The Effect of the Effectiveness of *E-Filing* Implementation on Tax Compliance of MSMEs in Greater Solo

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A B S T R A C T

The innovation of electronic tax return reporting through e-filing aims to improve taxpayer compliance. However, in practice, the implementation of e-filing has not been effective, mainly due to various obstacles such as a lack of taxpayer knowledge, low digital literacy, and minimal socialisation regarding the use of e-filing. In addition, the implementation of e-filing is not yet fully automated (full automation). This phenomenon is also felt by Micro, Small, and Medium Enterprises (MSMEs) in the Greater Solo area. Therefore, this study aims to analyse the effect of the effectiveness of e-filing implementation on tax compliance among MSMEs in Solo. The population in this study consisted of 11,157 MSMEs, with a sample of 386 MSMEs obtained using the Slovin formula. The data used are primary data collected through the distribution of questionnaires. Data analysis techniques use the Structural Equation Modelling–Partial Least Square (SEM-PLS) method with the assistance of SmartPLS version 3 software. The analysis results show that the effectiveness of e-filing implementation has a positive and significant effect on MSME tax compliance in Solo Raya.

INTRODUCTION

In practice, taxes are the primary source of revenue for the state and local governments. Taxes managed by the central government are a source of state revenue in the State Budget (APBN), while taxes managed by local governments are a source of local revenue in the Regional Budget (APBD) (Mardiasmo, 2016). According to Law No. 16 of 2009, taxes are mandatory contributions from the community to the state that are compulsory but without expecting compensation. Taxes are becoming an increasingly important source of income for a country, especially in Indonesia, as they are one of the largest sources of state revenue and play a significant role in improving the welfare of the Indonesian people. It is hoped that tax contributions will increase year by year (Ponto, Karamoy & Kindangen, 2022).

Tax revenue comes from various sectors, including income from Micro, Small, and Medium Enterprises (MSMEs), which are numerous in Indonesia. Therefore, the government targets the MSME sector to increase tax revenue (Lolowang, Sondakh & Mintalangi, 2024).

In implementing effective, efficient, and integrated tax optimisation, the government, through the Director General of Taxes Decree No. Kep-88/PJ/2004 and Per-1/PJ/2014, regulates the procedures for submitting Tax Return Forms (SPT) for Individual Taxpayers online. The reform of the tax reporting system in the form of electronic SPT reporting through a real-time online system aims to facilitate services for taxpayers in reporting the amount of tax payable, so that taxpayers are not required to visit the Tax Office in person to fulfil their tax obligations (Kailola, Kuhuparuw & Ardiansyah, 2024).

The Directorate General of Taxes (DJP) has made various efforts to maximise tax revenue, given the important role of taxes in the national economy. One of the efforts of the is through the reform of legislation in the field of taxation with the implementation of a self-assessment system in tax collection since the 1984 fiscal year (Eliana, 2018).

The government, in this case the DJP, is also striving to innovate the tax system in Indonesia through the issuance of regulations on the electronic submission of Annual Tax Returns (SPT) through Directorate General of Taxes Regulation Number PER-02/PJ/2019. This programme is known as the e-Filing system. This reform aims to modernise tax administration, which will ultimately improve the efficiency and effectiveness of tax services in Indonesia (Aksara, 2021).

The government continues to support the e-Filing system, so that its implementation continues to be developed and socialised to taxpayers, which is expected to encourage increased taxpayer compliance (Shelvi, 2020). The implementation of e-Filing aims to minimise the costs and time spent by taxpayers in calculating, filling out, and submitting SPT correctly and on time. The effectiveness of e-Filing implementation is expected to improve taxpayer compliance in reporting Annual Tax Returns (Ponto, Karamoy & Kindangen, 2022).

Tax compliance is the obedience of taxpayers in fulfilling their tax obligations in accordance with applicable regulations. This compliance can be measured by the accuracy in paying and reporting taxes in accordance with applicable provisions (Lolowang, Sondakh & Mintalangi, 2024).

However, the implementation of e-Filing in practice has not been effective due to various obstacles, such as taxpayers' limited ability to access the e-Filing system and a lack of literacy and education regarding the system (Shelvi, 2020). Furthermore, the implementation of e-Filing has not yet fully utilised a fully automated system because taxpayers still need to visit the Tax Office and fill out forms manually to obtain an e-FIN (Abdurrohman, Domai & Shobaruddin, 2020).

Research on the effectiveness of e-Filing implementation on taxpayer compliance still shows inconsistent findings (research gap). A study by Situmorang & Ginarti (2022) states that e-Filing implementation has a positive and significant effect on taxpayer compliance at the Medan Petisah Tax Office. Similar results were also found in research by Kailola, Kuhuparuw & Ardiansyah (2024) on employees of the State Polytechnic in Ambon. However, research by Arifin & Syafii (2019) found that the implementation of e-Filing did not have a significant effect on taxpayer compliance at the Medan Polonia Tax Office.

Taxpayers are not only workers and owners of large businesses, but now also include the SME sector due to its significant contribution to GDP. In developing their businesses, many SMEs have moved into e-commerce, which is an internet-based business that supports sales. According to the E-Commerce Association (idEA), the number of MSMEs involved in e-commerce has reached 13.7 million businesses, or 21 percent of the total MSMEs (Rotinsulu, Samosir, Renaldi, Manullang & Tawil, 2024).

Observations by researchers on SMEs in the Solo Raya region indicate that many taxpayers are still not fully aware of how to submit their tax returns electronically, despite the Taxation Office (DJP) having provided extensive educational materials and video tutorials on e-Filing through social media. Another issue is that many SME taxpayers are accustomed to submitting their tax returns close to the deadline, even on the last day. Some SME operators also mentioned challenges in accessing the e-Filing system due to high traffic and unstable internet connections.

The research question in this study is: *Does the success of e-Filing implementation significantly influence the compliance of UMKM taxpayers in Solo Raya?* The objective of this study is to determine the significance of the impact of the success of e-Filing implementation on the tax compliance of UMKM taxpayers in Solo Raya.

The contribution of this study is expected to be used for the development of tax literature and as a reference/literature review for other researchers interested in this topic.

The consistency between the problem and the research objectives encourages this study to analyse the effectiveness of e-Filing implementation on taxpayer compliance. The novelty of this study lies in the use of MSME samples in the Greater Solo area and the development of indicators in the construct of e-Filing implementation effectiveness. Based on the phenomena and *research gaps* described above, this study aims to explore previous findings to develop a model *of "The Effect of E-Filing Implementation Effectiveness on Tax Compliance of MSMEs in Greater Solo".*

LITERATURE REVIEW

Micro, Small, and Medium Enterprises (MSMEs)

Micro, Small, and Medium Enterprises (MSMEs) are productive businesses that are independent, either conducted by individuals or business entities in various economic sectors. The difference between micro, small, and medium enterprises generally lies in the initial asset value and business turnover (Sinaga et al., 2024).

According to Law No. 20 of 2008, the criteria for MSMEs are classified as follows:

1. Micro Business
   a. Have a net worth of up to Rp50,000,000.00 (excluding land and buildings used for business operations); or
   b. Annual sales revenue of no more than Rp300,000,000.00.
2. Small Business
   a. Having a net worth exceeding Rp50,000,000.00 up to Rp500,000,000.00 (excluding land and buildings used for business operations); or
   b. Having annual sales revenue exceeding Rp300,000,000.00 up to Rp2,500,000,000.00.
3. Medium-Sized Business
   a. Having a net worth of more than Rp500,000,000.00 up to Rp10,000,000,000.00 (excluding land and buildings used for business operations); or
   b. Having annual sales revenue exceeding Rp2,500,000,000.00 up to Rp50,000,000,000.00.

Taxation

According to Law No. 16 of 2009 on General Provisions and Procedures for Taxation (KUP), tax is a mandatory contribution from individuals or entities to the state. In the Indonesian tax system, **the Self-Assessment System (SAS)** is used, where taxpayers actively calculate, pay, and report their own taxes owed (Mardiasmo, 2016).

Article 1(2) of the KUP defines a taxpayer as "an individual or entity, including taxpayers, tax with holders, and tax collectors, who have rights and obligations under tax laws and regulations" (Arifin & Syafii, 2019).

Electronic Filing (e-Filing)

Shelvi (2020) defines e-Filing as a method of submitting tax returns through a specific channel designated by the Director General of Taxes. E-Filing is an innovation in tax reporting that allows taxpayers to fill out and submit tax returns online (Arifin & Syafii, 2019). According to Mulyana (2021), this system is internet-based and is fast and efficient.

The benefits of using e-Filing include (Tumuli et al., 2016:104):

1. Quick, secure, and anytime submission of tax returns.
2. Free of charge (no fees apply).
3. Accurate tax calculation with system assistance.
4. Ease of filling out forms using a wizard feature.
5. Complete data with automatic validation.
6. Environmentally friendly as no paper is used.
7. Supporting documents do not need to be submitted unless requested by the Tax Office.

Implementation of e-Filing

Under the Self-Assessment System, taxpayers who have calculated and paid their taxes are required to submit a Tax Return (SPT). According to PER-02/PJ/2019, the SPT must be completed fully, accurately, and clearly in Indonesian, using Latin characters, Arabic numerals, the Rupiah currency unit, and signed before being submitted to the Tax Office (KPP) or another location designated by the Directorate General of Taxes (DJP) (Directorate General of Taxes, 2019).

The SPT can be submitted in electronic form (e-Filing), in person, by post, or through a courier service with proof of delivery.

Indicators of e-Filing Implementation Success

According to Meisiang, Sondakh & Warongan (2020), the success of e-Filing implementation is determined by two main dimensions:

1. *Human Resources (HR)*
   a. Taxpayers' knowledge regarding the use of e-Filing.
   b. Speed of tax return submission by taxpayers.
2. *Tax Awareness*
   a. The availability of training and socialisation through social media or offline channels.
   b. Availability of complete information on the internet or the DJP website.

Additionally, according to Purnaningsih & Noviari (2021), indicators of e-Filing success include:

1. Business expectations – taxpayers' confidence in the ease of e-Filing.
2. Knowledge – understanding of tax regulations and procedures.
3. Security – assurance of data security and confidentiality.
4. Speed – time efficiency in reporting.

Taxpayer Compliance

Tax compliance is a condition in which taxpayers voluntarily fulfil all their tax obligations in accordance with the regulations without intervention from the tax authorities (Wardani & Wati, 2018; Rotinsulu et al., 2024). This compliance reflects a conscious and responsible attitude towards tax obligations (Situmorang & Ginarti, 2022).

According to Minister of Finance Regulation No. 192/PMK.03/2007, taxpayers are classified as compliant if they meet the following criteria:

1. Submitting tax returns on time.
2. No outstanding tax liabilities.
3. Financial statements are audited and receive an Unqualified Opinion (WTP) for three consecutive years.
4. Have not been convicted of tax-related criminal offences in the past five years (Shelvi, 2020).

Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour (TPB) is used in this study to explain the tax compliance behaviour of MSMEs. TPB states that behaviour can be predicted from the intention to behave, which is influenced by attitudes, subjective norms, and perceived control over behaviour (LaMorte, 2022).

TPB has six main constructs:

1. Attitudes
   A person's evaluation of a particular behaviour, either positive or negative.
2. Behavioural Intention
   The motivation to perform an action.
3. Subjective Norms
   Social views on whether the action is approved by important people around them.
4. Social Norms
   Rules or general expectations in society regarding a behaviour.
5. Perceived Power (Perceived Power)
   Perceptions of factors that facilitate or hinder behaviour.
6. Perceived Behavioral Control (Perceived Behavioural Control)
   Perceptions of one's ability to carry out an action.

The development of TPB explains that the three main constructs (attitudes, subjective norms, and behavioural control) are formed from behavioural beliefs, normative beliefs, and control beliefs. This relationship is visualised in Figure 1 below.

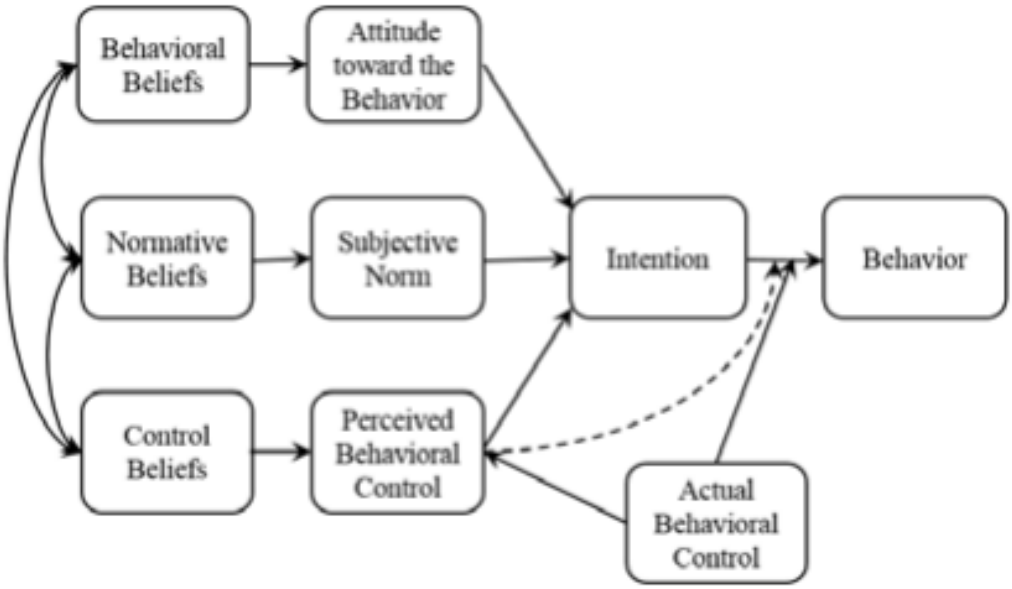

Figure 1. Theory of Planned Behaviour Developed
Source: Ajzen (2015)

RESEARCH METHOD

This type of research is quantitative because data analysis is conducted using statistical testing to test the validity of the proposed hypotheses. According to Sugiyono (2010), quantitative research is used when data analysis involves statistical testing, unlike qualitative research, which only describes data in the form of words, sentences, diagrams, and images.

Operational Definition of Variables

Success of E-Filing Implementation

The success of e-filing implementation is the level of success of the online tax return reporting system through the Directorate General of Taxes website in improving taxpayer performance. The indicators used in this study were adapted from Meisiang, Sondakh & Warongan (2020) and Purnaningsih & Noviari (2021), namely:

1. Taxpayers' reporting speed
2. Offline training or training via social media
3. Tax information obtained by taxpayers
4. Business expectations
5. Taxpayers' knowledge
6. System security
7. System speed

Taxpayer compliance

Tax compliance is the willingness of taxpayers to fulfil all their tax obligations and exercise their rights in accordance with applicable regulations. The indicators are adapted from Savitri & Damayanti (2018), , namely:

1. Understanding of regulations
2. Compliance with regulations
3. Timely tax payment

4. Accurate filing of tax returns
5. Accurate tax calculation
6. No tax arrears

Variable Indicators

Table 1. Research Variable Indicators

No	Variable	Indicator	Source
1	Success of E-Filing Implementation	1. Reporting speed 2. Training through social media/offline 3. Tax information obtained 4. Business expectations 5. Knowledge 6. System security 7. System speed	Meisiang et al. (2020); Purnaningsih & Noviari (2021)
2	Tax compliance	1. Understanding of regulations 2. Compliance with regulations 3. Paying taxes on time 4. Filing tax returns correctly 5. Calculating taxes correctly 6. No tax arrears	Savitri & Damayanti (2018)

Source: Data Process, 2025

Type and Source of Data

1. Data
   The data used is qualitative data in the form of respondents' perceptions of the research variables, which are then quantified in the form of scores.
2. Data
   The data sources were obtained from primary data through the distribution of questionnaires to respondents.

Population, Sample, and Sampling Technique

The population in this study is all SMEs in the Solo Raya region. Based on data from the Surakarta Cooperative, SME, and Industry Office (2023), the population size is 11,157 SMEs. The sample was determined using the Slovin formula (Umar, 2019:49) with an error rate (e) of 5%, resulting in a sample size of 386 SMEs. The sampling technique used was purposive sampling with the following criteria: SMEs that have used the e-filing system for at least one year.

Data Analysis Method

PLS-SEM

PLS-SEM (*Partial Least Square- Structural Equation Modeling*) is a robust analytical method because it is not based on many assumptions. Data does not need to be normally distributed (indicators with categorical, ordinal, interval, and ratio scales can be used in the same model), and the sample size does not need to be large (Garson, 2016).

This analysis technique can confirm theory and also be used to explain the existence of relationships between latent variables, while simultaneously analysing constructs formed with reflective and informative indicators (Garson, 2016). This study uses a reflective model approach, which analyses the relationship between latent variables and their indicators.

Outer Model Evaluation (Measurement Model)

Based on the model framework and hypotheses developed in this study, as well as the number of indicators for each variable, the PLS model in this study is presented in the following diagram.

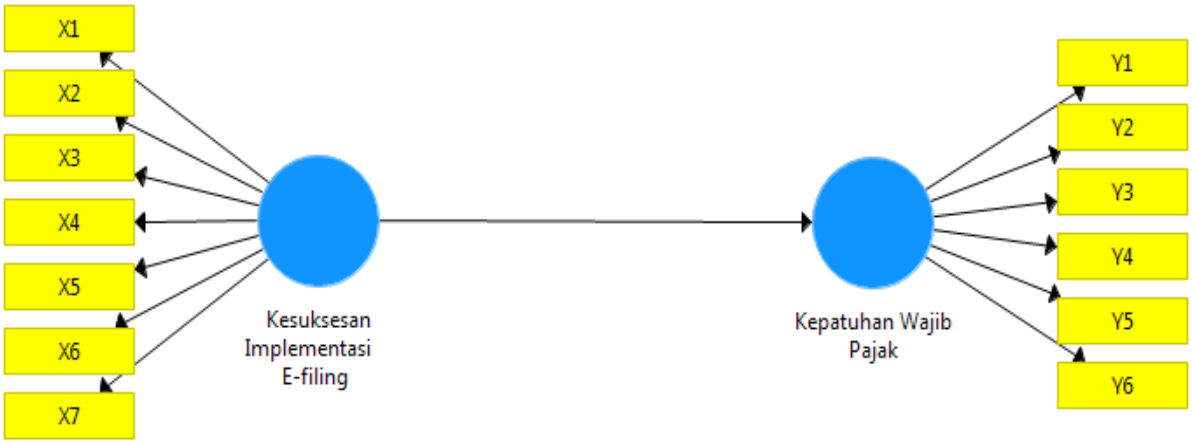

Figure 2. Outer Model

Validity Test

Validity testing is an index that indicates whether a measurement tool truly measures what it is intended to measure. Or the accuracy or precision of the instrument in relation to the instrument being studied. Validity testing is used to determine whether a questionnaire variable is valid or not. A questionnaire can be considered valid if the questions in the questionnaire are able to reveal what is being measured by the questionnaire (Garson, 2016).

Convergent Validity

This convergence measurement indicates whether each question item measures the same dimension of the variable. Therefore, only items with a high level of significance, i.e., greater than twice the standard error in the measurement of the research variable items, are considered valid. *Convergent* validity is achieved when each variable has *an AVE* above 0.5 and the loading value for each item is also greater than 0.5 (Garson, 2016).

Discriminant Validity

Discriminant validity indicators can be seen in *the cross-loadings* between indicators and their constructs. If the correlation between a construct and its indicators is higher than the correlation between the indicator and other constructs, this indicates that the latent construct predicts the indicators in their block better than the indicators in other blocks. Another method for assessing *discriminant validity* is by comparing the square root of *the average variance extracted (AVE)* for each construct with the correlation between constructs and other constructs in the model. A model is considered to have sufficient discriminant validity if the *AVE* root for each construct is greater than the correlation between the construct and other constructs. To assess the validity of constructs, look at the *AVE* values. A model is considered good if the AVE value for each construct is greater than 0.50 (Garson, 2016).

Reliability Test

In addition to validity testing, model measurement is also conducted to test the reliability of a construct. Reliability testing is performed to prove the accuracy, consistency, and precision of the instrument in measuring the construct. In *PLS-SEM* using the *SmartPLS* 3 program, reliability of a construct with reflective indicators can be measured in two ways, namely *Cronbach's Alpha* and *Composite Reliability.* A construct is considered *reliable* if the *composite reliability* and *Cronbach's alpha* values are above 0.70 (Garson, 2016).

Table 2. *Outer* Model Evaluation

GoF Assumptions	Criteria
Convergent Validity	*Factor loading* > 0.6
Discriminant Validity	AVE value > 0.5
Cronbach's Alpha	*Cronbach's Alpha* value > 0.6
Composite Reliability	*Composite reliability* value > 0.7

Source: Garson (2016)

Inner Model Evaluation (Structural Model)

The inner model (inner relation, structural model, and substantive theory) describes the relationship between latent variables based on substantive theory.

a. *Coefficient of Determination R-Square*
   In evaluating the structural model, first *assess the R-square* for each endogenous latent variable as the predictive power of the structural model. Changes in the *R-square* value can be used to explain the influence of certain exogenous latent variables on endogenous latent variables and whether they have a substantive effect. *R-square* values of 0.75, 0.50, and 0.25 can be interpreted as indicating a strong, moderate, and weak model, respectively (Garson, 2016).
b. *Goodness-of-fit* (GoF) test
   1) Q-square
      The goodness of the model is evaluated using the Q-square test. The Q-square measures how well the observed values are generated by the model and also the parameter estimates. A Q-square value > 0 indicates that the model has a value with a range of $0 < Q^{(2)} < 1$. In Gof, it is known that the Q-square value has the same meaning as the coefficient of determination in regression analysis (Garson, 2016).
   2) F-square
      The *F-square* test is conducted to assess the goodness of the model. F-square values of 0.02, 0.15, and 0.35 can be interpreted as indicating that the latent variable predictors have a weak, medium, or strong influence at the structural level (Garson, 2016).

Table 3. Evaluation of the *Inner* Model

***Goodness-of-fit* assumptions**	**Criteria**
Q-square	*Q-Square* Value & gt; 0 indicates that the model has good *goodness of fit*
F-square	F-square value 0.02; 0.15; 0.35 (weak, medium, strong)

Source: Garson (2016)

Hypothesis Testing

1) *Direct Effect* Test
   In the direct effect test, hypothesis testing is conducted by examining the *Path Coefficient* value in the *inner model* test. A hypothesis is accepted if the t-statistic value is greater than the t- e table 1.96 (α 5%) or *the p-value* is less than the significance level used (5%), which means that if the t-statistic value of each hypothesis is greater than the t-table or *the p-value* is less than 0.05, then the hypothesis is accepted.
2) *Indirect Effect* Test
   In the direct effect test, the hypothesis is tested by examining the calculated values *of Specific Indirect Effects* in the *inner model* test. A hypothesis is accepted if the t-statistic value is greater than the t-table value of 1.96 (α 5%) or *the p-value* is less than the significance level used (5%), meaning that if the t-

statistic value for each hypothesis is greater than the t-table value or *the p-value* is less than 0.05, then the hypothesis is accepted.

RESULTS AND DISCUSSION

Data Analysis

In this study, hypothesis testing was conducted using the *Partial Least Square* (PLS) data analysis technique with the SmartPLS 3.2 program. The following is the PLS program model tested:

Outer Model Analysis

The *outer* model test was used to determine the specification of the relationship between latent variables and their indicators. This test includes validity and reliability. Below are the results of the *Outer* Model calculation using the Smart PLS application:

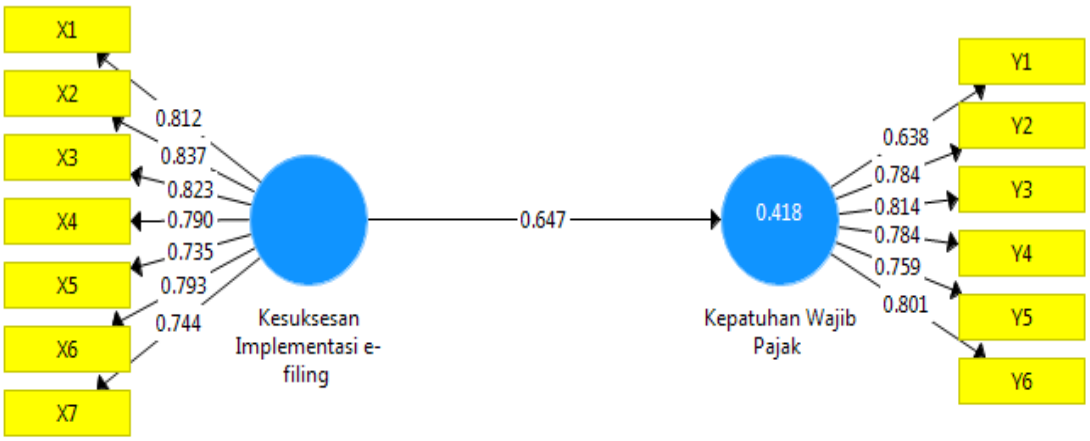

Figure 3. *Outer* Model Results

Validity Test

According to Jogiyanto (2015), validity testing is used to measure the validity of a questionnaire. A questionnaire is considered valid if the questions in the questionnaire are able to reveal what the questionnaire is intended to measure.

Convergent Validity

Convergent validity testing was conducted using reflective indicators based on Factor Loadings, also known as *Outer* Loadings. These are values generated by each indicator to measure its variable. Convergent validity values or factor loadings for latent variables with their indicators > 0.6 are considered to have good validity for research. The following are the results of the convergent validity testing in this study:

Table 4. Outer Loading Values

	Tax Compliance	The Success of e-filing Implementation
X1		0.812
X2		0.837
X3		0.823
X4		0.790

X5		0.735
X6		0.793
X7		0.744
Y1	0.638	
Y2	0.784	
Y3	0.814	
Y4	0.784	
Y5	0.759	
Y6	0.801	

Source: Data Process, 2025

Based on the table above, each research variable indicator has an *outer loading* value > 0.6. The data above shows that there are no variable indicators with an *outer* loading value below 0.6, so all indicators are declared feasible or valid for use in research and can be used for further analysis. Implications: *The factor loadings* obtained from this test have good convergent validity in measuring the success of *e-filing* implementation and taxpayer compliance.

Discriminant Validity

Discriminant validity is the *cross-loading* value used to determine whether a variable has adequate discriminant validity, by comparing the loading value of the target variable with the loading values of other variables. This test is measured using the Fornell-Lecker Criterion, where the AVE (*Average Variance Extracted*) value of the construct must be higher than that of other constructs. The results of the discriminant validity test using the Fornell-Lecker test value can be seen in the following table.

Table 5. *Average Variance Extracted* Values

	Average Variance Extracted (AVE)
Tax Compliance	0
's e-filing implementation success rate	0.626

Source

Based on the table above, each variable in this study shows an AVE *(Average Variance Extracted)* value of > 0.5. Each variable in this study has its own value for the e-filing implementation success variable of 0.626 and the taxpayer compliance variable of 0.586. This indicates that each variable in this study can be considered valid in terms of discriminant validity.

Implications: The AVE values obtained from this study are all greater than 0.5, indicating that the latent constructs (*e-filing* implementation success and taxpayer compliance) are able to explain most of the variance in their respective indicators.

Reliability Test

Reliability testing shows the level of consistency and stability of a measurement tool or research instrument in measuring a concept or construct. Reliability testing in this study used *Composite Reliability* and *Cronbach Alpha.*

Composite reliability is used to test the reliability of indicators in a variable. A variable can be considered to meet *composite reliability* if it has a *composite reliability* value > 0.7. The *composite reliability* values for each variable in this study are as follows:

Table 6. *Composite Reliability*

	Cronbach's Alpha	Composite Reliability
Tax Compliance	0.863	0.894
Success of e-filing implementation	0.901	0

Source: Data Process, 2025

From the table above, the *composite reliability* values of all research variables are greater than 0.7, namely 0.921 for the e-filing implementation success variable and 0.894 for the taxpayer compliance variable. This indicates that each variable has met *the composite reliability* requirement, so it can be concluded that all variables have a high level of reliability. Implications: The measurements of the latent constructs (e-filing implementation success and taxpayer compliance) that have been conducted are accurate for decision-making or generalisation.

The second reliability test is *Cronbach's Alpha. Cronbach's Alpha* is a statistical technique used to measure internal consistency in reliability tests of instruments or psychometric data. A construct is considered reliable if the *Cronbach's Alpha* value is greater than 0.60. Based on the table above, it shows that the *Cronbach Alpha* values for all variables in this study are above 0.6, with the *Cronbach Alpha* value for the success of e-filing implementation being 0.901 and the taxpayer compliance variable being 0.863, meaning that the *Cronbach Alpha* values meet the criteria, so all constructs can be considered reliable. Implications: The high Cronbach's Alpha values from this test indicate very good internal consistency, meaning that the instrument used is reliable (consistent) for measuring the success of *e-filing* implementation and taxpayer compliance.

Inner Model Analysis

Inner Model testing includes *Coefficient of Determination (R2)*, *Goodness of Fit (GoF)* and *Path Coefficient* Test. Below are the results of *inner* model calculations using the SmartPLS application:

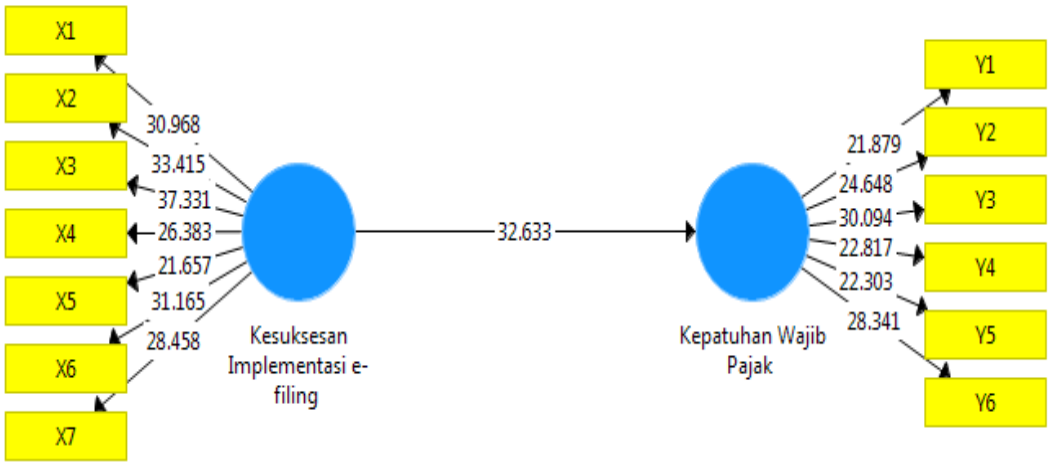

Figure 4. *Inner* Model Results

This study will explain the results of the *goodness of fit* test, *path* coefficient test, and hypothesis testing.

Model Goodness of Fit Test

Structural model evaluation is conducted to demonstrate the relationship between manifest and latent variables of the main predictor, mediator, and outcome variables in a complex model. The model goodness test consists of two tests, namely *R Square* (R^2) and *Q-Square* (Q^2). The R^2 or *R-Square* value indicates the determination of exogenous variables on endogenous variables. The larger the R^2 value, the better the level of determination. R^2 values of 0.75, 0.50, and 0.25 can be interpreted as indicating a strong, *moderate*, and weak model, respectively (Ghozali, 2015).

Based on the *R-Square* calculation results, the *R-Square* value is 0.418. This means that the relationship between the independent variable and the dependent variable is categorized as moderate. Table 4 below presents the calculation results or *R-Square.*

Table 7. *R-Square Values*

	R Square	Adjusted R Square
Tax Compliance	0.418	0.417

Source: Data Process, 2025

The next test is the *Q-Square* test. The Q^2value in structural model testing is determined by looking at the Q2 value *(predictive relevance).* The Q^2value can be used to measure how well the observations produced by the model and its parameters are. A Q^2value> 0 indicates that the model has *predictive relevance,* while a Q^2value < 0 indicates that the model lacks *predictive relevance.* The following are the results of the *R-Square* and *Q-Square* calculations*:*

Table 8. *Q-Square Values*

	SSO	SSE	Q^2 (=1-SSE/SSO)
Tax Compliance	2316	1,899,067	0.18
Success of e-filing implementation	2,702,000	2,702	

Source: Data Process, 2025

Based on the results of the above research, the *Q-Square* value is (0.180) > 0. Thus, from the calculation results, it can be stated that this research model has good *goodness of fit*.

Path Coefficient Test

The *path coefficient* test is used to show how strong the effect or influence of independent variables is on dependent variables. Based on the *inner model* diagram shown in Figure 4 above, it can be seen that the path from *E-filing* Success to Tax Compliance has a positive path coefficient with a calculated t-value of 32.633. This indicates a positive influence of *E-filing* Success on Tax Compliance among MSMEs in Solo Raya.

Hypothesis Testing

Hypothesis testing using the *bootstrapping* process was conducted to determine the *t-statistics* or *p-values (critical ratio)*. A *p-value* < 0.05 indicates a direct relationship between variables, while a *p-value* > 0.05 indicates no direct relationship between variables. In this study, the significance level used is *the t-statistic of 1.*96 (= t *level* of 5%). If *the t-statistic* is> *1.*96, then there is a significant effect. Hypothesis testing was conducted using the SmartPLS (Partial Least Square) 3.0 software. The following are the *path coefficient* values from the testing.

Table 9. Results of the *Bootstrapping Hypothesis* Test

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Success of e-filing implementation -& gt; Taxpayer compliance	0.647	0.651	0.020	32.63	0

Source: Data Process, 2025

The results of the *bootstrapping* test, as shown in the table above, yielded a *t-statistic* value of 32.633 > 1.96 or *p-values* (0.000) < 0.05, indicating that the success of *e-filing* implementation has a significant effect on tax compliance. Therefore, the hypothesis stating that "The success of *E-filing* implementation significantly influences tax compliance among SMEs in Solo Raya" is accepted or proven.

Discussion

The findings of this study prove that the success of *e-filing* implementation has a significant effect on tax compliance among SMEs in Solo Raya. This result is proven by the *bootstrapping* test with a *t-statistic* value of 32.633 > 1.96 or *p-values* (0.000) < 0.05.

The implications of these findings suggest that improving tax compliance among SMEs in Solo Raya can be achieved if the *e-filing* system currently in place yields better and more effective performance. The effectiveness of *e-filing* implementation in this study is proxied by the success of *e-filing* implementation, which is assessed using four indicators: business expectations, taxpayer knowledge, system security, and system speed.

Business expectations and taxpayer knowledge are internal factors of taxpayers, in this case, MSME actors in Greater Solo. Taxpayer business expectations are the taxpayers' belief in the benefits of *e-filing* in facilitating tax return reporting, while knowledge is the information possessed by taxpayers regarding taxation, ranging from regulations, sanctions, taxation processes, and so on.

The success indicators of *e-filing* implementation, when evaluated from external factors, are *system* security and speed. Security relates to *the system's* ability to ensure the safety and confidentiality of taxpayers' data, while speed refers to *the system's* ability to assist taxpayers in submitting their tax returns promptly.

The *e-filing* implementation success indicators with the highest validity are item number 2 (*offline* training or through social media) and item number 3 (taxpayers obtain complete information about taxes) with *loading factors* of 0.837 and 0.823. This indicates that training and tax awareness campaigns play the most significant role in supporting the success of *e-filing* implementation for SME taxpayers in the Solo Raya region. The effectiveness of *offline* training or training via social media still needs to be maintained, as does the dissemination of tax-related information for taxpayers. The indicators with the lowest validity are item number 5 (Taxpayers' knowledge) and item number 7 (System speed) with *loading factors* of 0.735 and 0.744. To further improve the effectiveness of *e-filing* implementation, the Director General of Taxes needs to pay attention to improving taxpayers' knowledge and the speed of the *e-filing* system. In reality, many taxpayers are elderly and unable to quickly grasp internet-based learning to maximise e-filing usage. Therefore, outreach efforts are increasingly needed to remind taxpayers of the benefits of taxes for the state and society, thereby increasing their awareness of the importance of paying taxes.

The results of this study support previous research conducted by Situmorang & Ginarti (2022) that the implementation *of e-filing* has a positive and significant impact on taxpayer compliance at the Medan Petisah Tax Office. The results of this study also support previous research conducted by Kailola, Kuhuparuw & Ardiansyah (2024) that the implementation *of e-filing* has a positive and significant effect on the compliance of annual tax return submission by WPOP at the State Polytechnic in Ambon.

Based on the findings of this study, the effectiveness of *e-filing* implementation for SME taxpayers in Solo Raya still needs to be improved by enhancing the performance of tax return submission socialisation through the *e-filing* system, both through offline tutorials and social media, as well as from external factors by improving the performance of the *e-filing* system itself. This will provide positive benefits for improving taxpayer compliance, especially among SMEs in Solo Raya.

CONCLUSION

The results of the hypothesis testing in this study indicate that the success of e-filing implementation significantly influences the tax compliance of SME taxpayers in Solo Raya. This finding is supported by the bootstrapping test results with a *t-statistic* value of 32.633, which is greater than 1.96, and a *p-value* of 0.000, which is less than 0.05. The implications of this finding indicate that the success of e-filing implementation can contribute positively to improving tax compliance among SMEs in the Greater Solo area.

This study has several limitations. First, the research only covers MSME actors in the Greater Solo area, so the findings cannot be generalised nationally. Second, the conclusions are only based on primary data obtained through questionnaires, so the possibility of subjectivity in the respondents' answers cannot be avoided. Third, this study only uses one exogenous variable, so further development is needed by incorporating other variables that may influence the tax compliance of MSMEs.

In practical terms, it is recommended that tax officials or tax authorities continue to develop solutions to the constraints faced by MSME taxpayers in accessing the e-filing system, such as through education and assistance tailored to the characteristics of taxpayers, especially those who are elderly or less familiar with digital technology. Additionally, the imposition of clear and proportional tax sanctions in accordance with applicable regulations is important as an instrument to enhance taxpayer compliance. From an academic perspective, it is recommended that future research expand the scope of the study area, such as to include SMEs at the provincial or national level, and develop research models by incorporating additional exogenous variables that influence SME tax compliance. The research is also expected to integrate intervening or moderating variables to explore more comprehensively the factors influencing taxpayer compliance.

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