Jurnal Aplikasi Bisnis dan Manajemen (JABM), Vol. 12 No.2, May 2026
Permalink/DOI: http://dx.doi.org/10.17358/jabm.12.2.736

Available online
http://journal.ipb.ac.id/index.php/jabm

MSMEs TAX BEHAVIOR AND VOLUNTARY TAX COMPLIANCE: THE ROLE OF ADAPTIVE E-FILING AND TAX LITERACY

Duryana[1*], Ekea Multi Febriyanti[1], Yusri Karmila[2]

[1]Sekolah Tinggi Ilmu Ekonomi Makassar Maju
Jl. Griya Alam Permai No.12, Kapasa, Tamalanrea, Makassar, Sulawesi Selatan, Indonesia
[2]Universitas Wira Bhakti
Jl. Andi pangerang pettarani no.72, Tamamaung, Panakkukang, Makassar, Sulawesi Selatan, Indonesia

Article history:

Received
8 August 2025

Revised
23 October 2025

Accepted
26 February 2026

Available online
29 May 2026

Abstract:

Background: This gap is particularly evident in Indonesia, where MSMEs operate in the informal sector and have limited awareness of tax regulations. E-filing was introduced to simplify the tax reporting process and improve compliance, but its effectiveness is often hampered by a lack of tax literacy among MSMEs.
Purpose: The objectives of this study are 1) to determine whether adaptive e-filing synergy affects voluntary tax compliance; 2) to determine whether tax literacy affects voluntary tax compliance; 3) to determine whether the tax behavior of MSMEs moderates the relationship between the influence of adaptive e-filing synergy on voluntary tax compliance; 4) to determine whether the tax behavior of MSMEs moderates the relationship between the influence of tax literacy on voluntary tax compliance.
Design/methodology/approach: This is a quantitative study conducted in South Sulawesi Province, including Makassar City and the districts of Gowa, Takalar, Bulukumba, and Maros. The population in this study is unknown, with a sample of 110 MSMEs. Data analysis was performed using Structural Equation Modeling (SEM).
Findings/Result: This study shows that adaptive e-filing synergy acts as a technological factor that significantly increases voluntary tax compliance among MSMEs by reducing administrative barriers, increasing efficiency, and improving perceptions of ease in tax reporting. Tax literacy also positively influences voluntary tax compliance by enhancing taxpayers' understanding and awareness, although its influence does not fully guarantee consistent behavior without the support of motivational factors and system convenience. In addition, MSME tax behavior has been shown to strengthen the relationship between adaptive e-filing synergy and voluntary tax compliance, indicating that good tax behavior can transform technological benefits into actual compliance actions. Conversely, MSME tax behavior moderates the relationship between tax literacy and voluntary compliance in a negative and insignificant direction, indicating that tax knowledge is not yet strong enough to influence compliance without the support of practical experience, system convenience, and business conditions.
Conclusion: Improving voluntary tax compliance among MSMEs is more effectively achieved through the integration of adaptive tax technology utilization and the formation of positive tax behavior, while tax literacy plays a supporting role in building compliance awareness.
Originality/value (State of the art): This study highlights the need for an adaptive e-filing system that aligns with MSMEs' levels of tax literacy and understanding. The findings of this study provide more holistic and effective policy recommendations for the government to improve MSME tax compliance, not only from a technological perspective but also from an educational perspective.

Keywords: adaptive e-filing synergy, voluntary tax compliance, tax literacy, MSME tax behavior

How to Cite:
Duryana, Febriyanti, E. M., & Karmila, Y. (2026). MSMEs tax behavior and voluntary tax compliance: The role of adaptive e-filing and tax literacy. Jurnal Aplikasi Bisnis dan Manajemen (JABM), 12(2), 736. https://doi.org/10.17358/jabm.12.2.736

* Corresponding author:
Email: duryana.ana21@gmail.com

INTRODUCTION

Voluntary tax compliance is a crucial foundation of a modern tax system oriented toward active taxpayer participation. Voluntary compliance, based on taxpayers' internal awareness and willingness to comply without coercion or strict supervision, is the ideal and sustainable level of compliance (Saragih & Putra, 2021; Orkaido et al. 2024). Achieving this requires more than just technological convenience and knowledge transfer (Safitri & Umaimah, 2022). Amidst the country's increasing need for stable and sustainable tax revenue, the government continues to strive to create a more adaptive, efficient, and user-friendly taxation system. One notable innovation is the implementation of adaptive e-filing, a digital-based tax reporting system designed to simplify the reporting process and improve taxpayer transparency and accountability. However, this technological advancement has not been fully accompanied by changes in the tax behavior of Micro, Small, and Medium Enterprises (MSMEs), which are significant contributors to the national economy as well as a potential tax base. There are still various obstacles, such as limited tax literacy, low administrative capacity, perceptions of system complexity, and a lack of trust and motivation to voluntarily fulfill tax obligations.

In addition, the characteristics of MSMEs, which tend to have limited resources, poorly organized financial records, and a primary focus on business continuity, mean that tax compliance is not yet a top priority (Purnamasari et al. 2020). This situation shows that the existence of a digital system alone is not enough to improve compliance, as behavioral factors, perceptions of ease, and taxpayer understanding also determine the effectiveness of tax technology implementation. Therefore, an approach is needed that not only emphasizes the provision of adaptive tax reporting technology, but also the improvement of tax literacy and the formation of positive MSME tax behavior so that voluntary tax compliance can increase sustainably (e Hassan et al. 2021). Thus, the integration of technological innovation, tax education, and the strengthening of taxpayer behavior is key to optimizing tax revenue from the MSME sector.

MSMEs play a strategic role in driving economic growth and expanding employment opportunities. However, voluntary tax compliance in this sector still faces various challenges, such as low tax literacy, perceptions of the complexity of tax administration, and a poor understanding of the benefits of tax compliance for business continuity. The lack of tax literacy causes many MSMEs to not understand their tax rights and obligations, resulting in tax behavior that tends to be reactive and not oriented towards voluntary compliance. This lack of tax education creates a mismatch between regulations and practices. Although the implementation of e-filing and increased tax literacy have been the focus of various initiatives, the level of voluntary compliance among MSMEs remains a concern (Tri Widyastuti Ningsih, 2024; Kusbiantora & Asmara, 2025; Prasetia, 2021). This is evident in the performance of South Sulawesi Province's Tax Revenue as of April 30, 2024, reaching IDR4.12 trillion or 29.66% of the 2024 target of IDR13.89 trillion, an increase of only 2.06%. The majority of major taxes experienced negative growth due to slowing economic activity (www.pajak.go.id). One of the main causes of low MSME satisfaction is low tax literacy. However, according to the Theory of Planned Behavior (Ajzen, 1991), a person's behavior is greatly influenced by attitudes, subjective norms, and perceptions of behavioral control in accordance with TPB theory, which in the context of taxation can be interpreted as awareness, motivation, and the ability to voluntarily fulfill tax obligations. On the other hand, the implementation of adaptive e-filing has the potential to be a strategic solution to change the tax behavior of MSMEs towards higher compliance and voluntary compliance. This system not only simplifies tax reporting but also increases time efficiency, reduces compliance costs, and enhances trust in the digital tax administration system. The integration of adaptive e-filing and increased tax literacy is expected to create positive synergies that strengthen the tax behavior of MSMEs, in terms of awareness, willingness, and ability to report and pay taxes without coercion.

Previous research has shown that tax literacy, the e-filing system, and taxpayer behavior have a positive impact on tax compliance, as demonstrated by Listyaningsih & Hoyriyah (2024); Lukman et al. (2023); Al-Zaqeba & Al-Rashdan (2020), and Murwenie et al. (2024). Although the implementation of e-filing and increasing tax literacy have been the focus of various initiatives, the level of voluntary compliance among MSMEs remains a concern (Tri Widyastuti Ningsih, 2024; Kusbiantora & Asmara, 2025; Prasetia, 2021). Voluntary compliance, based on taxpayers' internal awareness and willingness to comply without coercion or strict supervision, is the ideal and sustainable level of compliance (Saragih & Putra, 2021; Orkaido et al.

2024). To achieve this, more than just technological convenience and knowledge transfer are needed (Safitri & Umaimah, 2022). MSMEs play a vital role in the South Sulawesi economy, yet their contribution to tax revenue remains inadequate. This is due to a lack of tax information, which makes it difficult for taxpayers to fulfill their tax obligations (Lyandra & Margie, 2024; Wenty et al. 2023). MSMEs still face difficulties or do not understand how this system works, making the adoption of e-filing very important. In addition, tax literacy among MSMEs remains a challenge. A lack of understanding of tax rights, obligations, and benefits makes MSMEs less motivated to voluntarily comply with tax regulations. As a result, there is a gap between the potential tax revenue from MSMEs and its realization, which is caused by barriers to e-filing adoption and low tax literacy. Therefore, this study will explore how a combination of technology and education can change the behavior of MSMEs towards proactive and sustainable tax compliance. Through this approach, this study aims to reveal how the integration of technology, education, and behavior can create an inclusive tax environment for MSMEs. The emphasis on voluntary tax compliance is crucial to creating a fair, efficient, and sustainable tax system to support national development.

This study approaches problem solving by combining behavioral theory (Behavioral Approach) and technology adoption (TAM Approach) to explain how the adaptive capacity of the e-filing system and the level of tax literacy can influence the tax behavior of MSMEs, which ultimately encourages sustainable voluntary tax compliance, as follows: 1) Theoretical Approach: (a) This study uses the Technology Acceptance Model (TAM) framework to explain how the ease of use and usefulness of adaptive e-filing systems can influence the intentions and behavior of MSME taxpayers in voluntarily fulfilling their tax obligations. (b) In addition, behavioral finance theory and tax theory (Behavioral Tax Theory) are used to explain the role of tax literacy as a cognitive factor that influences MSME decision-making and tax awareness; 2) Analytical Approach: (a) This study uses a quantitative approach with a survey method, where data is collected through structured questionnaires from MSMEs that have used the e-filing system; (b) Analysis was performed using Structural Equation Modeling (SEM) to test the causal relationship between variables: Synergy Adaptive E-filing, Tax Literacy, MSME Tax Behavior, and Voluntary Tax Compliance; (c) This model allows for testing direct and indirect effects, thereby determining the extent to which tax behavior mediates the relationship between technology and voluntary compliance.

The objectives of this study are: to determine whether adaptive e-filing synergy affects voluntary tax compliance; to determine whether tax literacy affects voluntary tax compliance; to determine whether MSME tax behavior moderates the relationship between adaptive e-filing synergy and voluntary tax compliance; to determine whether MSME tax behavior moderates the relationship between tax literacy and voluntary tax compliance.

METHODS

This study uses a quantitative approach to analyze the causal relationship between the variables of Synergy Adaptive E-filing, Tax Literacy, MSME Tax Behavior, and Voluntary Tax Compliance. The data used is primary data, obtained directly from respondents through questionnaires distributed to Micro, Small, and Medium Enterprises (MSMEs) that have used the e-filing system for their tax reporting in South Sulawesi Province, including Makassar City, Gowa Regency, Takalar, Bulukumba, and Maros. The sample size was 11 x 10 indicators from 110 selected MSMEs. Secondary data was also used as supporting data, in the form of publications from the Directorate General of Taxes (DGT), academic literature, and previous studies relevant to tax behavior and digital tax technology.

Data were collected through a closed-ended questionnaire using a Likert scale of 1–5 to measure respondents' perceptions of each research variable indicator. Distribution was conducted online and in-person (hybrid) to MSMEs in various business sectors registered with the Pratama Tax Office (KPP Pratama). A purposive sampling technique was used with the following respondent criteria: Active MSMEs that have used the e-filing system; Business owners or managers who understand the tax reporting process.

Data analysis was conducted using Structural Equation Modeling (SEM) with the assistance of the SmartPLS program. The analysis stages included: Construct Validity and Reliability Testing to ensure the reliability of variable indicators; Measurement Model Testing (Outer Model) to assess convergence and discrimination between indicators; Structural Model Testing (Inner Model) to examine causal relationships between latent variables; Hypothesis Testing to determine the significance of direct and indirect influences between variables.

The implementation of electronic reporting systems also has a positive impact on voluntary tax compliance (Adejuwon et al, 2024). Although the impact is somewhat smaller than that of online payment systems, research shows that the ease of use and accuracy of electronic reporting systems in tax filing contribute to more accurate reporting and increased compliance. (Athanas, 2025) This underscores the importance of modernizing tax-related processes to align with digital advancements.
H1: Adaptive E-filing Synergy has a positive effect on Voluntary Tax Compliance

It is said that tax literacy is basically the public's understanding of taxes, which leads to awareness of being a wise and tax-compliant citizen. Through this tax literacy, taxpayers will have knowledge and understanding of tax regulations. Based on the Theory of Planned Behavior, it is explained that before individuals decide to do something, they will have beliefs about the results that will be obtained from their behavior (behavioral beliefs). In this case, taxpayers who have good tax literacy certainly know and believe that the taxes they pay are very important for state financing and development. Research conducted by (Arifin & Sriyono, 2022) and (Intansari, 2022) and also (Nurlis & Ariani, 2020) shows that tax literacy has a positive and significant effect on taxpayer compliance. The results of this study explain that the higher tax literacy faced will have an impact on increasing taxpayer compliance. The high level of tax literacy of taxpayers will make taxpayers better understand what exactly the functions and benefits of taxes are for their lives, not think that taxes are a burdensome burden.
H2: Tax Literacy has a positive effect on Voluntary Tax Compliance

Motivation for taxpayer compliance requires an understanding of taxpayers' attitudes toward taxes, their knowledge and understanding of tax regulations, their personal and social norms, and their concern for distributive and procedural justice. Several recent contributions highlight the need to address the activities of multinational corporations by developing rules and instruments to effectively control their tax behavior. Perceived behavioral control is related to taxpayer compliance. The higher the perceived behavioral control, the higher the taxpayer compliance. Behavioral control is formed from individuals' beliefs about the existence of factors that support or inhibit the emergence of such behavior. Perceived behavioral control is an external control that influences taxpayer behavior to comply with the tax controls that are applied. The findings indicated that there is a trust-tax compliance nexus whereby both trust in tax authority(institutional trust) and interpersonal trust could enhance voluntary tax compliance among the small enterprises in Tanzania.Respondents believe that their voluntary tax compliance wouldincrease if theyhad trust-based relationshipswith officials and tax authorities. The findings indicate that both institutional and personal trust plays a significant role in promoting tax compliance among small enterprises (Kibona & Goyayi, 2025; Qadri & Darmawan, 2021; Athanas, 2025). Theoretically, the model of this study contributesto tax compliance practices
H3: MSME tax behavior positively and significantly moderates the relationship between adaptive e-filing synergy and MSME voluntary tax compliance.
H4: MSME tax behavior positively and significantly moderates the relationship between tax literacy and MSME voluntary tax compliance.

This framework (Figure 1) shows that the synergy between adaptive e-filing systems and tax literacy directly and indirectly influences voluntary tax compliance through the tax behavior of MSMEs as an intermediary variable. This approach emphasizes that the use of digital systems that are easy, useful, and educational can strengthen taxpayer compliance behavior, especially when accompanied by adequate tax literacy.

RESULTS

The characteristics of respondents were obtained through the questionnaires provided, which contained information regarding the Region/Domicile of MSMEs, Duration of MSMEs, and Registered as a Taxpayer (WP) MSME respondents as shown in the Table 1. There are differences in the characteristics of respondents, which can be grouped into three groups. First, the category of MSME Region/Domicile: in Makassar City, there were 28 respondents, Gowa Regency 27, Takalar Regency 20, Bulukumba Regency 10, and Maros Regency 25, bringing the total number of respondents who completed the questionnaire to 110. The highest number of active MSMEs that have used the e-filing system for more than 5 years (55), followed by 26 businesses with 3-4 years (26), and 29 businesses with 1-2 years (1-2 years). Meanwhile, among MSMEs whose owners or managers understand the tax reporting process, 42 are those with no understanding, while 68 are those who do not. The research results indicate that owners or managers still lack understanding of the tax reporting process.

Validity and reliability test

Discriminant validity testing evaluates the correlation between indicators of different constructs. A construct is considered to predict its block well if its correlation with measurement items is higher than with other constructs. Structural validity is indicated by a loading factor value >0.70, although for initial research a value of 0.50-0.60 is still acceptable.

Composite reliability is used in evaluating latent variable coefficients, where there are two main criteria, namely composite reliability and Cronbach's alpha, both of which are above 0.70 to be considered valid and reliable. In addition, the minimum Average Variance Extracted (AVE) value is 0.50.

Based on the results in Table 2, testing the outer model shows that the overall research data meets the validity and reliability requirements. Convergent validity, which is indicated by the value of outer loadings on each variable indicator, is above 0.7, in accordance with the convergent validity criteria set by the authors. In addition, discriminant validity, indicated by the AVE value, also meets the set standard of above 0.5. Therefore, the validity test provided satisfactory results overall (Memon et al. 2021). Similarly, the Cronbach's alpha value also met the 0.6 threshold set.

R-square test

An R-square result of 0.75 is classified as strong, an R-square number of 0.5 indicates a moderate model, and an R-square result of only 0.25 indicates that the model is weak. Table 3 shows the results of the R-square (R^2) with Voluntary Tax Compliance at the strong model level because it is greater than 0.75. Therefore, we can explain that Adaptive E-filing Synergy, Tax Literacy variables simultaneously have an influence of 46,7% on Voluntary Tax Compliance, the remaining 53,3% is due to other factors not included in the study.

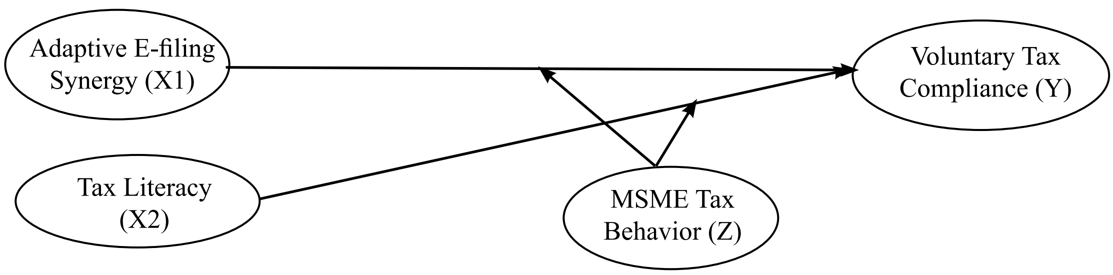

Figure 1. Conceptual framework

Table 1. Respondent Characteristics MSMEs

Characteristics	Classification	Quantity
MSME Region/Domicile	Makassar	28
	Gowa	27
	Bulukumba	10
	Takalar	20
	Maros	25
Active MSMEs that have used the e-filing system	< 5 years	55
	3-4 years	26
	1-2 years	29
Business owners or managers who understand the tax reporting process	Yes	42
	No	68

Table 2. validity and reability test between adaptive e-filing synergy, tax literacy, voluntary tax compliance, and MSME tax behavior

Variabel	Indicator	Outer Loading	AVE	Cronbach's Alpha	Composite Reability
Adaptive E-filing Synergy (X1)	X1.1	0.749	0.665	0.748	0.856
	X1.2	0.819			
	X1.3	0.873			
Tax Literacy (X2)	X2.1	0.833	0.612	0.684	0.825
	X2.2	0.743			
	X2.3	0.768			
MSME Tax Behavior (Z)	Z1.1	0.889	0.759	0.684	0.863
	Z1.2	0.854			
Voluntary Tax Compliance (Y)	Y1.1	0.767	0.618	0.702	0.829
	Y1.2	0.797			
	Y1.3	0.793			

Table 3. r-square test results with Voluntary Tax Compliance

	R-Square
Voluntary Tax Compliance	0.467

Table 4. Hypothesis test (path coefficient) between adaptive e-filing synergy, tax literacy, voluntary tax compliance, and MSME tax behavior

Hypothesis	Original sample (O)	T statistics (O/STDEV)	P values
H1: Adaptive E-filing Synergy → Voluntary Tax Compliance	0.451	4.007	0.000
H2: Tax Literacy → Voluntary Tax Compliance	0.280	2.196	0.028
H3: MSME Tax Behavior x Adaptive E-filing Synergy → Voluntary Tax Compliance	0.163	1.816	0.069
H4: MSME Tax Behavior x Tax Literacy → Voluntary Tax Compliance	-0.021	0.210	0.833

Hypothesis testing

Hypothesis testing uses SmartPLS software by performing the SmartPLS resampling boothstrapping method and testing the significance of accepting the hypothesis with the original sample requirement as a positive or negative effect and a p-value < 0.010 (Hair, 2023). In the Table 4, the first hypothesis, Adaptive E-filing Synergy, has a significant effect on Voluntary Tax Compliance with a value of 0.451, a statistical value of 4.007, and a p-value of 0.000. Therefore, the test results show that Hypothesis 1 is accepted. The second hypothesis, tax literacy, has a positive and significant effect on voluntary tax compliance with an original sample value of 0.280, a statistical value of 2.196, and a p-value of 0.028. These results indicate that hypothesis 2 is accepted.

The results of hypothesis 3 show that the test results indicate that the synergy between MSME Tax Behavior and Adaptive E-filing has a positive effect on Voluntary Tax Compliance, with a coefficient value of 0.163 and a t-statistic value of 1.816. The significance level of 0.069 indicates that the relationship is significant at a significance level of 10%. This result is consistent with the hypothesis, so it was decided that Hypothesis 3 was accepted. The final hypothesis, namely The test results show that the interaction between MSME Tax Behavior and Tax Literacy on Voluntary Tax Compliance has a coefficient of -0.021 with a t-statistic value of 0.210 and a significance level of 0.833. This value indicates that the moderating effect is not significant, so the hypothesis cannot be accepted.

The Effect of Adaptive E-filing Synergy on Voluntary Tax Compliance

The results of the hypothesis show a strong and significant relationship between Adaptive E-filing Synergy* and positive voluntary tax compliance, which means that the higher the synergy of adaptive E-filing use, the more significant the increase in voluntary tax compliance among MSMEs. This finding is not only in line with the Technology Acceptance Model (TAM), which explains that perceptions of ease of use and technological benefits encourage acceptance and use of the system, but can also be explained through The Theory of Planned Behavior developed by (Ajzen, 1991). From a TPB perspective, the use of adaptive E-filing contributes to the formation of a positive attitude towards tax reporting because the easy, flexible, and efficient system reduces the administrative burden on taxpayers. In addition, ease of access and digital support strengthen perceived behavioral control, which is the belief of MSMEs that they are able to fulfill their tax obligations without significant obstacles. When positive attitudes and perceived control increase, the intention to comply also becomes stronger and ultimately encourages voluntary tax compliance behavior.

Research results (Sahendra & Halim, 2023; Putra & Setiawan, 2020) show that the e-filing variable has a positive and significant influence on the taxpayer compliance variable. This indicates that e-filing makes it easier for taxpayers to fulfill their obligations, namely tax compliance. With e-filing, taxpayers who wish to fulfill their tax payment obligations can do so easily, anywhere, anytime, without spatial or temporal constraints. Thus, the synergy of adaptive E-filing acts as a technological factor that reinforces the psychological determinants in TPB, thereby increasing voluntary tax compliance among MSMEs.

The Effect of Tax Literacy on Voluntary Tax Compliance

The results of the hypothesis show that tax literacy has a positive relationship with voluntary tax compliance, which means that the higher the level of taxpayers' understanding of tax rules, procedures, and benefits, the greater the tendency to comply voluntarily. However, when this influence becomes insignificant in a more complex model, this finding is interesting because it contradicts the assumption that knowledge always encourages compliance. From the perspective of the Technology Acceptance Model (TAM), tax literacy can increase perceptions of ease of use and perceived benefits of digital taxation systems. Meanwhile, based on (Ajzen, 1991) Theory of Planned Behavior, tax literacy plays a greater role in shaping beliefs and attitudes, but voluntary tax compliance is also greatly influenced by subjective norms and perceived behavioral control. Thus, taxpayers who have good knowledge are not necessarily compliant if there is no social support, internal motivation, trust in tax authorities, or perceived ease in carrying out their obligations.

These findings are inconsistent with (Hidayat, 2024), which found that tax knowledge does not significantly influence taxpayer compliance. This study is consistent with several studies (Tri Widyastuti Ningsih, 2024; Kusbiantora & Asmara, 2025; Afshan & Siddiqui, 2021) that found a positive relationship and significant influence on tax compliance. These results indicate that a good understanding of improving tax literacy can make people aware of the importance of taxes, their benefits for the general public, themselves as individuals, and other matters, and vice versa. This shows that tax literacy is an important factor but is not strong enough on its own, so voluntary tax compliance is more determined by a combination of cognitive, psychological, social, and perceptual factors related to the taxation system.

The influence of MSME tax behavior moderates the relationship between adaptive e-filing synergy and voluntary tax compliance

The results of the hypothesis show that MSME tax behavior acts as a moderating variable that strengthens the positive relationship between adaptive e-filing synergy and voluntary tax compliance. This means that the use of adaptive e-filing not only has a direct impact on increasing compliance, but also encourages the formation of better MSME tax behavior, such as accuracy of reporting, regularity of recording, and awareness of tax obligations, which ultimately strengthens voluntary compliance. These findings are in line with the Technology Acceptance Model (TAM), whereby an e-filing system that is easy to use, flexible, and provides tangible benefits will increase perceptions of ease and usefulness, thereby encouraging technology adoption and more positive changes in tax behavior. Furthermore, from the perspective of the Theory of Planned Behavior proposed by (Ajzen, 1991), the use of adaptive E-filing can shape positive attitudes towards tax reporting and increase perceived behavioral control, as MSMEs feel more capable and confident in fulfilling their tax obligations. MSME tax behavior then becomes a psychological mechanism that bridges the intention and action of compliance, so that the combination of technology acceptance and behavioral factors can strengthen voluntary tax compliance more optimally.

The research results align with (Utami et al. 2025; Sahendra & Halim, 2023; Adejuwon et al. 2024) which indicate that the use of e-filing systems has a significant positive impact on SME tax compliance. Implicitly, institutional and interpersonal trust play a crucial role in enhancing voluntary tax compliance among small businesses. Respondents believe that their voluntary tax compliance will increase if they have a trust-based relationship with tax officials and authorities. Therefore, in order for tax authorities to improve voluntary compliance behavior, it is important to focus on tax administration strategies that will build, enhance, and maintain the trust of organizations and officials to ensure sustainable domestic revenue for the socio-economic community.

The influence of MSME tax behavior moderates the relationship between tax literacy and voluntary tax compliance

The results of hypothesis testing show that MSME tax behavior moderates the relationship between tax literacy and voluntary tax compliance in a negative and insignificant manner. These findings indicate that the existence of MSME tax behavior has not been able to strengthen the influence of tax literacy on increasing voluntary compliance, and even tends to weaken it. This condition can be explained through several indicators of insignificance. First, the gap between knowledge and practice shows that MSMEs that have an understanding of taxation do not necessarily apply consistent tax behavior, especially in administration and reporting complexity. Second, the quality of tax literacy measurement does not yet cover applicable aspects such as the ability to calculate taxes, the use of digital systems, and procedural understanding, so its contribution to actual behavior is limited. Third, several psychological and contextual factors, such as trust in tax authorities, tax fairness, and business financial conditions, can determine compliance more than literacy alone. Thus, the insignificant negative moderation results confirm that tax literacy is not yet a strong enough factor in shaping voluntary compliance if it is not accompanied by stable tax behavior, internal motivation, and a tax system that supports MSMEs in fulfilling their obligations.

The results of this study are not in line with the studies by (Rinaldi, 2025; Afshan & Siddiqui, 2021) show that digital tax literacy has a positive effect on digital tax compliance and fully mediates the relationship between perceived information quality and digital tax compliance. Tax literacy also appears to increase tax compliance. The research results show that taxpayers' perceptions of the tax system are important because the fairness of the tax system will instill compliant behavior among taxpayers. Understanding taxpayer motivation and developing tax policies and strategies that can influence compliance will generate more revenue.

Theoretical Implications

This study explicitly confirm that voluntary tax compliance among MSMEs is a multidimensional phenomenon that cannot be explained solely by knowledge factors, but also by the interaction between technology acceptance and taxpayer behavior. The findings regarding the positive influence of adaptive e-filing synergy reinforce the relevance of the Technology Acceptance Model (TAM), particularly in the role of perceived ease of use and perceived benefits as determinants of compliance behavior change in the context of digital taxation. In addition, the moderating role of MSME tax behavior broadens the understanding of the Theory of Planned Behavior developed by Icek Ajzen, whereby attitudes, subjective norms, and perceived behavioral control not only influence intentions but also function as mechanisms that strengthen or weaken the influence of cognitive and technological factors on actual behavior. The finding of insignificant negative moderation in the relationship between tax literacy indicates a gap between knowledge and behavioral implementation, so this study provides a theoretical contribution in the form of an affirmation that tax literacy plays more of an enabling factor than a driving factor in shaping voluntary compliance when not supported by behavioral factors and system convenience. Thus, this study enriches the integration of TAM and TPB in the context of MSME tax compliance by placing tax behavior as a key variable that bridges the dimensions.

Managerial Implications

The managerial implications of this study are relevant to tax authorities and MSME actors. For tax authorities, the results of the study show the importance of strengthening an adaptive, simple, and responsive E-filing system that meets the needs of MSMEs, as the ease and benefits of the system have been proven to increase compliance directly and through the formation of better tax behavior. Tax authorities also need to design literacy programs that not only focus on conceptual knowledge but also emphasize practical aspects such as digital reporting assistance, simplification of procedures, and SME-based case studies so that knowledge can be translated into compliant behavior. Meanwhile, for MSMEs, the implications of this study emphasize the importance of establishing orderly tax administration habits, optimizing the use of reporting technology, and raising awareness that tax compliance is part of business sustainability. Overall, a managerial approach that integrates service digitalization, strengthening compliance behavior, and improving applied literacy is a more effective strategy in promoting sustainable voluntary tax compliance among MSMEs.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The results of the study show that adaptive e-filing* synergy is a technological factor that can significantly increase voluntary tax compliance among MSMEs. This finding confirms that an adaptive, user-friendly tax reporting system that meets the needs of taxpayers can reduce administrative barriers, increase convenience, and encourage MSMEs to voluntarily fulfill their tax obligations. Thus, the use of taxation technology not only serves as a reporting tool but also as an instrument that shapes compliance behavior through increased efficiency and perceived ease.

Furthermore, tax literacy has been proven to have a significant positive influence on voluntary tax compliance, indicating that an increased understanding of tax rules, procedures, and benefits contributes to taxpayers' awareness and decision to comply. However, this influence is cognitive in nature and does not fully guarantee consistent compliance behavior if it is not accompanied by other supporting factors such as motivation, perceived ease, and business conditions. This indicates that tax literacy is an important prerequisite, but not the only determinant of voluntary compliance.

Furthermore, MSME tax behavior has been proven to strengthen the relationship between adaptive e-filing synergy and voluntary tax compliance. Good tax behavior, such as disciplined record keeping, accurate reporting, and administrative awareness, acts as a mechanism that transforms the benefits of technology into actual compliance actions. This means that the successful implementation of adaptive e-filing will be more optimal when accompanied by positive MSME tax behavior, thereby strengthening voluntary compliance both directly and indirectly.

Conversely, MSME tax behavior moderates the relationship between tax literacy and voluntary tax compliance in a negative and insignificant direction. This finding indicates that limited tax literacy does not automatically reduce compliance, because MSME tax behavior is more influenced by practical factors such as system convenience, business needs, and administrative experience than by knowledge level alone. The results of the study confirm that voluntary tax compliance among MSMEs is more effectively improved through a combination of adaptive tax technology utilization and the formation of positive tax behavior, while tax literacy plays a supporting role in strengthening awareness but does not always directly determine compliance actions.

Recommendations

This research recommendation emphasizes that the Directorate General of Taxes needs to continue developing an e-filing system that is more adaptive, simple, and responsive to the characteristics of MSMEs, including simplifying the interface, integrating with business recording applications, and providing easily accessible digital assistance services. For MSME players, it is important to increase awareness and positive tax behavior by making optimal use of digital taxation facilities and understanding the long-term benefits of voluntary compliance, such as improved business reputation, easier access to financing, and business partner trust. In addition, economic education institutions and business communities are expected to play an active role in expanding digital tax literacy through practical training, seminars, and tax awareness campaigns, so that a culture of compliance is formed early on among entrepreneurs and digital MSMEs. The synergy between an efficient e-filing system, applicable literacy, and responsible tax behavior will strengthen the legitimacy of MSMEs as compliant taxpayers while supporting the country's fiscal capacity and business sustainability. For future researchers, it is recommended to add variables such as tax trust, perceptions of fairness, and digital service quality, as well as expand the sample and use a longitudinal or mixed-method approach to gain a more comprehensive understanding of voluntary tax compliance among MSMEs.

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to the Ministry of Research, Technology, and Higher Education for this grant opportunity. This support is not only in the form of funding, but also a great motivation for my entire team to continue our work. The research project we are currently working on is running smoothly thanks to this assistance. Thank you very much.

FUNDING STATEMENT: This research received a grant from kemdiktisaintek.

CONFLICT OF INTEREST: The authors declare no conflict of interest.

DECLARATION OF GENERATIVE AI STATEMENT: During the preparation of this scientific paper, the author used the ChatGPT application to check and improve grammar. After using this facility, the author then carefully checks and edits the content of the sentence so that it is as needed and is fully responsible for all the content of this scientific paper that I publish.

REFERENCES

Adejuwon et al. (2024). Determinants of Voluntary Tax Compliance in Nigeria. *Baze University Journal of Entrepreneurship & Interdisciplinary Studies*, *1*(1), 146–156. https://doi.org/10.61955/lrpjtm

Afshan, S., & Siddiqui, D. A. (2021). How Treatment from the Tax Authority, Tax Literacy, and Exchange and Vertical Equity Affect Tax Compliance: The Role of Fairness of the Tax Assessment Process Complemented by Demographics and Collectivist Culture. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3941031

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Al-Zaqeba, M. A. A., & Al-Rashdan, M. T. (2020). The effect of attitude, subjective norms, perceived behavioral control on tax compliance in Jordan: The moderating effect of costums tax. *International Journal of Scientific and Technology Research*, *9*(4), 233–238. https://doi.org/https://www.ijstr.org/

Arifin, S. A. K., & Sriyono, S. (2022). The Effect of Tax Literacy, Service Quality of Tax Employees, Financial Attitudes, and Tax Understanding on Taxpayer Compliance: Pengaruh Literasi

Pajak, Kualitas Pelayanan Pegawai Pajak, Sikap Keuangan, Serta Pemahaman Perpajakan Terhadap Kepatuhan Wajib. *Indonesian Journal of Innovation Studies*, *20*, 10–21070.

Athanas, N. (2025). The Influence of Trust on Voluntary Tax Compliance in Tanzania: A Case of Small Enterprises. *East African Journal of Business and Economics*, *8*(1), 117–128. https://doi.org/10.37284/eajbe.8.1.2683

e Hassan, I., Naeem, A., & Gulzar, S. (2021). Voluntary tax compliance behavior of individual taxpayers in Pakistan. *Financial Innovation*, *7*(1). https://doi.org/10.1186/s40854-021-00234-4

Hidayat, M. (2024). Tax Literacy, Tax Sanctions, Taxpayer Awareness and Quality of Tax Services on Taxpayer Compliance in Payment of Land and Building Taxes in Dumai City (Riau). *Accounting Studies and Tax Journal (COUNT)*, *1*(1), 38–47. https://doi.org/10.62207/x82pe081

Intansari, M. R. (2022). The Effect of Tax Literacy on Tax Compliance: The Moderating Role of Patriotism. *Technium Soc. Sci. J.*, *34*, 455.

Joseph F. Hair Jr. · G. Tomas M. Hult ·. (2023). Review of Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook. In *Structural Equation Modeling: A Multidisciplinary Journal* (Vol. 30, Issue 1). https://doi.org/10.1080/10705511.2022.2108813

Kibona, M. H., & Goyayi, M. L. J. (2025). Effect of Electronic Filing (E-Filing) on Voluntary Tax Compliance in the Kinondoni Tax Region, Tanzania. *African Journal of Empirical Research*, *6*(1), 702–712. https://doi.org/10.51867/ajernet.6.1.60

Kusbiantora, M., & Asmara, R. Y. (2025). *Tax Management , Tax Regulations , and Tax Literacy on Corporate Taxpayer Compliance : Mediation of Tax Restitution*. *6*(2), 562–579.

Listyaningsih, E., & Hoyriyah, S. (2024). Pengaruh Literasi Pajak, Sistem Administrasi Perpajakan Dan Kualitas Pelayanan Terhadap Kepatuhan Wajib Pajak Pada Badan Pendapatan Daerah Kabupaten Pringsewu Dengan Sanksi Perpajakan Sebagai Variabel Moderasi. *Jurnal Akuntansi, Keuangan, Perpajakan Dan Tata Kelola Perusahaan*, *1*(3), 164–177. https://doi.org/10.59407/jakpt.v1i3.577

Lukman, H., Setiawan, F. A., & Simina, J. (2023). Factors Affecting Individual Taxpayer Compliance on Tax Return After Using E-Filing. *International Journal of Application on Economics and Business*, *1*(1), 133–140. https://doi.org/10.24912/v1i1.133-140

Lyandra, S., & Margie, A. (2024). *Penerapan E-Filing , Biaya Kepatuhan Pajak dan Lingkungan Sosial Terhadap Kepatuhan Wajib Pajak*. *3*(2), 1516–1527.

Memon, M. A., Ramayah, T., Cheah, J., Ting, H., Chuah, F., & Cham, T. H. (2021). PLS-SEM Statistical Programs : A Review. *Journal of Applied Structural Equation Modeling*, *5*(1). https://doi.org/10.47263/JASEM.5(1)06

Murwenie, I., Yusuf, R., Permana, T. E., Manajemen, P. S., Ekonomi, F., Indonesia, U. G., Raya, J., No, S., Sekretaris, P. S., Icb, P. P., Penghulu, J., Mustopa, H. H., Bandung, N., Bandung, N., Manajemen, P. S., Sekretaris, A., Pasir, J., & No, K. (2024). *Tax Assistant Mediation in The Behavioral Model of Tax Compliance in MSMEs*. *12*(2), 110–122.

Nurlis, N., & Ariani, M. (2020). Tax awareness moderates knowledge and modernization of tax administration on tax compliance, survey on MSME taxpayers in South Tangerang City, Indonesia. *International Journal of Management Studies and Scoial Science Research*, *2*(5), 250–259.

Orkaido, K., Beyene, T., Mitiku, S., & Tesiso, Y. (2024). Examining Factors Affecting Presumptive Tax Voluntary Compliance (A Case Study in Gedeo Zone). *Journal of World Economic Research*, *13*(1), 11–23. https://doi.org/10.11648/j.jwer.20241301.12

Prasetia, T. (2021). The Effect of Taxpayer Religiousity, Tax Amnesty, and Tax Sanction on Taxpayer Compliance with Medium Small Micro Business Taxes (Msmes). *Research Square*, *1*(3), 1–17. https://doi.org/10.21203/rs.3.rs-368632/v1

Purnamasari, P., Pramono, I. P., Haryatiningsih, R., Ismail, S. A., & Shafie, R. (2020). Technology Acceptance Model of Financial Technology in Micro , Small , and Medium Enterprises (MSME) in Indonesia. *Journal of Asian Finance, Economics and Business*, *7*(10), 981–988. https://doi.org/10.13106/jafeb.2020.vol7.no10.981

Putra, I. N. A., & Setiawan, P. E. (2020). The Effect of Taxpayer Awareness, Service Quality, Taxation Understanding, and Application of E-Filling System on Corporate Taxpayer Compliance. *American Journal of Humanities and Social Sciences Research*, *2*, 219–224. www.ajhssr.com

Qadri, R. A., & Darmawan, E. E. (2021). E-Filing Implementation, Tax Compliance, and Technology Authority. *Journal of Applied Accounting and Taxation*, *6*(1), 23–36. https://doi.org/10.30871/jaat.v6i1.2822

Rinaldi, M. (2025). *The Mediating Role of Digital Tax Literacy in TikTok- Based Tax Compliance Among Indonesian Taxpayers*. *10*(1), 717–732.

Safitri, A., & Umaimah, U. (2022). The Influence of E-Filing Implementation,Service Quality and Tax Knowledge on Individual Taxpayer Compliance. *Innovation Research Journal*, *3*(2), 139. https://doi.org/10.30587/innovation.v3i2.4723

Sahendra, A. D., & Halim, S. (2023). The Effect of E-Filing, Tax Sanctions, and Tax Socialization on Individual Tax Payer Compliance of Employees. *International Research Journal of Economics and Management Studies-IRJEMS*, *4*(2), 263–270. https://doi.org/10.56472/25835238/IRJEMS-V2I4P130

Saragih, A. H., & Putra, I. D. N. S. (2021). Ethical Perception of Tax Evasion: Determinants and Consequences on Voluntary Tax Compliance. *Jurnal Akuntansi Dan Keuangan*, *23*(1), 1–14. https://doi.org/10.9744/jak.23.1.1-14

Tri Widyastuti Ningsih. (2024). *The Influence of Tax Literacy on Tax Compliance With Tax Sanctions as A Moderating Variable*. *6*, 2266–2282. https://doi.org/10.47476/reslaj.v6i6.3406

Utami, N. M. S., Sapta, I. K. S., Dicriyani, N. L. G. M., & Verawati, Y. (2025). Use of E-Filing System: Antecedents and Consequences to MSME Tax Compliance. *International Journal of Scientific Research and Management (IJSRM)*, *13*(03), 8537–8552. https://doi.org/10.18535/ijsrm/v13i03.em03

Wenty Wandira W, Utaminingtyas, T. H., & Fauzi, A. (2023). The Effect of Tax Collection, Tax Audit, and Taxpayer Compliance on Corporate Income Tax Revenue at The Tax Service Office Pratama Pancoran. *Nexus Synergy: A Business Perspective*, *1*(2), 84–94.