

Online Platforms and Tax Compliance in Tanzania's E-Commerce Sector

Abbas Sanga^{1*}, Lucas Mataba¹ and Juda Msaki¹

Abstract: *Developing economies continue to underexplore the role of online platforms in tax administration, despite the growing importance of e-commerce. This study investigates the impact of online platforms on tax compliance among e-commerce entrepreneurs in Tanzania. Data were collected from 385 respondents using self-administered questionnaires and analyzed using a binary logistic regression model. The study examined how data sharing and cooperation between online platforms and the Tanzania Revenue Authority (TRA) influence tax compliance. The results demonstrated that data sharing has a coefficient of 0.425 and a p-value of 0.437, indicating that it has no statistically significant influence on tax compliance. It may facilitate the transparency conceptually, but in practice, it has not yet translated into measurable improvements in tax compliance among e-commerce actors. While cooperation between online platforms and the tax authority showed a coefficient of -2.073 and a p-value of 0.000, indicating that their cooperation actually had a significant negative effect on tax compliance; this surprising result might suggest that these efforts are impractical or considered intrusive by e-commerce businesses, leading to less voluntary compliance. These findings highlight the complex dynamics between regulatory collaboration and digital information sharing. Additionally, government and tax professionals should not view online platforms as avenues for evasion; instead, they should serve to improve tax compliance and revenue generation.*

Keywords: Tax Compliance, e-Commerce, Online Platforms, Data Sharing, Cooperation.

JEL classification: H26, L81, H32, K34, O33, O55

1.0 Introduction

Global figures indicate that revenue from the digital economy increased to over \$38.1 trillion in 2021, up from \$23.1 trillion in 2020 (Jin et al., 2023; Data Reportal, 2023). E-commerce marketplaces, among other online platforms, have significantly bolstered the exponential expansion of e-commerce (Rukanova et al., 2021; Costa and Rodrigues, 2023). Scarcella's (2019) analysis reveals that internet platforms generate over \$2 trillion in profits yearly, with projections indicating that this figure could surpass \$4.5 trillion by 2025. Similarly, in Africa and Sub-Saharan Africa (SSA), there has been a

¹ Department of Banking Accounting and Finance, Moshi Cooperative University.

* Correspondence E-mail: abbassanga@yahoo.com

significant increase in the number of people conducting business online (Myovella et al., 2020; Asante et al., 2019; Junyong and Linbo, 2014).

Notably, in Tanzania, income generated by online platforms will increase from \$493.6 million in 2023 to \$783.7 million in 2027 (Statista Markets Insights, 2023). Moreover, due to the development of information and communication technology (ICT) and the coronavirus pandemic, the number of customers buying and selling through online platforms has increased (Acheampong, 2021; Papis-Almansa, 2019). The rapid growth and expansion of the digital economy have led to increased focus on taxation issues related to online platforms, both in practice and in academia.

Despite the efforts made by governments to boost revenue collection by modernising the tax system, broadening the tax base, and bringing e-commerce companies into the tax net, there remain challenges for online platforms to adhere to tax rules and regulations (Jin et al., 2023; Bassey et al., 2022; Mpofu, 2022). This poses challenges for tax authorities and the government in accessing accurate tax-related information due to the digitisation, virtualisation, and conceptualisation of transactions. Especially, e-commerce owners who engage in e-commerce transactions through online platforms without registering for tax purposes (Puspita et al., 2023; Gangodawilage, 2021). The lack of information available to tax authorities regarding e-commerce owners on online platforms is more pronounced in e-commerce than in conventional businesses. Within the context of this article, the term "online platforms" refers to individuals, organisations, or firms that enable e-commerce owners to execute e-commerce transactions.

Undoubtedly, online platforms hold extensive data on users' e-commerce transactions, which can inform tax assessments (Holland and Gutiérrez-Leefmans, 2018). This information, regardless of whether it is kept private or not, is valuable to tax authorities for the purpose of collecting and determining the taxable income of persons (Şekeroğlu and BİlgİN, 2020; Saura et al., 2022). Country-wise, these have sparked more challenges, such as under-reporting, data opacity, and platform-mediated transactions.

Furthermore, despite the fact that these e-commerce entities are fulfilling their tax obligations, the complexity of their operations makes it challenging to identify the income they generate precisely. This complicates the process of conducting audits and making necessary assessments, as only online platforms retain the information required. The study by Luo and Niu (2019) demonstrated that tax authorities can obtain crucial data on e-commerce transactions through online and digital platforms.

In the meantime, various studies have examined the relationship between online platforms and tax compliance, specifically in developed nations (Dann et al., 2022;

Belahouaoui and Attak, 2024). However, little is known about how data sharing and cooperation through online platforms affect tax compliance among e-commerce businesses in many developing countries, particularly in Tanzania. Groulx and McGregor (2019) conducted a study to investigate the importance of integrating social media data warehouses with tax authority systems. The purpose was to detect fraudulent acts by influencers and promote compliance with tax legislation. Ouyang et al.(2023) found that delivering tax-related information through digital financing can boost tax compliance among small enterprises in China. In their study, Prihatiningtias and Karo Karo (2021) examined the tax compliance of social media influencers during the COVID-19 pandemic.

They discovered that social media influencers were not in compliance with tax regulations due to a lack of precise income categorisation and access to tax information. Furthermore, Scarcella (2020) conducted an extensive investigation into the impact of online platforms on tax compliance in the e-commerce sector. The study revealed that online platforms play a crucial role in furnishing tax authorities with information to enhance tax compliance among e-commerce participants. Arora and Jain's (2024) study, on the other hand, uncovered apprehensions among e-commerce platforms about disclosing their customers' private information, which could disrupt their business operations. The study concluded that regulating data sharing would benefit all parties involved.

Although e-commerce and tax compliance have drawn attention to enforcement mechanisms, taxpayers' knowledge, and the challenges of the digital economy, there has been scant empirical attention to the role of online platforms and to their cooperation with revenue authorities in tax compliance, especially in developing countries (Liganya, 2020). In the Tanzanian context, studies emphasize e-commerce and revenue collection at the conceptual level, with little empirical evidence on how data sharing and cooperation between online platforms and the Tanzania Revenue Authority (TRA) influence tax compliance outcomes. Additionally, these online platforms act as intermediaries because they possess transaction data on their clients, creating information asymmetry between platform users and the Tanzania Revenue Authority (TRA), resulting in an information gap between the two.

Therefore, this study examined the influence of online platforms on tax compliance among e-commerce businesses in Tanzania. Specifically, it investigates how data sharing and cooperation between e-commerce businesses and the TRA affect tax compliance behaviour. The study contributes to understanding digital taxation mechanisms in Sub-Saharan Africa and informs policy reforms to improve domestic revenue mobilisation through the digital economy.

2.0 Literature Review

2.1 Empirical Literature

2.1.1 Tax compliance and online platforms

The growth of the digital economy, also known as the 4.0 industrial revolution, has compelled tax authorities to explore more effective methods to enhance tax compliance among technology users. These developments have altered the ways participants in e-commerce report information, leading to a shift from traditional to online tax payment methods (Dann *et al.*, 2022; Masele and Matama, 2020; Mahpudin *et al.*, 2018). Consequently, tax authorities are now devising more effective strategies to boost tax revenue while simultaneously enhancing tax compliance. Online platforms streamline the process of purchasing and selling products and services online, whether tangible or intangible. (Effiong and Nwanagu, 2020; H. Costa *et al.*, 2021; OECD, 2019). These platforms serve as repositories of information for many parties in the e-commerce field. Thus, they play a crucial role in providing the tax authority with the information it needs to determine their clients' taxable income.

According to Tran (2021), e-commerce trade platforms primarily affect participants by reducing business costs and increasing efficiency, while also serving as custodians of valuable trade information. In their study Asmah and Inayah (2023), they revealed that high-quality tax-related data is critical for enhancing tax compliance and improving the efficient management of tax revenue. However, the advancement of technology has created difficulties in determining the goods and services traded or to be traded, posing challenges for tax authorities due to a lack of clear management of information about online transactions (Younus, 2021).

Electronic commerce, also known as "e-commerce," refers to online shopping through the World Wide Web, where participants use electronic data transmission to buy and sell goods and services (Tofan and Bostan, 2022). Unlike conventional businesses, e-commerce has a broader reach due to its lack of boundaries and cross-border nature. Additionally, e-commerce encompasses any electronic financial transactions. This study defines e-commerce explicitly as any electronic commercial and financial transactions carried out by buyers and sellers, or between business partners, suppliers, and customers, as well as the marketing of products through the internet.

2.1.2 Online platforms

According to OECD (2019), an online platform is a digital service that facilitates interactions between two or more distinct but interdependent sets of users (whether firms or individuals) who interact through the service via the internet. Online platforms encompass a range of services available on the internet, including marketplaces, search engines, social media, creative content outlets, app stores, communications services,

and payment systems, as well as services comprising the so-called "collaborative" or "gig" economy.

Online platforms may mean different things depending on the professionals or sectors in which they operate. The most fascinating definition comes from software engineers, who view online platforms as a standard set of technologies or interfaces available to a broad base of users who build on them. To them, a platform includes operating systems for computers or mobile phones; on the other hand, Merchants see the online platform simply as a convenient forum for buying and selling products and services. To them, online platforms could include all forms of e-commerce (Costa and Rodrigues, 2023; Santos *et al.*, 2022; Wang, 2021; OECD, 2019).

Additionally, Online platforms have been compared to stock exchange markets in other literature, as they fulfil the needs of both stock buyers and sellers (Bonina *et al.*, 2021). They engage in interactions on the exchange by indicating the prices at which they are prepared to purchase and sell. Indeed, both newspapers and stock exchanges have also transitioned into digital media (Ballerini *et al.*, 2023).

Therefore, online platforms act as digital service intermediaries that facilitate interactions between two or more distinct but interdependent sets of users (whether firms or individuals) who interact through the service via the internet. This argument aligns with the study conducted by Gupta *et al.* (2023), which found that online platforms offer benefits for e-commerce.

2.1.3 Tax compliance and data sharing between e-commerce actors and Tax Authorities

Adam *et al.* (2021) highlighted the importance of disseminating information regarding the taxation of electronic commerce. Papis-Almansa (2019), in connection with this study, investigated how to prevent tax evasion through e-commerce and concluded that third parties, leveraging their information, can improve tax compliance. Scarcella (2020) study on e-commerce and effective VAT/GST enforcement revealed that gathering information from online platforms can serve as a tool for advanced risk analysis, aimed at addressing non-compliance.

Furthermore, online platforms are required to disclose information about transactions conducted by their clients, such as e-commerce businesses (Bañez, 2022). Revenue authorities can use this information to categorise transaction characteristics and charge tax accordingly, thereby enhancing online revenue collection and tax compliance. Huang *et al.* (2018) found in their study on C2C electronic commerce tax management based on big data that tax authorities struggle to collect taxes and manage e-commerce data. Some of the problems they face are unclear tax subjects and jurisdictions, difficulty in tax oversight, and low tax awareness.

Profoundly, in addressing this the study by Papis-Almansa (2019) provided a list of information that are required by tax authority from e-commerce participants such as the billing address of the e-commerce actors, IP address of the device used by the customer or any method of geolocation, bank details, the Mobile Country Code of the International if any, Mobile subscriber identity stored on the consumer's SIM card for foreign transactions, the location of the customer's fixed landline or other commercially relevant information.

2.1.4 Tax compliance and cooperation between e-commerce actors and Tax Authorities

To implement the principle of equity/equality propounded by Adam Smith, the tax authority must tax both conventional business and e-commerce equally (Creig, 2000). This can be achieved by encouraging voluntary tax compliance from traditional businesses and online businesses through cooperation among actors and the revenue authority.

In line with this, OECD highlighted the key issues that tax authority must adhere in managing risk while encouraging taxpayers to fulfil their tax obligations a) treat taxpayers equally, b) focus the burden of audit to non-compliant taxpayers, c) make best use of the available human, financial and technical resources, d) increase the level of voluntary compliance of taxpayers, e) adjust available resources to the levels of risks, f) weigh the possibilities that a compliant taxpayer could become non-compliant.

To increase cooperation between e-commerce actors and the tax authority, the need for e-commerce companies to abide by the tax authority is inevitable through being aware of applicable tax regulations, using e-commerce platforms registered in the home country, utilising tax facilities provided by the tax authority, and paying attention to the changes in tax regulations (Hidayat *et al.*, 2023). On the authority's side, it should ensure the effective use of electronic tools to reduce the existing technological asymmetry between e-commerce models and the tax models applied by the authority, which are often designed to mitigate the risks associated with traditional business activities. The use of Big Data for estimating tax risk of e-commerce transactions and selecting entities to be inspected should be significant (Trautman, 2020)

2.2 Theoretical Review

2.2.1 Behavioural decision theory (BDT)

According to behavioural decision theory (BDT) by Einhorn and Hogarth (1981), it is assumed that decision-making can be done normatively and descriptively. Thus, humans are cognitively limited information processors (Simon, 1978). People have limited knowledge and skills to attain the degree of rationality required for making their choices. Alternatively, they use shortcuts to solve their problems (Kahneman, Slovic, and

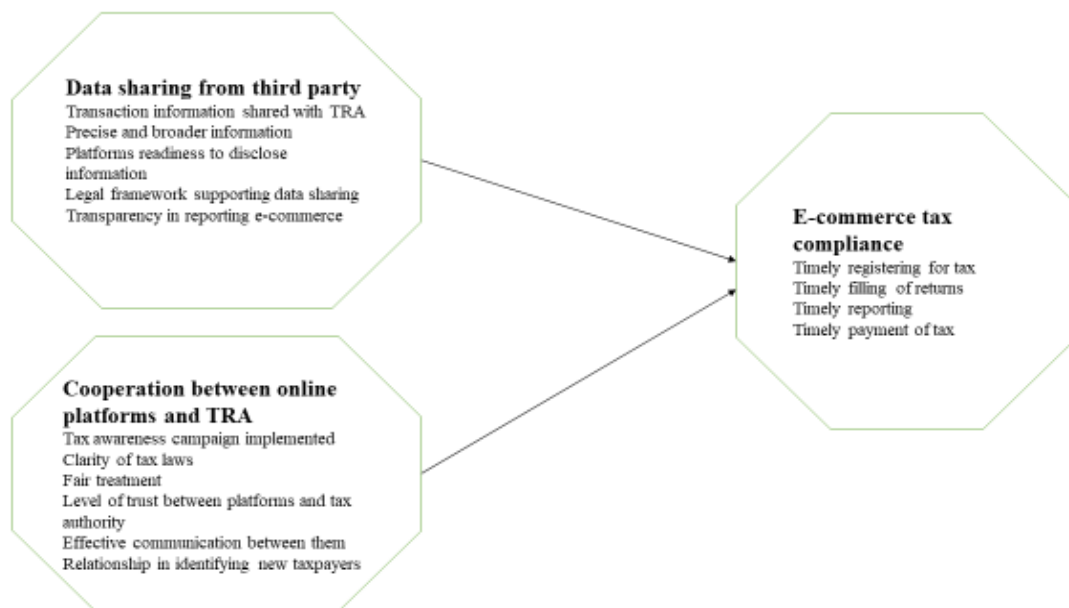
Tversky, 1981). Regarding tax compliance, this theory assumes that taxpayers make decisions based on personal opinions and perceptions given social dilemma conditions. In making such decisions, taxpayers need information to help them make conclusions. To elaborate on the decision-making process, BDT gives a robust conceptual foundation (Shakkour et al., 2021).

As evidenced by various studies, there is a strong influence of social and personal factors responsible for tax compliance among taxpayers. The perception regarding the importance of such things as fairness, altruism, morality, patriotism, social norms, social customs, the 'bandwagon effect', quality services, awareness, tax knowledge, social capital, social networks, 'tax morale', intrinsic motivation, obedience to authority and many other objectives, all of which depend in some way upon the individual's interaction (Stingl and Geraldi, 2021). This information is required for both kinds of business, whether online or conventional. This theory, therefore, is suitable for this study since taxpayers' behaviour and willingness to pay tax depend on their perception of the tax system for both conventional and online businesspeople. This theory is also relevant to this study since it explains electronic purchasing behaviour and taxation.

2.3 Conceptual Framework

The study developed a conceptual model grounded in the behavioural decision theory (BDT) to examine how online platforms influence participants' e-commerce tax compliance.

Figure 1: Conceptual model



Source: Author's Own Work

3.0 Methodology

The study was conducted in the Dar es Salaam region because it serves as Tanzania's business hub, has the country's largest population, and offers numerous business opportunities. Furthermore, Dar es Salaam was selected as the most dynamic economic region in the country, actively participating in electronic business transactions. At present, Dar es Salaam boasts of more than 100 e-commerce sites, surpassing those of any other region in the country (Data reportal, 2022). The study employed a descriptive cross-sectional research design to investigate the correlation between the explanatory variables and the response variable at a single point in time. The study used a mixed method to gain a richer understanding of the role of online platforms in enhancing compliance among e-commerce owners in Tanzania. The rationale for employing the mixed strategy lies in its ability to mitigate the impact of a single approach (Alharahsheh and Pius, 2020).

The population of this study is e-commerce participants. Cochran's (1977) formula for large or infinite populations, which is appropriate when the population size is unknown, was employed, with a chosen Z value for a confidence level of 95% yielding 1.96, a population proportion of 0.5, and a margin of error of 0.05 (Kerdvimaluang and Banjongprasert, 2021; Kadiri *et al.*, 2024) resulting in a sample size of 385. The sample size estimation should ensure that the study recruits a sufficient number of participants, evaluate the statistical precision of the determined sample size, and determine whether it impacts the accuracy and replicability of the results (Kiria *et al.*, 2020; Cao *et al.*, 2024; Kyriazos, 2018; Francis *et al.*, 2010). Approval letters were obtained from the local government authorities (RAS, Dar Es Salaam City Council, Kinondoni Municipal Council, Temeke Municipal Council, Ubungu Municipal Council, and Kigamboni Municipal Council). Letters were sent to Ward Executive Officers (WEOs), and documentation on e-commerce was gathered from the TRA.

A multi-stage probability sampling approach was employed; at the first stage, the Dar es Salaam region was selected due to its prominence in national e-commerce activity, digital entrepreneurship, and internet penetration. At the second stage, simple random sampling was applied to choose three municipal councils from the five municipalities in the region (Dar es Salaam City, Kinondoni, Temeke, Ubungu, and Kigamboni). The randomly chosen councils were Dar es Salaam City Council, Kinondoni Municipal Council, and Temeke Municipal Council. At the third stage, e-commerce participants were selected using a snowball sampling technique: the first respondent was randomly selected, followed by referrals until the researcher reached the desired sample size. The snowballing sampling techniques were preferred due to the mobility and transience of the target population (Parker and Geddes, 2019). A study by Leighton *et al.* (2023) also used snowball sampling to recruit participants on social media. Using the snowballing sampling method in a non-homogeneous population carries a high risk of bias because

one group dominates. This risk was mitigated by ensuring that the recruited seed participants had diverse characteristics, including gender, Age, business type, and platforms used. This mitigates the dominance of a single group. Documentary information on e-commerce was also gathered from the Tanzania Revenue Authority (TRA).

Self-administered questionnaires were used to collect information from respondents. The study population consisted of e-commerce owners in Dar es Salaam. Responses were captured using a 5-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. For each construct, individual item scores were aggregated using the composite mean approach. Consistent with prior studies employing binary logistic regression, the composite scores were dichotomised using a median split to generate binary variables (0 = Low, 1 = High) suitable for regression analysis.

This study used descriptive statistics together with STATA to demonstrate the respondent's characteristics like Age, sex, education level, level of income, record keeping costs, tax preparation fees, tax software and technology costs, compliance advisory costs, the presence of physical storefront, e-commerce business type, and online business experience as they can reveal the overall behaviour and pattern of respondents (Ghani and Mohamed, 2021; Nora Alwi, 2022). The data were examined using descriptive techniques, encompassing both percentages and frequencies. To determine the factors influencing tax compliance among e-commerce owners, a binary logistic regression model was employed. The binary logistic regression model was suitable for this study since the dependent variable was dichotomous. The logistic regression model is highly adaptable, has robust interpretability, and is ideal for assessing data with a categorical dependent variable (Zabor *et al.*, 2022; Bujang *et al.*, 2018). The Model is shown below;

Consider;

Dependent variable = $y \left(\frac{0}{1} \right)$

Independent variables = $(x_1, x_2, x_3, \dots, x_n)$

Model specification is; $y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon \dots \dots \dots (1)$

Thus, $\text{logit}(P) = \ln \left(\frac{p}{1-p} \right) = \frac{e^{(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n)}}{1 + e^{(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n)}} \dots \dots \dots (2)$

Where,

P= probability of success in this case, the likelihood that the e-commerce owner will abide by tax compliance

β_0 = Constant term when all predictors are equal to zero

$\beta_1 - \beta_n$ = parameter estimates; $X_1 - X_n$ = Model predictors

e^x = Natural exponential [exp(x)] of the sum of the product of each of the covariates.

Tax compliance = $\beta_0 + \beta_1 \text{data sharing} + \beta_2 \text{Cooperation between platforms and TRA}$

Content analysis was employed to validate, scrutinise, and convert qualitative data into quantitative data. The process involved cross-referencing, organising, and condensing themes and viewpoints derived from the collected information.

3.1 Reliability and validity test

Table 1: Reliability test

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Data Sharing	0.783	0.786	0.843	0.734
Enhanced Cooperation with Actors	0.710	0.712	0.805	0.708
<i>Kaiser-Meyer-Olkin Measure of Sampling Adequacy(KMO)=0.865</i> <i>Bartlett's Test of Sphericity*Approx. Chi-Square=618.904, Degree of freedom (Df)=28, P-value=0.000</i>				

Table 1 presents the reliability test results for the study variables, showing that both constructs meet acceptable thresholds for internal consistency and convergent validity. The Cronbach's alphas for Enhanced Cooperation with Actors and Data Sharing are 0.710 and 0.783, respectively. Both of these numbers exceed the 0.7 minimum, indicating good internal consistency. Similarly, the composite reliability (both rho_a and rho_c) values are above 0.8 for both constructs, suggesting strong construct reliability. The Average Variance Extracted (AVE) values exceed 0.7, indicating adequate convergent validity, as each construct explains a substantial portion of its items' variance.

Furthermore, the Kaiser-Meyer-Olkin (KMO) measure of 0.865 indicates sampling adequacy for factor analysis. At the same time, Bartlett's Test of Sphericity is significant (Chi-Square = 618.904, df = 28, $p < 0.001$), confirming that the data are suitable for structure detection. Overall, these results confirm the reliability and validity of the measurement model.

3.2 Ethical consideration

The Moshi Cooperative University (MoCU) approved the study, as indicated by reference No. HD/T/MoCU/072/20 dated 6/07/2023. This endorsement paves the way for further research and collaboration between the university and various stakeholders.

3.3 Informed consent

To prioritise ethical standards and integrity, the study implemented written informed consent procedures. Participants were provided with detailed information in the written

consent forms before completing the questionnaires, including a request for their willingness to participate in the study. This approach ensured that participants were fully informed about the study's aims and procedures while also fostering trust and transparency between the researchers and the participants.

Table 2: Operationalization of Variables

Variables	Indicators/items	Measurement	Sources
Independent variables			
Data Sharing	Transaction information shared with TRA Precise and broader information Confidentiality of data shared The platform's readiness to disclose information Legal framework supporting data sharing Transparency in reporting e-commerce	Categorical variables representing the data sharing of the taxpayer; 1 if no, 0 otherwise	Arora and Jain (2024)
Cooperation between online platforms and TRA	Tax awareness campaign implemented clarity of tax laws Level of trust between platforms and the tax authority effective communication between them Relationship in identifying new taxpayers	Categorical variables representing the use of tax cooperation between OP and TRA: 1 if they do not use tax professionals,0 otherwise.	
Dependent Variable			
E-commerce tax compliance	Timely registration for tax Timely filing of returns Timely reporting Timely payment of tax	Represent the act of complying or not complying with tax rules and regulations, measured as the categorical variable that takes the value of one for the taxpayer who complies and zero for those who do not comply.	Adapted from Kirchler (2007); Alm (2011)

Source: Author's Own Work

4.0 Results and Discussion

This part presents the results and discusses the role of online platforms in enhancing tax compliance among e-commerce owners in Tanzania.

4.1 Role of online platforms: Enhancing Data sharing and cooperation between e-commerce actors and TRA

Table 3, presents frequency distributions regarding the role of online platforms in improving tax compliance among e-commerce actors in Tanzania. The table illustrates two components: data sharing between e-commerce actors and TRA and cooperation between e-commerce actors and TRA, along with their respective levels of enhancement (not enhanced and enhanced).

Table 3: Frequency distribution for the role of online platforms in Enhancing Data sharing and collaboration between e-commerce actors and TRA

Role of online platform	Frequency (n=385)	Percentage (%)
Data sharing between E-commerce actors and TRA		
Not enhanced	116	30.1
Enhanced	269	69.9
Cooperation between E-commerce actors and TRA		
Not enhanced	138	35.8
Enhanced	247	64.2

The study interviewed 385 participants, out of which 116 (30.1%) said that online platforms do not improve data sharing between e-commerce actors and TRA. On the other hand, 269 (69.9%) respondents replied that online platforms enhance data sharing between e-commerce actors and TRA. This distribution suggests that online platforms are playing a greater role in facilitating data sharing and thereby encouraging tax compliance. It also implies that data sharing alone does not lead to tax compliance. It has to be accompanied by technological, legal, and trusted frameworks. This aligns with the study by Dewi Noor Fatikhah et al. (2023), which demonstrated that transparency of e-commerce actors on online platforms is crucial for enhancing taxpayer compliance.

Various online traders articulated doubt, with one remarking, *"We do not observe any genuine link between the data acquired by platforms and the TRA's tax systems."* Another remarked, *"Although platforms gather our data, we are uncertain whether it passes to TRA or supports compliance."*

Several e-commerce users observed that *"using registered platforms enhances our business visibility and facilitates accurate sales record-keeping, thereby simplifying compliance with tax obligations."*

On the other hand, 138 (35.8%) respondents replied that cooperation between e-commerce actors and TRA is not enhanced through online platforms. In comparison, 247

(64.2%) of respondents showed that online platforms enhanced cooperation between e-commerce actors and the TRA. This distribution indicates that cooperation between online platforms and tax regulatory authorities enhances tax compliance. This implies that a favourable impact on interactions between e-commerce actors and the Tax Regulatory Authority through online platforms enhances tax compliance. The study by Belahouaoui and Attak (2024) aligns with these results, showing that cooperation between e-commerce actors and revenue authorities via online platforms is paramount for improving e-commerce tax compliance. This was supported by a TRA official, who echoed the same.

"Our cooperation with platforms allows us to track online sales, identify active traders, and remind them of their tax obligations, which has significantly improved compliance monitoring."

4.2 Association between tax compliance and the role of online platforms in Enhancing Data sharing and cooperation between e-commerce actors and TRA

Table 2 displays Chi-square test results on the relationship between tax compliance and the role of online platforms in enhancing data sharing and cooperation between e-commerce actors and the Tax Regulatory Authority (TRA). The Chi-square value is used to assess the degree to which the observed data distribution aligns with the expected distribution (Turhan, 2020).

Table 4: Chi-square test of association between tax compliance and the role of online platforms in Enhancing Data sharing and cooperation between e-commerce actors and TRA

Role of online platform	Level of Tax Compliance		χ^2	P-value
	Not comply	Comply		
Data sharing				
Not enhanced	36	80	40.53	0.000
Enhanced	178	91		
Cooperation between E-commerce actors and TRA				
Not enhanced	41	97	58.33	0.000
Enhanced	173	74		

The table illustrates two components: data sharing between e-commerce actors and TRA, and cooperation between e-commerce actors and TRA, along with their respective levels of enhancement (not enhanced and enhanced). Starting with data sharing, the table demonstrates a strong correlation between tax compliance and data sharing through online platforms ($\chi^2 = 40.53$, $p = 0.000$). Respondents who replied 'not enhanced' account for a significant proportion (36), which belong to the 'not comply' category, while only 80 belong to the 'comply' category. This implies that e-commerce actors who perceive data sharing as not enhanced are more likely to be non-compliant. According to the table above, online platforms enhance data sharing, with 178 respondents falling into the comply category and 91 in the not comply category. This data indicates that e-commerce actors who perceive enhanced data sharing are more inclined to comply with tax laws.

Regarding cooperation between e-commerce actors and the TRA, which is notably not enhanced, the Chi-square test shows a strong link between tax compliance and corporations among e-commerce actors using online platforms ($\chi^2 = 58.33$, $p = 0.000$). The data indicates that 41 e-commerce actors fall into the non-complying category, whereas only 97 belong to the complying group. This illustrates that a lack of enhanced cooperation increases the probability of non-tax compliance among e-commerce actors.

On the other hand, a significant number of participants (97) who believe that e-commerce and TRA cooperation have improved fall into the comply category, whereas 41 belong to the not-comply category. This indicates that e-commerce actors who perceive enhanced cooperation are more likely to be associated with compliance.

Therefore, the Chi-square test demonstrates a statistically significant correlation between e-commerce actors' attitudes toward the role of online platforms in data sharing and their cooperation with tax authorities. The findings suggest a link between adherence to tax regulations among e-commerce participants and their reported enhanced willingness to share data and cooperate through online platforms.

4.3 Logistic Regression Results

4.3.1 Robustness Checks and Model Diagnostics

Before interpreting the logistic regression results, several diagnostic and robustness checks were conducted to assess the adequacy and reliability of the estimated Model.

4.3.1.1 Multicollinearity Diagnostics

Multicollinearity among explanatory variables was assessed using the Variance Inflation Factor (VIF). The results showed these two variables had VIF values below the commonly accepted threshold of 10. Data sharing showed a borderline value ($VIF = 9.47$), and cooperation between e-commerce actors and TRA showed a borderline value ($VIF = 8.57$). These results suggest moderate multicollinearity among conceptually related constructs. These showed that the overall model estimates remained stable and the key predictors retained strong statistical significance, indicating that multicollinearity did not materially distort the substantive conclusions. Therefore, the variables were retained in the Model based on strong theoretical justification.

4.3.1.2 Model Specification Test

Model specification was assessed using the linktest. The results indicated that the predicted values ($\hat{\mu}$) were statistically significant ($p < 0.001$), while the squared predicted values ($\hat{\mu}^2$) were also statistically significant ($p = 0.027$), suggesting potential model under-specification. To investigate whether this was due to an incorrect functional form, a multivariable fractional polynomial (MFP) procedure was applied. The MFP results confirmed that all continuous predictors were appropriately modelled in their linear form (all powers = 1), indicating the absence of non-linearity in the logit. The remaining misspecification is therefore more likely attributable to omitted relevant variables, a recognised limitation in cross-sectional behavioural studies, which is acknowledged in the limitations section.

4.3.1.3 Goodness-of-Fit and Model Adequacy

The overall model fit was evaluated using multiple indicators. The Omnibus test of model coefficients ($\chi^2 = 426.232$, $p < 0.001$) confirmed that the complete Model significantly outperformed the null Model. The Hosmer–Lemeshow goodness-of-fit test was non-significant ($\chi^2 = 4.28$, $df = 8$, $p = 0.815$), indicating that the Model fits the data well.

In addition, pseudo- R^2 measures were examined to evaluate the Model's explanatory capacity. The Cox–Snell R^2 was 0.69, while the Nagelkerke R^2 was 0.93. Although pseudo- R^2 values do not represent the proportion of variance explained in the same way as in linear regression, they indicate relative model performance. These values suggest that the Model has strong explanatory power in distinguishing between compliant and non-compliant e-commerce actors. The Model also demonstrated high predictive accuracy, with an overall classification rate of 95.6%, further supporting the robustness of the estimated Model.

4.4 Logistic regression analysis was carried out to determine the role of online platforms in tax compliance. Table 5 presents the results.

Table 5 demonstrates the findings of a logistic regression analysis designed to determine the role of online platforms in facilitating tax compliance of e-commerce participants.

Table 5: Logistic regression results to determine the role of online platforms in facilitating tax compliance of e-commerce businesses.

Independent variables	B	S.E.	Wald	df	Sig.	Exp(B)
Data sharing	0.425	0.547	0.605	1	0.437	1.530
Cooperation between E-commerce actors and TRA	-2.073	0.527	15.452	1	0.000	0.126
Constant	0.799	0.201	15.830	1	0.000	2.222
1. Dependent variable: level of tax compliance (0=Not comply or 1=Comply)						
2. Omnibus test of model coefficients: Chi-squared=60.036, df=9, and P-value=0.000						
3. Hosmer and Lemeshow test: Chi-squared=0.001, df=9, and P-value=0.992						
4. Model classification=70.1%						
5. Cox&Snell R-square=14.4%						

As shown in the table, data sharing has a coefficient of 0.425 and a p-value of 0.437, indicating that it does not exert a statistically significant influence on tax compliance. Although the odds ratio (Exp(B) = 1.530) suggests a positive, albeit weak, association, this effect is not statistically significant. Therefore, while data sharing may, in principle, facilitate transparency, the results indicate that, in practice, it has not yet translated into measurable improvements in tax compliance among e-commerce actors.

Conversely, cooperation between e-commerce actors and TRA has a coefficient of -2.073 and a p-value of 0.000, indicating a statistically significant negative impact on tax compliance. While the odds ratio of 0.126 indicates that as perceived cooperation between e-commerce actors and the TRA through online platforms increases, the probability of tax compliance diminishes significantly. The odds ratio (Exp B = 0.126)

suggests that as perceived cooperation increases, the likelihood of compliance decreases substantially. This unexpected or counterintuitive result may imply that cooperation efforts are not yet practical or are perceived as intrusive by e-commerce actors, thereby reducing voluntary compliance. While Ogembo and Lehdonvirta (2020) found that information cooperation can enhance tax monitoring and enforcement, the present findings suggest that, in Tanzania's context, cooperation mechanisms may be poorly structured or inadequately implemented, leading to negative or adverse compliance outcomes.

This study was grounded in the Behavioural Decision Theory (BDT), which offers a valuable perspective on e-commerce tax compliance by demonstrating how the implementation of digital tax systems and online platforms affects taxpayer behaviour. Regarding BDT e-commerce tax compliance through online platforms, it depends on how users perceive information and how they use it in making decision under electronic environment. E-commerce participants are more likely to adopt online tax technologies and data-sharing methods when they perceive these technologies and techniques as facilitating filing processes, improving accuracy, and reducing compliance costs, thereby fostering voluntary compliance. If these digital technologies are perceived as complex or untrustworthy, users may resist adoption, resulting in lower compliance. Consequently, the perceived usefulness and user friendliness of online tax platforms significantly influence attitudes, intentions, and, ultimately, tax compliance behaviour among e-commerce participants.

5.0 Conclusion and Recommendations

This study concludes that data sharing between online platforms and TRA may, in principle, facilitate transparency and compliance in practice. Still, it has not yet translated into measurable improvements in tax compliance among e-commerce participants. It recommends that TRA establish third-party information-sharing platforms and a regulatory framework, conduct network tax inspections, implement real-time data updates, monitor illicit trading activities, and enhance oversight of service quality in the e-commerce sector. Regarding cooperation between online platforms and tax authorities, the study concludes that ineffective or perceived as intrusive cooperation between online platforms and TRA leads to lower voluntary tax compliance; conversely, practical cooperation would result in increased voluntary tax compliance. The study recommends that enhancing cooperation can improve tax mobilisation and enforcement, thereby enhancing tax compliance.

5.1 Theoretical, practical, and policy implications

This study highlights the following implications. Firstly, theoretically, the study underscores the importance of technological advancement in improving e-commerce through online platforms. The study offers a thorough understanding of how online platforms enhance tax compliance for e-commerce owners, thereby simplifying tax collection for both taxpayers and tax authorities while ensuring compliance with tax laws and regulations. Secondly, practically, the study indicates that the government should enhance collaboration with online platforms and facilitate data sharing through

TRA. This study highlighted the roles of online platforms, vendors, purchasers, and various payment providers and financial intermediaries in improving tax compliance in Tanzania. Lastly, regarding policy implications, the study improves policymakers' understanding of how online platforms serve as intermediaries by providing information about their clients (e-commerce proprietors) and helping to impose taxes on e-commerce participants in accordance with established laws and regulations. Additionally, it suggests that e-commerce companies work together with online platforms to set up data warehouses. This will help the country collect tax revenue from e-commerce and improve tax compliance, thereby providing for social and economic projects.

5.2 Study limitations

This study encountered some limitations. Firstly, it employed a cross-sectional design and was conducted within the specific context of Tanzania. The results cannot be generalised to e-commerce players operating outside Tanzania, in different countries, or under varying environmental and economic conditions. Therefore, one should exercise caution when extrapolating these findings beyond the study's scope. Secondly, the study's geographic focus on Dar es Salaam may limit the generalisability of its findings. Thirdly, reliance on self-reported data can introduce biases that may affect the validity of the findings. Finally, the use of snowball sampling techniques may introduce bias; as such, researchers need strategies to mitigate this risk.

5.3 Areas for future study

Future studies may expand upon this study in multiple ways. Firstly, future studies may add more variables, such as the cost of compliance, the regulatory framework, and digital literacy, as these may play a vital role in shaping compliance attitudes among e-commerce actors. Secondly, future research may use alternative approaches, such as comparative studies across regions and longitudinal studies, to provide a comprehensive and holistic understanding of the phenomenon. Lastly, future studies may adopt different theoretical frameworks beyond TAM and BDT to examine e-commerce and tax compliance.

This study aimed to understand the role of mathematics on emergent ideas (innovation) thereby empowering Tanzanians for self-employment which is the current challenge experienced. 51 articles were cleaned and selected from 132 papers. Tanzania found to be dominant in the chosen articles that detail math for innovation with total papers 16 and publication rate found to rise cumulatively from the period of 2000 to 2025. Additionally, the study highlighted the foundations of mathematics for innovation and self-employment followed by application of mathematics concepts in real-world experience through empowerment strategies for enhancing critical thinking and problem-solving that build confidence to innovate.

In Tanzania, unlocking the potential of mathematics skills can transform the way individuals approach self-employment, from calculating profits and managing budgets to analysing the existing markets and optimizing business strategies. By harnessing practical math skills into vocational training and entrepreneurial education, the country can nurture a generation of self-reliant, innovative thinkers who are equipped to shape

and strengthen sustainable livelihoods. Empowering Tanzanian students through numbers is not just about improving numeracy; it's about building a foundation for long-run economic growth, resilience, and inclusive development through emergent self-employments. The future of self-employment in Tanzania depends not only on new ideas, but on the ability to compute, adapt, and grow them—through the language of mathematics. To bridge the gap between theory and practice, this study recommends the integration of practical Mathematics into Tanzania Vocational Curricula to embed real-world math applications in entrepreneurship and vocational training programs.

References

- Acheampong, E. (2021). E-commerce Taxation Amidst the Covid-19 Pandemic and Beyond. *International Journal of Business and Risk Management*, 4(1), 9–18. <https://doi.org/10.12691/ijbrm-4-1-2>
- Adam, S., Shagari, S., & Saidu, S. (2021). Determinants of E-commerce users' Behaviour on tax Compliance intention in Nigeria:A Conceptual Model. *International Journal of Intellectual Discourse*, 12(1), 187–193.
- Alharahsheh, H. H., & Pius, A. (2020). A review of key paradigms: positivism vs interpretivism. *Global Academic Journal of Humanities and Social Sciences*, 2(3), 39–43.
- Asante Isaac, Fang Jiaming, D. D. (2019). Consumers' Role in The Survival of E-Commerce in Sub-Saharan Africa: Consequences of E-Service Quality on Engagement Formation. *2019 IEEE 10th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)*, 0763–0770.
- Asmah, A., & Inayah, A. I. (2023). Efficiency for E-Commerce Business Actors. In *Proceedings of the 3rd International Conference on Business Law and Local Wisdom in Tourism (ICBLT 2022)* (pp. 185–193). Atlantis Press SARL. https://doi.org/10.2991/978-2-494069-93-0_22
- Ayesha Arora, T. J. (2024). Data sharing between platform and seller: An analysis of contracts, privacy, and regulation. *European Journal of Operational Research*, 313(3), 1105–1118.
- Ballerini, Jacopo. Yahiaoui, Dorra. Giovando, Guido. Ferraris, A. (2023). E-commerce channel management on the manufacturers' side.pdf. *Review of Managerial Science*, 18, 413–447.
- Bañez, E. S. (2022). *Rethinking Taxation in the Digital Economy*. <https://www.pids.gov.ph>
- Bassey, E., Mulligan, E., & Ojo, A. (2022). A conceptual framework for digital tax administration - A systematic review. In *Government Information Quarterly* (Vol. 39, Issue 4). Elsevier Ltd. <https://doi.org/10.1016/j.giq.2022.101754>
- Belahouaoui, R. Attak, E. H. (2024). Exploring the relationship between taxpayers and tax authorities in the digital era: evidence on tax compliance behavior in emerging economies". *International Journal of Law and Management*, <https://doi.org/10.1108/IJLMA-02-2024-0064>.

- Bonina, C., Gawer, A., Koskinen, K., & Eaton, B. (2021). *Digital platforms for development : Foundations and research agenda*. January, 869–902. <https://doi.org/10.1111/isj.12326>
- Bujang, M. A., Sa'At, N., Tg Abu Bakar Sidik, T. M. I., & Lim, C. J. (2018). Sample size guidelines for logistic regression from observational studies with large population: Emphasis on the accuracy between statistics and parameters based on real life clinical data. *Malaysian Journal of Medical Sciences*, 25(4), 122–130. <https://doi.org/10.21315/mjms2018.25.4.12>
- Cao, Y., Chen, R. C., & Katz, A. J. (2024). Why is a small sample size not enough? *The Oncologist*, June 2023, 761–763. <https://doi.org/10.1093/oncolo/oyae162>
- Costa, H., Nicoletti, G., Pisu, M., & Von Rueden, C. (2021). *Economics Department Are Online Platforms Killing The Offline Star? Platform Diffusion And The Productivity Of Traditional Firms*. [Www.Oecd.Org/eco/workingpapers](http://www.Oecd.Org/eco/workingpapers)
- Costa, P., & Rodrigues, H. (2023). The ever-changing business of e-commerce-net benefits while designing a new platform for small companies. In *Review of Managerial Science*. Springer Science and Business Media Deutschland GmbH. <https://doi.org/10.1007/s11846-023-00681-6>
- Dann, D., Müller, R., Werner, A. C., Teubner, T., Mädche, A., & Spengel, C. (2022). How do tax compliance labels impact sharing platform consumers? An empirical study on the interplay of trust, moral, and intention to book. *Information Systems and E-Business Management*, 20(3), 409–439. <https://doi.org/10.1007/s10257-022-00554-7>
- Devos, K., Morton, E., Curran, M., & Wallis, C. (2023). The tax profession's response to the recent review of the TPB, the TASA 2009 Code of Professional Conduct, investigations, and related sanctions. *EJournal of Tax Research*, 21(2), 253–300.
- Effiong, S. A., & Nwanagu, P. O. (n.d.). *E-Commerce Transactions and Tax Revenue: A Commensal-Symbiotic Evaluation*.
- Francis, J. J., Johnston, M., Robertson, C., Glidewell, L., Entwistle, V., Eccles, M. P., & Grimshaw, J. M. (2010). What is an adequate sample size? Operationalising data saturation for theory-based interview studies. *Psychology and Health*, 25(10), 1229–1245. <https://doi.org/10.1080/08870440903194015>
- Gangodawilage, D. (2021). Use of Technology to Manage Tax Compliance Behavior of Entrepreneurs in the Digital Economy. *International Journal of Scientific and Research Publications (IJSRP)*, 11(3), 366–371. <https://doi.org/10.29322/ijsrp.11.03.2021.p11150>
- Ghani, E. K., & Mohamed, N. (2021). Influence of Behaviourism , Enforcement and Law Clarity on Tax Compliance Among E-Commerce Taxpayers. *Journal of Management Information and Decision Sciences*, 24(August), 1–9.
- Groulx, A., & McGregor, C. (2019). " *A Social Media Tax Data Warehouse to Manage the Underground Economy*.

- Gupta, S., Kushwaha, P. S., Badhera, U., Chatterjee, P., & Gonzalez, E. D. R. S. (2023). Identification of benefits, challenges, and pathways in E-commerce industries: An integrated two-phase decision-making model. *Sustainable Operations and Computers*, 4, 200–218. <https://doi.org/10.1016/j.susoc.2023.08.005>
- Hidayat, K., Muhammad, ;, & Idrus, I. (2023). The Tax Strategy for E-Commerce Companies is based on Developments in Indonesia. *International Journal of Social Science Research and Review*, 6(5), 565–572. <https://doi.org/10.47814/ijssrr.v6i5.1298>
- Holland, C. P., & Gutiérrez-Leefmans, M. (2018). A Taxonomy of SME E-Commerce Platforms Derived from a Market-Level Analysis. *International Journal of Electronic Commerce*, 22(2), 161–201. <https://doi.org/10.1080/10864415.2017.1364114>
- Huang, W., Liao, Y., & Li, S. (2018). *C2C Electronic Commerce Tax Management Based on Big Data*.
- Jie Ouyang, Shiyuan Liu, H. L. (2023). How does the development of digital finance affect small business tax compliance? Empirical evidence from China. *China Economic Review*, 80(101971).
- Jin, P., Feng, Z., & Li, G. (2023). The Effect of Platform Data Quality on Tax Compliance in Digital Economy: A Multiagent Based Simulation. *Complexity*, 2023. <https://doi.org/10.1155/2023/5511572>
- Junyong, X., & Linbo, J. (2014). Electronic commerce in China: current status, development strategies, and new trends. *China Finance and Economic Review*, 3(3), 71–94. <https://doi.org/10.1515/cfer-2014-030306>
- Kiria, L., James, M., & Masunga, F. J. (2020). The Influence of Behavioural Intention to use the ICT Tax System on Tax Compliance Behaviour: The Efficacy of Mediating Effect. *Journal of Business Management and Economic Research*, 4(4), 351–370. <https://doi.org/10.29226/tr1001.2020.215>
- Kyriazos, T. A. (2018). Applied Psychometrics: Sample Size and Sample Power Considerations in Factor Analysis (EFA, CFA) and SEM in General. *Psychology*, 09(08), 2207–2230. <https://doi.org/10.4236/psych.2018.98126>
- Liganya, B. (2020). *Taxation of E-Commerce: Prospects and Challenges for Tanzania. December*. <http://scholar.mzumbe.ac.tz/handle/11192/4451>
- Mahpudin, E., Junia, A. A., Hersona, S., & Lumban Batu, R. (n.d.). Analysis Of Taxpayer Compliance In Paying Sme Income Taxes Using Online Platforms In The Covid-19 Era And The New Normal Era. In *Journal of Positive School Psychology* (Vol. 2022, Issue 2). <http://journalppw.com>
- Masele, J. J., & Matama, R. (2020). Individual consumers' trust in B2C automobile e-commerce in Tanzania: Assessment of the influence of web design and consumer personality. *Electronic Journal of Information Systems in Developing Countries*, 86(1). <https://doi.org/10.1002/isd2.12115>

- Mpofu, F. Y. (2022). Taxing the Digital Economy through Consumption Taxes (VAT) in African Countries: Possibilities, Constraints and Implications. *International Journal of Financial Studies*, 10(3), 65. <https://doi.org/10.3390/ijfs10030065>
- Mugo, D., Njagi, K., Chemwei, B., & Motanya, J. (2017). The Technology Acceptance Model (TAM) and its Application to the Utilization of Mobile Learning Technologies. *British Journal of Mathematics & Computer Science*, 20(4), 1–8. <https://doi.org/10.9734/bjmcs/2017/29015>
- Mustafa, A. S., & Garcia, M. B. (2021). 2021 1st Conference on Online Teaching for Mobile Education, OT4ME 2021. *2021 1st Conference on Online Teaching for Mobile Education, OT4ME 2021*.
- Myovella, G., Karacuka, M., & Haucap, J. (2020). Digitalization and economic growth: A comparative analysis of Sub-Saharan Africa and OECD economies. *Telecommunications Policy*, 44(2). <https://doi.org/10.1016/j.telpol.2019.101856>
- Nanjundeswaraswamy, T. S., & Divakar, S. (2021). Determination Of Sample Size And Sampling Methods In Applied Research. *Proceedings on Engineering Sciences*, 3(1), 25–32. <https://doi.org/10.24874/pes03.01.003>
- OECD. (2019). Unpacking E-commerce: Business Models, Trends and Policies. *OECD Publishing, Paris* <https://doi.org/10.1787/23561431-En>.
- Papis-Almansa, M. (2019). VAT and electronic commerce: the new rules as a means for simplification, combatting fraud and creating a more level playing field? *ERA Forum*, 20(2), 201–223. <https://doi.org/10.1007/s12027-019-00575-9>
- Prihatiningtias, Y. W., & Karo Karo, G. N. P. (2021). The income tax compliance of social media influencers during COVID-19 pandemic: An exploratory study. *JEMA: Jurnal Ilmiah Bidang Akuntansi Dan Manajemen*, 18(2), 137. <https://doi.org/10.31106/jema.v18i2.12789>
- Puspita, B. A., Widjayanti, A., & Karunia, R. L. (2023). Tax Compliance of Youtubers in Jakarta Tebet's Primary Tax Service Office. In *International Journal of Economics Development Research* (Vol. 4, Issue 3).
- Rukanova, B., Tan, Y.-H., Ubacht, J., Molenhuis, M., Heijmann, F., Bosch, H., Palaskas, Z., Chen, H., Männistö, T., & Ratnasari, A. (2021). *eCommerce Platforms Evaluation Framework for Government Platforms Evaluation Framework for Government*. 10. https://doi.org/10.1007/978-3-030-84789-0_8i
- Santos, V., Augusto, T., Vieira, J., Bacalhau, L., Sousa, B., & Pontes, D. (2022). E-commerce: Issues, opportunities, challenges, and trends. In *Promoting Organizational Performance Through 5G and Agile Marketing* (pp. 224–244). IGI Global. <https://doi.org/10.4018/978-1-6684-5523-4.ch012>
- Saura, J. R., Ribeiro-Soriano, D., & Palacios-Marqués, D. (2022). Assessing behavioral data science privacy issues in government artificial intelligence deployment. *Government Information Quarterly*, 39(4). <https://doi.org/10.1016/j.giq.2022.101679>

- Scarcella, L. (2019). Tax compliance and privacy rights in profiling and automated decision making. *Internet Policy Review*, 8(4), 1–19. <https://doi.org/10.14763/2019.4.1422>
- Scarcella, L. (2020). E-commerce and effective VAT/GST enforcement: Can online platforms play a valuable role? *Computer Law and Security Review*, 36. <https://doi.org/10.1016/j.clsr.2019.105371>
- Şekeroğlu, S., & Bilgin, S. (2020). *Influencer Marketing and Taxation of Influencer in Turkey*. April, 126.
- Tofan, M., & Bostan, I. (2022). Some Implications of the Development of E-Commerce on EU Tax Regulations. In *Laws* (Vol. 11, Issue 1). MDPI. <https://doi.org/10.3390/laws11010013>
- Tran, L. T. T. (2021). Managing the effectiveness of e-commerce platforms in a pandemic. *Journal of Retailing and Consumer Services*, 58(September 2020), 102287. <https://doi.org/10.1016/j.jretconser.2020.102287>
- Trautman, L. J. (2020). *Journal of Technology Governance of the Facebook Privacy Crisis*. XX. <https://doi.org/10.5195/tlp.2020.234>
- Velicia-Martin, F., Cabrera-Sanchez, J. P., Gil-Cordero, E., & Palos-Sanchez, P. R. (2021). Researching COVID-19 tracing app acceptance: incorporating theory from the technological acceptance model. *PeerJ Computer Science*, 7(December 2019), 1–20. <https://doi.org/10.7717/peerj-cs.316>
- Venkatesh, V., & Davis, F. D. (2000). Theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, 46(2), 186–204. <https://doi.org/10.1287/mnsc.46.2.186.11926>
- Wang, Y. (2021). *Research on E-commerce Platform of Online Shopping Consumers*.
- Younus, A. (2021). Technological advancement and economic growth objective three. *Academic Journal of Digital Economics and Stability*, 10(2021), 55–62.
- Zabor, E. C., Reddy, C. A., Tendulkar, R. D., & Patil, S. (2022). Logistic Regression in Clinical Studies. *International Journal of Radiation Oncology Biology Physics*, 112(2), 271–277. <https://doi.org/10.1016/j.ijrobp.2021.08.007>