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IMPROVED PUBLIC SERVICES AND TAX COMPLIANCE OF SMALL AND MEDIUM SCALE ENTERPRISES IN NIGERIA: A GENERALISED ORDERED LOGISTIC REGRESSION



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ABSTRACT

Article History

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Keywords

Tax compliance Small Medium scale enterprises (SMEs) Public goods and services Generalised ordered logistic Regression, Nigeria, Likelihood.

JEL Classification: H21, H25, H26, H32. In this paper, we assess tax compliance among small and medium scale enterprises (SMEs) in Nigeria from the perspective of improving public goods and services. We utilise the Nigerian Economic Summit Group (NESG) 2018 Firms Survey Dataset on taxpayers' perception and attitudes and estimate the model of this research using the Generalised ordered logistic regression analysis. This methodology relaxes the assumption of equal odds as the explanatory variables increase. The results show a positive relationship between improved public goods and services and tax compliance of SMEs in Nigeria. However, the analysis reveals that a small increase in the improvement of public goods has a higher likelihood of moving SMEs to become low tax compliant than being tax compliant. We also find that the public goods with the highest likelihood of improving tax compliance of SMEs in Nigeria are public transport, security, and law courts. Furthermore, the findings reveal a significant positive relationship between Tax compliance of SMEs in Nigeria and tax knowledge, tax penalty, and trust in the government. The paper concludes that policymakers in Nigeria should revisit tax policies geared at improving Tax compliance of SMEs. The steps should include properly combining economic and psychological factors based on the extent to which tax non-compliant SMEs can be moved to become tax compliant.

Contribution/ Originality: This study contributes to the existing literature on SMEs tax compliance in Nigeria through identification of public goods with the highest likelihood of improving their tax compliance. Also, the adopted methodology revealed why previous tax policies have only increased the proportion of low tax compliant SMEs over tax compliant ones.

1. INTRODUCTION

In Nigeria, the issue of tax non-compliance is seen in both the formal and informal sector, among the wealthy and the poor, among corporate bodies as well as Entrepreneurs. Income taxes are mostly paid by persons who are formally employed, as well as large corporations (Kangave, Nakato, Waiswa, Nalukwago, & Zzimbe, 2018). The informal sector also referred to as the black economy, is made up of small-sized economic activities that are not being monitored by the tax authorities (Slemrod, 2019). Taxpayers among the Small and Medium Scale Enterprises (SMEs) in Nigeria have been contributing less than 5 per cent to the annual tax revenue generated, despite making up about 96 per cent of businesses, 84 per cent of employment, and 48 per cent of national GDP in the last five years (Obara & Nangih, 2017). This sector of the economy is of utmost importance as it serves as a critical source of employment, competition, innovation, poverty reduction, and economic growth (Ayuba, Saad, & Ariffin, 2018). However, more than 70 per cent of the SMEs in Nigeria are not paying taxes, and the few that are paying are not paying correctly (Obara & Nangih, 2017).

Among Sub Saharan African (SSA) countries, Nigeria has one of the lowest tax revenue to Gross Domestic Products (GDP) ratio of about 6.5 per cent, with countries like South Africa and Seychelles having ratios of about 28.4 and 31.5 respectively (International Monetary Fund Fiscal Monitor, 2018). Nigeria is, therefore, yet to attain the minimum tax revenue to GDP threshold of 15-20 per cent, as recommended by the United Nations and the World Bank in 2015, for the achievement of the Sustainable Development Goals (SDGs) in 2030 (Umar, Derashid, Ibrahim, & Bidin, 2019). This threshold is necessary because health, education, power, transportation, and sanitation; which are key targets of the SDGs require additional finances if the SDGs are to be achieved (Adeleye, Osabuohien, & Asongu, 2020; Gaspar, Amaglobeli, Garcia-Escribano, Prady, & Soto, 2019; Gupta & Plant, 2019; Prichard et al., 2019; United Nations, 2017; World Bank, 2018). Tax compliance has, therefore, become a core development objective in Nigeria due to the rising public debts of about US\$81.27 and a growing debt servicing ratio of about 50 per cent of government revenue, among other factors (African Development Bank-AFDB, Nigeria Economic Outlook, 2020).

The search for a sustainable solution to tax non-compliance has remained a paramount agenda for the Nigerian government and the tax authorities. The Self-assessment system was introduced in 2011 but failed in its objectives, as the voluntary compliance and knowledge it required were not precisely available (Kasum, Sanni, & Fagbemi, 2019). More so, the primary objective of the National Tax Policies (NTP) implemented in 2012 and 2017 was to put in place a strong and productive tax system in Nigeria, with a focus on legislative amendments, to reduce the tax burdens of corporate firms and SMEs. The presumptive tax regime was implemented based on the tax policies to collect taxes from SMEs (Udoh, 2015). The presumptive taxation system is used to predict taxpayers' income based on information about variables not considered in the standard computation of taxable income (Adeleye, Osabuohien, Bowale, Matthew, & Oduntan, 2018; Bucci, 2019). Despite its objective to increase overall revenue generated from this sector, tax compliance is still low (Olaitan, 2016). The most recent effort is the just enacted 2020 Public Finance Act in Nigeria which has a vital goal to improve the ease of doing business in Nigeria and also to reduce the burdens of SMEs. SMEs with annual turnovers below a particular threshold was therefore exempted from paying Value Added Taxes (VAT) and Company Income Taxes-CIT (Budget Office of the Federation, 2020). The economic and psychological factor schools of thought explain tax compliance. In the psychological school of thought, one of the determinants of tax compliance is the creation of a fiscal social contract (Alasfour, 2019; Bird & Davis-Nozemack, 2018; Da Silva, Guerreiro, & Flores, 2019; Gobena & Van Dijke, 2017; Umar et al., 2019). When tax compliance is explained concerning the provision of socioeconomic goods and services, the creation of a fiscal social contract is in view. This contract binds the government and the citizens and does not disaggregate the citizens into the wealthy and the poor. It opines that citizens should pay their taxes to the government and will, in turn, be given projects and goods and services for the paid taxes (Fjeldstad, Schulz-Herzenberg, & Hoem Sjursen, 2012; George, Olayiwola, Adewole, & Osabuohien, 2013; Timmons, 2005; Umar & Tusubira, 2017). This determining factor has worked in advanced countries like Sweden, where one of the reasons provided for the attainment of a high tax compliance rate is the expansion of the welfare benefits like all-inclusive social insurance schemes and diminishing wage inequality (Nistotskaya & D'Arcy, 2017). The Swedish government used a more service-oriented approach to improve citizens' voluntary tax compliance which thus created an early fiscal social contract between the Swedish government and the citizens (Nistotskaya & D'Arcy, 2017). However, from the taxpayers' narratives in Nigeria, it has been revealed that the citizens are unhappy with the non-transparent tax systems, and the deplorable state of socioeconomic conditions (Umar & Tusubira, 2017).

Advanced economies have relatively performed well in deploying taxation as a tool for achieving societal development. However, the same cannot be said for developing countries, Nigeria inclusive, where government spending on public goods and services is low (Okorie, Osabuohien, & Oaikhenan, 2020; Traoré, 2018). In Nigeria, recurrent expenditure still takes about 45.7 per cent of the total government spending, while capital expenditure is about 26.3 per cent. The government expenditure allocation to roads is about 2.4 per cent while for electricity it is just about 1.2 per cent (Budget Office of the Federation, 2020). Electricity generation in Nigeria is as low as 3355 megawatts, which is not even enough to power a business district in New York City, how much more cater for the needs of individuals and businesses in Africa's most populous nation (Efobi, Beecroft, & Osabuohien, 2014; Matthew et al., 2019). Expenditure allocations to security and public transportation are as low as 1.1 per cent and 1.14 per cent, respectively. Businesses will always require various means of transportation to bring in raw materials as well as to move out their goods and services to the consumers. This low rate of investment in transportation will, therefore, have adverse effects on small businesses. The low rate of the allocation to security also puts SMEs at risk of theft, slow response to fire outbreaks as well as the destruction of their properties (Olaitan, 2016).

Empirical researches in Nigeria and other developing countries have found mixed results when Tax compliance of SMEs is explained with respect to the various determinants, provision of public goods and services inclusive. The results have shown significant positive or negative relationships between Tax compliance of SMEs and improved tax morale, improved public goods and services, reduced corruption, improved trust in the government as well as tax rates, tax penalties, and tax audits (Lee, Gokalp, & Kim, 2019; Newman, Mwandambira, Charity, & Ongayi, 2018; Otusanya, Adeyeye, & Ovienbor, 2019; Umar & Tusubira, 2017; Van Dijke, Gobena, & Verboon, 2019). However, these results were just focused on the positivity or negativity of these determining factors of tax compliance and nothing was said about the different extents to which these factors move citizens from being tax non-compliant, to being low tax compliant and eventually tax compliant. Perhaps, these results have not fully informed the government and policymakers on the factors that are most likely to improve tax compliance rates. As such, focus has been on less likely factors or less likely a combination of factors.

From the foregoing, it becomes crucial to assess Tax compliance of SMEs in Nigeria from the extent to which improved public goods and services will move taxpayers from being non-tax complaint and low tax compliant to being tax compliant. This study, therefore, uses the generalized ordered logistic regression to examine the likelihood of Tax compliance of SMEs in Nigeria when public goods are improved. The public good with the most impact on Tax compliance of SMEs in Nigeria will also be ascertained from the regression results as well as the predicted probability results and descriptive analysis. These results will help the government and policymakers revisit strategies for improving Tax compliance of SMEs and focus on them from the most impactful, bearing in mind how the effects actually work.

2. INSIGHTS FROM EXTANT STUDIES

Tax compliance is deciding to pay taxes for the benefit of society and at the expense of personal benefits (Van Dijke et al., 2019). It is the will of the taxpayer to act according to the spirit and letter of tax rules and regulations and tax administration without the use of coercion (José, Quesada, Tapia, & Llàcer, 2014; Newman et al., 2018). While Public goods are referred to as "non-rivalrous": because they do not reduce as persons consume them (Kenton, 2018). These goods are numerous and include public parks, national defence, public sewer systems, electricity, roads and other infrastructure necessary for the survival and growth of any business. These goods are financed publicly through such means as taxes (Ingham, 2015).

The definitions of Small and Medium Scale Enterprises (SMEs) varies across countries. According to the Central Bank of Nigeria-CBN (2005) SMEs are independent firms with 11 to 200 employees and has an asset base between N5-N500million excluding land and buildings (Ayuba et al., 2018).

2.1. Theoretical Review

2.1.1. Economic Deterrence Theory

As described by Allingham and Sandmo (1972) and Becker (1974) economic deterrence explains tax compliance with respect to tax rates, probability of being detected for evasion, and the penalties and threats of punishments (Ali, Fjeldstad, & Sjursen, 2013). The three principles of this theory are certainty; which represents a surety, severity; which represents the weight of punishment, and celerity; which means how fast these punishments would be given to defaulters. It should also be noted, however, that in the course of achieving this seamless tax collection process using deterrence, the taxpayers would try to test their chances of being caught. Where they find higher chances, they would then decide to go on ahead to comply, and where they find lower chances, they would look for loopholes to evade taxes (Feld & Frey, 2006; Sandmo, 2004). This is because the theory assumes that taxpayers' calculate the costs and opportunities of their actions before taking any actual decision. As such, the taxpayer is applying the economic rationale that makes them evade taxes as much as the payoff from evasion exceeds the supposed cost of being found non-compliant (Pfister, 2009).

2.1.2. Fiscal Social Contract

This theory is said to have sprung up and developed from the deterrence and socio-psychological theories. It is built on government and taxpayer contract embedded in social and relational factors (Fjeldstad et al., 2012; McKerchar & Evans, 2009). Fjeldstad et al. (2012) opined that the taxpayers engage in an exchange of their market purchasing power for government goods and services. However, the exchange is dependent on government authority and its varying performance. According to Timmons (2005) the conditions sufficient for the fulfilment of the fiscal social contract include the ability of the government to produce public goods so that each citizen does not have to do so themselves. Tax prices are to be set above the cost of producing public services so that the government can cover its cost. The enforcement of tax compliance through force must be more costly than producing goods, allowing gains to be obtained from trade. The existence of a probability that one of the citizens will play Tit-For-Tat (TFT); that is, responding to the demands of the government for taxation based on their performance.

2.2. Empirical and Methodological Review

In the qualitative research on the explanations to the issues facing developing countries with respect to the fiscal social contract of taxation, Umar and Tusubira (2017) conducted a semi-structured interview with selfemployed business owners in Nigeria. It was concluded that Tax non-compliance is as a result of the people's dissatisfaction with the non-transparent tax system, the poor condition of socioeconomic goods, and the non-functioning of the tax audit system. On the other hand, Jolodar, Ahmadi, and Imankhan (2019) developed a tax compliance model using socio-psychological factors. A sample of 550 legal persons in Iran's Sari tax administration liable to pay Value Added Tax (VAT) was drawn from a population of 2900 legal persons. Using Structural Equation Modelling (SEM), it was concluded that given tax fairness, taxpayers' attitude, trust in the authorities, and tax morale, tax morale has the most impact on tax compliance. Non-pecuniary factors like tax knowledge limitation, non-compliance by other taxpayers, and corruption of the tax officials are key determinants of tax compliance in Sub-Saharan African (SSA) countries as indicated by Kamasa, Adu, and Oteng-Abayie (2019). This conclusion was made using the Afro Barometer round five (5) survey data, and the fiscal social contract was said to have more associations with tax compliance in countries with British origins. Brockmann, Genschel, and Seelkopf (2016) examined the improvement of tax compliance from the perspective of giving positive rewards to active taxpayers. Using a controlled laboratory experiment, tax compliance was compared in light of deterrence and reward. It was concluded that rewards significantly affect tax compliance; however, this relationship is not straight forward. While women were seen improving their tax compliance, the men were not. Umar et al. (2019) examined the relationship between public governance quality and tax compliance behaviour in developing countries. Their conceptual paper was focused on socioeconomic conditions serving as a mediator between the government and the citizens, with emphasis on maintaining the fiscal social contract. It was concluded that dissatisfaction with the system leads to the boycott of the tax system and in turn, affects economic development. However, being a conceptual effort, they could not correctly explain socioeconomic conditions in all developing countries as these are country-specific characteristics. Also, the provision of goods and services influences taxpayers to comply with tax laws and tax obligations (Otusanya et al., 2019). This conclusion was made in their tax compliance research which employed Ordinary Least Squares (OLS) regression analysis to explain tax compliance of SMEs in Nigeria.

Furthermore, Nistotskaya and D'Arcy (2017) conducted exploratory research on why the tax compliance rate in Sweden is among the highest in the world. It was concluded that the early monitoring of economic activities and the development of a direct vertical and horizontal fiscal social contract between the state and the people had played an enormous role in Sweden's high tax compliance rate, despite the high tax rates. While Da Silva et al. (2019) compared voluntary and enforced tax compliance using the slippery slope framework in Brazil. Using a service paradigm, they proposed that taxpayers' willingness to pay taxes is as a result of their desire to receive proper treatment and quality public services in return for the taxes paid. The outcome of their study confirmed the existence of a trust-based interaction between the taxpayers and the government that boosts tax morale and tax compliance. Thus, as noted by Lamberton, De Neve, and Norton (2014) boosting tax morale and tax compliance is through giving the citizens voice on their choice of public goods and also being accountable as a government for what you use the tax money for. This conclusion was made in their study on tax compliance through eliciting taxpayers' preferences. Another outcome of the study was that allowing taxpayers' preference to show the distribution pattern of the government in terms of public goods will increase tax compliance by 15 per cent. However, Lee et al. (2019) explained firms' tax compliance in developing countries from the social exchange point of view. Employing multilevel logistic regression analysis, their study emphasised that the creation of social exchange between the firms and the government does not happen in a short space. Therefore, factors like bribery, tax burdens, as well as tax enforcement, are to be appropriately analysed.

2.3. Tax Compliance Strategies in Nigeria

In trying to achieve voluntary tax compliance among these SMEs in Nigeria, the presumptive taxation system has been put in place. The presumptive taxation system is used to predict taxpayers' income based on information about variables not considered in the standard computation of taxable income. This system takes into consideration the poor accounting of business information for auditing allows taxes to be collected from them (Egwaikhide, 2019). Despite its objective to increase overall revenue generated, it cannot be called a sustainable solution to the problem at hand. Taxpayers who typically comply with the rules will want to shift to this regime if they perceive the tax burden to be lower. Taxpayers will thus manipulate income declared and deliberately hide as SMEs to remain within the presumptive tax regime. This will, in turn, tamper with voluntary compliance and erode the actualization of improved revenue (Ebifuro, Mienye, & Odubo, 2016).

The Voluntary Assets Income Declaration Scheme (VAIDS) implemented in 2017 was put in place to improve the Nigerian tax base and reduce tax non-compliance. The focus was on persons with income above N1 billion and it yielded about N54 billion in paid tax and increased the overall tax revenue generated in 2018 to N5.32 trillion (Federal Inland Revenue Service-FIRS, 2018). However, the lack of enforcement after its completion killed any

adverse effect that it was meant to have on evasion as people still got away with not truthfully declaring their assets. The Voluntary Offshore Assets Regularisation Scheme (VOARS) launched in 2018 giving wealthy taxpayers a 12 months window to declare their offshore assets and pay the necessary taxes voluntarily has shown little or no enforcement evidence on the part of neither the government nor any form of eagerness on the part of the taxpayers (Adebiyi, Bamfo, & Isiadinso, 2019).

National tax policies contain a set of broad parameters for taxation as a whole. It describes principles and guidelines that govern tax administration and tax collection. The aim is to bring about fiscal responsibility and accountability, correct market failure, pursue fairness and equity, and provide economic stability, among others (Beecroft, Osabuohien, & Olurinola, 2018; Dike, 2014; Osabohien, Ufua, Moses, & Osabuohien, 2020). The 2016 NTP was published to simply the tax system, to provide ease of tax compliance, to provide new policies to improve the tax revenue to Gross Domestic Products (GDP) ratio, among others. The focus was to improve indirect taxes, review tax rates, create a competitive edge, and improve tax revenue generation in Nigeria.

Tax policies are good, but they require strong legal back up so that they can become tax laws. Tax laws are fundamental because they clearly state tax rates and stipulate sanctions for clearly stated tax offences. The most recent tax Act in Nigeria is the 2020 Public Finance Act, called "the Act"; signed on the 13th of January 2020 by President Muhammadu Buhari. Some of the significant changes contained in this Act, according to the Budget Office of the Federation (2020) include:

- Application of excess dividend tax to only untaxed distributions other than profits exempted tax and investment income.
- Small business whose annual turnovers are less than N25 million will be exempted paying Company Income taxes (CIT).
- Medium-sized companies with annual turnovers between N25 million to N100 million will pay low CIT rates of 20 per cent.
- Modification of commencement and cessation rules to get rid of overlaps and gaps and avoid double taxation during commencement.
- There was an amendment of minimum tax provision to 0.5 per cent of annual turnover, with exemptions only for small businesses.
- Medium-sized companies now have 2 per cent bonus for early payments of CIT and a 1 per cent bonus for large companies.
- The requirement of Tax Identification Number (TIN) before bank accounts for individuals while existing account holders are required to provide their TIN for the continued operation of their account.
- Value Added Tax (VAT) registration threshold of N25 million as annual turnovers in a calendar year was made.
- Increase of VAT rate from 5 percent to 7.5 percent.

The 2020 Public Finance Act has five specific goals and objectives, which include improving government revenue through various fiscal measures, domestic tax law reforms and aligning them with global best practice. Others include ensuring fiscal equity by reducing instances of regressive taxation, provision of support to small businesses in line with Ease of Business Reforms and the provision of tax incentives for investments in infrastructure and capital market.

3. METHODOLOGY

3.1. Theoretical Framework

This study adopts the fiscal contract paradigm in Timmons (2005) research work on fiscal contract: states, taxes, and public services. This contract states that tax compliance in itself is a tool for regulating government activities and preferences because the citizens can hinder the government by holding back revenue. It is argued that

using bureaucracies to monitor and sanction non-taxpaying citizens is very costly (Fjeldstad et al., 2012). The government should, therefore, make tax compliance cost-effective by remaining committed to the citizens, give the people a voice over policies, provide them with goods of direct benefits, and invest in methods and beliefs that can be substituted for coercion. This, in turn, opens a door for an exchange-based government relationship in which the government sells services for revenue (Timmons, 2005). Therefore, in understanding taxpayers' behaviour and their unforced willingness to pay their taxes, it is possible to assume that the behaviour and attitude of the taxpayers are determined by satisfaction levels with the fiscal exchange with the government. Therefore, a wrong perception of the tax system may bring about tax non-compliance by the taxpayers, as an attempt to adjust the terms of trade with the government (Lenton, Masiye, & Mosley, 2017; Umar et al., 2019; Umar & Tusubira, 2017).

The conceptual framework for this study is obtained through the modification of the recommended framework in the tax compliance studies carried out by Umar et al. (2019); Lenton et al. (2017) and Timmons (2005).

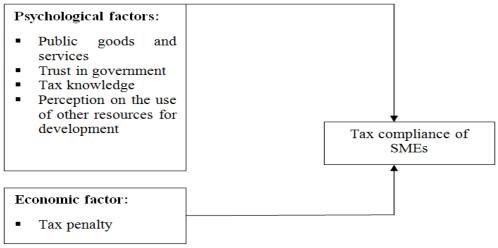


Figure-1. Schematic framework for Tax compliance of SMEs in Nigeria.

From 1, tax compliance of SMEs is obtained directly from either psychological factor, of which provision of public goods and services is included or through tax penalty; which is an economic factor.

3.2. Model Specification

To understand the effects of the provision of public goods on Tax compliance of SMEs in Nigeria, the model for this study is specified according to the adapted fiscal social contract by Timmons (2005). Therefore, the model is modified to suit the conceptual framework for this study and written its implicit form as follows:

$$TC = f(PG, OR, T, TK, TP)$$
(1)

Where:

TC: Tax compliance.

PG: Improved public goods.

OR: Perception on government's use of other resources.

T: Trust in the government.

TK: Tax knowledge.

TP: Tax penalty.

Equation 1 can be re-written in its linear form such that:

$$Y_i = \beta_0 + \beta_1 P G_i + \beta_2 O R_i + \beta_3 T_i + \beta_4 T K_i + \beta_5 T P_i + \varepsilon_i$$
⁽²⁾

Where:

β₀: Intercept term.

 $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 : Slope coefficients.

 ε_i : Error term.

3.3. Data and Estimation Technique

3.3.1. Data

This research utilized the 2018 Nigeria Economic Summit Group (NESG) quantitative survey dataset on firms' attitudes and perceptions towards tax compliance in Nigeria. The 8238 firms surveyed were small and were defined based on their sizes, according to the National Bureau of Statistics (NBS). Since most of the firms in the rural areas did not have up to 10 employees, the surveyed small firms used were defined as having employees between 5 and 49 employees. They were a combination of both registered and unregistered firms. The survey was conducted across the states in Nigeria and had an urban to a rural ratio of 70:30.

3.3.2. Estimation Technique

The study employs the generalised ordered logistic regression analysis to assess the role of improved public goods on Tax compliance of SMEs in Nigeria. This method is used when the outcome variable is ordinal and ranked, and when the outcome variable is ordinal and ranked. This methodology is used to relax the assumption of proportional odds as this study believes that the level of Tax compliance of SMEs varies as each explanatory variable increase. The SME is thus either tax non-compliant, low tax compliant or tax compliant. Given the response category of the dependent variable, SMEs that opine that tax non-compliance is not wrong at all are regarded as tax non-compliant. Those that assert that tax non-compliance is wrong but understandable are seen as low tax compliant, while those that state tax non-compliance is wrong and punishable are deemed tax compliant.

The Generalised Ordered Logistic model is specified according to Fullerton and Xu (2016) and McCullagh and Nelder (1989) such that:

$$P_{r}(y = z | X) = \begin{cases} F(\omega_{1} - X\alpha_{1}) \\ F(\omega_{z} - X\alpha_{z}) - F(\omega_{z-1} - X\alpha_{z-1}) \\ 1 - F(\omega_{z-1} - X\alpha_{z-1}) \end{cases}$$
(3)

Where F is the logistic Cumulative Density Function (CDF);

 α is a vector of logit coefficients that varies freely across logit equation;

X is a vector of explanatory variables;

ω is a cut-off point;

Z is the logit.

4. RESULTS AND DISCUSSIONS

4.1. Results

The results for this research are presented in two sets. The first set uses an indicator for overall improved public goods and combines it with the other explanatory variables. The second set, on the other hand, uses eight public goods and tax penalty to explain Tax compliance of SMEs in Nigeria and to ascertain which of these public goods have the most impact on tax compliance. The results of the generalised ordered logistic regression have two panels. The first panel contrasts SMEs that are tax non-compliant with SMEs that are less tax compliant or more tax compliant. While the second panel contrasts SMEs that are tax non-compliant and less tax compliant with SMEs that are more tax compliant. The positive coefficients depict the likelihood to fall into a higher category of tax compliance. In comparison, the negative coefficients depict a less probability of falling into a higher category of tax compliance. For the regression coefficients, only the signs are interpreted. The odds ratio shows the odds that SMEs will comply with taxes when the explanatory variable increases. This is measured by taking the ratio of the probability of tax compliance to the probability of tax non-compliance. The probability value of the Z test statistic, on the other hand, measures the statistical significance of each regression coefficients in explaining tax compliance. The null hypothesis that regression coefficients are not statistically significant is rejected at a 5 per cent level of significance. The Pseudo R squared is not interpreted like the R squared of linear regression analysis. Instead, it is used to compare models.

Table-1. First	t generalised	l ordered lo	ogistic r	egressior
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Variables	Coefficients	Odds ratio	P-value
Not wrong at all			
Perception of not paying taxes until better services are provided	-0.121	0.886	0.005
Perception on the use of other resources to finance government	-0.193	0.824	0.000
projects			
Trust in government	0.131	1.141	0.000
Tax knowledge	0.098	1.103	0.019
Tax penalty	0.446	1.561	0.000
Wrong but understandable			
Perception of not paying taxes until better services are provided	-0.213	0.809	0.000
Perception on the use of other resources to finance government	-0.228	0.796	0.000
projects			
Trust in government	0.103	1.109	0.000
Tax knowledge	0.111	1.118	0.001
Tax penalty	0.906	2.474	0.000
P-LR Chi-square	0.000		
Pseudo R square	0.045		

The results in the first and second panel of Table 1 reveal that all the explanatory variables are statistically significant at 5 per cent in explaining Tax compliance of SMEs in Nigeria. The probability value of the likelihood ratio chi-square is also statistically significant at 5 per cent. Thus, this means that at least one of the regression coefficients in this model is not equal to zero. The test for multicollinearity displayed in Section 10f the appendices revealed the presence of no strong positive correlation between the explanatory variables.

In the first and second panel of Table 1 the negative regression coefficients for SMEs perception that taxes should not be paid until better services are given and that the government can use other resources instead of taxing firms it reveals a less likelihood of these factors to bring about tax compliance. While the positive regression coefficients for tax penalties, tax knowledge, and trust in government reveals a higher likelihood for tax compliance based on these factors.

For the odds ratio, tax penalty and tax knowledge increase the odds for tax compliance as movement is made from the first panel to the second panel, while a slight decrease is seen in the odds of tax compliance for trust in government. On the other hand, SMEs perception that tax should not be paid until better services are given and that the government can use other resources instead of taxing firms show a decrease in the odds of tax compliance. Table-2. Predicted probabilities.

Table-2. Predicted probabilities.									
Tax compliance levels	PG	OR	Т	TK	ТР				
Non-tax compliant	15%	15%	11%	12%	8%				
Low tax compliant	59%	59%	57%	56%	49%				
Tax compliant	26%	26%	33%	32%	43%				

Where:

PG: Improved public goods

OR: Perception on government's use of other resources

T: Trust in the government

TK: Tax knowledge

TP: Tax penalty

The predicted probability results presented in Section 3 of the appendices revealed that all the predicted probabilities are statistically significant at 5 per cent. The results in Table 2 show that SMEs perception that taxes should not be paid until better services are provided and perception on the use of other resources to finance projects instead of taxing SMEs, has a higher percentage of making SMEs low tax compliant, than being tax compliant or non-tax compliant. Also, greater trust in government, improved tax knowledge and greater tax penalty have a higher percentage to leave SMEs as low tax compliant than being tax compliant.

Table-3. Second generalised ordered logistic regression.

Variables	Coefficient	Odds ratio	P-value
Not wrong at all			
Improved telecommunication	-0.136	0.871	0.042
Improved electricity	-0.049	0.952	0.460
Improved public transport	-0.079	0.923	0.290
Improved financial institution	-0.087	0.916	0.233
Improved court of law	-0.055	0.946	0.453
Improved labour regulation	0.081	1.085	0.270
Improved roads	0.189	1.208	0.006
Improved security	0.253	1.288	0.000
Tax penalty	0.592	1.652	0.000
Wrong but understandable			
Improved telecommunication	-0.036	0.965	0.500
Improved electricity	-0.021	0.979	0.685
Improved public transport	0.014	1.149	0.017
Improved financial institution	0.118	1.017	0.758
Improved court of law	0.144	1.154	0.013
Improved labour regulation	0.003	1.003	0.956
Improved roads	-0.014	0.986	0.803
Improved security	-0.028	1.015	0.779
Tax penalty	0.870	2.388	0.000
P-LR Chi-square	0.000		
Pseudo R square	0.004		

Table 3 contains several statistically insignificant negative regression coefficients. This analysis was conducted to see the extent to which improving each public goods and services will improve Tax compliance of SMEs. In the first panel, only improved telecommunication, roads and security are statistically significant at 5 per cent and positive in explaining Tax compliance of SMEs in Nigeria. While in the second panel, only improved law court and

public transport are statistically significant. These two variables also have positive signs and thus depict a likelihood of Tax compliance of SMEs. This, therefore, means that in moving SMEs from being tax non-compliant to being low tax compliant or tax compliant, the essential variables are improved telecommunications, roads and security. While to move SMEs from being tax non-compliant or low tax compliant to being tax compliant, the critical factors are improved law court and public transport.

Tax compliance levels	Telecomm	Roads	Security	Law court	Public transport
Non-tax compliant	15%	13%	13%	12%	13%
Low tax compliant	57%	56%	56%	56%	56%
Tax compliant	28%	30%	31%	31%	31%

Table-4. Predicted probabilities

The results in Table 4 selected the predicted probabilities of only the statistically significant factors in Table 3. It is revealed from Table 4 that employing improved telecommunications, roads and security to move SMEs from being tax non-compliant to being either low tax compliant or tax compliant more of the SMEs will fall in the category of low tax compliance. Also, when an improved court of law and public transport are being employed to move SMEs from being tax non-compliant and low tax compliant to becoming tax compliant, majority of the SMEs will remain low tax compliant. From this result also, it is revealed that improved security, law courts and public transport have the most likelihood to make SMEs tax compliant.

4.2. Summary of Findings

This study found a positive relationship between improved public goods and services and Tax compliance of SMEs in Nigeria. This finding is in line with the empirical studies of Umar and Tusubira (2017) and Lee et al. (2019). Also, the findings on the positive relationship between Tax compliance of SMEs and trust in government as well as tax knowledge and tax penalty are in accordance with theoretical postulations of Allingham and Sandmo (1972) and Feld and Frey (2006). It also corroborates the results of Umar and Tusubira (2017); Jolodar et al. (2019) and Kamasa et al. (2019).

However, being that improving public services requires large funds and investments, the Nigerian government and policymakers can start with improving security, law courts and public transportation. Also, all the economic and psychological factors used in this study have shown that a small increase in these factors will have the most effect on moving tax non-compliant SMEs to become low tax compliant. Therefore, in addressing the issue of tax non-compliance among SMEs, time for strategies to yield the desired objectives should be put into consideration, and hasty decisions should not be made.

5. CONCLUSION AND RECOMMENDATIONS

The primary goal of this study was to assess the likelihood of Tax compliance of SMEs in Nigeria when public goods are improved. Also, the public goods with the most impact on Tax compliance of SMEs in Nigeria was established; given the present conditions of SMEs and the level of trust between the government and the citizens. The findings revealed the likelihood of Tax compliance of SMEs to improve in Nigeria when public goods are improved. It also revealed the importance of improving SME tax knowledge, as well as tax penalties in determining tax compliance in Nigeria. The perception of SMEs that the government can use other resources to finance projects instead of taxing firms also plays a significant negative role in determining tax compliance levels. Furthermore, investment in security, public transportation and law courts can be a starting point for improving public goods in Nigeria, being that they have the most impact on tax compliance.

It is, therefore, worrisome that the allocations of the annual budgets to these socioeconomic goods are still very low. The tax laws already in place to govern the overall Nigerian tax system are very important. However, to harness the benefits of these tax laws, reduce tax compliance costs, and achieve an improved domestic revenue generation in Nigeria, the Nigerian government and policymakers are advised to take steps to improve the allocation of government expenditure to public goods and services required for the survival and growth of SMEs. Also, efforts should be made to improve taxpayers' education and tax knowledge.

Furthermore, bearing in mind that getting the people to comply with taxes takes some time even when quality goods and services are being provided, the policymakers in developing countries, Nigeria inclusive can start by focusing on tax compliance that has higher tax compliance likelihood, as revealed in the findings of this research.

The importance of strengthened and improved government institutions cannot be overemphasised. It is important for tax laws to be in place. However, these laws are adhered to concerning the guiding and governing institutions for its enforcement. The government in developing countries should, therefore, deepen the quality of tax institutions and give stronger punishments for tax non-compliance. This will, in turn, reduce the ease at which small businesses evade taxes since they would be more conscious of the repercussions for being caught.

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APPENDICES

Section-1. Test for Multicolinearity

. estat vce, correlation

Correlation matrix of coefficients of ologit model

	e (V)	q21 q23b	q29d	q54a	q61	q22e	cut1 _ ^{cons}	cut2 _cons
q21								
	q23b	1.0000						
	q29d	0.0664	1.0000					
	q54a	0.0021	-0.0754	1.0000				
	q61	0.0196	-0.0057	0.0106	1.0000			
	q22e	-0.2589	0.0883	-0.0102	-0.0144	1.0000		

. estat vce, correlation

Correlation matrix of coefficients of ologit model

	e (V)	q21 q26a	q26b	q26c	q26d	q26e	q26f	q26g	q26h	q61	cut1 _ ^{cons}	cut2 _cons
q21												
	q26a	1.0000										
	q26b	-0.2473	1.0000									
	q26c	-0.2419	-0.0901	1.0000								
	q26d	-0.1035	-0.0550	-0.2587	1.0000							
	q26e	-0.1328	0.0108	-0.0903	-0.3180	1.0000						
	q26f	-0.0573	-0.0296	-0.1470	-0.1358	-0.3705	1.0000					
	q26g	-0.0251	-0.2222	-0.1226	-0.0626	-0.0322	-0.1091	1.0000				
	q26h	-0.0701	-0.2356	-0.0381	-0.0239	0.0240	-0.0230	-0.3835	1.0000			
	q61	-0.0285	-0.0219	-0.0077	-0.0053	0.0139	-0.0370	0.0087	0.0180	1.0000		

Section-2. Generalized Ordered Logistic Regression Result

Section-2. Gener			~	~			
Generalized Ordered 1	Logit Est	timates		nber of ok		6762	
				chi2(10)	=	586.21	
				ob > chi2	0.0000		
Log likelihood = -62	70.1575		Pse	eudo R2	=	0.0447	
	q21	Coef.	Std. Err.	Z	₽> z	[95% Conf.	Interval]
1_ Not wrong at all							
	q23b	1930942	.0476811	-4.05	0.000	2865474	099641
	q29d	.1314677	.0359844	3.65	0.000	.0609396	.2019957
	q54a	.0983779	.0419009	2.35	0.019	.0162536	.1805022
	q61	.445611	.0567995	7.85	0.000	.334286	.556935
	q22e	1213788	.0428714	-2.83	0.005	2054052	0373524
	_ ^{cons}	1.063341	.224666	4.73	0.000	.6230042	1.503679
2_ Wrong but understa	andable						
	q23b	2276283	.0336024	-6.77	0.000	2934877	161768
	q29d	.1034505	.0277718	3.73	0.000	.0490188	.1578822
	q54a	.1114478	.033764	3.30	0.001	.0452716	.1776242
	q61	.9056411	.0481827	18.80	0.000	.8112048	1.00007
	q22e	2125497	.032295	-6.58	0.000	2758467	149252
	_ ^{cons}	-2.346383	.1809546	-12.97	0.000	-2.701047	-1.991718
. gologit2 q21 q23b	q29d q	54a q61 q22e,	or				
Generalized Ordered 1	Logit Est	timates	Nun	nber of ob	os =	6762	
	5			chi2(10)	=	586.21	
			Pro	ob > chi2	=	0.0000	
Log likelihood = -62	70.1575		Pse	eudo R2	=	0.0447	
	q21	Odds Ratio	Std. Err.	Z	₽> z	[95% Conf.	Interval]
1 Not wrong at all							
	q23b	.8244043	.0393085	-4.05	0.000	.7508515	.9051623
	q29d	1.140501	.0410402	3.65	0.000	1.062835	1.223843
	q54a	1.10338	.0462326	2.35	0.019	1.016386	1.19781
	q61	1.561444	.0886892	7.85	0.000	1.396943	1.74531
	q22e	.8856984	.0379711	-2.83	0.005	.8143173	.963336
	_cons	2.896032	.6506398	4.73	0.000	1.864521	4.49820
2_ Wrong but understa	andable						
	q23b	.7964202	.0267616	-6.77	0.000	.7456584	.8506378
	~20d	1 1 1 0 0 0 0 1	0207007	2 7 2	0 000	1 05024	1 171029

3.73 0.000

3.30 0.001

18.80 0.000

0.000

-6.58

.01732 -12.97 0.000

1.171028

1.194376

2.718492

.8613515

.1364607

1.05024

1.046312

2.250618

.7589292

.0671352

q29d

q54a

q61

q22e

_cons

1.108991

.8085201

.0957147

.0307987

.0261112

1.117895 .0377446

2.473517 .1191806

Generalized Ordered Logit Es	imates	Num	ber of ol	os =	6257	
Scherarized bracica bogic is	211110 000		chi2(18)	=	448.10	
			b > chi2	=	0.0000	
Log likelihood = -5881.3549			udo R2	=	0.0367	
q21	Coef.	Std. Err.	Z	₽> z	[95% Conf.	Interval]
1_ Not wrong at all						
q26a	1385686	.0680343	-2.04	0.042	2719133	0052239
q26b	0489971	.0663762	-0.74	0.460	1790921	.0810979
q26c	0792403	.0749158	-1.06	0.290	2260727	.067592
q26d	0873299	.0732771	-1.19	0.233	2309503	.0562906
q26e	0554153	.0738293	-0.75	0.453	2001181	.0892876
q26f	.0813561	.0737219	1.10	0.270	0631363	.2258484
q26g	.1892835	.068847	2.75	0.006	.0543459	.3242212
q26h	.2532257	.0638061	3.97	0.000	.128168	.3782834
q61	.5022316	.0589324	8.52	0.000	.3867263	.6177369
_cons	.4130625	.1663595	2.48	0.013	.087004	.7391211
2_ Wrong but understandable						
q26a	0361186	.0535766	-0.67	0.500	1411269	.0688897
q26b	021411	.052716	-0.41	0.685	1247325	.0819105
q26c	.1387643	.0583469	2.38	0.017	.0244064	.2531222
q26d	.0176774	.0573903	0.31	0.758	0948055	.1301602
q26e	.1440799	.0577606	2.49	0.013	.0308711	.2572886
q26f	.0031003	.0562618	0.06	0.956	1071708	.1133715
q26g	0135824	.0543411	-0.25	0.803	120089	.0929242
q26h	.0144045	.051266	0.28	0.779	086075	.114884
q61	.8703092	.0491274	17.72	0.000	.7740213	.9665971
			~ ~ ~ ~			-2.897384
	-3.19392	.1512964	-21.11	0.000	-3.490455	
Cons		Num LR	ber of ol	os = =	6257 448.10	-2.097304
Generalized Ordered Logit Es		Num LR Pro	ber of ob	os = =	6257	-2.097304
Generalized Ordered Logit Es		Num LR Pro	ber of ob chi2(18) bb > chi2	os = = =	6257 448.10 0.0000	-2.097304
Generalized Ordered Logit Es		Num LR Pro	ber of ob chi2(18) bb > chi2	os = = =	6257 448.10 0.0000	
Generalized Ordered Logit Es Log likelihood = -5881.3549	limates	Num LR Prc Pse	uber of ol chi2(18) bb > chi2 eudo R2	DS = = = =	6257 448.10 0.0000 0.0367	
Generalized Ordered Logit Es Log likelihood = -5881.3549 q21	limates	Num LR Prc Pse	uber of ol chi2(18) bb > chi2 eudo R2	DS = = = =	6257 448.10 0.0000 0.0367	Interval]
Generalized Ordered Logit Est Log likelihood = -5881.3549 q21 1_ Not wrong at all	imates Odds Ratio	Num LR Pro Pse Std. Err.	uber of ob chi2(18) ub > chi2 eudo R2 z	DS = = = = P> z	6257 448.10 0.0000 0.0367 [95% Conf.	Interval]
Generalized Ordered Logit Est Log likelihood = -5881.3549 q21 1_ Not wrong at all g26a	Cimates Odds Ratio .8706035	Num LR Pro Pse Std. Err.	uber of ob chi2(18) bb > chi2 eudo R2 z -2.04	P> z 0.042	6257 448.10 0.0000 0.0367 [95% Conf. .7619203	Interval] .9947897 1.084477
Generalized Ordered Logit Es: Log likelihood = -5881.3549 q21 1_ Not wrong at all g26a g26b	0dds Ratio .8706035 .9521839	Num LR Pro Pse Std. Err. .0592309 .0632024	bber of ol chi2(18) bb > chi2 sudo R2 z -2.04 -0.74	P> z 0.042 0.460	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289	Interval] .9947897 1.084477 1.069929
Generalized Ordered Logit Est Log likelihood = -5881.3549 q21 1_ Not wrong at all q26a q26b q26c	Odds Ratio .8706035 .9521839 .9238179	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086	Liber of ol chi2(18) bb > chi2 sudo R2 -2.04 -0.74 -1.06	<pre>DS = = = P> z 0.042 0.460 0.290</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601	Interval] .9947897 1.084477 1.069925 1.057905
Generalized Ordered Logit Est Log likelihood = -5881.3549 	Odds Ratio .8706035 .9521839 .9238179 .9163748	Num LR Pro Std. Err. .0592309 .0632024 .0692086 .0671493	hber of ol chi2(18) bb > chi2 rudo R2 z -2.04 -0.74 -1.06 -1.19	<pre>DS = = = = = = = = = = = = = = = = = = =</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789	Interval] .9947897 1.08447 1.069929 1.057905 1.093395
Generalized Ordered Logit Est Log likelihood = -5881.3549 q21 1_ Not wrong at all q26a q26b q26c q26d q26e q26f	Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922	Num LR Pro Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494	hber of ol chi2(18) bb > chi2 uudo R2 z -2.04 -0.74 -1.06 -1.19 -0.75	<pre>DS = = = = P> z 0.042 0.460 0.290 0.233 0.453</pre>	6257 448.10 0.0000 (.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634	Interval] .9947897 1.084477 1.069925 1.057905 1.09395 1.253386
Generalized Ordered Logit Est Log likelihood = -5881.3549 q21 1_ Not wrong at all q26a q26b q26c q26d q26e	Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494 .0799704	hber of ol chi2(18) bb > chi2 eudo R2 z -2.04 -0.74 -1.06 -1.19 -0.75 1.10	P> z 0.042 0.233 0.453 0.270	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .9388155	Interval] .9947897 1.084477 1.069929 1.057900 1.057900 1.053386 1.253386 1.382953
Generalized Ordered Logit Est Log likelihood = -5881.3549 1_ Not wrong at all	Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757 1.208384 1.288174	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0692086 .0671493 .0698494 .0799704 .0831936 .0821934	Liber of ol chi2(18) bb > chi2 gudo R2 -2.04 -0.74 -1.06 -1.19 -0.75 1.10 2.75 3.97	<pre>>> = = = = = = = = = = = = = = = = = =</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .9388155 1.05585 1.136744	Interval] .9947897 1.084477 1.069929 1.057905 1.253386 1.382953 1.459777
Generalized Ordered Logit Est Log likelihood = -5881.3549 q21 1_ Not wrong at all q26a q26b q26c q26d q26e q26f q26g	Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757 1.208384	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494 .0799704 .0831936	Liber of ol chi2(18) bb > chi2 eudo R2 -2.04 -0.74 -1.06 -1.19 -0.75 1.10 2.75	<pre>DS = = = = = = = = = = = = = = = = = = =</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .9388155 1.05585	Interval] .9947897 1.084477 1.069929 1.057905 1.253386 1.253386 1.382953 1.459777 1.854726
	Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757 1.208384 1.288174 1.652405	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494 .0799704 .0831936 .0821934 .0973801	Liber of ol chi2(18) bb > chi2 z -2.04 -0.74 -1.06 -1.19 -0.75 1.10 2.75 3.97 8.52	<pre>>> = = = = = = = = = = = = = = = = = =</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .9388155 1.05585 1.136744 1.472153	Interval] .9947897 1.084477 1.069929 1.057905 1.253386 1.253386 1.382953 1.459777 1.854726
Generalized Ordered Logit Est Log likelihood = -5881.3549	Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757 1.208384 1.288174 1.652405	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494 .0799704 .0831936 .0821934 .0973801	Liber of ol chi2(18) bb > chi2 z -2.04 -0.74 -1.06 -1.19 -0.75 1.10 2.75 3.97 8.52	<pre>>> = = = = = = = = = = = = = = = = = =</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .9388155 1.05585 1.136744 1.472153	Interval] .9947897 1.084477 1.069925 1.057905 1.093395 1.253366 1.382953 1.459777 1.854726 2.094094
Generalized Ordered Logit Est Log likelihood = -5881.3549 q21 1_ Not wrong at all q26a q26b q26c q26d q26c q26d q26f q26f q26f q26g q26f q26g q26f q26g q26f q26g q26f q26g q26f q26g q26h q26a q26b q26d q26a q26b q26a q26a q26a q26a q26a q26a q26a q26a	Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757 1.208384 1.288174 1.652405 1.51144	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494 .0799704 .0831936 .0821934 .0973801 .2514423	hber of ol chi2(18) bb > chi2 udo R2 2 -2.04 -0.74 -1.06 -1.19 -0.75 1.10 2.75 3.97 8.52 2.48	<pre>P> z P> z 0.042 0.460 0.290 0.233 0.453 0.270 0.006 0.000 0.000 0.013</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .938155 1.05585 1.136744 1.472153 1.090901	Interval] .9947897 1.084477 1.069925 1.057905 1.09395 1.25386 1.38295 1.459777 1.854726 2.094094 1.071318
Generalized Ordered Logit Est Log likelihood = -5881.3549 q21 1_ Not wrong at all q26a q266 q266 q266 q266 q264 q268 q267 q268 q268 q268 q264 q264 q268 q264 q264 q264 q264 q264 q264 q264 q264	Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757 1.208384 1.288174 1.652405 1.51144 .9645259 .9788166	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494 .0799704 .0831936 .0821934 .0973801 .2514423 .0516761 .0515993	Aber of ol chi2(18) bb > chi2 eudo R2 -2.04 -0.74 -1.06 -1.19 -0.75 1.10 2.75 3.97 8.52 2.48 -0.67 -0.41	<pre>>> = = = = = = P> z 0.042 0.460 0.290 0.233 0.453 0.270 0.006 0.000 0.000 0.013 0.500 0.685</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .9388155 1.05585 1.136744 1.472153 1.090901 .8683791 .882733	Interval] .9947897 1.084477 1.069929 1.057905 1.05386 1.382953 1.459777 1.854726 2.094094 1.071316 1.085355
Generalized Ordered Logit Est Log likelihood = -5881.3549 q21 1_ Not wrong at all q26a q26b q26c q26d q26c q26f q26g q26h q26 q26 q26 q26 q26 q26 q26 q26 q26 q26	Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757 1.208384 1.288174 1.652405 1.51144 .9645259 .9788166 1.148853	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494 .0799704 .0831936 .0821934 .0973801 .2514423 .0516761 .0515993 .0670321	Liber of ol chi2(18) bb > chi2 z -2.04 -0.74 -1.06 -1.19 -0.75 1.10 2.75 3.97 8.52 2.48 -0.67 -0.41 2.38	DS = = = = = = = = = = = = = = = = = = =	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .9388155 1.05585 1.136744 1.472153 1.090901 .8683791 .882733 1.024707	Interval] .9947897 1.08447 1.069929 1.057900 1.09399 1.25386 1.382953 1.45977 1.854726 2.094094 1.071318 1.085359 1.288041
Generalized Ordered Logit Est Log likelihood = -5881.3549 q21 1_ Not wrong at all q26a q26b q26c q26d q26e q26f q26g q26f q26g q26f q26g q26f q26g q26b q26d q26g q26d q26a q26d q26d q26d q26d q26a q26d q26d q26d q26d q26a q26d q26d q26d q26d q26d q26a q26d q26d q26d q26d q26d q26d q26d q26d	Odds Ratio .8706035 .9521839 .9238179 .9460922 1.084757 1.208384 1.288174 1.652405 1.51144 .9645259 .9788166 1.148853 1.017835	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494 .0799704 .0831936 .0821934 .0973801 .2514423 .0516761 .0515993 .0670321 .0584138	Liber of ol chi2(18) bb > chi2 z -2.04 -0.74 -0.75 1.10 2.75 3.97 8.52 2.48 -0.67 -0.41 2.38 0.31	DS = = = = P> z 0.042 0.460 0.233 0.453 0.270 0.006 0.000 0.000 0.013 0.500 0.685 0.017 0.758	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .9388155 1.05585 1.136744 1.472153 1.090901 .8683791 .882733 1.024707 .9095498	Interval] .9947897 1.084477 1.069929 1.057905 1.253866 1.382953 1.459777 1.854726 2.094094 1.071318 1.085355 1.288041 1.139013
Generalized Ordered Logit Est Log likelihood = -5881.3549 q21 1_ Not wrong at all q26a q26d q26d q26d q26d q26d q26f q26d q26f q26f q26d q26b q26f q26d q26b q26d q26d q26d q26d q26d q26d q26d q26d	Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757 1.208384 1.652405 1.51144 .9645259 .9788166 1.148853 1.017835 1.154976	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0692086 .0671493 .0698494 .0799704 .0831936 .0821934 .0973801 .2514423 .0516761 .0515993 .0670321 .0584138 .0667122	hber of ol chi2(18) bb > chi2 z -2.04 -0.74 -1.06 -1.19 -0.75 1.10 2.75 3.97 8.52 2.48 -0.67 -0.41 2.38 0.31 2.49	<pre>DS = = = = = = = = = = = = = = = = = = =</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .9388155 1.05585 1.136744 1.472153 1.090901 .8683791 .882733 1.024707 .9095498 1.031353	Interval] .9947897 1.08447 1.069925 1.057905 1.093395 1.253366 1.382955 1.459777 1.854726 2.094094 1.071316 1.085355 1.288041 1.39011 1.293416
Generalized Ordered Logit Est Log likelihood = -5881.3549 	Cimates Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757 1.208384 1.288174 1.652405 1.51144 .9645259 .9788166 1.148853 1.017835 1.154976 1.003105	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494 .0799704 .0831936 .0821934 .0973801 .2514423 .0516761 .0515993 .0670321 .0584388 .0667122 .0564366	hber of ol chi2(18) bb > chi2 z -2.04 -0.74 -1.06 -1.19 -0.75 1.10 2.75 3.97 8.52 2.48 -0.67 -0.41 2.38 0.31 2.49 0.06	<pre>DS = = = = = = = = = = = = = = = = = = =</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .9388155 1.05585 1.05585 1.05585 1.05585 1.05585 1.05585 1.05683791 .882733 1.024707 .9095498 1.031353 .8983722	Interval] .9947897 1.08447 1.069929 1.057905 1.093395 1.253366 1.382953 1.459772 2.094094 1.071316 1.854724 2.094094 1.071316 1.288041 1.38011 1.39011 1.393416 1.120046
	Cimates Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757 1.208384 1.288174 1.652405 1.51144 .9645259 .9788166 1.148853 1.017835 1.154976 1.003105 .9865094	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494 .0799704 .0831936 .0831936 .0821934 .0973801 .2514423 .0516761 .0516761 .0515993 .0670321 .0584138 .0667122 .0564366 .053608	hber of ol chi2(18) bb > chi2 z -2.04 -0.74 -1.06 -1.19 -0.75 1.10 2.75 3.97 8.52 2.48 -0.67 -0.41 2.38 0.31 2.49 0.06 -0.25	<pre>DS = = = = = = = = = = = = = = = = = = =</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .938155 1.0585 1.136744 1.472153 1.090901 .8683791 .882733 1.024707 .9095498 1.031353 .8983722 .8868415	Interval] .9947897 1.08447 1.069929 1.057905 1.053395 1.382953 1.459777 1.854726 2.094094 1.071318 1.085355 1.288041 1.139011 1.293418 1.293418 1.20048 1.097379
Generalized Ordered Logit Est Log likelihood = -5881.3549 q21 1_ Not wrong at all q26a q26d q26d q26d q26d q26d q26d q26d q26d	Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757 1.208384 1.288174 1.652405 1.51144 .9645259 .9788166 1.148853 1.017835 1.154976 1.003105 .9865094 1.014509	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494 .0799704 .0831936 .0821934 .0831936 .0821934 .0516761 .0515993 .06516761 .0515993 .0671321 .0584138 .0667122 .0564366 .053608 .0520098	hber of ol chi2(18) bb > chi2 z -2.04 -0.74 -1.06 -1.19 -0.75 1.10 2.75 3.97 8.52 2.48 -0.67 -0.41 2.38 0.31 2.49 0.06 -0.25 0.28	<pre>>> = = = = = = = = P> z 0.042 0.233 0.270 0.006 0.000 0.000 0.013 0.500 0.685 0.017 0.758 0.017 0.758 0.017 0.556 0.803 0.956</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .9388155 1.05585 1.136744 1.472153 1.090901 .8683791 .882733 1.024707 .9095498 1.031353 .8983722 .8868415 .9175254	Interval] .9947897 1.084477 1.06922 1.057905 1.253386 1.382953 1.459777 1.854726 2.094094 1.071318 1.085359 1.288041 1.139011 1.293418 1.120048 1.097379 1.121743
	Cimates Odds Ratio .8706035 .9521839 .9238179 .9163748 .9460922 1.084757 1.208384 1.288174 1.652405 1.51144 .9645259 .9788166 1.148853 1.017835 1.154976 1.003105 .9865094	Num LR Pro Pse Std. Err. .0592309 .0632024 .0692086 .0671493 .0698494 .0799704 .0831936 .0831936 .0821934 .0973801 .2514423 .0516761 .0516761 .0515993 .0670321 .0584138 .0667122 .0564366 .053608	hber of ol chi2(18) bb > chi2 z -2.04 -0.74 -1.06 -1.19 -0.75 1.10 2.75 3.97 8.52 2.48 -0.67 -0.41 2.38 0.31 2.49 0.06 -0.25	<pre>DS = = = = = = = = = = = = = = = = = = =</pre>	6257 448.10 0.0000 0.0367 [95% Conf. .7619203 .8360289 .7976601 .7937789 .818634 .938155 1.0585 1.136744 1.472153 1.090901 .8683791 .882733 1.024707 .9095498 1.031353 .8983722 .8868415	Interval] .9947897 1.08447 1.069929 1.057905 1.053395 1.382953 1.459777 1.854726 2.094094 1.071318 1.085355 1.288041 1.139011 1.293418 1.293418 1.20048 1.097379

.5767156 .6022219

Section-3. Result for Predicted Probabilities

. margins, predict (outcome (1)) at (q22e=3) atmeans

q61

q22e

Adjusted pre Model VCE				Number of obs	=	6762
Expression	: Pr(q21==1),	predict(outcome (1	L))		
at	: q23b	=	2.412896	(mean)		
	q29d	=	2.098492	(mean)		
	q54a	=	2.560041	(mean)		

= 2.123928 (mean)

3

		Delta-method Std. Err.	Z	₽> z	[95% Conf.	Interval]
cons	.1512817	.0052205	28.98	0.000	.1410497	.1615137

=

. margins, predict (outcome (2)) at (q22e=3) atmeans

Adjusted pre	djusted predictions					er of ob	s =	6762
Model VCE	: OIM							
Expression	: Pr(0	q21==2),	predict(outcome (2	2))			
at	: q231	c	=	2.412896	(mean)			
	q290	ŕ	=	2.098492	(mean)			
	q54a	a	=	2.560041	(mean)			
	q61		=	2.123928	(mean)			
	q226	e	=	3				
		I	Delta-met	hod				
		Margin	Std. Er	r. z	₽> z	[95%	Conf.	Interval]

. margins, predict (outcome (3)) at (q22e=3) atmeans

_cons

```
Adjusted predictions Number of obs = 6762
Model VCE : OIM
```

.5894687 .0065068 90.59 0.000

Expression	: Pr(q21=	=3), predict	(outcome (3))
at	: q23b	=	2.412896 (mean)
	q29d	=	2.098492 (mean)
	q54a	=	2.560041 (mean)
	q61	=	2.123928 (mean)
	q22e	=	3

	1	Delta-method				
	Margin	Std. Err.	Z	₽> z	[95% Conf.	Interval]
_cons	.2592496	.0068771	37.70	0.000	.2457707	.2727285

.5761598 .6014704

. margins, predict (outcome (1)) at (q23b=3) atmeans

Adjusted pre Model VCE		Number of obs = 6762
Expression at	: Pr(q21==1), predict(outcome (1) : q23b = 3 q29d = 2.098492 q54a = 2.560041 q61 = 2.123928 q22e = 2.235138	(mean) (mean) (mean)
	Delta-method Margin Std. Err. z	P> z [95% Conf. Interval]
cons	.1499865 .0049476 30.32	0.000 .1402894 .1596835

. margins, predict (outcome (2)) at (q23b=3) atmeans

Adjusted pr	edictions			Number c	f obs :	= 6762
Model VCE	: OIM					
Expression	: Pr(q21==2),	predict(outcome (2))			
at	: q23b	=	3			
	q29d	=	2.098492 (m	ean)		
	q54a	=	2.560041 (m	ean)		
	q61	=	2.123928 (m	ean)		
	q22e	=	2.235138 (m	ean)		
		Delta-met	hod			
	Margin	Std. Er	r. z	P> z	[95% Con:	f. Interval]

. margins, predict (outcome (3)) at (q23b=3) atmeans

_cons

```
Adjusted predictions Number of obs = 6762
Model VCE : OIM
```

.5888151 .0064569 91.19 0.000

Expression	:	Pr(q21==3),	predict(c	outcome	(3))
at	:	q23b	=		3
		q29d	=	2.09849	2 (mean)

q54a	=	2.560041	(mean)
q61	=	2.123928	(mean)
q22e	=	2.235138	(mean)

	I	Delta-method				
	Margin	Std. Err.	Z	₽> z	[95% Conf.	Interval]
_cons	.2611984	.0064642	40.41	0.000	.2485289	.2738679

. margins, predict (outcome (1)) at (q29d=4) atmeans

Adjusted pre Model VCE				Number of	obs	=	6762
Expression at	: Pr(q21==1), : q23b q29d q54a q61 q22e	= = =	Dutcome (1 2.412896 4 2.560041 2.123928 2.235138	(mean) (mean) (mean)			

	I	Delta-method				
	Margin	Std. Err.	Z	₽> z	[95% Conf.	Interval]
_cons	.1118528	.005893	18.98	0.000	.1003027	.1234029

. margins, predict (outcome (2)) at (q29d=4) atmeans

Adjusted pre	edictions			Number	of obs	=	6762
Model VCE	: OIM						
Expression	: Pr(q21==2),	predict	(outcome (2	2))			
at	: q23b	=	2.412896	(mean)			
	q29d	=	4				
	q54a	=	2.560041	(mean)			
	q61	=	2.123928	(mean)			
	q22e	=	2.235138	(mean)			
·							
		Delta-me	thod				
	Margin	Std. E	rr. z	P> z	[95% C	onf. Int	erval]

67.08 0.000

.540619

.57316

. margins, predict (outcome (3)) at (q29d=4) atmeans

.5568895 .0083014

_cons

Adjusted pre	djusted predictions				Number	of obs	3 =	6762
Model VCE	:	OIM						
Expression	:	Pr(q21==3),	predict	outcome (3	3))			
at	:	q23b	=	2.412896	(mean)			
		q29d	=	4				
		q54a	=	2.560041	(mean)			
		q61	=	2.123928	(mean)			
		q22e	=	2.235138	(mean)			
	Τ			, ,				
			Delta-met					
		Margin	Std. Er	r. z	₽> z	[95%	Conf.	Interval]

_cons .3312577 .0117207 28.26 0.000 .3082855 .3542299		nargin			1/121	[558 00111.	
	_cons	.3312577	.0117207	28.26	0.000	.3082855	.3542299

. margins, predict (outcome (1)) at (q54=4) atmeans

Adjusted pre Model VCE				Number of obs	=	6762
Expression at	: Pr(q21==1), : q23b q29d q54a q61 q22e	= 2. = 2. = 2.	come (1)) 412896 (mear 098492 (mear 4 123928 (mear 235138 (mear	.)		

	I	Delta-method				
	Margin	Std. Err.	Z	₽> z	[95% Conf.	Interval]
_cons	.1175891	.0057943	20.29	0.000	.1062326	.1289457

. margins, predict (outcome (2)) at (q54=4) atmeans

Adjusted pre	dictions		Number of obs	= 6762
Model VCE	: OIM			
Expression	: Pr(q21==2),	predict(outcome	(2))	
at	: q23b	= 2.4128	96 (mean)	
	q29d	= 2.0984	92 (mean)	
	q54a	=	4	
	q61	= 2.1239	28 (mean)	
	q22e	= 2.2351	38 (mean)	
		Delta-method		
	Margin	Std. Err.	z P> z [95% (Conf. Interval]

.5635464 .0077965 72.28 0.000 .5482655 .5788273

. margins, predict (outcome (3)) at (q54=4) atmeans

_cons

Adjusted pre	dictions		Number of ob	os = 6762
Model VCE	: OIM			
Expression	: Pr(q21==3), p:	redict(outcome (3	3))	
at	: q23b	= 2.412896	(mean)	
	q29d	= 2.098492	(mean)	
	q54a	= 4		
	q61	= 2.123928	(mean)	
	q22e	= 2.235138	(mean)	
	De	lta-method		
	Margin	Std. Err. z	P> z [959	Conf. Interval]
	1			

_cons .3188645 .0107869 29.56 0.000 .2977225 .340

6762

. margins, predict (outcome (1)) at (q61=3) atmeans

Adjusted pr	edictions		Number of obs =
Model VCE	: OIM		
Expression	: Pr(q21==1),	predict(outcome (1))
at	: q23b	=	2.412896 (mean)
	q29d	=	2.098492 (mean)
	q54a	=	2.560041 (mean)
	q61	=	3
	q22e	=	2.235138 (mean)

	I	Delta-method				
	Margin	Std. Err.	Z	₽> z	[95% Conf.	Interval]
cons	.0755892	.0037931	19.93	0.000	.0681549	.0830235

. margins, predict (outcome (2)) at (q61=3) atmeans

Adjusted pre Model VCE					Num	ber of obs	=	6762
Expression			•					
at	:	q23b	=	2.412896	(mean)			
		q29d	=	2.098492	(mean)			
		q54a	=	2.560041	(mean)			
		q61	=	3				
		q22e	=	2.235138	(mean)			
			Dolto mo					

	I	Delta-method				
	Margin	Std. Err.	Ζ	₽> z	[95% Conf.	Interval]
_cons	.4916542	.0083312	59.01	0.000	.4753254	.507983

. margins, predict (outcome (3)) at (q61=3) atmeans

Adjusted pre Model VCE			Number of obs	= 6762
Expression at	: Pr(q21==3), p: : q23b q29d q54a q61 q22e	redict(outcome (3 = 2.412896 = 2.098492 = 2.560041 = 3 = 2.235138	(mean) (mean) (mean)	
	-	lta-method		

	I	Delta-method				
	Margin	Std. Err.	Ζ	₽> z	[95% Conf.	Interval]
_cons	.4327566	.0104165	41.55	0.000	.4123406	.4531725

6257

. margins, predict (outcome (1)) at (q26h=3) atmeans

Adjusted pre	dictions		Number of obs =
Model VCE	: OIM		
Expression	: Pr(q21==1), p	predict	(outcome (1))
at	: q26a	=	2.120185 (mean)
	q26b	=	2.240531 (mean)
	q26c	=	1.961483 (mean)
	q26d	=	1.878376 (mean)
	q26e	=	1.754195 (mean)
	q26f	=	1.808055 (mean)
	q26g	=	2.098929 (mean)
	q26h	=	3
	q61	=	2.118268 (mean)

	1	Delta-method				
	Margin	Std. Err.	Z	₽> z	[95% Conf.	Interval]
_cons	.1317432	.0055488	23.74	0.000	.1208678	.1426186

. margins, predict (outcome (2)) at (q26h=3) atmeans

Adjusted pre	edi	ctions			Number of obs = 6257	
Model VCE	:	OIM				
Expression	:	Pr(q21==2),	predic	ct(outcome	(2))	
at	:	q26a	=	2.12018	85 (mean)	
		q26b	=	2.24053	31 (mean)	
		q26c	=	1.96148	83 (mean)	
		q26d	=	1.87837	76 (mean)	
		q26e	=	1.75419	95 (mean)	
		q26f	=	1.80805	55 (mean)	
		q26g	=	2.09892	29 (mean)	
		q26h	=		3	
		q61	=	2.11826	68 (mean)	

	:	Delta-method				
	Margin	Std. Err.	Z	₽> z	[95% Conf.	Interval]
 _cons	.5599249	.0071325	78.50	0.000	.5459456	.5739043

. margins, predict (outcome (3)) at (q26h=3) atmeans

Adjusted pred	ictions			Numbe	r of obs	=	6257
Model VCE	: OIM						
Expression	: Pr(q21==3),	predict(ou	tcome (3	3))			
at	: q26a	= 2	.120185	(mean)			
	q26b	= 2	.240531	(mean)			
	q26c	= 1	.961483	(mean)			
	q26d	= 1	.878376	(mean)			
	q26e	= 1	.754195	(mean)			
	q26f	= 1	.808055	(mean)			
	q26g	= 2	.098929	(mean)			
	q26h	=	3				
	q61	= 2	.118268	(mean)			
	1						
		Delta-metho	d				
	Margin	Std. Err.	Z	₽> z	[95%	Conf.	Interval]
_cons	.3083318	.0089262	34.54	0.000	.2908	369	.3258268

. margins, predict (outcome (1)) at (q26a=3) atmeans

Adjusted pred Model VCE				Number	of obs	=	6257
-	: Pr(q21==1), : q26a q26b q26c q26d q26e q26f q26f q26g q26h q61	= 2.2 = 1.9 = 1.1 = 1.1 = 1.1 = 2.0 = 2.2	come (1) 3 240531 (1 361483 (1 378376 (1 754195 (1 308055 (1 098929 (1 286879 (1 118268 (1	mean) mean) mean) mean) mean) mean)			
		Delta-method Std. Err.	Z	₽> z	[95%)	Conf. I	[nterval]
cons	.1482143	.0068463	21.65	0.000	.1347	959	.1616328

. margins, predict (outcome (2)) at (q26a=3) atmeans

Adjusted pre	edi	ctions			Number	of obs	=	6257
Model VCE	:	OIM						
Expression	:	Pr(q21==2),	predict(outcome (2	2))			
at	:	q26a	=	3				
		q26b	=	2.240531	(mean)			
		q26c	=	1.961483	(mean)			
		q26d	=	1.878376	(mean)			
		q26e	=	1.754195	(mean)			
		q26f	=	1.808055	(mean)			
		q26g	=	2.098929	(mean)			
		q26h	=	2.286879	(mean)			
		q61	=	2.118268	(mean)			
			Delta-met	hod				

	1	Delta-method				
	Margin	Std. Err.	Z	₽> z	[95% Conf.	Interval]
_cons	.5718714	.0072117	79.30	0.000	.5577368	.586006

. margins, predict (outcome (3)) at (q26a=3) atmeans

Adjusted pred	di	ctions				N	umber	of	obs	=		6257
Model VCE	:	OIM										
Expression	:	Pr(q21==3),	predi	ct (outcome (3	3))						
at	:	q26a	=		3							
		q26b	=		2.240531	(mean)						
		q26c	=		1.961483	(mean)						
		q26d	=		1.878376	(mean)						
		q26e	=		1.754195	(mean)						
		q26f	=		1.808055	(mean)						
		q26g	=		2.098929	(mean)						
		q26h	=		2.286879	(mean)						
		q61	=		2.118268	(mean)						
			Delta-	metl	hod							
		Margin	Std.	Er	r. z	P> :	z	[9	5% Coi	nf.	Inter	[val]
	-											

_cons	.2799143	.0100415	27.88	0.000	.2602333	.2995952

. margins, predict (outcome (1)) at (q26g=3) atmeans

Adjusted pre	di	ctions				Number of	obs	=	6257
Model VCE	:	OIM							
Expression	:	Pr(q21==1),	pred	ict(outcome (1	.))			
at	:	q26a		=	2.120185	(mean)			
		q26b		=	2.240531	(mean)			
		q26c		=	1.961483	(mean)			
		q26d		=	1.878376	(mean)			
		q26e		=	1.754195	(mean)			
		q26f		=	1.808055	(mean)			
		q26g		=	3				
		q26h		=	2.286879	(mean)			
		q61		=	2.118268	(mean)			
	Т								
			D = 1 + -		1l				

	1	Delta-method				
	Margin	Std. Err.	Z	₽> z	[95% Conf.	Interval]
_cons	.1337177	.006481	20.63	0.000	.1210152	.1464201

. margins, predict (outcome (2)) at (q26g=3) atmeans

Adjusted pre Model VCE		Number of obs = 6257	
Expression	Pr(q21==2), predict(outcome (2))		
at	q26a = 2.120185 (mea	in)	
	q26b = 2.240531 (mea	in)	
	q26c = 1.961483 (mea	in)	
	q26d = 1.878376 (mea	in)	
	q26e = 1.754195 (mea	in)	
	q26f = 1.808055 (mea	in)	
	q26g = 3		
	q26h = 2.286879 (mea	in)	
	q61 = 2.118268 (mea	in)	
	Dolta-mathad		

	I	Delta-method				
	Margin	Std. Err.	Z	₽> z	[95% Conf.	Interval]
_cons	.5615964	.0076036	73.86	0.000	.5466936	.5764992

. margins, predict (outcome (3)) at (q26g=3) atmeans

```
Adjusted predictions Number of obs = 6257
Model VCE : OIM
```

Expression	: Pr(q21==3),	predict(outcome (3	3))
at	: q26a	=	2.120185	(mean)
	q26b	=	2.240531	(mean)
	q26c	=	1.961483	(mean)
	q26d	=	1.878376	(mean)
	q26e	=	1.754195	(mean)
	q26f	=	1.808055	(mean)
	q26g	=	3	
	q26h	=	2.286879	(mean)
	q61	=	2.118268	(mean)

		Delta-method Std. Err.	Z	₽> z	[95% Conf.	Interval]
_cons	.3046859	.0106952	28.49	0.000	.2837236	.3256482

. margins, predict (outcome (1)) at (q26e=3) atmeans

odel VCE	dicti	ons				Number	of ob:	5 =		6257
	: 01	М								
xpression	• D*	(q21==1), p	aradiat (a	utcomo (1	1 \ \					
t	: q2			2.120185		an)				
		6b		2.240531						
		6c		1.961483						
	-	6d		1.878376						
	-	6e	=	3	(110)	,				
		6f		1.808055	(me	an)				
	-	6q		2.098929						
	-	6h		2.286879						
	q6			2.118268						
		De Margin	elta-meth Std. Err			P> z	[95%	Conf.	Inte	ervall
	_									
_cons		.1289492	.0082438	15.64	4	0.000	.112	7915	.14	451068
. margins	, pre	edict (outc	ome (2))	at (q26e	=3)	atmeans				
Adjusted	nradi	ations				Num	ber of	oha	_	625
Model VCE	-	OIM				Nulli	Jei ui	005	-	025
HOUGET VCH		0111								
Expressio	on :	Pr(q21==2), predic	t(outcome	e (2))				
at	:	q26a	- =	2.120	185	(mean)				
		q26b	=	2.240	531	(mean)				
		q26c	=	1.9614	483	(mean)				
		q26d	=	1.8783						
		q26e	=		3	/				
		q26f	=	1.8080		(mean)				
		q26g	=			(mean)				
		q26h	=			(mean)				
		q61	=	2.1182						
		*								
			Dalta							
		Margi	Delta-m n Std.		z	₽> z	Ľ	95% Co	nf.	Interval
		.557437	5 .0091	377 6	1.00	0.000			9	.575347
c	cons	.337437					•	539527		
							•			
		edict (outco								
	s, pre	edict (outc				atmeans	Der of			625
	s, pre	edict (outc				atmeans				625
margins Adjusted	s, pre	edict (outco				atmeans				625
. margins Adjusted Model VCE Expressio	predi	edict (outco actions : OIM : Pr(q21==3	ome (3))), predic	at (q26e: ct(outcome	=3) e (3	atmeans Numl				625
. margins Adjusted Model VCE	predi	edict (outco ections : OIM : Pr(q21==3 : q26a	ome (3))	at (q26e= ct(outcome 2.120:	=3) e (3 185	atmeans Numl)) (mean)				625
. margins Adjusted Model VCE Expressio	predi	edict (outco ctions : OIM : Pr(q21==3 : q26a q26b	ome (3))), predic	at (q26e ct(outcome 2.120 2.240	=3) e (3 185 531	atmeans Numl)) (mean) (mean)				625
. margins Adjusted Model VCE Expressio	predi	edict (outco ections : OIM : Pr(q21==3 : q26a	ome (3))), predic =	at (q26e ct(outcome 2.120 2.240	=3) e (3 185 531	atmeans Numl)) (mean)				625
. margins Adjusted Model VCE Expressio	predi	edict (outco ctions : OIM : Pr(q21==3 : q26a q26b	ome (3))), predic = =	at (q26e= ct(outcome 2.120) 2.240! 1.961	=3) e (3 185 531 483	atmeans Numl)) (mean) (mean)				625
. margins Adjusted Model VCE Expressio	predi	edict (outco cctions : OIM : Pr(q21==3 : q26a q26b q26c	ome (3))), predic = = =	at (q26e= ct(outcome 2.120) 2.240! 1.961	=3) e (3 185 531 483	atmeans Numl)) (mean) (mean) (mean)				625
. margins Adjusted Model VCE Expressio	predi	edict (outco cctions : OIM : Pr(q21==3 : q26a q26b q26c q26d	ome (3))), predic = = =	at (q26e: 2.120) 2.240) 1.961 1.878	=3) e (3 185 531 483 376 3	atmeans Numl)) (mean) (mean) (mean)				625
. margins Adjusted Model VCE Expressio	predi	edict (outco cctions : OIM : Pr(q21==3 : q26a q26b q26c q26d q26e	ome (3))), predic = = = = =	at (q26e tt(outcome 2.120 2.240 1.961 1.878 1.8080	=3) e (3 185 531 483 376 3 055	atmeans Numi (mean) (mean) (mean) (mean)				625
. margins Adjusted Model VCE Expressio	predi	edict (outco cctions : OIM : Pr(q21==3 : q26a q26b q26c q26d q26e q26f	ome (3))), predic = = = = = =	at (q26e tt(outcome 2.120 2.240 1.961 1.878 1.808(2.098)	=3) e (3 185 531 483 376 3 055 929	atmeans Numi (mean) (mean) (mean) (mean)				625
. margins Adjusted Model VCE Expressio	predi	edict (outco .ctions : OIM : Pr(q21==3 : q26a q26b q26c q26d q26c q26d q26e q26f q26f q26g	ome (3))), predic = = = = = = = =	at (q26e+ tt(outcome 2.120; 2.240; 1.961+ 1.878; 1.808(2.098; 2.286)	=3) e (3 185 531 483 376 3 055 929 879	atmeans Numi (mean) (mean) (mean) (mean) (mean)				625
. margins Adjusted Model VCE Expressio	predi	edict (outco ctions : OIM : Pr(q21==3 : q26a q26b q26c q26d q26c q26d q26f q26f q26f q26g q26h	ome (3))), predic = = = = = = = = = =	at (q26e+ tt(outcome 2.120; 2.240; 1.961+ 1.878; 1.808(2.098; 2.286)	=3) e (3 185 531 483 376 3 055 929 879	atmeans Numi (mean) (mean) (mean) (mean) (mean) (mean)				625
. margins Adjusted Model VCE Expressio	predi	edict (outco ctions : OIM : Pr(q21==3 : q26a q26b q26c q26d q26c q26d q26f q26f q26f q26g q26h	ome (3))), predic = = = = = = = = = =	at (q26e+ 2.120) 2.240) 1.961 1.878) 1.808(2.098) 2.286(2.118)	=3) e (3 185 531 483 376 3 055 929 879	atmeans Numi (mean) (mean) (mean) (mean) (mean) (mean)				625

. margins, predict (outcome (1)) at (q26c=3) atmeans

	ictions			Number	of obs =	= 625
Model VCE	: OIM					
Expression	: Pr(q21==1),	predict(o	utcome (1	.))		
at	: q26a	=	2.120185	(mean)		
	q26b	=	2.240531	(mean)		
	q26c	=	3			
	q26d	=	1.878376	(mean)		
	q26e	=	1.754195	(mean)		
	q26f	=	1.808055	(mean)		
	q26g	=	2.098929	(mean)		
	q26h	=	2.286879	(mean)		
	q61	=	2.118268	(mean)		
	1					
		elta-meth) Std. Err		P> z	[05% Cont	f. Interval
		Stu. EII	• 4	E > 2		
_cons	.132605	.0073976	17.93	0.000	.118106	.14710
. margins, pr	edict (outcome	e (2)) at	(q26c=3)	atmeans		
Adjusted pred	ictions			Number	of obs =	= 625
Model VCE	: OIM					
Expression	: Pr(q21==2),	predict (o	utcome (2	211		
	: q26a		2.120185			
	q26b		2.240531			
	q26c	=	3	(mean)		
	q26d	=	1.878376	(mean)		
	q26e		1.754195			
	q26f		1.808055			
	q26g		2.098929			
	q26h		2.286879			
	q61		2.118268			
	T					
		elta-meth				
	Margin	Std. Err	. Z	P> z	[95% Coni	f. Interval
	.5606631	.0082294	68.13	0.000	.5445339	.576792
_ ^{cons}	1					
-	edict (outcome		(q26c=3)	atmeans		
- . margins, pr	edict (outcome		(q26c=3)		of obs =	= 625
- . margins, pr Adjusted pred	edict (outcome ictions		(q26c=3)		of obs =	= 625
- . margins, pr Adjusted pred Model VCE	edict (outcome ictions	e (3)) at		Number	of obs =	= 625
- . margins, pr Adjusted pred Model VCE Expression	edict (outcome ictions : OIM : Pr(q21==3),	e (3)) at predict(o		Number	of obs =	= 625
- . margins, pr Adjusted pred Model VCE Expression	edict (outcome ictions : OIM	e (3)) at predict(o =	utcome (3	Number	of obs =	= 625
- . margins, pr Adjusted pred Model VCE Expression	edict (outcome ictions : OIM : Pr(q21==3), : q26a q26b	e (3)) at predict(o =	utcome (3 2.120185	Number	of obs =	= 625
- . margins, pr Adjusted pred Model VCE Expression	edict (outcome ictions : OIM : Pr(q21==3), : q26a q26b q26c	<pre>e (3)) at predict(o = = =</pre>	utcome (3 2.120185 2.240531 3	Number 3)) (mean) (mean)	of obs =	- 625
- . margins, pr Adjusted pred Model VCE Expression	<pre>edict (outcome ictions : OIM : Pr(q21==3), : q26a q26b q26c q26d</pre>	<pre>e (3)) at predict(o = = = =</pre>	utcome (3 2.120185 2.240531 3 1.878376	Number 3)) (mean) (mean) (mean)	of obs =	= 625
- . margins, pr Adjusted pred Model VCE Expression	<pre>edict (outcome ictions : OIM : Pr(q21==3), : q26a q26b q26c q26d q26e</pre>	e (3)) at predict(o = = = = =	utcome (3 2.120185 2.240531 3 1.878376 1.754195	Number 3)) (mean) (mean) (mean)	of obs =	= 625
- . margins, pr Adjusted pred Model VCE Expression	<pre>edict (outcome ictions : OIM : Pr(q21==3), : q26a q26b q26c q26d q26e q26f</pre>	e (3)) at predict(o = = = = = =	utcome (3 2.120185 2.240531 3 1.878376 1.754195 1.808055	Number))) (mean) (mean) (mean) (mean)	of obs =	= 625
- . margins, pr Adjusted pred Model VCE Expression	<pre>edict (outcome ictions : OIM : Pr(q21==3), : q26a q26b q26c q26d q26c q26d q26e q26f q26g</pre>	: (3)) at predict(o = = = = = = =	utcome (3 2.120185 2.240531 3 1.878376 1.754195 1.808055 2.098929	Number))) (mean) (mean) (mean) (mean) (mean)	of obs =	= 625
- . margins, pr Adjusted pred Model VCE Expression	<pre>edict (outcome ictions : OIM : Pr(q21==3), : q26a q26b q26c q26d q26e q26d q26e q26f q26g q26h</pre>	: (3)) at predict(o = = = = = = = = =	utcome (3 2.120185 2.240531 3 1.878376 1.754195 1.808055 2.098929 2.286879	Number)) (mean) (mean) (mean) (mean) (mean) (mean)	of obs =	= 625
- . margins, pr Adjusted pred Model VCE Expression	<pre>edict (outcome ictions : OIM : Pr(q21==3), : q26a q26b q26c q26d q26c q26d q26e q26f q26g</pre>	: (3)) at predict(o = = = = = = = = =	utcome (3 2.120185 2.240531 3 1.878376 1.754195 1.808055 2.098929	Number)) (mean) (mean) (mean) (mean) (mean) (mean)	of obs =	= 625
- . margins, pr Adjusted pred Model VCE Expression	<pre>edict (outcome ictions : OIM : Pr(q21==3), : q26a q26b q26c q26d q26c q26d q26f q26f q26f q26f q26f q26h q61</pre>	: (3)) at predict(o = = = = = = = = = = = =	utcome (3 2.120185 2.240531 3 1.878376 1.754195 1.808055 2.098929 2.286879 2.118268	Number)) (mean) (mean) (mean) (mean) (mean) (mean)	of obs =	= 625
- . margins, pr Adjusted pred Model VCE Expression	edict (outcome ictions : OIM : Pr(q21==3), : q26a q26b q26c q26d q26e q26f q26f q26h q61	<pre>: (3)) at predict(o</pre>	utcome (3 2.120185 2.240531 3 1.878376 1.754195 1.808055 2.098929 2.118268 od	Number)) (mean) (mean) (mean) (mean) (mean) (mean)		

Section-4. Data Measurement

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Iner	1eccrintions	OT THE	ina	leatore	chosen	tor	This study	v are as follows:
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Variables	Indicators	Response categories
Tax compliance	Q21: Perception on firms not	1. Not wrong at all
	complying with taxes	2. Wrong but understandable
		3. Wrong and punishable
Improved public goods and	Q22e: Firms should not pay	4. Disagree
services	taxes until they get better	5. Neither agree nor disagree
	services from the government	6. Agree
Perception on the use of other	Q23b: Government can find	7. Disagree
resources to finance	resources for development	8. Neither agree nor disagree
government projects	without taxing small firms	Agree
Trust in government	Q29d: Trust of small firms in	1. No trust
0	t government	2. A little trust
		3. Somewhat trust
		4. Trust alot
Tax knowledge	Q54a: Ease of finding out	1. Very difficult
0	taxes and fees firms are liable	2. Difficult
	for	3. Easy
		4. Very easy
Tax penalty	Q61: perception of the size of	1. No penalty
F	penalty for small firms, if	2. Modest penalty
	caught not paying taxes	3. Heavy penalty
Improved telecommunication	Q26a: More taxes for better	1. Not willing
1	telecommunication	2. Maybe willing
		3. Definitely willing
Improved electricity	Q26b: More taxes for better	1. Not willing
improvou orocorreroj	electricity	2. Maybe willing
		3. Definitely willing
Improved public transport	Q26c: More taxes for better	1. Not willing
	public transport	2. Maybe willing
	Passe clampfort	3. Definitely willing
Improved financial institutions	Q26d: More taxes for better	1. Not willing
mprovou munerar moreutions	financial institutions	2. Maybe willing
		3. Definitely willing
Improved law court	Q26e: More taxes for better	1. Not willing
	law courts	2. Maybe willing
		3. Definitely willing
Improved labor regulation	Q26f: More taxes for better	1. Not willing
improved labor regulation	labor regulation	2. Maybe willing
		3. Definitely willing
Improved roads	Q26g: More taxes for better	0. Agree with statement 2
Improved roads	roads	1. Agree with statement 1
Improved coounity	Q26h: More taxes for better	1. Agree with statement 1 1 The good of Nigerians
Improved security	\sim	
	security	2 For its own good

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