GIJEA
Greenation International Journal of Economics and Accounting
+62 81210467572 https://research.e-greenation.org/GIJEA greenation.info@gmail.com
GREENATION RESEARCH

DOI: https://doi.org/10.38035/gijea.v4i4.1416
https://creativecommons.org/licenses/by/4.0/
Received: 14 September 2026 | **Revised:** 15 September 2026 | **Accepted:** 25 October 2026

Digitization of Tax Services and Tax Knowledge: Determinants of Tax Compliance, with the Role of Tax Application Service Providers as a Moderating Variable

Agus Sudiasmoro[1], Susy Suhendra[2], Tety Elida[3]
[1]Universitas Gunadarma, Jakarta, Indonesia, sudiasmoro@gmail.com
[2]Universitas Gunadarma, Jakarta, Indonesia, susys@staff.gunadarma.ac.id
[3]Universitas Gunadarma, Jakarta, Indonesia, tety@staff.gunadarma.ac.id

Corresponding Author: sudiasmoro@gmail.com[1]

Abstract: Indonesia's low tax ratio highlights the need to strengthen factors that promote tax compliance. This study analyzes the impact of the digitization of tax services and tax knowledge on tax compliance, with Tax Application Service Providers (PJAP) serving as a moderating variable. The study employed a quantitative approach, involving a survey of 422 taxpayers who use the PJAP, selected through simple random sampling. The data were analyzed using SEM-PLS. The digitization of tax services and tax knowledge has a positive effect on tax compliance. PJAP significantly strengthens the effect of tax knowledge on tax compliance, but does not strengthen the effect of the digitization of tax services. Optimizing tax compliance requires collaboration between tax authorities and tax service providers to improve tax literacy and develop a roadmap for tax service providers that includes service standardization, system integration, and incentive schemes.

Keyword: Digitization of Tax Services, Tax Knowledge, Tax Compliance, the Role of Tax Advisors.

INTRODUCTION

Taxes are an essential mandatory contribution that serves as a source of government revenue to finance development and achieve people's prosperity (Tax Administration Law, 2021). To optimize tax revenue, Indonesia has implemented a self-assessment system that fully delegates authority to taxpayers to independently calculate, determine, pay, and report their tax obligations (Suwardi & Saragih, 2023). The implementation of this self-assessment inherently requires taxpayers to have a comprehensive understanding of tax regulations so that they can fully exercise their rights and fulfill their obligations (Inasius, 2019; Pui Yee et al., 2017). However, meeting these literacy requirements faces practical challenges, given that tax regulations are constantly evolving in response to rapid business and economic developments. As a tool for monitoring self-assessment and these regulatory changes, tax

returns are presumed to be valid until the tax authorities make administrative corrections through audits or on-site visits (Appiah et al., 2024).

Tax authorities are working to secure tax revenue to reach the ideal tax-to-GDP ratio of 15% in order to ensure fiscal stability and funding for essential investments (Junquera-Varela & Haven, 2018) ; (Choudhary et al., 2024); (Mulatsih et al., 2024) , however, empirical evidence shows that the tax ratio in Indonesia remains relatively low due to low compliance, which is influenced by economic and non-economic factors, as well as broad demographic and geographic challenges. (Anugrah & Fitriandi, 2022; Slemrod, 2007; Verboon & Goslinga, 2009); (Mayowan, 2019; Mebratu, 2024) ; (Liu et al., 2013).

Table 1. Comparison of Tax Ratios between OECD and ASEAN Countries

No	Country	Tax Ratio	Tax & Excise Revenue	No	Country	Tax Ratio	Tax & Excise Revenue
1	France	40,31%	17.439,25	15	Brazil	14,10%	4.159,85
2	Italy	38,30%	11.909,34	16	Turkey	13,75%	1.715,46
3	EU	37,78%	97.733,71	17	Mexico	13,71%	3.041,21
4	Germany	36,40%	22.845,96	18	China	13,40%	38.240,50
5	Australia	32,24%	8.657,46	19	Singapura	12,96%	951,86
6	UK	26,99%	13.444,25	20	Kamboja	12,04%	53,10
7	Russia	26,63%	8.845,20	21	Malaysia	11,75%	733,01
8	USA	19,57%	76.297,80	22	KSA	10,79%	1.698,62
9	Japan	19,31%	12.617,28	23	Filipina	10,43%	652,63
10	Korsel	18,09%	4.885,41	24	Indonesia	10,39%	2.034,58
11	Thailand	17,18%	1.403,43	25	Laos	9,46%	29,07
12	Canada	16,50%	4.733,10	26	India	9,42%	5.086,20
13	Vietnam	16,21%	1.006,20	27	Afsel	8,05%	515,61
14	Argentina	15,71%	1.542,49	28	Myanmar	5,78%	52,99

The Directorate General of Taxes (DGT) must address the issue of low tax compliance, which is reflected in a low tax ratio. There are two categories of factors contributing to low tax compliance economic and non-economic that influence taxpayers' decisions (Anugrah & Fitriandi, 2022; Slemrod, 2007; Verboon & Goslinga, 2009). Economic factors include tax rates or burdens, compliance costs, a lack of tax incentives, low-income levels, and the nature of enforcement (such as tax audits and legal action). Non-economic factors include a lack of tax knowledge, culture and social norms, distrust of tax authorities or the government, and the complexity of the tax system (Mayowan, 2019; Mebratu, 2024). As a developing nation, Indonesia faces these same factors, resulting in a tax ratio that remains far below expectations.

To address these challenges, the Directorate General of Taxes (DGT) has since 2017, through Director General of Taxes Regulation Number PER-09/PJ./2017 (the third amendment to PER-54/PJ./2010 regarding Information Technology Development Policy) been shifting tax services from manual processes toward digital technology systems. The digitalization of tax services has continued, and in January 2025, a new tax information system known as the Core Tax Administration System (CTAS) or *Pembaruan Sistem Inti Administrasi Perpajakan* (PSIAP) went live. PSIAP is a project to redesign tax administration business processes by developing a system based on Commercial Off-the-Shelf (COTS) technology, alongside an overhaul of the tax database, aiming to make the tax system easy, secure, integrated, accurate, and certain (DGT, 2025).

To address these oversight and compliance challenges, the Directorate General of Taxes (DGT) has initiated ongoing reforms through tax education programs and a comprehensive digital service transformation, including system improvements through Core Tax Administration System (CTAS) (DJP, 2025) ; (Ambrus & Borbély, 2024). As part of its

ongoing adaptation to the Tax Administration 3.0 era, the DGT is also working to expand its digital ecosystem by facilitating partnerships with third parties namely, Tax Application Service Providers (PJAP) to provide integrated intermediary services that can adapt to the specific needs of taxpayers (OECD Forum Tax Administration, 2020); (Claybaugh et al., 2019).

Paradoxically, although various previous academic studies have confirmed that the implementation of digital services and tax literacy has been shown to have a positive impact on compliance and to minimize tax avoidance practices (Mascagni et al., 2021), Total tax revenue and tax ratios in Indonesia remain, in fact, at low levels. This has given rise to a gap between theoretical and empirical findings, highlighting the urgent need for further research particularly to comprehensively examine the effectiveness and impact of digital platforms operated by new players, such as PJAP, on improving tax compliance, given that this area has not yet been extensively explored academically.

Therefore, this study was conducted to examine the policies implemented by the DGT to improve taxpayer compliance through the digitization of tax services and tax knowledge, by involving third parties that provide tax intermediary services. The research problem involves developing a conceptual framework and an empirical research model to examine the impact of the digitization of tax services and tax knowledge on tax compliance, with the role of PJAP serving as a moderating variable.

In the conceptual framework (Figure 1), the researcher identified the independent variables, dependent variables, and mediating variables that influence the research results. Based on the conceptual framework developed, there are 2 (two) independent variables in this study namely, the digitization of tax services and tax knowledge 1 (one) mediator variable, namely the role of PJAP, and 1 (one) dependent variable, namely tax compliance.

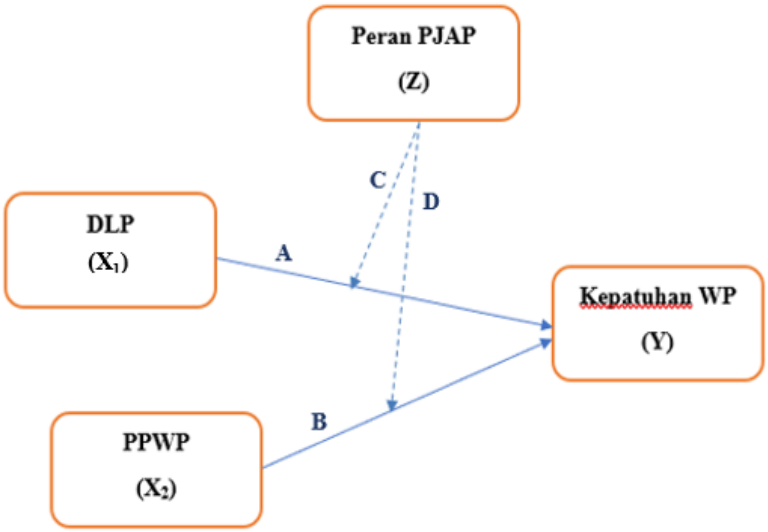

Figure 1. Conceptual Framework

METHOD

This study employs a quantitative approach using a survey method to test hypotheses through PLS-SEM statistical analysis. The study was conducted from February to July 2025 with a population of 284,745 corporate taxpayers who use PJAP services and a sample of 422 respondents determined using the Slovin formula through simple random sampling. Prior to data collection, focus group discussions (FGD) were held with registered PJAPs to refine the concept and ensure the questionnaire was easy to understand; subsequently, the validated questionnaire was distributed by the PJAPs to their clients via internal channels. Data analysis utilized PLS-SEM with a second-order approach consisting of two stages: a

measurement model to test construct validity and reliability, and a structural model to test the influence or relationships between constructs using t-tests (Hair et al., 2018)

RESULT AND DISCUSSION

First-Order Verificative Statistics

Based on the conceptual framework in Figure 1 and the analysis of the operational indicators outlined for each variable, the complete statistical model for this study is shown in Figure 2 below:

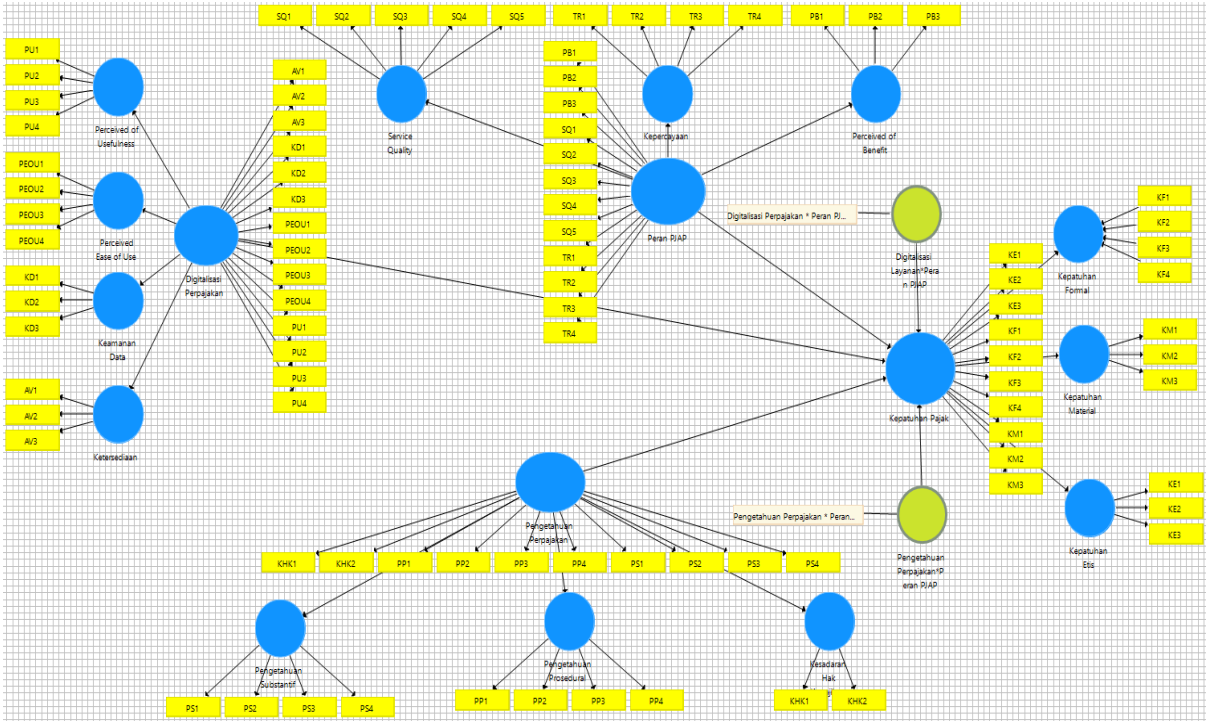

Figure 2. Research Statistical Models

Convergent validity testing for the outer model was conducted using outer loading values, whereby an indicator was deemed to meet the criteria if its value was greater than 0.7000. Based on the analysis results, all statement items across various dimensions for the four main variables namely, digitization of tax services (PU, PEOU, KD, Av), tax knowledge (PS, PP, KHK), tax compliance (KF, KM, KE), and the role of PJAP (SQ, TR, PB) consistently had factor loadings above 0.7000. These findings indicate that each statement item has a significant relationship with the measured factor; thus, all indicators in this study are deemed to meet the criteria and are validly categorized as having convergent validity.

Table 2. HTMT Analysis Results (First-Order Constructs)

	PU	PEOU	KD	Av	PS	PP	KHK	SQ	Tr	PB	KF	KM	KE
PU	0,132												
PEOU	0,607	0,215											
KD	0,610	0,195	0,985										
Av	0,632	0,185	1,020	1,053									
PS	1,011	0,106	0,546	0,566	0,604								
PP	0,971	0,101	0,559	0,582	0,625	0,960							
KHK	1,010	0,126	0,591	0,610	0,642	0,998	0,990						
SQ	0,087	0,071	0,580	0,517	0,548	0,059	0,067	0,070					
Tr	0,084	0,049	0,572	0,556	0,553	0,057	0,065	0,082	0,990				
PB	0,065	0,058	0,522	0,466	0,530	0,052	0,052	0,033	0,990	0,967			

	PU	PEOU	KD	Av	PS	PP	KHK	SQ	Tr	PB	KF	KM	KE
KF	0,135	0,986	0,166	0,127	0,128	0,059	0,119	0,133	0,100	0,059	0,102		
KM	0,132	0,998	0,157	0,190	0,111	0,119	0,104	0,124	0,023	0,068	0,059	1,014	
KE	0,132	0,998	0,157	0,130	0,110	0,119	0,104	0,124	0,093	0,068	0,059	1,014	

Based on the discriminant validity test using the results of the HTMT (heterotrait-monotrait ratio) analysis as shown in Table 2, it can be concluded that most of the relationships between constructs in this research model demonstrate good discriminant validity. Constructs with HTMT values below 0.8500 such as the relationship between PU and the PEOU dimension (HTMT = 0.1320) indicate that these two constructs do not overlap and are clearly distinguishable. However, there are several pairs of constructs with higher HTMT values, such as KD and the Av dimension (HTMT = 0.9850) and the PEOU dimension and the KE dimension (HTMT = 0.9980), which indicate potential issues with discriminant validity. These values are close to 1, indicating that these constructs may overlap or be too similar, which could affect the model's ability to distinguish between constructs. Given these conditions, a validity test was conducted again using the Fornell-Lacker criteria as shown below.

Table 3. Fornell-Lacker Test Result

	PU	PEOU	KD	Av	PS	PP	KHK	SQ	Tr	PB	KF	KM	KE
PU	0,847												
PEOU	0,109	0,838											
KD	0,523	0,176	0,835										
Av	0,518	0,157	0,831	0,864									
PS	0,520	0,144	0,833	0,847	0,834								
PP	0,877	0,087	0,470	0,480	0,496	0,844							
KHK	0,832	0,082	0,475	0,487	0,508	0,821	0,874						
SQ	0,849	0,100	0,493	0,501	0,511	0,837	0,820	0,853					
Tr	0,064	-0,056	0,494	0,435	0,446	0,030	0,058	0,049	0,828				
PB	0,066	-0,022	0,488	0,451	0,449	0,026	0,079	0,062	0,841	0,830			
KF	0,040	-0,053	0,422	0,388	0,410	0,001	0,041	0,011	0,799	0,781	0,900		
KM	0,116	0,811	0,140	0,105	0,105	0,085	0,102	0,111	-0,085	-0,046	-0,080	0,800	
KE	0,112	0,808	0,132	0,105	0,084	0,100	0,088	0,103	-0,077	-0,045	-0,046	0,858	0,815

Based on the Fornell-Lacker criteria as shown in Table 3, the relationships among the constructs satisfy discriminant validity, because the square root of the AVE (√AVE) for each construct is greater than the interconstruct correlation coefficient.

Table 4. First-Order Reliability Test Results

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
PU	0.8690	0.8690	0.9100	0.7180
PEOU	0.7880	0.7880	0.8760	0.7020
KD	0.8550	0.8550	0.9020	0.6970
Av	0.8300	0.8300	0.8980	0.7470
PS	0.7790	0.7800	0.8720	0.6950
PP	0.8650	0.8650	0.9080	0.7120
KHK	0.8450	0.8450	0.9060	0.7630
SQ	0.8130	0.8130	0.8890	0.7270
Tr	0.8480	0.8480	0.8970	0.6860
PB	0.8500	0.8500	0.8990	0.6890
KF	0.7650	0.7670	0.8950	0.8100
KM	0.8590	0.8590	0.8990	0.6400
KE	0.8310	0.8320	0.8880	0.6640

For the reliability and validity tests shown in Table 4, most dimensions of each variable in this research model exhibit good reliability. The Cronbach's alpha and composite reliability (rho_a and rho_c) values for most constructs were above 0.7000, indicating that these constructs have high internal consistency. The average variance extracted (AVE) values for most dimensions also showed adequate results, with most AVE values greater than 0.5, indicating good convergent validity.

Second-Order Inferential Statistics

In a second-order outer model, the relationships between latent variables and their dimensional blocks are defined as reflective based on theoretical foundations and previous empirical research.

Table 5. Outer Loading Result

	Outer Loading
Perceived Usefulness → Digitization of tax services	0.911
Perceived Ease of Use → Digitization of Tax Services	0.899
Data Security → Digitization of Tax Services	0.845
Accessibility → Digitization of tax services	0.861
Substantive Knowledge →Tax knowledge	0.908
Procedural Knowledge → Tax knowledge	0.900
Awareness of Rights & Obligations → Tax knowledge	0.796
Formal Compliance → Tax compliance	0.904
Substantive Compliance → Tax compliance	0.886
Ethical Compliance → Tax Compliance	0.881
Service Quality → Role of PJAP	0.918
Trust → Role of PJAP	0.897
Perceived Benefits → Role of PJAP	0.831

Based on the results of the outer loading analysis in Table 5 above, it can be seen that nearly all of the indicators used to measure the variables have factor loadings greater than 0.7000, indicating excellent convergent validity.

Table 6. HTMT Analysis Result

	Tax Compliance	**The Role of PJAP**	**Digitization of Tax Services**	**Tax Knowledge**	**The Role of PJAP x Digitalization of Tax Services**	**The Role of PJAP x Tax Knowledge**
Tax Compliance						
The Role of PJAP	0.1540					
Digitization of Tax Services	0.5930	0.1200				
Tax Knowledge	0.5450	0.0760	0.0700			
The Role of PJAP x Digitalization of Tax Services	0.1560	0.0770	0.1000	0.0380		
The Role of PJAP x Tax Knowledge	0.2300	0.0870	0.0410	0.1460	0.0820	

All HTMT values in Table 6 are well below the threshold of 0.90; in fact, most are below 0.6000. This indicates that there is no significant overlap among the constructs. Thus, it can be concluded that each construct in this model has good discriminant validity.

Table 7. Reliability Test Result

	Cronbach's alpha	Composite Reliability (rho_A)	Composite Reliability (rho_C)	Average Variance Extracted (AVE)
Tax Compliance	0.9360	0.9360	0.9450	0.6340
The Role of PJAP	0.9370	0.9560	0.9440	0.5840
Digitization of Tax Services	0.9570	0.9580	0.9620	0.6420
Tax Knowledge	0.9340	0.9350	0.9440	0.6260

Based on Table 7, the reliability test results show that all research variables namely, the digitization of tax services (X1), tax knowledge (X2), the role of PJAP (Z), and tax compliance (Y) exhibit very strong and stable internal consistency. This is evidenced by Cronbach's alpha values of 0.9570, 0.9340, 0.9370, and 0.9360, respectively, as well as composite reliability values that all successfully exceeded the minimum threshold of 0.7000.

Structural/ Inner Model

Table 8. R-Square Values (Inner Model)

	R-square	R-square adjusted
Tax Compliance	0.5900	0.5850

Based on Table 8, the test results for the tax compliance variable (Y) show an R-squared value of 0.5900 and an adjusted R-squared value of 0.5850. This indicates that 59% of the variability in tax compliance can be explained by the digitization of tax services (X1) and tax knowledge (X2), while the remaining 41% is influenced by other factors outside the scope of this study. The adjusted R-squared value serves to account for the number of predictor variables, thereby providing a more accurate and conservative estimate of the model's predictive power.

Tabel 9. F-Square Value *(Inner Model)*

	F-square
Digitization of Tax Services → Tax Compliance	0.6180
Tax Knowledge → Tax Compliance	0.5200
Role of Tax Advisors x Digitization of Services → Tax Compliance	0.0090
Role of Tax Advisors x Tax Knowledge → Tax Compliance	0.0490

Based on Table 9, the results of the F-square test (partial effect) indicate that the digitization of tax services (X1) and tax knowledge (X2) individually have a strong and significant effect on tax compliance (Y), with values of 0.6180 and 0.5200, respectively (classified as "large" according to Cohen, > 0.3500). Meanwhile, regarding moderation effects, the interaction between the role of PJAP (Z) and X1 was found to make no significant contribution because it had no effect (0.0090), whereas the interaction between the role of PJAP (Z) and X2 had a small but still significant effect (0.0490) on tax compliance (Y).

Table 10. Model Fit

	Saturated Model	Estimated Model
SRMR	0.038	
d_ULS	1.549	1.545
d_G	0.57	
Chi-Square	1.294.071	1.292.611
NFI	0.907	

Based on Table 10, the results of the model fit analysis indicate an excellent and accurate level of fit based on the SRMR and d_ULS values. The SRMR value obtained 0.038 for both the saturated and estimated models is well below the threshold of 0.08, indicating that the model is capable of describing the relationships among variables with high precision. Consistent with this, the low d_ULS values (1.549 for the saturated model and 1.545 for the estimated model) demonstrate that these estimated models perform quite well and are valid in representing the actual observed data.

These positive findings are reinforced by the d_G and NFI indices, which also indicate optimal model performance. The geodesic distance measurement, with a d_G value of 0.570 for both models, indicates a good fit and remains within acceptable tolerance limits in SEM analysis. Finally, the NFI value of 0.907 successfully exceeded the minimum standard of 0.900, strongly confirming that the estimated model has a significant advantage in explaining the relationships among variables compared to the independent model.

Table 11. Hypothesis Test Value

	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Digitization of Tax Services → Tax Compliance	0.5100	0.5080	0.0330	15.3130	0.000
Tax Knowledge → Tax Compliance	0.4680	0.4640	0.0270	17.6090	0.000
Role of Tax Advisors x Digitization of Services → Tax Compliance	0.0620	0.0680	0.0380	1.6370	0.102
Role of Tax Advisors x Tax Knowledge → Tax Compliance	0.1400	0.1460	0.0370	3.7370	0.000

1. The Effect of the Digitization of Tax Services (X1) on Tax Compliance (Y)

The research results show that the digitization of tax services (X1) has a positive and significant effect on tax compliance (Y), with a coefficient of 0.5100, a T-statistic of 15.3130, and a P-value of 0.0000. These results indicate that the better the implementation of digital services such as e-filing, e-billing, and e-payment, the higher the level of taxpayer compliance. Digitization provides convenience, efficiency, and transparency, while also reducing errors in the tax reporting and payment processes. Taxpayers can also access information and monitor their tax obligations more easily without having to perform manual administrative processes.

These findings are consistent with the Technology Acceptance Model (TAM), which explains that technology acceptance is influenced by perceived ease of use and perceived usefulness (Lee et al., 2003). In addition, Tax Compliance Theory explains that administrative ease and transparency can encourage taxpayer compliance. The results of this study are also consistent with Nose dan Mengistu (2023) which found that digital technologies such as e-filing and e-billing can improve tax compliance, Hidayat and Defitri (2024) which found that digital technologies such as electronic tax filing and electronic tax collection can improve tax compliance, Bellon et al. (2022) which found that e-invoicing can improve reporting accuracy and reduce tax evasion. These findings are also consistent with (Mascagni et al., 2021). Therefore, the DGT needs to continue strengthening the digitization of its services while also enhancing public education so that digital services can be utilized to their fullest potential.

2. The Effect of Tax Knowledge (X2) on Tax Compliance (Y)

The test results show that tax knowledge (X2) has a positive and significant effect on tax compliance (Y), with a coefficient of 0.468, a T-statistic of 17.6090, and a P-value of

0.0000. This indicates that the higher a taxpayer's knowledge of tax regulations, rights and obligations, procedures, and penalties, the higher their level of compliance. Good knowledge helps taxpayers understand tax procedures, reduce administrative errors, and increase their awareness and sense of responsibility in fulfilling their tax obligations.

These findings are supported by Tax Compliance Theory (TCT), which identifies knowledge as one of the key factors in improving compliance. The Theory of Planned Behavior (TPB) also explains that knowledge can shape attitudes and increase perceived behavioral control in fulfilling tax obligations. The findings of this study are consistent with Anugrah and Fitriandi (2022) which indicate that subjective attitudes and norms influence the intention to comply with tax laws, as well as Ambrus dan Borbely (2024) who found that tax knowledge has a positive effect on taxpayer compliance. Therefore, the DGT needs to continue improving tax education through digital campaigns, seminars, and easily accessible educational materials.

3. The Effect of the Interaction Between Variables Z × X1 on Y (The Role of the PJAP and the Digitization of Tax Services on Tax Compliance)

The test results show that the interaction between the role of the PJAP (Z) and the digitization of tax services (X1) has no significant effect on tax compliance (Y), with a coefficient of 0.0620 and a P-value of 0.102. Since the P-value is greater than 0.050, the role of PJAP is not proven to amplify the effect of the digitization of tax services on tax compliance. The results indicate that although PJAPs assist taxpayers in utilizing digital services, their role as facilitators is not yet strong enough. This situation can be attributed to the fact that the survey was conducted early in the implementation of Coretax, when some PJAPs were not yet fully integrated and various challenges within the digital system still existed. Thus, to enhance the effectiveness of PJAPs in advancing digitalization, further improvements in system integration and service quality are still needed.

4. The Effect of the Interaction Between PJAP and Tax Knowledge (Z × X2) on Tax Compliance (Y)

The test results show that the interaction between the role of PJAP (Z) and tax knowledge (X2) has a positive and significant effect on tax compliance (Y), with a coefficient of 0.1400, a T-statistic of 3.7370, and a P-value of 0.0000. These results indicate that the presence of PJAP strengthens the influence of tax knowledge on taxpayer compliance.

These findings are consistent with Tax Compliance Theory (TCT), which explains that tax knowledge, as an internal factor, can increase awareness and compliance, while the Tax Administration and Policy Agency (PJAP), as an external factor, helps provide access to information and facilitates tax administration. From a TPB perspective, the PJAP can also enhance perceived behavioral control through easier access to tax technology and information. These results are consistent with Imelda (2023) which highlights the importance of system and information support in improving compliance, as well as J.R Alm & Torgler (2005) which emphasizes that tax compliance is influenced not only by technology, but also by knowledge, culture, and tax ethics. These findings are also consistent with Supriyati et al. (2025) which shows that tax awareness can strengthen the link between digitalization and tax compliance.

Thus, PJAPs not only play a role in providing digital services but can also enhance taxpayers' understanding through information, education, and service support. Therefore, the DGT and PJAPs need to integrate digitalization with tax education so that the benefits of technology can be fully leveraged to improve tax compliance.

CONCLUSIONS AND RECOMMENDATIONS

Based on the research findings, the digitization of tax services and tax knowledge have been shown to have a significant impact on tax compliance. Digitization is primarily influenced by perceived usefulness (PU), perceived ease of use (PEOU), service availability, and data security, while tax knowledge is primarily demonstrated through substantive and procedural knowledge, as well as awareness of rights and obligations. These findings are consistent with the TAM, UTAUT, Tax Compliance, and TPB theories. The role of PJAP was not found to strengthen the influence of digitization on compliance, which may be due to the suboptimal integration of PJAP with Coretax during the early stages of implementation. However, PJAP was found to strengthen the influence of tax knowledge on compliance, in line with the Tax Compliance and SDL theories through its role in providing information, education, and support to taxpayers. Therefore, the DGT needs to continue developing digital services, strengthen tax education through collaboration with PJAPs, and improve integration, service standards, and support for PJAPs. Meanwhile, PJAPs need to continue innovating and providing more personalized services tailored to taxpayers' needs in order to improve compliance, efficiency, and certainty in the fulfillment of tax obligations.

REFERENCES

Ajzen, I., & Kruglanski, A. W. (2019). Reasoned Action in the Service of Goal Pursuit. *Psychological Review*, *126*(5), 774–786. https://doi.org/10.1037/rev0000155

Allingham, M. G., & Sandmo, A. (1972). Income tax evasion: A theoretical analysis. *Journal of Public Economics*, *3*(2), 201–202. https://doi.org/10.1016/0047-2727(74)90037-1

Alm, J., Kirchler, E., & Muehlbacher, S. (2012). Combining Psychology and Economics in the Analysis of Compliance: From Enforcement to Cooperation. *Economic Analysis and Policy*, *42*(2), 133–151. https://doi.org/10.1016/S0313-5926(12)50016-0

Alm, J. R., & Torgler, B. (2005). Culture Differences and Tax Morale in the United States and in Europe. *SSRN Electronic Journal*, *March*. https://doi.org/10.2139/ssrn.562861

Ambrus, R. A., & Borbély, K. (2024). Tax knowledge in connection with tax compliance in Hungary. *Journal of Infrastructure, Policy and Development*, *8*(11), 1–17. https://doi.org/10.24294/jipd.v8i11.8115

Anggraeni, D., Hamzah, M. Z., Sofilda, E., & Rismawanti, I. D. (2025). The Special Feature of Compliance Risk Management Strategies on Indonesian Tax Authority. *OIDA International Journal of Sustainable Development*, *18*(3), 81–96.

Anugrah, M. S. S., & Fitriandi, P. (2022). Analisis Kepatuhan Pajak Berdasarkan Theory of Planned Behavior. *Info Artha*, *6*(1), 1–12. https://doi.org/10.31092/jia.v6i1.1388

Appiah, T., Domeher, D., & Agana, J. A. (2024). Tax Knowledge, Trust in Government, and Voluntary Tax Compliance: Insights From an Emerging Economy. *SAGE Open*, *14*(2), 1–13. https://doi.org/10.1177/21582440241234757

Bani-Khalid, T., Alshira'h, A. F., & Alshirah, M. H. (2022). Determinants of Tax Compliance Intention among Jordanian SMEs: A Focus on the Theory of Planned Behavior. *Economies*, *10*(2), 1–20. https://doi.org/10.3390/economies10020030

Bellon, M., Dabla-Norris, E., Khalid, S., & Lima, F. (2022). Digitalization to improve tax compliance: Evidence from VAT e-Invoicing in Peru. *Journal of Public Economics*, *210*, 104661. https://doi.org/10.1016/j.jpubeco.2022.104661

Bhalla, N., Sharma, R. K., & Kaur, I. (2022). Effect of Tax Knowledge and Technological Shift in Tax System on Business Performance: A PLS-SEM Analysis. *Sustainability (Switzerland)*, *14*(16), 1–18. https://doi.org/10.3390/su141610217

Bornman, M., & Ramutumbu, P. (2019). A conceptual framework of tax knowledge. *Meditari Accountancy Research*, *27*(6), 823–839. https://doi.org/10.1108/MEDAR-09-2018-0379

Çetin Gerger, G. (2019). *Tax Services and Tax Service Providers' Changing Role in the IoT and AmI Environment*. 203–216. https://doi.org/10.1007/978-3-030-04173-1_9

Choudhary, R., Ruch, F. U., & Skrok, E. (2024). *Taxing for Growth: Revisiting the 15 Percent Threshold*.

Chow, C. Y. (2004). Gearing up for the self assessment tax regime for individuals. *Tax Nasional*, *2*, 20–23.

Claybaugh, C. C., Haried, P., & Tang, L. (2019). Skill and the Art of Tax Filing Excellence: Comparison of Two Cultures. In *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics): Vol. 11589 LNCS*. Springer International Publishing. https://doi.org/10.1007/978-3-030-22338-0_25

DJP. (2025). *DJP*.

Duve, M., & Schutte, D. P. (2025). Unmooring tax compliance: The impact of information technology in the Zimbabwean small firms under presumptive taxation. *Social Sciences and Humanities Open*, *11*(February), 101422. https://doi.org/10.1016/j.ssaho.2025.101422

Garg, S., Narwal, K. P., & Kumar, S. (2024). Investigating the compliance behavior of GST taxpayers: An extension to theory of planned behavior. *Journal of Public Affairs*, *24*(3). https://doi.org/10.1002/pa.2936

Hair, J. F., Risher, J. J., & Ringle, C. M. (2018). *When to use and how to report the results of PLS-SEM*. *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hana, P., & Vitezić, V. (2022). Tax Compliance Challenge Through Taxpayers' Typology. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.4060768

Harinurdin, E., Safitri, K. A., & Kountur, R. (2024). Applying the Theory of Planned Behavior in Examining the Intention to Improve Corporate Tax Compliance Through Compensation and Counterproductive Work Behavior. *SAGE Open*, *14*(4), 1–14. https://doi.org/10.1177/21582440241305624

Hesami, S., Jenkins, H., & Jenkins, G. P. (2024). Digital Transformation of Tax Administration and Compliance: A Systematic Literature Review on E-Invoicing and Prefilled Returns. *Digital Government: Research and Practice*, *5*(3). https://doi.org/10.1145/3643687

Heviana, R. N., Nisa, F., & Prawati, L. D. (2024). Tax Digitalization and Transparency: The Role of Core Tax Administration System (CTAS) in Indonesia's Tax Reform. *2024 International Conference on Information Technology Systems and Innovation, ICITSI 2024 - Proceedings*, 169–175. https://doi.org/10.1109/ICITSI65188.2024.10929365

Hidayat, M., & Defitri, S. Y. (2024). Digitalization and the Changing Landscape of Tax Compliance (Challenges and Opportunities). *Accounting Studies and Tax Journal (COUNT)*, *1*(1), 131–139. https://doi.org/10.62207/c2gyc030

Ihnatišinová, D. (2021). Digitalization of tax administration communication under the effect of global megatrends of the digital age. *SHS Web of Conferences*, *92*(2021), 02022. https://doi.org/10.1051/shsconf/20219202022

Imelda, G. (2023). Imelda dan Santioso: Pengaruh Tax Knowledge, Tax Awareness terhadap Tax …. *Jurnal Paradigma Akuntansi*, *V* (1), 417–422.

Inasius, F. (2019). Factors Influencing SME Tax Compliance: Evidence from Indonesia. *International Journal of Public Administration*, *42*(5), 367–379. https://doi.org/10.1080/01900692.2018.1464578

Junquera-Varela, R. F., & Haven, B. (2018). Getting to 15 Percent: Addressing the Largest Tax Gaps. *World Bank*.

Kintan Farrasati, N., & Murwendah. (2020). Smart Governance on Taxation: Tax Data Integration through Host-to-Host e-Invoices towards Collaborative Compliance in

Indonesia. *7th International Conference on ICT for Smart Society: AIoT for Smart Society, ICISS 2020 - Proceeding*. https://doi.org/10.1109/ICISS50791.2020.9307587

Kirchler, E. (2005). Combining Psychology and Economics in the Analysis of Compliance: From Enforcement to Cooperation. *Economic Analysis and Policy*, *42*(2), 133–151. https://doi.org/10.1016/S0313-5926(12)50016-0

Kushwah, S. V., Nathani, N., & Vigg, M. (2021). Impact of tax knowledge, tax penalties, and E-filing on tax compliance in India. *Indian Journal of Finance*, *15*(5–7), 61–74. https://doi.org/10.17010/ijf/2021/v15i5-7/164493

Lee, Y., Kozar, K. A., & Larsen, K. R. T. (2003). The Technology Acceptance Model: Past, Present, and Future. *Communications of the Association for Information Systems*, *12*(December). https://doi.org/10.17705/1cais.01250

Liu, H., Zhou, Q., Zhou, L., & Wang, S. (2013). On the human capital factors to evaluate the efficiency of tax collection using data envelopment analysis method. *Research Journal of Applied Sciences, Engineering and Technology*, *5*(6), 2156–2162. https://doi.org/10.19026/rjaset.5.4766

Lusch, R. F., Vargo, S. L., & Wessels, G. (2008). Toward a conceptual foundation for service science: Contributions from service-dominant logic. *IBM Systems Journal*, *47*(1), 5–14. https://doi.org/10.1147/sj.471.0005

Mascagni, G., Mengistu, A. T., & Woldeyes, F. B. (2021). Can ICTs increase tax compliance? Evidence on taxpayer responses to technological innovation in Ethiopia. *Journal of Economic Behavior and Organization*, *189*, 172–193. https://doi.org/10.1016/j.jebo.2021.06.007

Mayowan, Y. (2019). *Tax Morale and Tax Compliance*. https://doi.org/10.2991/aicobpa-18.2019.60

Mebratu, A. A. (2024). Theoretical foundations of voluntary tax compliance: evidence from a developing country. *Humanities and Social Sciences Communications*, *11*(1), 1–8. https://doi.org/10.1057/s41599-024-02903-y

Mulatsih, S. N., Saepuloh, D., Putri, W. A., & Alicia, R. (2024). Improving Tax Compliance Intentions and Self-Assessment System: Approach to the Theory of Planned Behavior. *Review of Applied Socio-Economic Research*, *28*(2), 116–136. https://doi.org/10.54609/reaser.v28i2.524

Nariswari, A., & Vargo, S. L. (2024). Service-Dominant Logic: Theoretical Foundations and Directions. *Humanism in Business Series*, *Part F4245*, 153–186. https://doi.org/10.1007/978-3-031-67155-5_8

Nguyen, V. D., & Duong, T. H. M. (2022). Corruption, Shadow Economy, FDI, and Tax Revenue in BRICS: A Bayesian approach. *Montenegrin Journal of Economics*, *18*(2), 85–94. https://doi.org/10.14254/1800-5845/2022.18-2.8

Nose, M., & Mengistu, A. (2023). *Cataloging-in-Publication Data IMF Library*.

Occhiali, G., & Kalyango, F. (2023). Can tax agents support tax compliance in low-income countries? Evidence from Uganda. *Public Administration and Development*, *43*(4), 269–279. https://doi.org/10.1002/pad.2022

OECD Forum Tax Administration. (2016). Rethinking Tax Services: The Changing Role of Tax service Providers in SMe Tax Compliance. In *Rethinking Tax Services*.

OECD Forum Tax Administration. (2020). *Tax Administration 3.0: The Digital Transformation of Tax Administration*.

Pui Yee, C., Moorthy, K., & Choo Keng Soon, W. (2017). Taxpayers' perceptions on tax evasion behaviour: an empirical study in Malaysia. *International Journal of Law and Management*, *59*(3), 413–429. https://doi.org/10.1108/IJLMA-02-2016-0022

Rustiarini, N. W., & Dularif, M. (2021). Tax compliance and non-deterrence approach: a systematic review. © *Emerald Publishing Limited*, *Volume 42,* (23 September 2022). https://doi.org/https://doi.org/10.1108/IJSSP-04-2021-0108

Salawu, M. K., Adigun, O. A., Lawal, Q. A., & Olaleye, J. A. (2025). Electronic Tax Filing System and Compliance among Small and Medium-Sized Enterprises in Lagos State, Nigeria. *International Journal of Economics and Financial Issues, 15*(1), 32–41. https://doi.org/10.32479/ijefi.17309

Slemrod, J. (2007). Cheating ourselves: The economics of tax evasion. *Journal of Economic Perspectives*, *21*(1), 25–48. https://doi.org/10.1257/jep.21.1.25

Supriyati, S., Oktarina, D., Rokhmania, N., & Prananjaya, K. P. (2025). Tax Digitalization and Justice with Taxpayer Compliance and the Mediating Role of Tax Awareness. *Aptisi Transactions on Technopreneurship (ATT)*, *7*(2), 542–555. https://doi.org/10.34306/att.v7i2.512

Suwardi, E., & Saragih, A. H. (2023). The effect of tax risk on audit report delay: Empirical evidence from Indonesia. *Cogent Business and Management*, *10*(1). https://doi.org/10.1080/23311975.2023.2192315

Taing, H. B., & Chang, Y. (2021). Determinants of Tax Compliance Intention: Focus on the Theory of Planned Behavior. *International Journal of Public Administration*, *44*(1), 62–73. https://doi.org/10.1080/01900692.2020.1728313

Verboon, P., & Goslinga, S. (2009). The role of fairness in tax compliance. *Netherlands Journal of Psychology*, *65*(4), 136–145. https://doi.org/10.1007/BF03080136

Yitzhaki, S. (1974). A Theory of the Deterrence Effect of Tax Audits. *Journal of Public Economics*, *4*, 287-306.

Zairin, G. M., Khairunnisa, H., Naufal, A., Fahrozi, M. L., Suyono, W. P., & Anugrah, S. (2025). Advancing Taxation in the New Era: Enhancing Tax Ratios with the Core Tax Administration System (CTAS). *Smart Innovation, Systems and Technologies*, *422*, 85–98. https://doi.org/10.1007/978-981-96-0147-9