

Tax officers' perceived relationship of e-taxation use, taxpayer satisfaction and taxpayer compliance



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ABSTRACT

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This study aims to examine the effect of e-taxation (eTax) use on taxpayer compliance (TPC) and taxpayer satisfaction (TPS). To achieve this objective, this study used taxpayer satisfaction as a moderating variable. Using a questionnaire survey, this study was carried out on 309 tax accounts as a sample at 33 tax service locations in West Java. The data of this study were explained via the use of structural equation modelling and verification. Based on the data analysis, this study showed that the use of electronic tax filing and the level of taxpayers' satisfaction had a considerable impact in a positive direction on taxpayer compliance. This study also shows that the influence of e-taxation on taxpayer compliance is successfully moderated by the level of satisfaction reported by taxpayers. This study implies that eTax may increase the satisfaction that taxpayers feel while meeting their tax responsibilities, despite the fact that this effect is not as significant as the effect that it has on taxpayer compliance. The e-taxation system must be improved in accordance with the tax administration business process in order to make it easier and more trusted by its users, hence increasing taxpayer compliance.

Contribution/Originality: This study contributes to the existing accounting literature and is the first to examine the effect of e-taxation on taxpayer compliance and taxpayer satisfaction using Indonesia as the research focus.

1. INTRODUCTION

Indonesia's tax ratio growth in the last three years is not encouraging and is closely related to taxpayer satisfaction (TPS), the use of taxation information technology, and taxpayer compliance (TPC). Despite the increased performance of tax authorities, there is still a large gap to close to achieve the most optimal performance; for example, 0.55 basis points in public satisfaction could be increased by the tax authorities (DGT, 2020). For the use of taxation information technology, not all taxation technology systems could be completed in 2019 by the Directorate General of Taxation (DGT), the tax authority in Indonesia. Meanwhile, concerning taxpayer compliance, the 2019 assessment results showed a gap above 27% of the expected conditions (DGT, 2020). Based on the empirical facts from the tax performance report, taxpayer compliance from the aspect of supervision is not optimal because the DGT's human resources, information technology (IT) systems, and organizations have not been able to reach all taxpayers in Indonesia (DGT, 2020). Additionally, there is no available information that

shows the level of taxpayer compliance.

Another interesting finding is in terms of taxpayer satisfaction and the application of taxation technology. The results of a public satisfaction survey on DGT services show that, despite the good satisfaction index of 4.45 out of 5, some aspects still need improvement (DGT, 2020), including (1) developing policies to facilitate taxpayers in obtaining the best services, such as procedures for submitting tax service complaints; (2) improving the application used by taxpayers in carrying out their tax obligations; (3) service automation via pajak.go.id; (4) providing the best service to taxpayers and the public; and (5) the average time for handling complaints from taxpayers and the public, which is still quite long at 12 working days.

The problem of taxpayer compliance and its predictor variables has been the subject of various studies. According to Aziz and Idris (2016), the use of the taxation system, or e-taxation, in Malaysia has an impact on taxpayer compliance regarding the submission of tax reports. This shows that the motivation to use electronic filing is mainly because the system is convenient and makes the taxpayer's job easier. The use of e-filing represents the level of taxpayer compliance with tax regulations in Malaysia. The use of tax-related technology contributes to the level of compliance with taxes. This means that taxpayers comply with tax payment expectations and taxation laws (James & Alley, 2002). Obert, Rodgers, Tendai, and Desderio (2018) concluded that the implementation of an online taxation system affects taxpayer compliance because it offers convenience in managing tax administration. Another study also suggests that one of the factors that affects the tax compliance of small and medium enterprises (SMEs) is the application of an online taxation system that helps taxpayers submit and pay their tax obligations (Edward & Ambrose, 2017).

Another contributing factor is taxpayer satisfaction. According to Blaufus, Hechtner, and Jarzembki (2020), who researched the effect of tax service satisfaction on taxpayer compliance in Germany, a better quality of service interaction affects taxpayer compliance, where satisfactory taxation services increase tax compliance for taxpayers with low taxation knowledge and high morality. According to Lambertson, De Neve, and Norton (2018), taxpayer satisfaction can increase compliance. Susuawu, Ofori-Boateng, and Amoh (2020) examined the effect of satisfaction with the quality of tax services on the tax compliance behavior of SMEs. Their study found a statistically significant positive effect of reliability, responsiveness, assurance, and empathy on the tax compliance of SMEs.

Theoretically, there is still a gap left by previous research to view taxpayer compliance from different perspectives or predictors. The research by Night and Bananuka (2020); Twesige, Gasheja, Baryandama, and Alexis (2019); Obert et al. (2018); Edward and Ambrose (2017) and Handayani and Tambun (2016) explains that e-taxation is a strong factor of taxpayer compliance. On the other hand, the research by Blaufus et al. (2020); Susuawu et al. (2020); Lambertson et al. (2018); Awaluddin and Tamburaka (2017); Kiow, Salleh, and Kassim (2017) and Russo (2013) showed that taxpayer compliance has a strong influence on taxpayer satisfaction. Unfortunately, there is no research that examines the effect of e-taxation and taxpayer satisfaction on taxpayer compliance. In addition, previous studies mostly measured the level of taxpayer compliance from the taxpayer's perspective instead of the tax officer's perspective. Based on empirical phenomena and theoretical gaps, this study seeks to provide an alternative measurement of taxpayer compliance by developing a new model from the tax officer's perspective. This study complements the previous literature on aspects of tax compliance. Thus, it is important to examine the effects of e-taxation and taxpayer satisfaction on taxpayer compliance from the perspective of tax officers.

Section 2 provides the theoretical background of this study; Section 3 presents the hypothesis development; Section 4 explains the research methodology; Section 5 provides the results and discussion; and the last section concludes this study.

2. THEORETICAL BACKGROUND AND HYPOTHESES

2.1. *The Theory of Planned Behavior*

According to the notion of reasoned action, if a person observes a good action and believes that "higher people"

want him to perform that action, he is more likely to execute it (Sheppard, Hartwick, & Warshaw, 1988). However, this theory has a flaw in that a person does not always have perfect control over his or her actions (Ajzen, 1991). Ajzen (1991) created the idea of planned conduct based on this philosophy connecting morality and conduct. Three belief factors impact human behavior: behavioral, normative, and control. Behavioral belief is defined as an indication of individual readiness to perform a particular behavior as a direct antecedent of the behavior (Ajzen, 2002). Normative belief is an individual's perception of normative social pressure or a societal belief to take or not take action. Control belief is an individual's belief regarding the existence of factors that facilitate or hinder behavior (Ajzen, 2001). In the implementation of government activities, the use of technology is one factor that can influence the behavior of taxpayers. Venkatesh, Thong, and Xu (2012) found that the behavior of state service users improved after the modernization of government service centers. Lai (2017) used the technology adoption model approach to measure user behavior and concluded that the application of technology can affect user behavior. From a legal perspective, a person's behavior is also influenced by applicable regulations. An individual can violate regulations for prosperity, work more efficiently, or provide better service to customers (Morrison, 2006).

2.2. Implementation of E-Taxation

The taxation system is expected to minimize many taxation problems, such as tax evasion, tax abuse, and falsification of records that cause low tax revenues. E-taxation was introduced to increase efficiency and fairness in collecting taxes (Adeniyi & Adesunloro, 2017). E-taxation is a legal system that facilitates payment to the government in the form of mandatory levy transfers from individuals, groups, or private institutions. E-taxation demonstrates the government's capacity to utilize information, communication, and technology tools to generate revenue and close revenue leakage (Nchuchuwe & Ojo, 2017). E-taxation is the government's online portal that aims to provide convenient access to all taxation services (Dečman, Stare, & Maja, 2010). In taxation, electronic service is the provision of services using an online filing approach with supporting systems to save time and money and facilitate the public in reporting their tax obligations (Ali, Asmi, Rahman, Malik, & Ahmad, 2017).

E-taxation is similar to an online transaction that is made by an organization or a company to increase its productivity and work efficiency (Chen & Huang, 2007). Floropoulos, Spathis, Halvatzis, and Tsiouridou (2010) measured the success of tax information systems in Greece and defined a taxation system as a modern, efficient, and computerized system that accommodates all the needs of tax administration to overcome perceived tax inequities, tax evasion, and financial statement manipulation. The development of taxation systems is expected to increase financial sources so that the government has sufficient financial support to carry out its functions (Petrenko, 2013). Based on the literature review (Adeniyi & Adesunloro, 2017; Ali et al., 2017; Chen & Huang, 2007; Dečman et al., 2010; Floropoulos et al., 2010; Nchuchuwe & Ojo, 2017; Petrenko, 2013) in the context of this study, an e-taxation system is defined as an electronic tax administration and business process automation system where taxpayers can obtain information about taxation and perform all tax-related activities online to provide convenience and security, increase efficiency, and minimize tax problems. E-taxation in this study is measured using two dimensions and eight indicators synthesized from the literature (Connolly, Bannister, & Kearney, 2010; Dečman & Klun, 2015; Dečman et al., 2010; Oni, Musa, & Oni, 2020), namely software engineering methodology with indicators of portability, IT infrastructure and IT skills, and user acceptability with indicators of ease of completion, efficiency, privacy, reliability, and contact.

2.3. Taxpayer Satisfaction

Ibarra, Casas, and Partida (2014) analyzed taxpayer satisfaction at the tax office in Mexico and defined taxpayer satisfaction as the taxpayer's perception of the level of fulfillment of expectations for the services provided. Service user satisfaction is related to the ability to influence users' positive feelings after utilizing services, creating a sense of loyalty and the desire to make repeated transactions when referring to services provided by the

government (Ali et al., 2017). Awaluddin and Tamburaka (2017) defined taxpayer satisfaction as a situation where taxpayer expectations and needs have been met. However, taxpayer satisfaction is not only material. Even though the amount of tax paid does not decrease, taxpayers can still feel satisfied with paying their taxes when they are allowed to participate in allocating a small portion of their tax dollars to government programmes that they are interested in or consider important. This breakthrough increases public participation, synchronizes government spending and citizen perceptions, accommodates minority voices, and is more effective than simply informing the government about tax spending (Lamberton, 2013). Taxpayers will be more satisfied if they can influence the government's spending of their taxes based on their wishes or perspectives (Turner, 2004).

Based on the literature review (Ali et al., 2017; Awaluddin & Tamburaka, 2017; Ibarra et al., 2014; Lamberton, 2013; Turner, 2004), taxpayer satisfaction in the context of this study is defined as a situation where taxpayers' expectations and needs have been met by tax authorities and state administrators in general in all aspects of taxation. Taxpayer satisfaction in this study is measured using three dimensions and eight indicators synthesized from the literature (Alghamdi & Rahim, 2016; Awaluddin & Tamburaka, 2017; Dehghanpouri, Soltani, & Rostamzadeh, 2020; Ibarra et al., 2014; Lamberton, 2013), namely (1) tax authority services with indicators of empathy, interactivity, problem solving, and responsiveness; (2) taxpayer added value with indicators of benefits and participation; and (3) taxpayer experience with indicators of experience and personal need.

2.4. Taxpayer Compliance

According to James and Alley (2002), taxpayer compliance indicates that taxpayers are willing to obey tax regulations. Tax compliance, from a corporate standpoint, is the process of reporting all revenue and tax payments in line with laws, regulations, and court rulings (Alm, 1999). Tax compliance may also refer to providing timely information about taxes, completing taxpayer duties willingly, paying taxes on time without penalty, and generally adhering to the tax law (Ipek, Öksüz, & Özkaya, 2012). In addition, tax compliance is also described as a state in which a taxpayer fulfils all of his tax duties and utilizes his taxation rights (Pratami, Sulindawati, & Wahyuni, 2017). Other studies, such as Palil (2010), defined tax compliance as taxpayers' desire to comply with taxation rules, accurately disclose income, claim tax deductions, breaks, and refunds, and pay all taxes on time. McBarnet (2017) defined tax compliance from three different points of view: (a) commitment compliance, which means that taxpayers are willing to pay without complaining; (b) capital compliance, which means that taxpayers don't want to pay taxes; and (c) creative compliance, which means that taxpayers manipulate the value of their income and spending. Based on a review of the literature (Alm, 1999; Ipek et al., 2012; James & Alley, 2002; McBarnet, 2017; Palil, 2010; Pratami et al., 2017), taxpayer compliance is the ability and willingness of taxpayers to follow tax regulations, calculate all financial transactions correctly, report income, assets, and tax obligations, and pay all taxes on time. Taxpayer compliance in this study was measured using two dimensions and nine indicators synthesized from the literature (Chong & Arunachalam, 2018; Junpath, Kharwa, & Stainbank, 2016; Palil, 2010; Riahi-Belkaoui, 2004; Ritsema, Thomas, & Ferrier, 2003; Serem, Robert, & Phillip, 2017): (1) submission and reporting with indicators of timely submission, submission knowledge, income declaration, simplicity of tax administration, and third party reporting; (2) social economy with indicators of complaint, awareness, and high economic freedom.

3. HYPOTHESIS DEVELOPMENT

Saravanan and Muthulakshmi (2017) examined the modernization of the taxation system in India. The high-security e-filing website that provides effective tax transactions and saves time, energy, and costs can improve taxpayer satisfaction. Alghamdi and Rahim (2016) studied the effect of implementing an online tax system (TS) on taxpayer satisfaction in Australia. They used three dimensions of information system implementation: reliable information, system usability, and time efficiency. The results showed that the implementation of an online TS significantly increased user satisfaction. Dečman and Klun (2015) conducted a study on the application of the TS in

Slovenia, concluding that, based on the user satisfaction survey, the application of a TS provided non-financial benefits in the form of increased taxpayer satisfaction. Gaigalienė, Giačas, and Legenzova (2016) conducted research on the transformation of tax administration in Lithuania. The study concluded that the tax administration system causes dissatisfaction among taxpayers due to the large amount of taxpayer time wasted on calculating, recording, and declaring their tax obligations.

Chen (2010) performed research in Taiwan on the utilization of online tax filing systems and taxpayer satisfaction. The quality of the information system was shown to have a considerable effect on the degree of taxpayer satisfaction, with the quality of the information and the system being the most relevant factors. Canares (2016), on the other hand, investigated the use of information and communication technology in the Philippine local government taxation system. It was discovered that using a taxation system boosted taxpayer satisfaction since the system was clearer. This is, however, determined by the political leadership of each local government. Gotoh (2009) investigated the elements that impact tax service users' satisfaction in Japan. He came to the conclusion that the quality of a good TS had a substantial impact on taxpayer satisfaction. As a result, the first hypothesis is as follows:

H1: There is a positive effect of online tax systems on taxpayer satisfaction.

Obert et al. (2018) conducted a study on the impact of utilizing online tax systems on taxpayer compliance. It was determined that the implementation of a TS had an effect on taxpayer compliance, and that the system itself enhanced the convenience of doing business in the community. Edward and Ambrose (2017) investigated the factors that impact the tax compliance of small and medium-sized businesses. Regarding the online TS, they focused on the perception and the technical aptitude of taxpayers. According to the findings, the deployment of the online TS affected taxpayer compliance. Similarly, Tambun and Muhtiar (2019) investigated the level of compliance of individual taxpayers and determined that the implementation of the online TS has a positive and statistically significant influence on the level of taxpayer compliance.

Additionally, Night and Bananuka (2020) investigated the impact of implementing an online TS as a mediator between the influence of taxpayer behavior and taxpayer compliance in small businesses. The results indicated that the implementation of the online TS had a substantial impact on taxpayer compliance. Twesige et al. (2019) also found a significant correlation between online TS reforms and taxpayer compliance. They found that 56% of taxpayer compliance was influenced by the reform of the online TS, while the remainder was influenced by socialization and tax penalties. In contrast to some of the above findings, Handayani and Tambun (2016) concluded that the implementation of the e-filing system in Indonesia had no significant impact on taxpayer compliance due to the difficulty of gaining access and completing online tax reporting. Consequently, the second hypothesis is stated as follows:

H2: There is a positive effect of online tax systems on taxpayer compliance.

Blaufus et al. (2020) did a study on how satisfied taxpayers in Germany are with tax services and how that affects how well they pay their taxes. Based on the Organization for Economic Co-operation and Development (OECD) recommendations, tax services were improved in many countries. Their research found that better quality service interaction affects taxpayer compliance, but with many exceptions. Satisfactory tax services improve tax compliance for taxpayers with low tax knowledge and high morality, reducing unintentional errors. Satisfactory tax services can also reduce branding costs and the possible appeals made by taxpayers. Lamberton et al. (2018) conducted a study on taxpayer compliance based on citizens' satisfaction with government spending. The results of their research indicated that this satisfaction could increase taxpayer compliance. Furthermore, allowing taxpayers to express their interest in government spending significantly increases taxpayer compliance. Susuawu et al. (2020) examined the effect of satisfaction with the quality of tax services on tax compliance behavior in small and medium enterprises. Their study found a statistically significant positive effect of reliability, responsiveness, assurance, and empathy on taxpayer compliance behavior.

Russo (2013) conducted a study on the factors affecting Italian taxpayer compliance. The results of the study

indicated that tax payer satisfaction with government services had a positive effect on tax payer compliance, as tax payers perceived their tax contributions to be correctly utilized. [Awaluddin and Tamburaka \(2017\)](#) conducted research on the factors influencing taxpayer compliance in Kendari City. The findings indicate that taxpayer satisfaction had a marginally positive effect on the level of taxpayer compliance. This insignificance is primarily attributable to the obscurity and complexity of the information surrounding tax payments. [Kiow et al. \(2017\)](#) investigated the variables that influence individual taxpayer conformance in Malaysia. According to their findings, satisfaction with governance and government transparency increases taxpayer conformance. Taxpayers who receive direct benefits from government spending and whose fundamental requirements are met tend to be more compliant with their tax obligations. Consequently, the third hypothesis is stated as follows:

H3: There is a positive effect of online tax systems on taxpayer compliance.

[Twesige et al. \(2019\)](#) concluded that there is a significant effect between TS reforms and taxpayer compliance. The reform of the online TS affects 56% of taxpayer compliance, while the rest is influenced by socialization and tax penalties. [Saravanan and Muthulakshmi \(2017\)](#) concluded that modernization of the TS in India can save time, money, and energy while increasing taxpayer satisfaction. [Edward and Ambrose \(2017\)](#) found that the implementation of an online TS affects taxpayer compliance. [Dečman and Klun \(2015\)](#) concluded that, based on user satisfaction surveys, the application of the online TS provides non-financial benefits in the form of increased taxpayer satisfaction. Thus, the fourth hypothesis is formulated as follows:

H4: There is a positive effect of online tax systems on taxpayer compliance through taxpayer satisfaction.

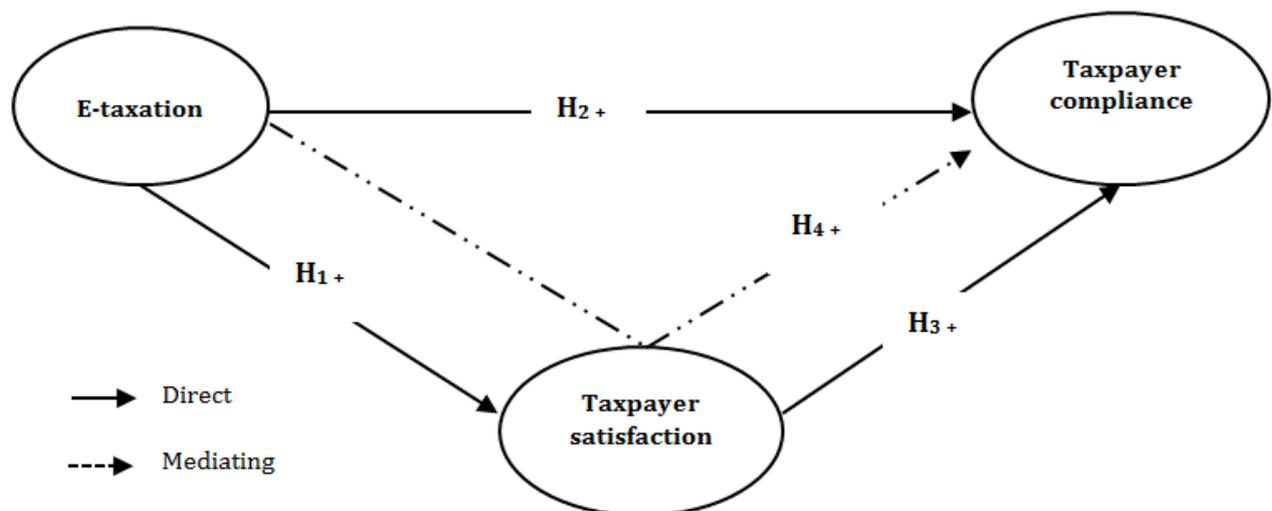


Figure 1. Conceptual model.

By illustrating the idea of thinking from various previous research results supported by the concept of logical thinking, the researchers created a conceptual model for solving the research problem, as shown in [Figure 1](#).

4. RESEARCH METHOD

The data for this study were collected using a Google Forms questionnaire which was distributed to tax account representatives (ARs) at 38 regional tax offices (RTOs) in West Java. Data collection was carried out for 180 calendar days, from January 20 to July 20, 2021. The distribution of the questionnaire followed the procedures applicable to the tax office and was approved by the tax research and development unit. The total population of ARs is 1,354. Out of these, 309 questionnaires were filled out completely and returned, which met the minimum sample requirements for the population so that the data could be analyzed. Then, all the collected data were tabulated, processed, and analyzed using the descriptive method and verified using the structural equation modelling (SEM) approach. The data were processed in three stages: cleansing and editing, tabulation, and data interpretation. The

data were analyzed using a verification approach with SEM. The use of SEM techniques in this study divides the test into two parts. The first tests the measurement model for the validity and reliability of the instrument, and the second tests the structural model to test the research hypotheses.

5. RESULTS AND DISCUSSION

5.1. Respondents' Profiles

Based on gender, the distribution of respondents is fairly even. No significant difference between the number of male and female respondents was noted. Male respondents accounted for 51% (158 ARs), while female respondents accounted for 49% (151 ARs). Based on their age, most respondents (279 respondents, or 90%) are between 18 and 40 years old (millennials). Only 30 (10%) of the respondents were over 40 years old. Regarding years of work, most respondents (196, or 63%) have worked as an AR for less than five years. The number of respondents who have worked as an AR for 6 to 10 years is 96 (31%). The other 17 respondents (6%) have worked as ARs for over 10 years. Based on the level of education, most respondents (180, or 58%) have S1/D4 education (bachelor's degree), 72 respondents (24%) have D3 education (diploma 3), 38 respondents (12%) have S2 education (master's degree), and only 19 respondents (6%) have D1 education (diploma 1).

5.2. Measurement Model

According to the validity test results in Table 1, the loading factor values for software engineering methodology (SM) and user acceptability (UA) on the e-taxation construct are 1.00 and 0.91, respectively. The values for tax authority service (TAS), taxpayer added value (TAV), and taxpayer experience (TEXTP) for the taxpayer satisfaction construct are 1.00, 0.84, and 1.00, respectively.

The values for submission and reporting (SR), and social economy (SE) for the taxpayer compliance construct are 1.00 and 0.92, respectively. According to the results of the factor loading analysis, all indicators have values greater than the critical value. This indicates that the value measuring the latent construct is greater than the loading factor values of the other latent constructs. All of these indicators are suitable for quantifying the latent concept of taxpayer compliance.

According to Table 2, the e-taxation constructs have values of 0.94 and 0.89, taxpayer satisfaction constructs have values of 0.94 and 0.85, and taxpayer compliance constructs have values of 1.00 and 0.92. This indicates that the variance extracted (VE) square root score of each latent construct is greater than its correlation value with other constructs, indicating that all instruments are reliable.

Table 1. The results of validity and reliability testing.

Construct	CR**	AVE***	Result	Dimension	SFL*	Result
E-taxation (eTax)	0.94	0.89	Reliable	SM	1.00	Valid
				UA	0.91	Valid
Taxpayer satisfaction (TPS)	0.94	0.85	Reliable	TAS	1.00	Valid
				TAV	0.84	Valid
				TEXTP	1.00	Valid
Taxpayer compliance (TPC)	1.00	0.92	Reliable	SR	1.00	Valid
				SE	0.92	Valid

Note: SFL* = standardized factor loadings; CR** = construct reliability; VE*** = variance extracted, UA = user acceptability, AVE = average variance extracted.

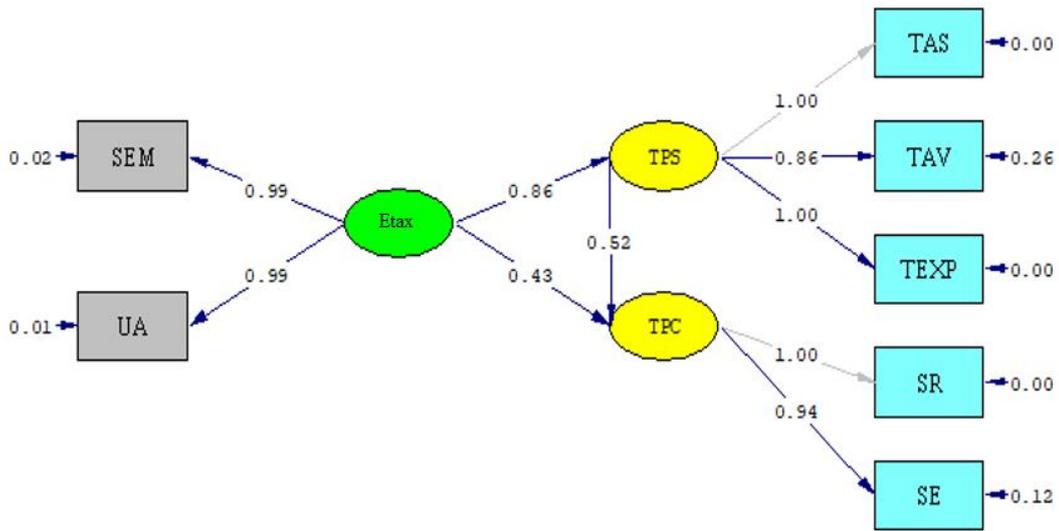


Figure 2. SEM results of all variables in the study.

Note: Model fit indices: Chi-Square = 0.00; df = 41; P-value = 1.00000; Root mean square error of approximation (RMSEA) = 0.000.

Figure 2 shows that taxpayer compliance is most affected by taxpayer satisfaction compared to the electronic tax system. Meanwhile, the electronic tax system has a greater effect on taxpayer satisfaction compared to taxpayer compliance. This means that taxpayer satisfaction depends on current tax information systems, because most tax services currently use information technology. On the other hand, taxpayer compliance is achieved if taxpayer satisfaction increases, and high taxpayer satisfaction is related to the quality of tax digitization.

5.3. Hypothesis Testing Results

The four hypotheses were tested using a t-test, provided that H_0 was rejected if the t-value was greater than the critical t-value of 1.64 (one-tailed test). The direct effect for hypotheses 1, 2, and 3 and the mediating effect for hypothesis 4 were tested. The Sobel test was carried out by testing the strength of the indirect effect of the independent construct of e-taxation (eTax), the taxpayer compliance (TPC) dependent construct, through the taxpayer satisfaction (TPS) construct. The results of the structural model test using the LISREL SEM are shown in Table 2.

Table 2. Hypothesis testing results.

Path	Coeff. value	Critical value	Direct	Indirect	Hypothesis
Direct effect					
1 eTax → TPS	18.87	1.64	0.86	-	Accepted
2 eTax → TPC	8.65	1.64	0.43	-	Accepted
3 TPS → TPC	11.11	1.64	0.52	-	Accepted
Indirect effect					
4 eTax → TPS → TPC	9.60	1.64	0.43	0.44	Accepted

Note: N = 309; p < 0.05; one-tailed test.

This study's findings validate the findings of Saravanan and Muthulakshmi (2017), who demonstrated that the modernization of the taxation system in India by enhancing the security of the e-filing website is effective for tax transactions and can save time, energy, and money, thereby increasing taxpayer satisfaction with tax administration. This study also confirms the findings of Alghamdi and Rahim (2016), who explained that the implementation of an online taxation system in Australia increases taxpayer satisfaction. This condition will significantly increase taxpayer satisfaction. In this study, the IT skills of the tax officer describe the effect of instituting an e-taxation system on increasing taxpayer contentment. This is evidenced by the level of contentment

of taxpayers with the abilities and knowledge of tax officials in providing more information on the use of tax information systems. The indicator for convenience of completion demonstrates an additional effect of e-taxation system implementation on increasing taxpayer satisfaction. Currently, the TS is able to provide taxpayers with convenience through e-registration, e-filing (registering), e-SPT (reporting), e-billing (payment), e-invoicing (payment), and e-Bupot (reporting) for filing annual tax returns and facilitating tax invoice payments.

The findings are similar to those of [Obert et al. \(2018\)](#), who explained that there is an effect of TS utilization on taxpayer compliance. The ease with which tax administration can be carried out using information technology has a very significant impact. A real example in the case of submitting tax returns is that taxpayers do not need to queue up at the tax office; they can do it through notebooks, laptops, desktops, and smartphones. The findings support the study by [Edward and Ambrose \(2017\)](#), which shows that the application of an online taxation system affects taxpayer compliance in terms of submitting tax returns, disclosing assets, and making tax payments. The findings of this study confirm the results of the study by [Tambun and Muhtiar \(2019\)](#), which found that the increase in personal taxpayer compliance increases with improvements in the online taxation system.

In this study, the ease of completion is an indicator of how putting the e-taxation system in place has made taxpayers more likely to pay their taxes. The current TS offers convenience to taxpayers through e-registration, e-filing, e-SPT, e-billing, e-invoicing, and e-Bupot in reporting annual tax returns and making tax billing payments. The improvement of the e-taxation system must be in line with the tax administration business process to make it simpler and more trusted by its users so that taxpayer compliance will increase. Another influence is the efficiency indicator. This means that the use of an online TS accelerates taxpayers' ability to calculate and report their tax obligations correctly. The use of an online TS will save time for taxpayers when calculating and reporting their tax obligations. The Directorate General of Taxation (DGT) is expected to continue to improve the online TS so that it can be integrated between modules, for example, integration between e-SPT and e-Bupot, or even integration with the banking system, where the calculation and payment processes can be integrated into one tax payment system interface. The effect of taxpayer satisfaction on increasing taxpayer compliance in the context of this study can be explained by the indicator of interactivity. Taxpayer satisfaction is shown by the ease of communication with tax officers to respond and resolve tax problems. The DGT must continue to optimize its outreach to the public so that applicable regulations can be easily identified, either through direct counselling or through various communication media, such as call centers, social media, websites, brochures, and various advertising media. The goal is that taxation rules can be easily accessed and understood by the public so that the level of tax compliance increases because people will know their tax rights and obligations. Another influence is shown by the problem-solving indicator, which explains that, when taxpayers have been greatly assisted in finding solutions to their tax problems, it will trigger an improvement in the level of taxpayer compliance. Therefore, the role of tax officers is crucial in solving problems, especially in situations of rejection, conflict, and tax disputes. Thus, tax officers need to have the correct communication skills to solve problems.

The findings of this study support the results of the study by [Twesige et al. \(2019\)](#), which concluded that there is a significant effect of online TS reform on taxpayer compliance through taxpayer morality. The reform of the online taxation system through the implementation of an e-taxation system has an impact on improving the morale of taxpayers because of the ease of tax administration. Furthermore, better taxpayer morality encourages taxpayers to be more obedient in carrying out tax administration, such as submitting tax returns, which can be done very easily. The results of this study are in line with the findings of [Saravanan and Muthulakshmi \(2017\)](#), who stated that the modernization of the taxation system can save time, money, and energy while increasing taxpayer satisfaction. Increased taxpayer satisfaction has a psychological contribution to increasing taxpayer compliance. This finding agrees with the study of [Edward and Ambrose \(2017\)](#), which shows that the application of an online TS affects taxpayer compliance by first increasing taxpayer satisfaction. The mediating effect of taxpayer satisfaction on the relationship between the implementation of an e-taxation system and increased taxpayer

compliance in the context of this study can be explained by the reliability indicator, showing that an online TS rarely experiences disruption when accessed by taxpayers. It is easy for taxpayers to use or access the system whenever needed, which can increase taxpayer satisfaction. The DGT must continue to maintain the reliability of the online TS and improve its quality in line with the increasing expectations of taxpayers on the use of e-taxation to encourage increased taxpayer compliance. Another influence is the contact indicator explaining that the TS provides optimal customer service and assistance for using an online, 24-hour system to taxpayers, which can increase their satisfaction. In providing this tax accounting service, the DGT must always ensure that the technology is up to date. Smart robots that can provide consulting services for repeated questions on the same topic are also needed. Other improvements can be made through chat features and artificial intelligence-based email complaint services to quickly respond to taxpayer complaints. When it comes to implementing the e-taxation system, the DGT must keep improving the privacy of taxpayer data. The law protects the privacy of taxpayers' information so that data leakage of people's tax identification numbers doesn't happen again. This increase in data privacy depends a lot on how the DGT's database system is run and how safe it is. Improvements to these aspects need to be made in terms of regulations and governance. Regarding taxpayer satisfaction, the DGT should continue to encourage service improvement to meet the public's expectations for tax service satisfaction. The DGT should continue to eliminate various obstacles in the service process provided by the tax system. It must be able to reduce public complaints regarding officers who are slow or unfriendly; cumbersome, long queues; uncomfortable offices; inadequate facilities, and so on. These complaints will eventually result in taxpayers not complying with their tax obligations. Regarding taxpayer compliance, the DGT should work hard to raise taxpayer awareness of the importance of declaring their income via tax reporting. It is expected to continue to build awareness and concern, as well as the voluntariness of taxpayers to declare their income through tax reporting. Raising public awareness is the main challenge for the DGT. Thus, the DGT must determine alternative steps to build awareness and voluntary concern among taxpayers. It is necessary to raise public awareness of paying taxes from an early age, for example, by including taxation subjects in elementary school. Currently, in the era of big data, the use of analytical data has become a necessity to capture the phenomenon of taxpayer behavior in carrying out tax obligations, so raising taxpayer awareness to declare their income in tax reports is the right thing to do.

6. CONCLUSION

In this study, taxpayer compliance is greatly influenced by taxpayer satisfaction, followed by the implementation of an e-taxation system. This finding can be explained by empirical verification that the tax administration information system (e-taxation) is generally good. E-taxation is easy to use, accessible, reliable, integrated with the online TS, accurate, and provides information certainty for taxpayers so that the level of services and supervision of tax administration in Indonesia continues to improve. The application of the e-taxation system has a positive effect on taxpayer satisfaction. This is indicated by the level of satisfaction among taxpayers with the skills and knowledge of tax officers in providing information on the use of online tax information systems. The online taxation system can provide convenience for taxpayers by using e-registration, e-filing, e-SPT, e-billing, e-invoicing, and e-Bupot in reporting annual tax returns and facilitating tax payments.

The improvement of the e-taxation system must be in line with the tax administration business process to make it simpler and more trusted by its users so that taxpayer compliance will increase. The ease of communicating with tax officers to get responses to tax constraints is important. The DGT should continue to optimize its outreach to the public so that applicable regulations can be easily identified. Counselling can be done directly or through various communication media, such as call centers, social media, websites, brochures, and other advertising media. The goal is that taxation rules can be easily found and understood by the public so that the level of tax compliance increases.

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