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## South African Taxpayers Perceptions towards E-Filing

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### Abstract

*The study has two parts: the first part studies how South African taxpayers felt about e-filing, and the second part analyses how e-filing affected tax compliance. We use self-structured questionnaires to collect data from about 151 South African taxpayers, and we analyze them using binary logistic regression. The study finds that online tax registration and auto-assessment has a negative relationship with tax compliance in South Africa, while online payment methods, difficulty in tax evasion, and higher educational attainment have a positive association with tax compliance. The study also finds that the extent to which the e-filing system encourages taxpayers to become compliant has a positive and statistically significant relationship with tax compliance. Overall, the study suggests that the development of e-filing has a positive impact on taxpayers' perceptions in South Africa and significantly increases voluntary tax compliance. To maximize the benefits of e-filing, it is important to ensure that taxpayers have access to the necessary technology and knowledge to use it effectively.*

**Keywords:** *Tax Compliance; Information Technology; Binary Logistic Regression; E-Filing.*

**JEL Classification:** *H24, H26, C51, O31.*

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## 1. Introduction

The application of automated processes in business and government has shown to be capable of enhancing administrative efficiency. One of the sectors of government that has significantly benefited from the use of automated processes has been tax administration. This statement has been empirically tested and proven by several scholars including Chatama (2013), Umaru et al (2019), Adegbite et al (2019) to name a few. The United Nations defines e-taxation as the use of electronic processes to file tax returns, submit and process tax documents without the use of hard paper<sup>1</sup>. The use of information technology in tax administration has been significantly welcomed in most countries (e.g., South Africa, Nigeria, Kenya, Ukraine, Nepal etc). The World Bank documents that by 2011, more than 74 countries had adopted e-filing and online payment systems<sup>2</sup>. This is because, information technology has the potential to alleviate tax administration deficiencies and enhance tax revenue collection by enabling taxpayers to file annual tax returns with ease, apply for different tax types, retrieve their tax compliance status and certificate, lodge complains and receive technical support. Also, information technology can bolster tax compliance by reducing the time and cost of compliance. A study by Coolidge and Yilmaz (2014) found that the time and cost of compliance reduces with e-filing in developing countries. Although several authors have studied the effects of information technology on tax administration, few studies have analysed the use of information technology from different aspects of tax administration including online tax registration, online tax compliance and online tax remittance. In the case of South Africa, only a single study (i.e., Kgonare, 2017) has been conducted to analyse the effects of information technology on tax administration although using a systematic literature review. This study on the other hand, makes use of a combination of qualitative and quantitative techniques to estimate the influence of information technology on tax administration and compliance in South Africa. This is particularly important given the substantial amount of funds dedicated towards the development of digital tax services in South Africa.

Since its inception by the South African Revenue Services (SARS) in 2006, taxpayers perceptions on the e-filing system have not been empirically studied in

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<sup>1</sup> United Nations, 2007. Benchmarking e-government: A Global Perspective, retrieved from <http://www.unpal.un.org/intradoc/groups/public/documents/april2013>.

<sup>2</sup> World Bank, 2014. Does e-Filing reduce Tax Compliance Costs in Developing Countries? Retrieved from: <https://documents1.worldbank.org/curated/en/970451468321559619/pdf/911910BRI0B0x30D0VC0KNOWLEDGE0NOTES.pdf>

South Africa. Although statistics from the 2020 Budget Review indicate that majority of local taxpayers file their tax returns electronically, a proper analysis of the use of the e-filing system has not been conducted to date to estimate the extent to which e-filing has benefited tax administration and compliance and consequently tax revenue collection. In addition, the majority of ICT illiterate taxpayers are still reluctant to file their returns electronically. This study will contribute significantly to the existing body of literature on taxpayers attitudes towards electronic filing. Also, this study is unique in that, it approaches information technology from different aspects of taxation including online tax registration, online tax calculation, online tax compliance and online tax remittance. The use of modern qualitative and quantitative techniques employed in this study is also an added feature.

The study will be arranged as follows: Section 1 provided an introduction to the study and outlined the objectives and significance of the study. Section 2 will provide an overview of literature on the effects of information technology on tax administration and compliance, both from a theoretical and empirical perspective. Section 3 will unpack the empirical strategy to be executed by the study to estimate the influence of information technology on tax administration and compliance in South Africa. Section 4 will detail the findings of the study in line with existing studies. Section 5 will provide a brief conclusion of the study as well as implications for policymaking.

## **2. Literature Review**

This section will briefly discuss different theories pertaining the relationship between information technology and tax administration and compliance as well as findings by different scholars on the effect of information technology on tax administration and compliance.

### **2.1. Theoretical Review**

The theoretical literature of this study will be guided by the theories of technology adoption. Although there exist different theories of technology adoption including the Theory of Planned Behaviour developed by Ajzen (1991), Theory of Perceived Risk by Bauer (1960) and Theory of Reasoned Action by Fishbein & Ajzen (1975), for the purposes of this study we make use of the Technology Acceptance Model by Davis et al. (1989). The rationale is that the transition from paper filing to electronic filing would be best explained by the

technology acceptance model since taxpayers need to accept electronic filing as the new way of doing things.

### **Technology Acceptance Model**

Kimea et al. (2019) defines the technology acceptance model as “an information systems theory that models how users come to accept and use a technology”. The model was developed by Davis et al (1989) to predict the acceptability of an information system by individuals as well as to identify and analyse factors that encourage individuals to accept a particular information system. According to Davis et al (1989), the intention to use an information system is influenced by four factors namely, the perceived usefulness of the system, attitudes, actual behaviours and perceived ease of use of the system. Although information systems offer substantial improvements in administrative efficiency, it is sufficient to note that such efficiency gains are dependent on the user’s willingness to accept and ability to use the developed information system.

Several authors have applied the technology acceptance model in analysing factors that induce individuals to accept a particular information system. For example, Lu, Zhou, and Wang (2009) applied the technology acceptance model in analysing the behavioural intention of Chinese user’s on instant messenger. The study revealed that perceived playfulness and perceived usefulness of the instant messenger App significantly influenced the user’s attitudes towards the App. A similar study by Sanchez-Franco (2010) employed the technology acceptance model to analyse factors that influence the use of information technology as a learning platform. The study concluded that perceived usefulness, perceived playfulness and perceived ease of use are factors that induced the application of information technology to enhance learning.

Another study by Deslonde and Becerra (2018) utilised the technology acceptance model in understanding the factors that influence school counsellor’s ability to accept and utilise the Naviance system. The findings indicated that factors such as training, bandwidth and connectivity influenced the use and acceptance of the Naviance system by school counsellors. One of the crucial elements of the technology acceptance model is the concept of perceived behavioural control which originates from the theory of planned behaviour. The more individuals believe that they have complete control over opportunities and resources in executing a specific task, the more they are likely to make use of the available resources and opportunities in executing the task (Liao et al, 2018).

### **Factors Induce the Use of E-Filing**

The adoption and use of online filing services by taxpayers can be explained by different individual, demographic, social, economic and organisational factors. Demographic factors to begin with, include differences in urban based taxpayer's vis-a-vis rural based taxpayers. The assumption is that urban based taxpayers are more likely to make use of electronic filing services than rural based taxpayers given that urban areas are more advanced in terms of internet access, electricity supply, computer usage and access to information on electronic filing. Social factors such as education level, income, household size and structure and population density also play a role in the taxpayer's decision on whether to use paper filing or electronic filing. Taxpayers that possess certain skills and level of educational attainment are most likely to make use of electronic filing services than paper filing services given their level of exposure to technological habits and daily use of automated processes. Automated processes are perceived to be more efficient, time saving and less costly.

Another key factor in the decision to file electronically is differences in business size and sector. A study by the World Bank<sup>3</sup> indicated that businesses that are large in size, as measured by the annual business turnover, make use of electronic filing services than businesses that are small in size. In addition, businesses that pay multiple taxes such as income tax, payroll tax, sales tax and excise duties were found to rely heavily on electronic filling services. Differences in employment or business sector also affect the decision to file electronically. For example, employees in the financial and banking sector are more exposed to electronic services than employees in the agricultural and manufacturing sectors. As a result, it is reasonable to assume that employees in technologically led sectors are more likely to file electronically than those in traditional sectors such as agriculture.

The study by Olatunji and Ayodele (2017) also revealed that perceptions on corruption and political stability also affect the decision by individual taxpayers and corporates to file electronically. To put this in context, when individual and corporate taxpayers perceive the state to be corrupt, they are most likely to make use of electronic filling services to avoid face to face contact with corrupt government officials.

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<sup>3</sup> World Bank, 2014. Does e-Filing reduce Tax Compliance Costs in Developing Countries? Retrieved from: <https://documents1.worldbank.org/curated/en/970451468321559619/pdf/911910BRI0B0x30D0VC0KNOWLEDGE0NOTES.pdf>

## **2.2. Empirical Review**

It is worth noting from the onset that empirical studies on the effects of information technology on tax compliance remain scant. Nonetheless, Umaru, Nasiru and Yusuf (2019) estimate the impact of information technology on tax administration in Adamawa state, Nigeria. The study uses of both quantitative and qualitative techniques to estimate impact of information technology on tax administration. This includes the completion of online surveys and questionnaires as well as various electronic media publications such as newspapers, journals, textbooks and publications documented by the Internal Revenue Services of Yola. The study targets both junior and senior tax officials of the Adamawa state in selecting 483 participants. Using regression analysis, the study finds that individual factors and information technology have a significant impact on tax administration in the Adamawa state.

Olatunji and Ayodele (2017) investigate the effect of information technology on tax planning and implementation in South-West, Nigeria. The study uses of self-structured questionnaires to collect data on taxpayers' perceptions on the use of information technology in tax administration. Utilizing pairwise correlation test and multiple regression analysis, the study reveals that information technology has a negative impact on tax planning and implementation in Nigeria and much of this can be attributed to poor internet connection, power outages, a lack of technical know-how by tax administrators and taxpayers, negative attitudes on the payment of taxes as well as high ICT maintenance costs. Adegbite et al (2019) estimate the effects of information technology on tax revenue mobilisation in Oyo State by sampling 300 participants of taxpayers and tax officials from the Oyo State board of internal revenue service. Using multivariate analysis, they document that information technology exhibits a positive effect on tax revenue mobilisation in the Oyo State by augmenting tax cash inflow.

Chatama (2013) examines the extent to which information technology has enhanced tax administration procedures and tax revenue mobilisation in Tanzania since its inception in 2001. A group of taxpayers and tax officials is administered through self-structured questionnaires which reveal that information technology has indeed enhanced tax administration and revenue mobilisation in Tanzania through the quick processing of annual returns, facilitating maintenance and timely access to tax records, lowering operational costs and curbing tax evasion and avoidance. Ajala and Adegbie (2020) study the impact of information technology on tax assessment in Nigeria using a survey over 2,857 participants consisting of administrative and management staff in the tax field. Utilizing

Cronbach's alpha reliability test, they find that information technology has a positive and statistically significant impact on tax assessment in Nigeria.

Kiema (2011) investigates the extent to which the use of information technology in tax administration has enhanced tax revenue collection in Kenya using survey research on tax officials. The study finds that the introduction of the iTax platform which is introduced to modernise tax revenue collection and facilitate e-filing has to a great extent, enhanced tax compliance and revenue collection in Kenya. A study by Coolidge and Yilmaz (2014) investigate if whether online tax filing reduces the cost and time of compliance in developing countries. The study constructs tax compliance cost surveys and finds that the time and cost of tax compliance reduces with online tax filing in developing countries. Kimea et al (2019) analyse the factors that influence taxpayers' decision to file returns electronically by means of econometric modelling and they document that social influence, associated risk and performance expectancy influence the taxpayer's decision to file tax returns electronically.

### **3. Research Methodology**

This study employs a quantitative research approach which includes collecting primary data through self-structured questionnaires and analysing the data by means of inferential statistics. To the best of our knowledge, there is no any literature on effect of information technology on tax compliance and administration in South Africa. Therefore, with this study, we aim to make contribution to the literature in this context. The target population of the study consists of South African permanent residents above the age of 18 years and who are registered for income tax with SARS.

#### **3.1. Data Collection**

In this study we use primary data collected by means of electronic surveys in the form of self-structured questionnaires. The questionnaires are designed in line with previous studies although some modification is made to bring the questionnaire in line with the objectives of the study.



### 3.2. Data Analysis

The data collected in this study is assessed statistically by means of descriptive analysis, Pearson Correlation test, and Binary Logistic regression analysis. The estimation techniques are explained below.

#### Descriptive Analysis

Descriptive analysis forms the basis of econometric modelling as it provides a summary of the type of data the researcher is dealing with. Also, descriptive analysis plays a crucial role in terms of breaking big data into simple components that explain the pattern and variability of the data. This is achieved through the use of two components of descriptive analysis, namely, central tendency and variability. Central tendency involves the various patterns contained in the data such as the mean, median and mode. Measures of variability on the other hand, provide detailed information on the range and the extent to which the data points are spread out. Measures of variability include skewness, standard deviation, range and variance. The standard deviation in particular, has gained popularity in analysing volatility in financial markets.

#### Pearson Correlation Test

The Pearson correlation test attempts to estimate the presence and strength of a linear relationship between two variables (Mukaka, 2012). The presence of a linear association between two variables is given by the probability value, usually at the 1%, 5% or 10% interval levels. The strength of the linear relationship between two variables is given by the coefficient value. Cohen (1988) notes that a coefficient value below 10% indicates that there is weak linear association between two concerned variables, while a coefficient value between 10% and 30% indicates that there is a moderate linear association between two concerned variables. Any coefficient value above 50% is indicative of a strong linear association between two concerned variables. The formula for calculating the correlation coefficient for any two continuous variables is given by:

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{[\sum_{i=1}^n (x_i - \bar{x})^2][\sum_{i=1}^n (y_i - \bar{y})^2]}} \quad (1)$$

Where  $x_i$  and  $y_i$  are values of x and y for the  $i_{th}$  individual. Mukaka (2012) states that one of the conditions of using the Pearson correlation test is that the variables should be normally distributed.

### Binary Logistic Regression

The logistic regression model has been widely used by researchers (e.g., Peng et al., 2002; Mertler & Vannatta, 2005) to obtain odds ratio in the face of categorical variables. The technique aims to model the chance of an outcome based on individual characteristics (Peng et al, 2002). For example, the technique can be used to estimate whether males succeed in college, whether female adults are most likely to get pregnant or whether male teenagers are most likely to engage in illegal activities or not. The technique works in a similar fashion as the linear multiple regression technique except that the outcome variable is binary (Sperandei, 2013). One advantage of using the logistic regression model over other econometric techniques is that it allows the researcher to use continuous independent variables with ease and it can handle more than two independent variables simultaneously. A simple logistic regression model can be expressed mathematically as follows:

$$\log\left(\frac{\mu}{1-\mu}\right) = \alpha_1 X_1 + \alpha_2 X_2 + \dots + \alpha_n X_n \quad (2)$$

Where  $\mu$  indicates the possibility of consequences for each event,  $\alpha_i$  represents the slope coefficients associated with the reference group and the  $X_i$  independent variables. Unlike discriminant analysis, the logistic regression model does not assume that the explanatory variables are normally distributed. This technique is best situated for our analysis given that the response variable is binary.

### 3.3. Model Specification

Our estimation model will be guided by earlier studies with a few modifications to put it in line with the objective of the study. The following model will be estimated:

$$tc = \beta_0 + \beta_i \delta_t + \alpha_i X_t + \varepsilon_t \quad (3)$$

Where  $tc$  is binary tax compliance variable taking a value of 1 for compliance and 0 for non-compliance,  $\beta_0$  is the constant term,  $\delta_t$  is a vector for individual level characteristics of the respondent: age, sex, education, employment status, wealth and ethnicity.  $X_t$  is a vector of variables that capture the use of information technology in tax administration including online tax registration, online tax calculation, online tax compliance and online tax remittance.  $\varepsilon_t$  is the idiosyncratic error term.

**Table 1.** Description of Variables

<b>Gender</b>	Categorised as male and female
<b>Age</b>	Ranging between 18 – 65 years
<b>Education</b>	No education, matric, undergraduate, postgraduate
<b>Employment sector</b>	Private sector, public sector, informal sector
<b>Employment status</b>	Employed, unemployed, self-employed
<b>Reason for evasion</b>	Unfair tax system, taxes are too high, government steals money, I know I won't get caught
<b>Difficulty of evasion</b>	Very easy, easy, neither easy nor difficult, difficult, very difficult
<b>Benefit</b>	If the taxpayer benefits from public services
<b>Tax morale</b>	If the quality of public services inspires the taxpayer to be tax compliant
<b>Trade off</b>	The trade-off between higher tax rates and quality public services or lower tax rates and poor quality of services
<b>Social influence</b>	If the perceived compliance of others influences the taxpayer
<b>Corruption</b>	Perception on the level of corruption
<b>Trust in government</b>	Perception on the trust in government
<b>State of democracy</b>	Perceptions on the state of democracy
<b>E-Registration</b>	The ease and ability of the taxpayer to register for tax online
<b>E-Filing</b>	The ability of the taxpayer to file tax returns electronically
<b>E-Payments</b>	The ability to settle tax liabilities electronically
<b>Auto-assessment</b>	Perceptions on auto-assessment, an automatic tax return calculation option initiated by SARS
<b>Platform user-friendliness</b>	Perceptions on the user-friendliness of the e-filing platform
<b>Overall satisfaction of E-Filing</b>	Taxpayers perception and preference of e-filing and paper-based filing.

### 3.4. Ethical Considerations

The study and data collection instruments are designed in such a way that they take into consideration the possibility of harm to participants. In addition, the study do not pose any psychological or physical harm to participants. Further to this, the study carry no potential for legal or social harm since no information about a participant's behaviour to illegal activities or substance abuse is collected. The study use of anonymous self-structured questionnaires and surveys wherein participants are not required to give out any information pertaining their identity

such as their full names, identity numbers, contact numbers, email or physical addresses.

#### 4. Findings and Discussion

This section details findings from the estimations performed in the previous section. This includes descriptive analysis, correlation analysis and binary logistic regression.

##### 4.1. Descriptive Analysis

The first point of analysis is to examine the individual characteristics of the variables. This includes the mean value, standard deviation, range and skewness of the data. The results are provided in table 2 below.

**Table 2.** Descriptive Statistics

	N	Min.	Max.	Mean	Std. Deviation	Std. Error	Skewness
Tax compliance	150	0	1	0.33	0.471	0.198	0.747
Gender	150	1	3	1.65	0.493	0.198	-0.449
Education	150	1	4	2.66	0.566	0.198	-1.222
Age	150	2	7	2.87	0.771	0.198	1.824
Employment status	150	1	3	2.15	0.488	0.198	0.360
Employment sector	150	2	4	2.67	0.807	0.198	0.664
E-Registration	149	1	5	3.56	1.016	0.199	-0.372
E-Filing	148	1	5	3.39	1.091	0.199	-0.338
E-Payments	147	1	5	3.44	0.98	0.200	-0.348
Auto assessment	149	1	3	2.29	0.618	0.199	-0.277
Platform friendly	146	1	2	1.77	0.424	0.201	-1.277
Overall satisfaction	147	1	3	2.34	0.602	0.200	-0.313

The total number of observations is 150 in respect of questions on gender, education, age, employment status and sector. For questions related to online tax registration and filling, the total number of observations varies given that certain questions are not applicable to the participants. We find that only 149 participants responded to the question on online registration, e-filing (148), e-payments (147), auto-assessment (149), user-friendliness of the platform (146) and overall rating of the system (147). Also, we find that the variables averaged

between 0 and 4 during the period of the study while the corresponding standard deviations ranged between 0 and 1 for all the variables. The lower value of the standard deviation implies that the data points are closer to the mean. The skewness values indicate that most variables, including gender, education level, online registration, e-filing, online payments, auto-assessments and user-friendliness of the platform are skewed to the left.

#### 4.2. Correlation Analysis

The Pearson correlation test is utilised to estimate the association between the dependent variable and explanatory variables. The results are presented in table 3 below.

**Table 3.** Pearson Correlation

	<i>Tax Compliance</i>	<i>E-Registr.</i>	<i>E-Filing</i>	<i>E-Payments</i>	<i>Auto-Assess.</i>	<i>Platform Friendly</i>	<i>Overall Satisfaction</i>
<i>Tax Compliance</i>	1	-0.051 (0.268)	0.081 (0.164)	0.187* (0.012)	-0.096 (0.122)	0.117 (0.080)	0.176* (0.016)
<i>E-Registr.</i>	-0.051 (0.268)	1	0.533** (0.000)	0.467** (0.000)	0.202** (0.007)	0.403** (0.000)	0.265** (0.001)
<i>E-Filing</i>	0.081 (0.164)	0.533** (0.000)	1	0.387** (0.000)	0.336** (0.000)	0.486** (0.000)	0.328** (0.000)
<i>E-Payments</i>	0.187* (0.012)	0.467** (0.000)	0.387** (0.000)	1	0.155* (0.031)	0.280** (0.000)	0.368** (0.000)
<i>Auto-Assess.</i>	-0.096 (0.122)	0.202** (0.007)	0.336** (0.000)	0.155* (0.031)	1	0.235** (0.002)	0.354** (0.000)
<i>Platform Friendly</i>	0.117 (0.080)	0.403** (0.000)	0.486** (0.000)	0.280** (0.000)	0.235** (0.002)	1	0.316** (0.000)
<i>Overall Satisfaction</i>	0.176* (0.016)	0.265** (0.001)	0.328** (0.000)	0.368** (0.000)	0.354** (0.000)	0.316** (0.000)	1

**Note:** \*\* and \* signify significance at 1% and 5% level of significance.

A positive and statistically significant correlation is established between electronic tax payments and tax compliance. This implies that the online tax payment system encourages taxpayers to become tax compliance given the relative efficiency, security and time saving nature of online payments. Also, we find a positive and statically significant correlation between tax compliance and the extent to which online filing has induced taxpayers to become tax compliant compared to paper-based filing. This is particularly because, online filling enables taxpayers to calculate and file their tax returns at the comfort of their home

without having to stand in long ques. Also, online filing saves time and transport costs, hence the positive association between tax compliance and online filing.

Electronic filing variables are found to have a positive and statistically significant association. For example, online registration is positively associated with online filing, online payments, auto-assessment and user friendliness of the platform. The linear relationship is based on the idea that all the variables have been integrated with the same purpose, which is to digitalize the entire tax system and bring about the much-needed efficiency gains to stimulate voluntary tax compliance.

### 4.3. Binary Logistic Regression

This subsection details findings from the estimated binary logistic regression model between tax compliance and e-filing. The results are given in table 4 below.

**Table 4.** Model 1

	<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Exp(B)</b>
<b>E-Registration</b>	-0.557	0.254	4.821	1	0.028**	0.573
<b>E-Filing</b>	0.148	0.244	0.368	1	0.544	1.159
<b>E-Payments</b>	0.534	0.243	4.827	1	0.028**	1.705
<b>Auto Assessment</b>	-0.786	0.343	5.260	1	0.022**	0.456
<b>Platform Friendliness</b>	0.797	0.574	1.926	1	0.165	2.219
<b>Overall Satisfaction</b>	0.668	0.377	3.146	1	0.076***	1.950
<b>Constant</b>	-2.299	1.185	3.760	1	0.052**	0.100

**Note:** \*\*\*, \*\*, \* signify significance at 1%, 5%, 10% level of significance. Omnibus Tests of Model Coefficients (0.005), Hosmer and Lemeshow Test Significance (0.465).

The findings from the estimated model (1) indicate that online registration is negatively associated with higher probabilities of tax compliance in South Africa. This implies that taxpayers find the online registration process too complex which discourages them from filing their tax returns electronically. Also, this indicates that there is still room for improvement in the aspect of online registration. In contrast, online payment methods are found to be positively associated with higher probabilities of tax compliance. This implies that taxpayers find it more convenient to settle their tax liabilities online given the time saving nature, security and efficiency of online payment systems and gateways.

Similarly, a positive and statistically significant relationship is established between tax compliance and the extent to which the overall online filing system has encouraged taxpayers to become tax compliant compared to paper-based filing. This implies that with e-filing has played a significant role in shaping taxpayers' compliance attitude than paper-based filing. This is particularly important given the substantial amount of funds the government invested in the development and acquisition of the e-filing system. Nonetheless, auto-assessment is found to be negatively associated with probabilities of higher tax compliance. This implies that taxpayers have not yet welcomed the auto-assessment feature and the manner in which their tax liabilities are automatically calculated. In model 2, the effects of demographic factors are incorporated. The results are provided in table 5 below.

**Table 5.** Model 2

	<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Exp(B)</b>
E-Registration	-0.609	0.269	5.122	1	0.024	0.544
E-Filing	0.218	0.258	0.713	1	0.398	1.244
E-Payment	0.586	0.269	4.754	1	0.029**	1.796
Auto-Assessment	-0.933	0.372	6.292	1	0.012*	0.393
Platform Friendliness	0.614	0.592	1.079	1	0.299	1.848
Overall Satisfaction	0.810	0.419	3.743	1	0.053**	2.247
Gender	0.088	0.419	0.044	1	0.834	1.092
Education	0.951	0.440	4.677	1	0.031**	2.589
Age	-0.489	0.317	2.385	1	0.122	0.613
Employment Status	1.013	0.721	1.973	1	0.160	2.754
Employment Sector	-0.544	0.390	1.946	1	0.163	0.581
Constant	-4.287	2.328	3.393	1	0.065***	0.014

**Note:** \*\*\*, \*\*, \* signify significance at 1%, 5%, 10% level of significance. Omnibus Tests of Model Coefficients (0.002), Hosmer and Lemeshow Test Significance (0.252).

The results in table 5 indicate that the role of education is particularly significant in explaining taxpayers attitudes towards e-filing and tax compliance. In addition, the coefficient for education is found to be positive, implying that the higher levels of educational attainment positively induce a shift to e-filing and consequently, voluntary tax compliance. Other demographic factors however, including age, gender, employment status and sector of employment are not significant in explaining variations in taxpayers' attitudes towards e-filing and tax compliance in South Africa. This is evidenced by the statistically insignificant coefficients across all variables. The next step is to include the ease of evasion and social factors in the initial model. The results are provided in table 6 below.

**Table 6. Model 3**

	<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Exp(B)</b>
E-Registration	-0.675	0.458	2.170	1	0.141	0.509
E-Filing	0.054	0.367	0.022	1	0.882	1.056
E-Payments	0.966	0.453	4.553	1	0.033**	2.628
Auto-Assessment	-1.458	0.566	6.628	1	0.010	0.233
Platform Friendliness	1.767	0.934	3.584	1	0.058***	5.855
Overall Satisfaction	0.305	0.642	0.226	1	0.635	1.357
Reason for Evasion	0.315	0.292	1.162	1	0.281	1.370
Difficulty of Evasion	3.573	0.663	29.085	1	0.000*	35.627
Social Influence	-0.513	0.645	0.633	1	0.426	0.599
Constant	-15.846	3.615	19.215	1	0.000	0.000

**Note:** \*\*\*, \*\*, \* signify significance at 1%, 5%, 10% level of significance. Omnibus Tests of Model Coefficients (0.000), Hosmer and Lemeshow Test Significance (0.106).

The results yielded from model 3 reveal that difficulties in tax evasion are associated with higher probabilities of tax compliance especially using digital tax platforms such as e-filing. Under the impression that taxes are difficult to evade, taxpayers in South Africa are most likely to become more compliant.

**Table 7. Model 4**

	<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Exp(B)</b>
E-Registration	-0.621	0.282	4.842	1	0.028**	0.538
E-Filing	0.265	0.277	0.918	1	0.338	1.304
E-Payments	0.673	0.273	6.100	1	0.014*	1.961
Auto-Assessment	-0.718	0.380	3.577	1	0.059**	0.488
Platform Friendliness	0.568	0.599	0.901	1	0.342	1.765
Overall Satisfaction	0.617	0.408	2.288	1	0.130	1.854
Benefit Pub Serv.	-0.181	0.461	0.154	1	0.695	0.835
Tax Morale	0.303	0.578	0.275	1	0.600	1.354
Trade-Off	-0.296	0.425	0.485	1	0.486	0.744
Constant	-2.147	1.556	1.904	1	0.168	0.117

**Note:** \*\*\*, \*\*, \* signify significance at 1%, 5%, 10% level of significance. Omnibus Tests of Model Coefficients (0.028), Hosmer and Lemeshow Test Significance (0.349).

On the downside however, the study fails to measure the effect of different tax penalties as a result of tax evasion. Further to this, the study estimates the effect of perceptions on government.



At table 7, taxpayers' perceptions on the government, including the government services they benefit from as well as the extent to which the quality of government services inspires them to settle their tax liabilities, is found to be statistically insignificant in explaining probabilities in tax compliance. The final aspect of our analysis involved adding the impact of the political regime to the original tax compliance model.

**Table 8.** Model 5

	<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Exp(B)</b>
E-Registration	-0.583	0.284	4.220	1	0.040**	0.558
E-Filing	0.126	0.271	0.215	1	0.643	1.134
E-Payments	0.509	0.258	3.882	1	0.049**	1.664
Auto-Assessment	-0.799	0.368	4.705	1	0.030**	0.450
Platform Friendliness	0.839	0.620	1.832	1	0.176	2.315
Overall Satisfaction	0.824	0.415	3.946	1	0.047**	2.280
Corruption Perception	1.058	1.302	0.660	1	0.416	2.881
Trust in Government	-0.325	1.597	0.041	1	0.839	0.722
State of Democracy	0.666	0.469	2.017	1	0.156	1.946
Constant	-4.014	1.935	4.304	1	0.038**	0.018

**Note:** \*\*\*, \*\*, \* signify significance at 1%, 5%, 10% level of significance. Omnibus Tests of Model Coefficients (0.014), Hosmer and Lemeshow Test Significance (0.188).

The inclusion of political factors to the initial tax compliance model does not yield any significant results. For example, although the state of democracy is found to be positively associated with higher probabilities of e-filing and consequently tax compliance, the results are found to be statistically insignificant. Similarly, taxpayers' trust in government is found to be negatively associated with higher probabilities of tax compliance. Although this is in line with the hypothesis of the study, the findings are statically insignificant.

## 6. Conclusion

The main aim of this research is to investigate how South African taxpayers perceive the impact of information technology on tax administration and compliance. The study uses a binary logistic model to analyze the data and finds that online registration is negatively associated with tax compliance. This suggests that taxpayers find the process of registering online too complicated, which discourages them from submitting their tax returns electronically. Therefore, there is room for improvement in the online registration process. On the other

hand, online payment methods are found to have a positive relationship with tax compliance, indicating that taxpayers find it more convenient to settle their tax liabilities online due to the time-saving, secure, and efficient nature of online payment systems and gateways.

Moreover, the study finds a positive relationship between tax compliance and the degree to which the online filing system encourages taxpayers to comply with their tax obligations compared to paper-based filing. This implies that the e-filing system has played a significant role in shaping taxpayers' attitudes towards compliance. This is important given the government's substantial investment in the development and acquisition of the e-filing system. However, the feature of auto-assessment is found to have a negative association with tax compliance, suggesting that taxpayers have not yet welcomed this feature.

The study also includes demographic factors, and the results show that higher levels of educational attainment are positively associated with a transition from paper-based filing to e-filing. In addition, the study finds that difficulties in evading taxes are positively associated with higher probabilities of tax compliance.

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**APPENDIX**



