EdinBurg Peer Reviewed Journals and Books Publishers
Journal of Finance and Accounting
Vol. 5||Issue 1||pp 12-21||January||2025
Email: info@edinburgjournals.org||ISSN: 2789-0201

Effect of Tax Literacy on Digital Income Tax Compliance among E-Commerce Traders in Nairobi, Kenya

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How to Cite: Lusala, B. A., Ogaga, B., & Tarus, J. K. (2025). Effect of Tax Literacy on Digital Income Tax Compliance among E-Commerce Traders in Nairobi, Kenya. *Journal of Finance and Accounting, 5*(1), 12-21.

Abstract

Purpose: The global digital economy has created a disruptive market where goods and services are exchanged online without requiring a physical presence at the point of sale. This poses a challenge for many governments worldwide in terms of collecting appropriate tax revenues from these digital platforms. The purpose of this study was to determine the effect of tax literacy on digital income tax compliance among e-commerce traders in Nairobi, Kenya. The theory that guided this study was the unified theory of acceptance and use of technology.

Methods: Explanatory research design was used in this study. The target population was 130 e-commerce traders in Nairobi, Kenya and a census survey was applied. The survey had 110 responses, which thereby 84.6% response rate. Questionnaires were used to collect primary data and analysis included both descriptive and inferential statistics. Null hypothesis was tested at 95% confidence level, and consequently, a significance level of 0.05 using the multiple regression analysis.

Results: The findings reveal that tax literacy has a positive and significant effect on digital income tax compliance among e-commerce traders in Nairobi, Kenya (β=0.206, p-value=0.004).

Conclusion: The Kenya Revenue Authority (KRA) should implement comprehensive education programs to increase tax literacy among e-commerce traders. These programs could focus on simplifying complex tax laws, providing practical guidance on compliance, and leveraging digital platforms for easy access to information. Future studies may examine the impact of psychological factors, such as taxpayer morale, on digital income tax compliance.

Keywords: *E-commerce Traders, Tax Literacy, Digital Income Tax Compliance*

Received: 05 December 2024 ***Revised: 03 January 2025*** ***Accepted: 08 January 2025***

1. Introduction

Taxation serves as the primary source of government revenue in both developed and developing economies, providing financial independence from external aid (OECD, 2019). However, tax noncompliance poses significant threats to this revenue source, with developing economies being the most affected. Although developing countries have relatively high tax performance levels at 35%, African countries report significantly lower levels at less than 23% (OECD, 2019).

Digital income tax compliance uses digital technologies to enhance the efficiency, accuracy, and transparency of tax collection and compliance processes. This includes online tax filing platforms, automated reporting systems, and the integration of data analytics to monitor and ensure taxpayers adhere to income tax regulations. Digital compliance systems aim to reduce errors, prevent tax evasion, and simplify the compliance process for both taxpayers and tax authorities. It aligns with the broader goals of *e-government*, where digital tools streamline interactions between citizens and government services, fostering trust and convenience (Picciotto, 2020).

Tax literacy can be defined as the individual's understanding of tax laws related to tax liability, fulfilling his/her tax obligations, and evaluating the possible tax risks independently in his/her financial environment (Cvrlj, 2019). Therefore, there is a close relationship between tax literacy and digital income tax compliance. Tax literacy is the knowledge and understanding of tax laws, regulations, and procedures that enable individuals and businesses to fulfil their tax obligations accurately and efficiently. Higher tax literacy is strongly correlated with improved tax compliance (Joulfaian, 2020). Understanding tax obligations**,** tax-literate individuals and businesses are more aware of their specific tax obligations, including what types of income must be reported, what deductions and credits are available, and when tax returns must be filed (Lind & Tyler, 2021).

E-commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals (Chaffey, Hemphill, and Edmundson-Bird, 2019). In Kenya, e-commerce has been defined as a method of trading that replaces paper-based documentation with a mutually binding electronic protocol between buyers and sellers (Waithaka, & Mnkandla, 2021). E-commerce is not limited to Internet and includes all business transactions which take place using electronic systems, including Electronic Data Interchange (EDI).

1.1 Problem Statement

The government introduced a digital service tax (DST) alongside VAT on digital market supply. The legislation aimed to impose a 1.5% tax on the total value of digital services. Starting in January 2021, individuals earning income by offering services or products through online platforms were required to pay this tax. Income tax Act cap 470 Section 3(ca) read along with Section 12E provides for taxation of income accruing from a business carried out over the internet or an electronic network including through a digital marketplace. Furthermore, the law specifies that both Kenyan residents and non-residents with permanent establishments in the country could utilize the tax amount as a deduction against their income liability for that particular year.

Despite the tremendous growth, KRA missed its domestic tax target yet again in the 2022/2023 financial year since the income tax collected was Kes173 billion against a target of Kes 406 billion (KRA, 2023). Specifically, digital income tax compliance for the past 1 year, the corresponding tax collection from the sector has remained very low. For instance, in the year 2022/2023 KRA collected Kes 5.3 billion, as compared to the target of Kes 8.2 billion, (KRA report, 2023). Not much is known regarding the digital income tax compliance in Kenya but the study by Simiyu in 2021, sought to establish determinants of digital tax education of some SMEs. Raja et al. (2021) studied taxation economy of digital compliance design in Malaysia. This underscores the need for this study to determine the effect of tax literacy on digital income tax compliance among e-commerce traders in Nairobi, Kenya.

2. Literature Review

2.1 Theoretical Review

2.1.1 Unified Theory of Acceptance and Use of Technology

This theory was formulated by Venkatesh et al. (2003) and aims to explain user intentions while using an information system and the subsequent usage behavior. The theory claims that four main factors will influence usage of a new information system, and they include: performance expectancy, effort expectancy, social influence, and facilitating conditions. The four factors are moderated by gender, age, experience, and voluntariness of the targeted user. For example, a user who is young and with an IT background, are more likely to find a new system highly useful in performing their duty, easy to use as they are already technical, and will most likely influence their peers in using the same information system.

The theory was developed by reviewing and consolidating the principles of eight earlier models which include the one above Technology Acceptance Model and others. The model has been used by various researchers in their studies but has also received criticism from various quarters as many compare it with the theory of technology acceptance model (Venkatesh, & Zhang, 2010). The Unified theory of acceptance and use of technology involves the economic environment of the firm, the structures of the industry, and the internal structure of the firm is one of the most important components for the growth and development of the firm. The unified theory involves the change from manual to use of computerized technology which makes work easier and faster. The information system is introduced to the firm by the management according to the various tasks that need to be performed successfully in an automated way. Most organizations have changed from the use of manual systems to the Modern information system which is a good example of automation (Venkatesh, 2016).

The growth of the firm involves the stages that are followed in the cycle of the growth and include the introduction stage the growth, peak, and decline stage, these stages are also used in the introduction of information technology to perform the various tasks. The capital increases in the growth stage but in the peak stage it remains constant then it starts going down in the decline stage and at this stage of decline most firms are forced to close down. The expenditure increases as the capital and the output increases at the same rate. Some of the information systems used in modern technology include the business systems that processes the data and produce the output (Venkatesh, 2016).

The theory of acceptance and use of technology was earlier demonstrated by other scholars who performed more research work to support their work and shows how small firms start and grow to big firms with more growth in output, capital, and expenditure as a result of the use of advanced technology by the use of computerized systems. The business continues to expand its market it producing more products and increasing labor costs and those are indicators for the growth of the firm in the industry. The firm acts as one union to attain the goals of the organization by using different processes to attain the objectives (Gupta, 2008).

The entrepreneurs of the business start with the idea of the business organize the idea and put it to work the business starts and there is growth in the development of the business idea which was the main aim of the entrepreneur to be successful. The entrepreneur is the inventor of the business idea and the processes of business development and should take the feedback. The introduction of an information system affects the organization but mostly the positive effects (Gupta, 2011).

2.2 Empirical Review

2.2.1 Tax Literacy

For taxpayers to understand the reasons for and consequences of engaging in tax evasion, tax literacy is essential (Kassa, 2021). Understanding taxes is essential to raising public understanding, particularly regarding tax laws, the role of taxes in national development, and, most importantly, how and where the government spends the money it collects (Sebele-Mpofu & Chinoda, 2019). The capacity and willingness of taxpayers to comply with tax rules are two aspects of knowledge that contribute to compliance. A broad awareness of tax laws and information regarding the possibility of tax evasion is the knowledge component related to compliance (Musimenta, 2020).

According to Witono (2019) concerning the effort to increase the number of taxpayers, he stated that there are factors that need to be put into consideration to increase tax compliance and awareness of tax through dissemination of tax regulations by means of counseling, billboards, moral appeal, and opening tax regulation sites that are easily accessible by taxpayers. “The tax sensitization provided to the community is intended to provide an understanding to the public of the importance of paying taxes. According to Razmerita (2022), a person's knowledge is influenced by several factors, including education, media, and information exposure. Furthermore, an individual guidance process is needed in the social world.”

Inasius (2019) looked at the factors that affect small and medium-sized businesses' compliance with income tax reporting requirements in Indonesia. Using multiple regression, six tax compliance indicators were investigated. Data was gathered from 328 respondents in a Jakarta survey who are small business taxes. According to the findings, the advisory group, audit probability, tax literacy, and views of justice and fairness all had a substantial impact on tax compliance. The target group has the biggest influence on the conduct of SMEs that do not comply with tax regulations. These findings may help policymakers establish future tax strategies that emphasize compliance.

Taru and Mukta (2019) examined goods and services tax compliance in India. The review had the object of examining the extent of literacy of the new tax. More so, the study sought to investigate promotional strategies that affected tax compliance. Data was analyzed descriptively. Results revealed that literacy can be said to be a moderate determinant of goods

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and service tax compliance from the sample taxpayers in India. Further data analysis found that promotional strategies were effective sensitization platforms that enhanced tax compliance.

2.2.2 Digital Income Tax Compliance

Income tax compliance in the digital economy involves the application and adherence to tax laws and regulations specific to income generated through digital platforms, services, and transactions. This area presents unique challenges and considerations, such as the borderless nature of digital activities and the varying regulations across different jurisdictions (OECD, 2022). The Income Tax Act, Cap 470, of the Laws of Kenya, has fourteen parts, one hundred thirty-three sections, and thirteen schedules. The Act is bulky, with heavy legal jargon undertones. Subsequent Finance Bills and Acts are issued continuously, to make amendments to the tax laws appearing in the Income Tax Act; for example, the Finance Act 2012(11), assented to on January 7th, 2013, to make amendments to the Finance Bill 2012(12). This complicates the system further, making it more unfriendly.

The tax is charged on the income earned by persons resident in Kenya. A resident for tax purposes is an individual who has permanent residence in Kenya and has spent any part of the working year(s) in the country; or, one without permanent residence in Kenya but has spent one hundred eighty-three days or more, working in the country during the period of assessment. A foreign employee in a non-Kenyan firm or individual who is resident in Kenya and is subject to income tax on all emoluments. To avoid double taxation on resident individuals and corporate entities earning income by contacting businesses in other countries, Kenya has signed double taxation treaties with most nations.

2.3 Conceptual Framework

Creswell (2003) defines conceptual framework as a graphical presentation of the relationship between the study variables. There was a dependent variable which is digital income tax compliance while independent variables were tax literacy which was measured by tax calculations and due dates. As shown in Figure 1, The dependent variable was Digital Income Tax Compliance measured by Taxpayers' Registration, Returns Filed, and Tax Payment.

Tax Literacy

- Tax Calculations
- Due Dates

Digital Income Tax Compliance

- Taxpayers' Registration
- Returns Filed
- Tax Payment

Independent Variable **Dependent Variable**

Figure 1 Conceptual Framework

3. Methodology

The research design is a plan that outlines techniques and strategies for how information should be collected for assessment or evaluation, including identifying the data collection method, the tools to be used, the management of the tools, and the organization of the information to be analyzed (Lawrence, 2012). The study adopted an explanatory research design where gathering and collection of information was done through the help of questionnaires. The target population of the study was 130 e-commerce traders in Nairobi, KRA, (2023). This research adopted a census survey. The study targeted 130 respondents of which 110 respondents submitted their survey results indicating an 84.6% response rate.

Table 1: Response Rate

Response Rate	Frequency	Percentage (%)
Response	110	84.6%
No Response	20	15.4%
Target	130	

Reliability analysis

The Cronbach's Alpha values for each construct indicate the degree to which the items within each construct are correlated, thus reflecting the reliability of the scale used. Digital Income Tax Compliance has a Cronbach's Alpha of 0.933 with 4 items. This high value suggests that the items measuring digital income tax compliance are highly consistent and reliable, indicating that respondents' answers to these items are closely related. Tax Literacy shows an even higher reliability with a Cronbach's Alpha of 0.957 across 5 items. This indicates that the items used to measure tax literacy are very consistent, providing confidence that the survey accurately assesses respondents' understanding and knowledge of tax-related matters.

Table 2: Test of Reliability of Questionnaire

Factor	Number of Items	Cronbach Alpha Score	Conclusion
Digital Income Tax Compliance	4	0.933	Reliable
Tax Literacy	5	0.957	Reliable

4.0 Results and Discussion

4.1 Descriptive statistics

4.1.1 Descriptive Statistics Tax Literacy

Table 3 shows that the item "We are aware of the tax rules that apply to our business" received a mean score of 3.97 (SD=1.15), indicating that respondents tend to agree with this statement. The standard deviation shows moderate variability in responses. The item "Our organization is aware of the risks if we don't carry out our obligations as a taxpayer" received a mean score of 4.06 (SD=1.14), indicating that respondents tend to agree with this statement. The standard deviation shows moderate variability in responses. The item "KRA seminars improve our awareness of tax laws" received a mean score of 4.05 (SD=1.16), indicating that respondents tend to agree with this statement. The standard deviation shows moderate variability in responses. The item "Our company is aware of tax avoidance risks" received a mean score of 3.96 (SD=1.18), indicating that respondents tend to agree with this statement. The standard deviation shows moderate variability in responses. The item "We can calculate how much tax we must pay from the business income" received a mean score of 4.04 (SD=1.11), indicating that respondents tend to agree with this statement. The standard deviation shows moderate variability in responses.

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Table 3: Tax Literacy

	N	Mean	SD	Skewness	Kurtosis
We are aware of the tax rules that apply to our business	110	3.97	1.15	-.66	-1.06
Our organization is aware of the risks if we don't carry out our obligations as a taxpayer.		4.06	1.14	-.76	-.96
KRA Seminars improve our awareness of tax laws		4.05	1.16	-.76	-.99
Our company is aware of tax avoidance risks.		3.96	1.18	-.61	-1.21
We can calculate how much tax we must pay from the business income.		4.04	1.11	-.73	-.900
Mean		**4.02**			

4.1.2 Descriptive Statistics for Digital Income Tax Compliance

Table 4: showed that the survey statement "We submit our returns on time" had a mean response score of 4.03 (SD=1.17), indicating that respondents tend to agree with this statement. The statement "We have registered for digital income tax compliance obligation" had a mean response score of 3.99 (SD=1.15), showing that respondents generally agree with this statement. The standard deviation indicates moderate variability in responses. For the statement "We mostly file our returns accurately," the mean response score was 4.01 (SD=1.18), suggesting that respondents tend to agree with this statement. The standard deviation shows moderate variability in responses. The statement "The tax system in place motivates us to voluntarily comply with digital income tax obligation" had a mean response score of 3.93 (SD = 1.14), indicating that respondents tend to agree with this statement. The standard deviation shows moderate variability in responses.

Table 4: Digital Income Tax Compliance

	N	Mean	SD	Skewness	Kurtosis
We submit our returns on time	110	4.03	1.17	-.79	-.80
We have registered for digital income tax obligation.		3.99	1.15	-.75	-.81
We mostly file our returns accurately.		4.01	1.18	-.74	-.90
The tax system in place motivates us to voluntarily comply with digital income tax obligations.		3.93	1.14	-.65	-.88
Mean		**3.99**			

4.2 Correlation Analysis

The correlation analysis assessed the nature of the relationships between each of the predictor variables, and the outcome variable. The correlation matrix showed the correlation between tax literacy and digital income tax compliance ($r = 0.496$, p-value = 0.003), suggesting that improving tax literacy among taxpayers may contribute to enhanced compliance with digital income tax stipulations.

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Table 5: Correlations Statistics

	Digital Income Tax Compliance	Tax Literacy
Digital Income Tax Compliance	1	0.496**
Tax Literacy	0.496**	1

**Correlation is significant at the 0.05 level (2-tailed).

4.3 Regression Analysis

Table 6 showed that tax literacy had a positive correlation with Digital Income Tax Compliance up to 49.6% or (R= 0.496). The results reveal that tax literacy caused a variation of 24.6% or (R^2=0.246 and adjusted R^2 =0.241) on Digital Income Tax Compliance. The remaining 75.9% of variation was caused by other factors not included in the model.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.496[a]	.0.246	.241	.32568

a. Predictors: (Constant), tax literacy _mean

Table 7 shows that there was an F statistic of 30.057 and a p-value of 0.000<0.05, which indicates that the model was significant in explaining the variance caused by Digital Income Tax Compliance.

Table 7: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.210	1	26.210	30.057	0.000
	Residual	94.247	108	0.872		
	Total	120.457	109			

a. Dependent Variable: Digital Income Tax Compliance

b. Predictor: (Constant), Tax Literacy

Table 8 showed that unit change in Tax literacy caused a 0.206 increase in digital income tax compliance. The study found that Tax literacy had a positive and significant effect on digital income tax compliance β =0.206 p-value =0.004<0.05. Consequently, the null hypothesis was rejected.

Table 8: Regression Coefficient analysis

Variable	Standardized β	Std. Error	t-Statistic	Unstandardized β	Prob.
Constant	1.858	0.424	4..382		0.000
Tax literacy	0.206	0.074	2.784	0.216	0.004

4.4 Discussion of the Findings

The study sought to establish the effect of tax literacy on digital income tax compliance among e-commerce traders in Nairobi, Kenya. The study found that there was a positive and significant correlation between Tax Literacy and Digital Income Tax Compliance ($r = 0.496$) suggesting that improving tax literacy among taxpayers contributed to enhanced compliance with digital income tax stipulations. The regression coefficient analysis showed that a change in tax literacy resulted in a significant increase in digital income tax compliance ($\beta = 0.206$, p-value = 0.000). This illustrated the importance of educating taxpayers on their tax obligations, as higher tax literacy led to better compliance. Kassa (2021), Sebele-Mpofu and Chinoda (2019), and Musimenta (2020) argue that tax literacy is essential for understanding tax laws, enhancing public awareness, and encouraging compliance. These studies suggest that higher tax literacy leads to better compliance. Witono (2019) and Razmerita (2022) also support the positive relationship between tax literacy and compliance, emphasizing that increased knowledge through education and information dissemination improves compliance rates.

5. Conclusion

The study aimed to determine the effect of tax literacy on digital income tax compliance. The results showed a positive and significant correlation between tax literacy and compliance. The conclusion drawn is that enhancing tax education and awareness among e-commerce traders could significantly improve compliance levels.

6. Recommendations

The Kenya Revenue Authority (KRA) should implement comprehensive tax education programs to increase tax literacy among e-commerce traders. These programs could focus on simplifying complex tax laws, providing practical guidance on compliance, and leveraging digital platforms for easy access to information.

Future studies may examine the impact of psychological factors, such as taxpayer morale, on digital income tax compliance.

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