed countries. As practical contribution, the study would enable tax administrators in Nigeria to have better understanding of the differences in taxpayers' compliance across demographic factors for efficient tax administration.

The remaining parts of this paper is organised as follows: part 2 reveiws previous literature on subject matter and the methodology adopted in the study is presented in part 3. Results and discussion are documented in part 4 while the conclusion and implications are presented in part 5.

2. Previous Literature

Taxpayers exhibit a range of behavioural possibilities influenced by several factors. These factors may be economic factors such as income, tax rate, tax penalty; psychological factors such as norm, moral, attitude of taxpayers; and social factors such as demographic factor (Brook, 2001). Allingham and Sandmo (1972) were the first researchers to conduct empirical analysis into compliance behaviour of taxpayers and they came up with a model which became known as A- S model. In the model, the compliance decision of taxpayers is considered to be affected by income of the taxpayer, tax rate, probability of audit, and fine rate. However, factors influencing compliance behaviour of taxpayers are far more numerous than suggested in the A-S model (Alm, 1991; Jackson & Millron, 1986). Therefore, the authors underplayed the influence of psychological and social factors including the demographic characteristics on taxpayers' behaviour.

Subsequently, in a comprehensive review study, Jackson and Millron (1986) came up with fourteen key determinants for tax compliance and these determinants were later categorized into four group determinants in the study of Fischer, Wartick and Mark (1992) and became known as Fischer's model of tax compliance. Demographic varaibles are within one of these groups of determinants. The demographic factors in Fischer's model include gender, age, education, income level and employment status

2.1 Gender

Behavioural literature has provided evidence suggesting differences in the behaviour of male and female toward risk taking. Studies had indicated that female have proven to be more risk averse than male in decision making particularly in financial decision risk (Meier-Pesti & Penz, 2007; Bernasek & Shwiff, 2001).

The theoretical explanations for differences in the behaviour of male and female are provided in various biological and social-psychological theories.

The biological thoerists attributed the differences in the risk behaviour of a man and woman to sex difference in name hormone and gene (Meier-Pesti & Penz, 2007; Saad & Gill, 2000). In social-psychological theories, the gender difference in behaviour may be due to sex-specific role in socialization (Meier-Pesti & Penz, 2007). This behavioural characteristic also have impact on the tax compliance behaviour of both male and female.

Generally, reviewed studies suggest that female taxpayers conformed and complied with tax rules more than male taxpayers (Jackson & Millron, 1986; Richardson & Sawyer, 2001). However, Richardson and Sawyers (2001) argued that the differences in the compliance behaviour between males and females may be narrowed as more non-traditional generation of women is evolving.

To be specific, Mason and Calvin (1978) investigated behaviour of 800 taxpayers to admit income tax noncompliance in Oregon and reported that more men admitted to one form of tax evasion than women. Similarly, Eicher, Thomas and Wendy (2002) who studied the individual perception about various crimes including cheating on tax return, observed that more women than men accepted that it is wrong to cheat on income tax returns. Torgler and Schneidier (2004) also found women to have high tax morale than men in Switzerland and Belgium. The study of Manaf, Hasseldina and Hodges (2005) also found that more women are tax compliant than men in Malaysia. Similar finding was reported in Grasso and Kaplan (1998), McGee (2006), Richardson (2004), Lew, Carrera, Cullis and Jones (2009), Katstlunger et al. (2010) and Gutpa (2009).

On the contrary, some studies indicate that males are more tax compliant than female. In a survey of Isreali postgraduate students' tax evasion behaviour, Friedlend, Maital and Rutenberg (1978) reported that more women are likely to evade taxes than men. Similarly, Kirchler and Maciejovsky (2001) reported that self-reported tax compliance of women is lower than that of men.

2.2 Age

Empirical evidence suggests that young people are more willing to take risk, more cline to crime and less sensitive to sanction (Tittle, 1980).

On the other hand, older people are considered to be more experienced, risk averse, endowed with more wisdom and knowledge. These characteristics are likely to make the young people to be tax noncompliant and the older people to compliant.

However, the findings linking age to tax behaviour are mixed. Mason and Calvin (1978) found young people are significantly more likely to admit under-reporting of taxable income than the older people.

Spicer and Lundstedt (1976), in a survey relating taxpayers' attitude toward tax evasion to some demographic factors in USA reported that respondent's age is significantly related to attitude toward tax evasion. In the study using taxpayers in the US and Hong Kong, Chan, Troutman and O'Bryan, (2000) found that the decision to comply with tax rules is driven by the age of the respondents. The result suggests that older taxpayers are more tax compliant than the young taxpayers. In other findings, Birch, et al. (2003), Richardson (2005), Devos (2008) also reported the same result between respondent's age and tax compliance behaviour.

However, the study of Wallschutzky (1984) found older taxpayers to be more involved in tax evasion in Australia. On the contrary, the evidence in the study of Coltfelter (1983) indicated differences in the compliance level between the youngest and oldest taxpayers. Gupta (2009) also provides evidence which suggests that age has no effect on taxpayers' attitude toward tax evasion.

2.3 Education

The effect of education on tax compliance is not clear. However, Kornhauser (2007) argued that through its role in the process of internalisation of social norm and inculcating higher moral reasoning in individuals, education has influence on tax compliance.

But Groenland and van Veldhoven (1983) cautioned that people with a better understanding (education) of tax laws have the capacity to avoid taxes as a result less compliant. As with other demographic factors, the empirical evidence on the association between education and tax compliance is mixed and inconclusive.

In a survey study of taxpayers in USA, Song and Yarbrough (1976) found that education level had influence on tax ethical behaviour of the taxpayers. The authors concluded that education level is positively related to tax ethic.

In the result of the investigation of the relationship between demographic factors and attitude toward tax evasion using New Zealand higher education students, Birch et al. (2003) reported that the respondents with higher education background and taxation knowledge are least involved in understating taxable income. Kasipilllai, Aripin and Amran (2003) determined the influence of education on tax compliance among undergraduate students in Malaysia and found significant relationship between education and tax compliance.

In another study to determine the correlation between key demographic variables and tax evasion using Australian tertiary students, Devos (2005) found that education background of the respondents had significant impact on attitude to tax evasion. The same result was reported in Chan et al. (2000), Devos (2006) and Gupta (2009). Unlike other studies, Schuetze (2002) did not find clear link between the level of education and tax noncompliance among self-employed in Canada.

2.4 Employment Status

Employment is source of taxable income. Individual may drived taxable income from either self-employment or employment. The income derived from self – employment occupation is more vunerable to under reporting for tax purpose than income from employment occupation. The reason for this, is that the income from employment in the tax system is subject to third party information reporting. For instance, under Nigerian tax system, tax on income from employement is deducted by employers under Pay As You Earn (PAYE) and remitted to relevant tax authority. This arrangement makes evading tax payment on income from employment almost impossible.

Accordingly, Chau and Leung (2009) argued that tax noncompliance opportunities are greater in occupation of self-employment such as sole trader, partnership and other sources of income that are not subject to withholding tax. Andreoni et al. (1998) also noted that there was an understatement of taxes by a greater percentage by sole proprietors who engaged in businesses in fixed locations. However, empirical evidence to support this assertion is mixed. The study of Groenland and vanVeldhoven (1983) reported that taxpayers who are self-employed are more likely to commit various forms of tax noncompliance.

Fjeldstad and Semboja (2001) also observed that employees paying their taxes through a withholding system have fewer opportunities to be noncompliant.

In another study, Gupta (2009) indicated that employment status statistically affect tax evasion in New Zealand.

In contrast to the above findings, the study of Birch et al. (2003) failed to find statistical significant relationship between employment status and acceptance of tax evasion. Similarly, Manaf et al. (2005) showed that self-empolyed individuals are likely to be more tax compliant.

2.5 Income Level

Theoretically, as income level increases, tax compliance decreases (Andreoni et al., 1989). The findings in most studies supported this theoretical assertion. In one of the earlier studies, Spicer and Lundstedt (1976) showed that level of income was statistically significant to respondents' attitude to tax evasion. Witte and Woodbury (1985) also reported that high- income earners are relatively noncompliant with tax rules.

In other studies, Crane and Nouraud (1990) found that individuals with a higher level of income tend to evade tax more. The study of Ritsema and Thomas (2003) showed that income level is positively related to the tax owed. Similarly, Manaf et al. (2005) found that middle-income taxpayers are more compliant.

2.6 Race/Ethnicity

People of the same race or ethnic background are considered different from others and are also seen by others as culturally different as a result, behave differently from others (Ackren, 2009). Differences in culture also means differences in behaviour of taxpayers of different race or cultural background. In line of this, Chan et al. (2000) declared that cultural differences have a direct effect on individual taxpayer's compliance behaviour. Other authors considered culture to be a powerful environmental factor having a great influence taxpayer's compliance behaviour (Chau & Leung, 2009; Tsakumis, Curatola & Porcano, 2007).

Most empirical studies provided evidence indicating differences in race and tax behaviour.

The study of Song and Yarbrough (1978) found minor difference between blacks and whites in tax compliance. But the finding in study of Aitken and Bonneville (1980) was that more blacks than whites were less compliant.

Cummings, Martinez-Vazquez, Mckee and Torgler (2006) showed differences in the compliance level between the US and the two African countries (Botswana and South Africa) due to cultural differences. Manaf et al. (2005) also reported difference in the tax compliance attitude of major Malaysian races.

However, the study of Kasipillai and Jabbar (2006) found no difference in tax compliance behaviour of the ethnic groups in Malaysia.

2.7 Religion

The influence of religious belief on the taxpayers' behaviour is extensively discussed in the literature (eg McGee, 2006; Torgler, 2003, 2006). Tax payment is regraded differently by different religious belief. While some religions support the payment of tax to finance any form of government expenditure, others may deny the obligation of tax payment under certain circumstances, such as a government engaging in activities regarded as illegitimate (McGee, 1996). However, evidence in the study of Torgler (2006) showed that in a country where the attendance of religious worship places is high there is significant tax compliance.

3. Research Method

3.1 Survey Instrument and Sample

The primary data of this study were collected with instrument of questionnaire. The questionnaire was designed with five-point Likert scale, dichotomous, categorical and numerical questions. The questionnaire was administered to 550 samples selected from the population of individual taxpayers residing the Federal capital (Abuja) of Nigeria. The study's samples were selected in using multi cluster random sampling method. Using this method, the individual taxpayers that served as the subjects of the study were radomly drawn from selected organizations, enterprises and government establishments that filed tax returns and PAYE to Federal tax offices in Abuja.

The survey fieldwork took almost 3 months and at the end of fieldwork, a total 332 correctly completed questionnaires collected from the respondents.

3.2 Measurement of Variables

Dependent variable of this study is tax compliance behaviour and this is operationally defined as true reporting of the tax base; correct computation of the tax liabilities; timely filling of tax returns and timely payment of the amount due as tax (Chatopadhyay & DasGupta, 2002; Franzoni, 2000).

Any behaviour by the taxpayer contrary to the above is noncompliance. As done in most compliance studies, the dependent variable was measured using the self-report method . The self-report method was designed in hypothetical scenario case, which followed Bobek (1997). The use of a scenario describing possible actions of a third party might likely produce the desired response and reduce personal bias (Kirchler & Maciejovsky, 2001).

In the scenario case, the respondents were asked 4 items questions to indicate their (1) income reporting compliance (2) Tax offset reporting compliance (3) Tax return filing compliance (4) tax payment compliance. The score (1), (2) and (3) were allocated to the options under each items of the scenario case and the values are interpreted as somewhat compliant, moderately compliant and fully compliant.

The demographic factors are the independent variables of the study. These variables were extracted from the information supplied by the respondents on their demographic background in the questionnaire of the study. Some of these variables were reclassified. The ages of the respondents were grouped in younger age (20-30 years), middle age: (31-50 years) and older age (above 50 years). Similarly, education was categorized into primary education, secondary education and higher education. Furthermore, income level was categorized into low-income level, middle-income level and high-income level, Employment status was also categorized into employees in private sector, employees in the public sector and sole proprietors. In other measurements, the Nigerian ethnic groups were categorized as Hausa/Fulani, Yoruba, Igbo, and minority while religions in Nigeria were grouped into Islamic, Christianity and traditional religion.

3.3 Data Treatment

Since the independent variables of this study are categorical variables, the most appropriate statistical technique for establishing the differences in the taxpayers' compliance behaviour along their demographic background is ANOVA. Accordingly, the data of the study were analysed under two panels using ANOVA statistical techniques.

Similar to what was done in Gutpa (2009), the differences in the tax compliance behaviour (dependent variable) across each category of demographic factors (independent variables) were statistical analysed by one way ANOVA in panel A. Post Hoc test was performed to determine the differences among individual groups of each demographic factors using Tukey HSD (honestly significant difference) method in panel B. In addition, mean plots was also used to demonstrate the differences among the individual groups of demographic factors in tax compliance behaviour .

4. Results and Discussion

4.1 Descriptive Statistics

In a cross tabulation of the respondents' gender and tax compliance behaviour, Table 1 indicates that of the 128 female which responded to the study, only 7% fully complied with the various tax rules while majority (93%) failed to comply. For the 204 male respondents in the study, 13% fully complied with the tax rules and that leave 87% as noncompliant. On the ages of the respondents, about 23% were young and of this number, Table 1 also indicates that 92% did not fully follow the tax rules, and, as a result, were noncompliant, while the remaining 8% of these respondents fully complied with the rules. For the 233 respondents within their middle ages, 88% of them were also noncompliant and this leaves 12% as fully compliant. Similarly, the majority of the older respondents (92%) did not comply with the tax rules. On the mean score, middle aged taxpayers had the highest score of 2.10 in the tax compliance together with standard deviation of .560.

For the respondents' educational backgrounds, the descriptive statistics shows the behaviour of 29% of the respondents with primary education were in full agreement with the tax rules. Furthermore, only 16% of the respondents who had secondary education qualifications fully complied with tax rules while 84% complied with the rule moderately. The small number of the 267 respondents (9%) with high education behaved in full compliance with the tax rules whereas the behaviour of the majority (93%) contradict the rules. Overall, respondents with primary education had highest mean score (2.25) as a result were relatively more compliant than the respondents with other education background.

Furthermore, the results of the cross tabulation of the respondents' employment status and tax compliance behaviour as documented in Table 1, reveals that 6% of the 171 respondents who were employed in the public sector complied fully with the tax rules while 94% of these respondents did not fully comply with the rules. Also, the majority of the respondents (90%) who worked in the private sector did not obey the tax rules as expected but the remaining 10% complied fully with the rules. In the case of respondents who earned their income as sole proprietors, 23% of them fully complied with tax rules while the remaining 77% followed the rules moderately.

On relative comparison, respondents who worked as sole proprietors with highest average score of 2.23 and standard deviation 0.553 were relatively more compliant than the respondents who earned their income from employment.

The descriptive statistics further indicates that 10% of the 218 respondents on low-income complied fully with the tax rules while remaining of these respondents did not comply with the rules. In addition, just about 15% of the respondents on the middle-income level fully followed the tax rules while others were noncompliant. Similarly, only 7% of the high-income respondents fully complied with the tax rules leaving 93% as noncompliant. With the average score of 2.22 together with standard deviation of .503, middle income earners appeared to have relatively better compliance behaviour compared to other income level.

Table 1: Profile of the Respondents (N = 332)

Demographic Factors	N	Mean	SD	Somewhat Compliant	Moderately Compliant	Compliant
Gender						
Male	204	2.08	.600	56(27)	122(60)	26(13)
Female	128	2.02	.571	38(30)	80(63)	10(7)
Age						
Young	75	1.95	.636	27(36)	58(25)	9(38)
Middle	233	2.10	.560	58(25)	147(63)	13(54)
Old	24	1.91	.538	9(38)	28(12)	2(8)
Education						
Primary	7	2.25	.692	2(29)	2(42)	2(29)
Secondary	58	2.08	.646	17(29)	32(55)	9(16)
Higher	267	2.04	.571	75(28)	167(63)	25(9)
Income level						
Low income	218	1.99	.610	68(31)	128(59)	22(10)
Middle income	83	2.22	.503	16(19)	55(66)	12(15)
High income	31	2.03	.554	10(32)	19(61)	2(7)
Income source						
Public sector	171	1.94	.605	59(34)	102(60)	10(6)
Private sector	81	2.14	.524	18(22)	55(68)	8(10)
Sole proprietorship	80	2.23	.553	17(21)	45(56)	18(23)
Race/Ethnicity						
Hausa	112	1.84	.593	47(42)	62(55)	4(3)
Yoruba	72	2.08	.566	22(31)	41(57)	9(12)
Igbo	61	2.21	.505	10(16)	41(67)	10(17)
Minority	86	2.22	.568	15(17)	58(68)	13(15)
Religion						
Islam	96	2.05	.563	30(31)	55(57)	11(12)
Christianity	225	2.05	.602	63(29)	137(61)	25(11)
Traditional	11	2.25	.461	1(9)	10(91)	-

Note: 1. N is number of respondents and SD is standard deviation

2. Percentage in parenthesis was rounded to nearest whole number.

Relating respondents' compliance behaviour to the races, the descrptive statistics reveal that 3% of the 112 respondents of the Hausa ethnic group complied fully, leaving majority from that race as noncompliant. For the Yoruba race, 88% of respondents from that race complied with tax rules moderately while the remaining 12% fully complied with the rules. Similarly, the behaviour of the majority of the respondents (83%) of the Igbo extraction did not complied with the tax rules while 17% fully obeyed the rules. Furthermore, only 15% of the respondents from minor tribes fully complied with the tax rule. With mean score of 2.21 and standard deviation of .505, the respondents of Igbo race were relatively more compliant than respondents of other origins.

In other descriptive statistics, Table 1 reveals that 12% of the 96 respondents of Islamic faith fully complied with tax rules whereas only the behaviour of 11% respondents of Christian belief fully agreed with the tax rules. Furthermore, none of the respondents from traditional belief complied with the tax rules.

4.2 ANOVA Results

The ANOVA results in panel A are documented in Table 2 while the results of multiple comparison in Post Hoc test using Tukey HSD method in panel B are presented in the appendix . The Post Hoc test results are presented along with the means plot demonstrating the differences between each sub-component of demographic variables and tax compliance. The ANOVA results indicate that there is no significant difference in taxpayer's compliance behaviour and gender (F ratio .938; $p>.10$) statistically. This result suggests that gender of taxpayers does not affect their compliance behaviour and accordingly, as indicated by the mean scores, the differences in tax compliance behaviour of both male (mean 2.08) and female(mean 2.02) is marginal. Although empirical evidence generally shows that female were more compliant than males (Eicher et al., 2002; Gutpa, 2009; Manaf et al., 2005; Mason & Calvin, 1984 etc), there are a few findings in the literature in support of this result (Friedland et al., 1978; Kirchler & Maciejovsky, 2001). Perhaps this finding demonstrates the implication of the bridging social gaps between males and females in Nigeria. Women are exposed to greater economic opportunities today in Nigeria than ever and this has increased their risk seeking capacity hence influenced their tax compliance behaviour negatively. This argument is hinged on the assertion of Richardson and Sawyer (2001) that the differences in the compliance behaviour between males and females may be narrowed as more generation of women are liberated socially.

Unlike the finding on gender, ANOVA result in panel A shows statistically significant differences in tax compliance behaviour across the age grouping of the respondents (F ratio 2.708; $p<.10$). This result provides evidence that the ages of individual taxpayers statistically affect their compliance behaviour.

Although the ANOVA result indicates that the age of respondent is associated with tax compliance behaviour, the result of multiple comparision via the Post Hoc test shows no remarkable differences between young age (1.95) , middle age (2.10) and old age (1.91). This suggests that the association between the age and tax compliance behaviour was not driven by any particular age grouping.

Accordingly, this result suggests that the older taxpayers are more likely to comply with tax rules and regulations than younger taxpayers. This finding is consistent with the studies of Spicer and Lundstedt (1976), Chan et al. (2000), Birch et al. (2003), Richardson (2005) and Devos (2008) which reported association between respondent's age and tax compliance behaviour. However, the result does not support the Wallschutzky (1984) which found that old taxpayers did not comply with tax rules. The present finding on taxpayer's age and tax compliance was expected because majority of the respondents (77%) of the study were within middle and old ages bracket hence they possessed the characteristic which might prompt them to have better tax compliance behaviour. However, it should be noted that greater part of Nigerian population constitute young people and majority of these young people are outside the tax bracket by virue of their economic and social standings in the society. This means that the data do not adequately reflect demographic characteristics of Nigeria.

The ANOVA result also indicates no significant differences in tax compliance behaviour across level of education of the respondents. This result reveals that the level of education attained by taxpayers did not affect their tax compliance behviour. Similarly, with mean difference of primary education (mean 2.25), secondary education (mean 2.08) and high education (mean 2.04), the result in Panel B for Post Hoc test indicates that there is no significant difference between different level of education in tax compliance behaviour. This result supports the study of Schuetze (2002) which reported no association between the level of education and tax noncompliance but contradict the findings in other studies such as Birch et al. (2003), Kasipilllai et al. (2003), Devos (2005), Gupta (2009) etc which reported that the level of education has influence on taxpayers' behaviour. Since greater number of the respondents had attained high education, this finding suggests that taxpayers with high education attainment may likely to be less tax compliant.

The possible reason for this finding might be that well educated people are more knowledgeable as a result, have better understanding of tax laws and can easily device the means of avoiding and evading tax than less educated people. In same light, Groenland and van Veldhoven (1983) also argued that people with a better education attainment may be less compliant because of their knowledge of the lopholes in the tax law which may make them device tax avoidance schemes easily.

Table 2: Panel A: ANOVA of Tax Compliance Behviour by Demographic Factors

Demographic Factors	Sum of Squares	Df	Mean Square	F ratio	Sig.
Gender					
Between Group	.322	1	.322	.938	.334
Within Group	113.487	330	.344		
	113.809	331			
Age					
Between Group	1.843	2	.922	2.708	.068*
Within Group	111.966	329	.340		
	113.809	331			
Education					
Between Group	.340	2	.170	.493	.611
Within Group	113.469	329	.345		
	113.809	331			
Income Level					
Between Group	3.160	2	1.580	4.697	.010**
Within Group	110.650	329	.336		
	113.809	331			
Employment Status					
Between Group	5.362	2	2.681	8.133	.000***
Within Group	108.448	329	.330		
	113.809	331			
Ethnicity/Race					
Between Group	9.090	3	3.030	9.491	.000***
Within Group	104.719	328	.319		
	113.809	331			
Religion					
Between Group	.435	2	.217	.631	.533
Within Group	113.375	329	.345		
	113.809	331			

Note: Significant levels are:*** P<.01, ** P<.05 and * P<.10.

Furthermore, the ANOVA result in panel A reveals significant difference in tax compliance behaviour across respondents' income level (F ratio 4.697; p<.05). This statistical evidence suggests that taxpayers' income level significantly affect tax compliance behaviour. However, the result in panel B for Post Hoc test indicates the major driver of the significant difference in tax compliance behaviour across income level as the middle income level. The mean difference of middle income (mean 2.22) drove association between tax compliance and income level remarkably than low income (mean 1.99) and high income (mean 2.03). This present finding is consistent with theoretical pronouncement that as taxpayers attained higher income level, they are likely to be less tax compliant (Andreoni et al., 1989).

Similarly, this study's result agrees with prior findings in Crane and Nouraud (1990), Ritsema and Thomas (2003) which showed association between income level and taxpayers behaviour.

The ANOVA result in panel A also provides evidence showing statistically significant difference in tax compliance behaviour along taxpayers' employment status. From the Post Hoc test in panel B, this difference is mainly driven by employment in private sector (mean 2.14) and sole proprietorship (mean 2.23) while the employment in the public sector (mean 1.94) exerted less impact on the difference between the two variables. This result suggests employment status of taxpayers significantly affect their compliance behaviour and it equally indicates that the employees in the private sector and self-employed persons are greater drivers of tax compliance than those employed in the public sectors. The finding in respect of the public sector was not expected because in Nigeria, the taxpayers working in the public sector have their income taxes deducted through PAYE hence they were less exposed to negative tax behaviour. However, other exogeneous factors might have interferred with the behaviour of the respondents from public sector. The result on the sole proprietorship is unexpected and contradicts general understanding that those operating in the informal economy are tax noncompliant. However, such result is not uncommon in the literature; for instance the study of Manaf et al. (2005) showed that self-empolyed persons are likely to be more tax compliant than employees.

In other results, ANOVA also shows statistically significant difference in tax compliance behaviour across taxpayers of different ethnic groupings in Nigeria . This finding suggests that ethnic grouping in Nigeria affects tax compliance behaviour statistically.

The results in panel B indicate that of the four major ethnic groupings in Nigeria, Yoruba race (mean 2.08), Igbo race (mean 2.21) and minority ethnic groupings (mean 2.22) had significant mean differences, as a result, these ethnic groupings were primary drivers of the observed difference between tax compliance and ethnicity. However, this result did not come as a surprise because prior studies have provided evidence suggesting significant differences in compliance behaviour of taxpayers of different ethnic background (Alabede et al., 2011; Aitken and Bonneville, 1980; Cummings et al., 2006; Manaf et al., 2005). Besides, the present finding is expected in highly heretogeneous society like Nigeria which has over 250 tribes.

The role of cultural influence in behaviour is plausible explanation for the differences in compliance behaviour of taxpayers of different races.

The ANOVA result reveals that there is no significant difference in tax compliance behaviour across taxpayers of different religious faith (F ratio .631; p>.10). Similarly, the result of Post Hoc test in panel B indicates the mean differences across the three religious grouping in Nigeria, that is Islam (mean 2.05), christianity (mean 2.05) and traditional religion (mean 2.25) are marginal and insignificant. This result suggests that the taxpayers' religious faith does not significantly affect tax compliance.

5. Conclusion and Implications

This study was conducted to further understand the compliance behaviour of individual taxpayers in Nigeria. The study primarily ascertained the differences in tax compliance behaviour across seven demographic backgrounds of the individual taxpayers. The data used in the study were extracted from the sample of individual taxpayers residing in the Nigeria's federal capital (Abuja) and these data were treated statistically with ANOVA. The results from the statistical analysis indicate statistically significant differences in tax compliance behaviour across the respondents' age grouping, income level, employment status and races. However, the present findings show no significant differences in tax compliance behaviour across gender, educational background and religious faith of the respondents.

Accordingly, these findings demonstrate that taxpayers' age grouping, income level, employment status and ethnic background significantly affect tax compliance behaviour in Nigeria.

The present findings have some practical implications on tax administration in Nigeria. First, Nigeria's policy makers particularly the tax administrators should take into consideration the demographic background of individual taxpayers in mapping out better strategies towards improving individual tax compliance behaviour in Nigeria. Furthermore, since this study indicates that tax compliance is influenced by cultural background of the taxpayers, policy makers should have rethink on the uniform personal income tax system operating in Nigeria. The personal income tax system should reflect the cultural diversity of Nigeria and for this reason; state governments should be allowed to adopt tax administration style that fits the culture of the taxpayers in their jurisdiction.

However, this study is not without limitations. In the first place, the taxpayers' compliance behaviour was measured using hypothetical scenario case but this method may not reflect the truthful behaviour of the respondents.

Similarly, a fair representation of the sample on a demographic basis was difficult because the list from which the samples of the study were drawn did not specify the taxpayers on a demographic basis.

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Appendix

Panel B Results

Post Hoc Test for Mean Differences of Tax Compliance for Age Grouping

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Young age	Middle age	-.14967	.07745	.131	-.3320	.0327
	Old age	.04708	.13681	.937	-.2750	.3692
Middle age	Young age	.14967	.07745	.131	-.0327	.3320
	Old age	.19675	.12506	.259	-.0977	.4912
Old age	Young age	-.04708	.13681	.937	-.3692	.2750
	Middle age	-.19675	.12506	.259	-.4912	.0977

Figure 1: Mean plot for tax Compliance Behaviour and Age Grouping

Post Hoc Test for Mean Differences of Tax Compliance for Education Level

(I) Education	(J) Education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Primary	Secondary	.16810	.23498	.755	-.3851	.7213
	High	.20599	.22486	.631	-.3234	.7354
Secondary	Primary	-.16810	.23498	.755	-.7213	.3851
	High	.03789	.08508	.896	-.1624	.2382
High	Primary	-.20599	.22486	.631	-.7354	.3234
	Secondary	-.03789	.08508	.896	-.2382	.1624

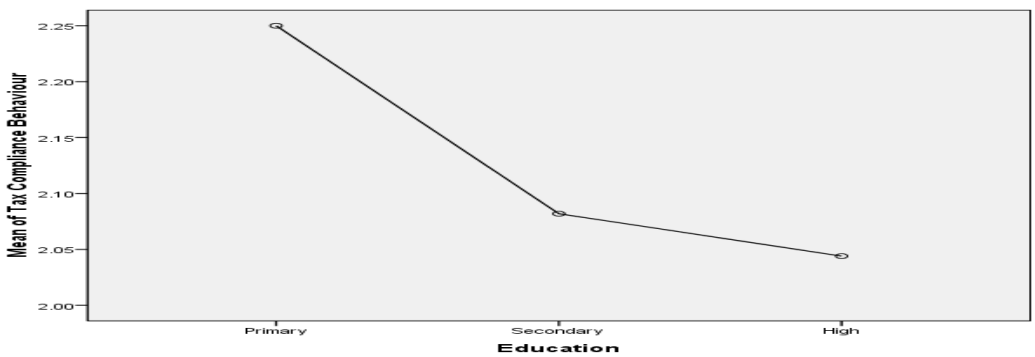

Figure 2: Mean Plot for Tax Compliance Behaviour and Education

Post Hoc Test for Mean Differences of Tax Compliance for Income Level

(I) Income	(J) Income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Low Income Level	Middle Income Level	-.22863*	.07480	.007	-.4047	-.0525
	High Income Level	-.03799	.11132	.938	-.3001	.2241
Middle Income Level	Low Income Level	.22863*	.07480	.007	.0525	.4047
	High Income Level	.19063	.12207	.264	-.0968	.4780
High Income Level	Low Income Level	.03799	.11132	.938	-.2241	.3001
	Middle Income Level	-.19063	.12207	.264	-.4780	.0968

*The mean difference is significant

Figure 3: Mean Plot for Tax Compliance Behaviour and Income Level

Post Hoc Test for Mean Differences of Tax Compliance for Employment

(I)Employment	(J) Employment	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Public Sector	Private Sector	-.20013*	.07744	.027	-.3825	-.0178
	Sole Proprietor	-.29245*	.07777	.001	-.4755	-.1094
Private Sector	Public Sector	.20013*	.07744	.027	.0178	.3825
	Sole Proprietor	-.09232	.09050	.565	-.3054	.1207
Sole Proprietor	Public Sector	.29245*	.07777	.001	.1094	.4755
	Private Sector	.09232	.09050	.565	-.1207	.3054

*The mean difference is significant

Figure 4: Mean Plot for Tax Compliance Behaviour and Employment Status

Post Hoc Test for Mean Differences of Tax Compliance for Ethnic Grouping

(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Hausa	Yoruba	-.24011*	.08520	.026	-.4601	-.0201
	Igbo	-.37273*	.08977	.000	-.6045	-.1409
	Minority	-.37883*	.08086	.000	-.5876	-.1700
Yoruba	Hausa	.24011*	.08520	.026	.0201	.4601
	Igbo	-.13263	.09833	.532	-.3865	.1213
	Minority	-.13873	.09026	.417	-.3718	.0943
Igbo	Hausa	.37273*	.08977	.000	.1409	.6045
	Yoruba	.13263	.09833	.532	-.1213	.3865
	Minority	-.00610	.09458	1.000	-.2503	.2381
Minority	Hausa	.37883*	.08086	.000	.1700	.5876
	Yoruba	.13873	.09026	.417	-.0943	.3718
	Igbo	.00610	.09458	1.000	-.2381	.2503

*. The mean difference is significant

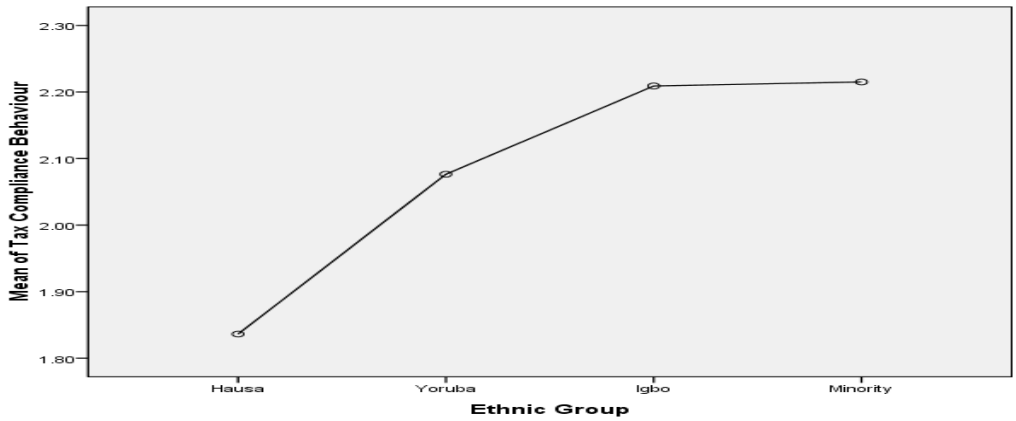

Figure 5: Mean Plot for tax Compliance Behaviour and Ethnic Grouping

Post Hoc Test for Mean Differences of Tax Compliance for Religious Faith

(I) Religion	(J) Religion	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Islam	Christianity	.00542	.07156	.997	-.1631	.1739
	Traditional Religion	-.19792	.18686	.540	-.6379	.2420
Christianity	Islam	-.00542	.07156	.997	-.1739	.1631
	Traditional Religion	-.20333	.18127	.501	-.6301	.2234
Traditional Religion	Islam	.19792	.18686	.540	-.2420	.6379
	Christianity	.20333	.18127	.501	-.2234	.6301

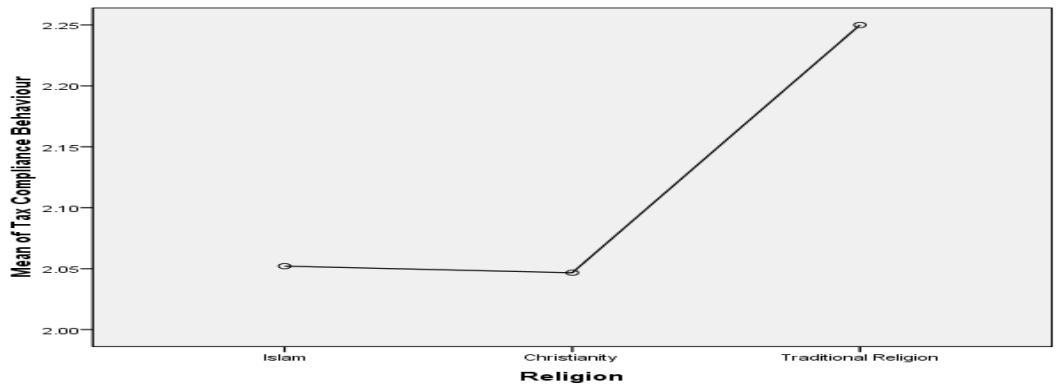

Figure 6: Mean Plot for Tax Compliance Behaviour and Religion