

The impact of E-wallet usage and digital financial literacy on freelancers' tax awareness: The moderating role of tax regulations

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Abstract: This study aims to examine the effect of e-wallet usage and digital financial literacy on tax awareness among freelancers, with digital tax regulation serving as a moderating variable. The research adopts a quantitative approach using a cross-sectional survey design. Data were collected from freelancers who actively use e-wallets for financial transactions and analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS 4. The findings indicate that e-wallet usage has a significant positive effect on freelancers' tax awareness, highlighting the role of digital payment platforms in enhancing financial transparency and income traceability. Digital financial literacy also shows a positive influence on tax awareness. Furthermore, digital tax regulation significantly strengthens the relationship between digital financial literacy and tax awareness, demonstrating the importance of supportive and well-integrated regulatory frameworks in the digital economy. In conclusion, the study emphasizes that technological adoption and regulatory support are essential drivers of tax awareness among freelancers. Practically, the findings suggest that policymakers and tax authorities should enhance digital tax systems and promote digital financial education, while digital finance providers can integrate tax-related features into e-wallet platforms to encourage compliance and foster a more transparent freelance economy.

Keywords: Digital financial literacy, Digital tax regulation, E-wallet, Freelancers, Tax awareness.

1. Introduction

The rapid advancement of digital technology has fundamentally transformed global financial transactions, with electronic wallets (e-wallets) becoming a key component of the digital economy [1]. E-wallets facilitate financial management by enabling convenient access to online purchases, fund transfers, and bill payments [2]. This transformation is particularly evident in the freelance economy, where conventional financial systems and tax mechanisms are often less applicable [3]. Freelancers typically manage irregular income streams, which create distinct challenges in fulfilling tax obligations. Despite the widespread adoption of e-wallets among freelancers, the relationship between e-wallet usage and tax awareness remains insufficiently explored, particularly in the context of digital financial literacy and digital tax regulations [4].

Digital financial literacy plays a critical role in enabling individuals to effectively utilize digital financial tools and understand their tax responsibilities in an increasingly cashless environment [5]. Freelancers often lack formal taxation education or institutional support, making digital financial literacy a key determinant of voluntary tax compliance [6]. As the use of e-wallets continues to expand, these platforms also present opportunities to enhance tax-related education and awareness [24]. In parallel, digital tax regulations provide an institutional framework that clarifies taxpayers' obligations and encourages compliance within the digital economy [7].

At the global level, the transition toward cashless economies presents both opportunities and challenges for tax administration [8]. In developing countries such as Indonesia, where digital payment

adoption is growing rapidly, many freelancers continue to overlook their tax obligations despite actively using e-wallets [9]. However, empirical evidence on how digital financial literacy interacts with regulatory frameworks to shape freelancers' tax behavior in emerging economies remains limited. This gap highlights the need for a more comprehensive understanding of how digital behaviors, particularly e-wallet usage and digital financial literacy, interact to influence tax awareness. Addressing this issue is essential, as increased e-wallet adoption may either support or hinder effective tax collection depending on users' literacy levels and engagement with digital tax systems [10].

Accordingly, this study is both timely and necessary. It aims to examine the influence of e-wallet usage and digital financial literacy on freelancers' tax awareness, while considering the moderating role of digital tax regulations. By integrating digital finance and taxation within the freelance context, this study contributes to a body of literature that has rarely examined these dimensions simultaneously. In addition, the findings provide empirical insights relevant to policymakers seeking to align tax frameworks with technological developments in the digital economy [11].

From a theoretical perspective, this research addresses an important gap by integrating technology adoption, financial literacy, and tax compliance within a unified analytical framework. From a practical perspective, the findings offer implications for freelancers, digital finance providers, and tax authorities. A clearer understanding of how e-wallet usage and digital financial literacy shape tax awareness can support the development of more adaptive tax systems and targeted educational initiatives aimed at improving compliance in the digital era.

To achieve these objectives, this study employs a quantitative approach using survey data collected from freelancers who actively use e-wallets. The data are analyzed using regression analysis to examine the relationships between e-wallet usage, digital financial literacy, and tax awareness, as well as to assess the moderating effect of digital tax regulations. This methodological approach enables rigorous statistical testing of the proposed hypotheses and enhances the validity and generalizability of the findings.

2. Literature Review

2.1. Previous Research

The impact of e-wallet usage and digital financial literacy on freelancers' tax awareness is a multidimensional issue encompassing digital transaction systems, financial literacy, and tax compliance. Digital financial literacy serves as a fundamental driver of financial well-being, equipping freelancers with the competencies required to manage finances effectively in the digital economy. Prior studies consistently show that individuals with higher financial literacy are better able to navigate complex financial environments and make informed financial decisions [12]. Empirical evidence further indicates a strong association between digital financial literacy and financial behavior among small and medium-sized enterprises (SMEs), suggesting its relevance to self-employed and freelance workers [13].

The global shift toward cashless economies, supported by the rapid adoption of e-wallets and digital payment systems, has significant implications for tax compliance. Digital payment systems enhance transaction traceability, thereby reducing opportunities for tax evasion and improving tax collection efficiency [14]. In addition, the implementation of digital tax systems has been shown to lower compliance costs while increasing taxpayer satisfaction [15]. Digital transformation within tax administration also contributes to higher compliance levels by fostering more transparent and efficient interactions between taxpayers and tax authorities [16].

Empirical studies demonstrate that familiarity with digital tax tools, such as e-filing and e-billing, can significantly strengthen taxpayer compliance [17]. However, the effectiveness of digital payment systems in mitigating tax evasion may vary depending on economic conditions and public engagement with tax authorities [18]. Financial behavior also plays a critical moderating role in the relationship between digital financial literacy and tax awareness. Digital competencies alone may be insufficient unless accompanied by proactive financial behavior, which has been shown to improve financial outcomes and compliance levels [19]. Moreover, an enhanced digital payment infrastructure not only

promotes compliance but also contributes to improved SME performance, generating broader economic benefits [20].

Generational differences further influence the relationship between digital financial literacy and tax awareness. Although Indonesia's millennial population demonstrates high proficiency in using digital financial tools, their understanding of tax obligations remains relatively limited [21]. This gap highlights the importance of targeted educational initiatives that explicitly link digital financial literacy with tax responsibility. Persistent barriers to digital financial understanding among younger populations also underscore the need for early and structured educational interventions [22]. Strengthening digital literacy while clarifying tax obligations has been shown to significantly improve tax awareness and foster a stronger culture of fiscal responsibility [23].

2.2. Grand Theory

2.2.1. Technology Acceptance Model

The Technology Acceptance Model (TAM) provides a well-established theoretical framework for explaining individuals' acceptance and use of technology. TAM posits that technology adoption is primarily influenced by perceived usefulness and perceived ease of use [24]. Perceived usefulness reflects the extent to which individuals believe that a technology enhances performance or task efficiency, while perceived ease of use refers to the degree to which the technology is perceived as effortless to use.

In the context of e-wallets, TAM suggests that freelancers' adoption of digital payment tools, and their subsequent impact on tax awareness, depends largely on how useful and easy to use these tools are perceived to be in managing income and tax-related activities. When freelancers perceive e-wallets as effective instruments for tracking income and simplifying financial transactions, they are more likely to integrate them into their financial practices, thereby increasing awareness of tax obligations associated with digital transactions [25].

The application of TAM in this study provides a theoretical foundation for explaining why e-wallet adoption may enhance freelancers' tax awareness. As e-wallets become embedded in daily financial routines, freelancers may increasingly recognize their utility in maintaining financial records and supporting tax compliance. TAM emphasizes that technologies perceived as both useful and easy to use are more likely to encourage informed, transparent, and compliant financial behavior. Accordingly, TAM supports Hypothesis 1 (H1), which posits that e-wallet usage has a positive effect on freelancers' tax awareness by improving efficiency, transparency, and accuracy in income-related transactions.

H₁: The use of e-wallets (X₁) has a positive effect on the tax awareness of freelance workers (Y).

2.2.2. Tax Compliance Theory

Tax Compliance Theory explains the key factors that influence individuals' decisions to comply with or evade tax regulations [26]. The theory posits that tax compliance is shaped by a combination of psychological and socio-economic factors, including perceptions of fairness, the probability of detection, tax system complexity, and the effectiveness of enforcement mechanisms [27]. In the context of freelancers, particularly those who utilize e-wallets, this framework suggests that compliance behavior is closely related to how clearly and fairly tax regulations are perceived within the digital economy. Because e-wallets generate transparent and traceable income records, their use may increase the perceived risk of non-compliance, thereby encouraging greater tax awareness and compliance.

Within this study, Tax Compliance Theory provides a conceptual foundation for explaining how digital financial tools and digital tax regulations jointly influence freelancers' tax awareness. The theory suggests that when freelancers perceive e-wallets as facilitating tax compliance, through improved income documentation and simplified transaction tracking, they are more likely to comply with tax obligations. Furthermore, digital tax regulations that are perceived as transparent, fair, and aligned with digital transaction characteristics can further strengthen compliance by reducing perceived barriers such as system complexity and regulatory ambiguity.

Tax Compliance Theory also emphasizes the importance of cognitive understanding and behavioral intention in shaping compliance behavior. Consistent with Hypothesis 2 (H2), which proposes that digital financial literacy positively influences freelancers' tax awareness, the theory indicates that individuals with higher levels of financial and tax-related knowledge are more likely to comply voluntarily. Enhanced digital financial literacy, particularly regarding e-wallet usage and digital tax regulations, can reduce psychological and procedural barriers, improve awareness of tax responsibilities, and ultimately foster more consistent and voluntary tax compliance behavior.

H₂: Digital financial literacy (X2) has a positive effect on the tax awareness of freelance workers (Y).

2.2.3. Tax Regulations Theory

Tax Regulations Theory emphasizes the role of legal frameworks, administrative procedures, and enforcement mechanisms in shaping tax compliance, collection, and oversight. In the freelance context, tax regulations are central to the formation of tax awareness and compliance behavior. A well-designed regulatory framework provides clarity regarding tax obligations and facilitates efficient tax filing and payment processes, thereby encouraging voluntary compliance among taxpayers.

A core concept within this theory is voluntary tax compliance, which suggests that individuals are more likely to comply with tax laws when obligations are clearly defined and the system is perceived as fair and transparent. According to Allingham and Sandmo, tax compliance is influenced by the perceived probability of detection and the severity of penalties associated with non-compliance [28]. In the digital era, the widespread use of e-wallets and digital payment systems enhances transaction transparency, increasing the traceability of income and potentially reducing opportunities for tax evasion.

Another important dimension of Tax Regulations Theory is tax simplification, which highlights the need for clear, efficient, and user-friendly tax systems. Complex tax regulations and cumbersome filing procedures often act as barriers to compliance, particularly for freelancers who may lack formal tax knowledge. Simplified digital tax frameworks, supported by e-filing, e-billing, and integrated digital payment systems, can improve administrative efficiency, reduce compliance costs, and enhance taxpayer satisfaction [15, 29].

Building on this theoretical foundation, Hypothesis 3 (H3) proposes that digital tax regulations mediate the relationship between e-wallet usage and freelancers' tax awareness. Well-designed digital tax regulations can streamline taxation processes, enabling freelancers to track income and fulfill tax obligations more transparently and conveniently. When effectively integrated with e-wallet systems, digital tax regulations function as a mediating mechanism that strengthens the positive effect of e-wallet usage on tax awareness by providing a simplified, transparent, and efficient regulatory environment.

H₃: Digital tax regulation (Z1) mediates the relationship between the use of e-wallets (X1) and the tax awareness of freelance workers (Y).

2.3. Social Motivation and Compliance Theory

Social Motivation and Compliance Theory posits that individuals' behaviors, including compliance with regulations such as tax laws, are shaped by social norms, peer influences, and the desire for social acceptance [30, 31]. In the case of freelancers, the decision to comply with tax obligations is not solely driven by personal motivation but is also influenced by external social factors, such as peer behavior, client expectations, and broader societal perceptions of compliance. The theory asserts that freelancers are more likely to adhere to tax laws when they perceive that their peers also comply, or when social incentives exist that associate tax compliance with professional integrity and reputational credibility. Compliance is further reinforced when individuals feel that tax-observant behavior is both socially expected and supported within their professional community.

For freelancers who utilize e-wallets, Social Motivation and Compliance Theory provide a useful lens for understanding how social dynamics influence tax-related behavior. Social networks, online professional communities, and even social media platforms can play a pivotal role in shaping attitudes toward compliance. When freelancers observe peers using e-wallets for income management and tax-

related purposes, or when tax compliance is positively reinforced within their social circles, they may be more likely to adopt similar practices. Social motivation thus becomes a critical driver of tax awareness, particularly as digital financial tools like e-wallets enhance the transparency and traceability of financial transactions.

In relation to Hypothesis 4 (H4), which posits that digital tax regulations mediate the relationship between digital financial literacy and freelancers' tax awareness, Social Motivation and Compliance Theory elucidates how social influence can amplify the effects of literacy and regulation on compliance behavior. When freelancers witness colleagues fulfilling tax obligations using digital tools, social pressure and professional norms may encourage them to follow suit. Furthermore, when digital tax regulations are clearly structured and integrated with digital financial systems, they reinforce these social norms by normalizing compliant behavior as part of professional conduct. Hence, positive social influence, coupled with transparent and well-integrated digital tax regulations, strengthens the relationship between digital financial literacy and tax awareness, promoting a culture of voluntary and responsible tax compliance among freelancers.

H₄: Digital tax regulations (Z₁) mediate the relationship between digital financial literacy (X₂) and tax awareness among freelance workers (Y).

2.4. Connection Between Theories and Hypotheses

The theories discussed above collectively provide a comprehensive foundation for explaining the relationships proposed in this study's hypotheses. The Technology Acceptance Model (TAM) posits that freelancers' adoption of e-wallets is driven by perceived usefulness and ease of use, which can subsequently enhance their tax awareness through increased engagement with digital financial systems. Tax Compliance Theory offers insights into how digital financial tools, such as e-wallets, heighten the perceived risk of non-compliance and thus foster greater tax consciousness. Tax Regulations Theory underscores the significance of simplified and transparent regulatory frameworks in promoting compliance and improving tax awareness, particularly among freelancers who often face administrative challenges. Finally, Social Motivation and Compliance Theory emphasizes the influence of external social factors, such as peer behavior, community norms, and professional ethics, in encouraging freelancers to fulfill their tax obligations. Together, these theoretical perspectives inform the development of the study's hypotheses and guide the analysis of how e-wallet usage, digital financial literacy, and digital tax regulations interact to shape freelancers' tax awareness in the evolving digital economy.

3. Method

3.1. Research Method

This study employs a quantitative research design with a cross-sectional survey approach to examine the influence of e-wallet usage (X₁) and digital financial literacy (X₂) on freelancers' tax awareness (Y), as well as the mediating role of digital tax regulations (Z₁). The quantitative method was selected to enable systematic testing of hypotheses and to generate statistically valid generalizations regarding digital financial behavior in the freelance economy.

Although the conceptual framework initially adopted a path analysis structure, data were analyzed using multiple regression models that test both direct and indirect effects among variables. This analytical approach is consistent with prior digital finance studies that utilize regression-based mediation analysis to identify moderating or mediating influences within behavioral models [11, 13].

3.2. Population and Sample

The population of this study comprises freelance workers in Indonesia who actively engage in digital financial activities through e-wallet platforms. Freelancers are broadly defined to include self-employed individuals earning income through digital or independent work, such as graphic design,

tutoring, marketing, content creation, and related services.

The sampling process employed a combination of purposive and convenience sampling. The inclusion criteria required respondents to (1) have used e-wallets for at least six months, and (2) be engaged in freelance or independent digital work with measurable income transactions. The decision not to categorize freelancers by specific sectors was deliberate. Given the highly fragmented and heterogeneous nature of Indonesia's freelance market, applying occupational segmentation would have substantially reduced the attainable sample size. Maintaining a broader inclusion scope ensured that the target sample of 200 respondents was achieved while preserving the general representativeness of digital freelancers as a socio-economic group.

This inclusive approach aligns with previous studies that define freelancers as a unified cohort within digital economies, emphasizing behavioral rather than occupational diversity [3, 21].

3.3. Research Instruments

Data were collected using a structured questionnaire comprising four major constructs:

- E-Wallet Usage (X_1): Measured using five items assessing frequency, intensity, and purpose of e-wallet utilization in daily transactions.
- Digital Financial Literacy (X_2): Measured with six items evaluating understanding of digital financial tools, transaction security, and risk management.
- Digital Tax Regulations (Z_1): Measured with 5 items reflecting awareness of online tax systems, e-filing familiarity, and perception of regulatory clarity.
- Tax Awareness (Y): Measured with 6 items exploring respondents' understanding, attitudes, and compliance tendencies toward tax obligations.

All items were rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Measurement indicators were adapted from established instruments in previous financial literacy and tax compliance studies, with contextual adjustments for the Indonesian freelance setting.

Prior to data analysis, validity and reliability tests were performed using factor analysis and Cronbach's alpha to ensure the internal consistency of the items. All variables achieved reliability coefficients exceeding the 0.70 threshold, confirming satisfactory internal reliability.

3.4. Data Collection Techniques

Questionnaires were distributed online via social media platforms, freelancer communities, and professional digital networks. The use of online distribution was considered most appropriate given the digital nature of the target population. Data collection was conducted over two months. All responses were checked for completeness and accuracy before inclusion in the analysis.

3.5. Data Analysis Techniques

The collected data were analyzed using multiple linear regression with mediation testing to examine both the direct and indirect effects of the independent variables on the dependent variable through the mediator. Regression diagnostics were conducted to verify that all assumptions of linear regression were met, including normality, multicollinearity, heteroskedasticity, and autocorrelation.

The analytical model can be expressed as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 Z_1 + \varepsilon$$

where Y represents freelancers' tax awareness, X_1 denotes e-wallet usage, X_2 represents digital financial literacy, and Z_1 captures the mediating effect of digital tax regulations. All statistical analyses were performed using SPSS v26.0, with significance levels set at 0.05.

3.6. Ethical Considerations

Participation in this research was voluntary. Respondents were informed of the study's objectives and assured that all data would be treated confidentially and used solely for academic purposes. No

personally identifiable information was collected.

3.7. Hypothesis Test

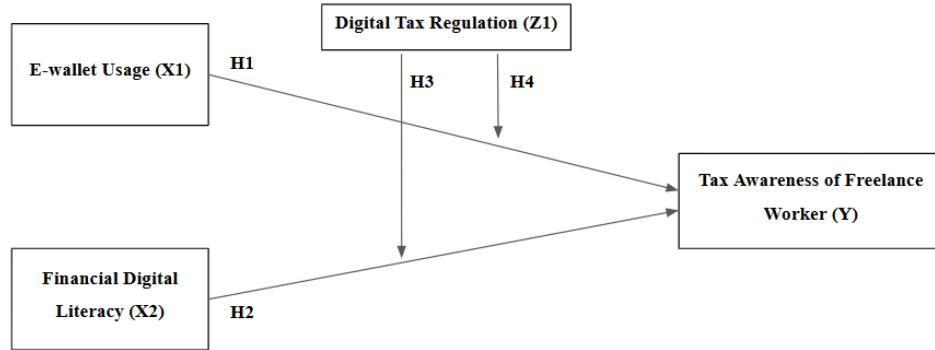


Figure 1.
Research Model.

This study examines the relationships among e-wallet usage, digital financial literacy, digital tax regulations, and the tax awareness of freelance workers. Hypothesis 1 (H1) proposes that e-wallet usage has a positive effect on freelancers' tax awareness ($X_1 \rightarrow Y$). As digital payment systems such as e-wallets facilitate transparent income tracking, they are expected to enhance freelancers' understanding of their tax obligations. Hypothesis 2 (H2) posits that higher levels of digital financial literacy increase tax awareness ($X_2 \rightarrow Y$), as financial literacy enables freelancers to manage their financial and tax responsibilities more effectively. Hypotheses 3 (H3) and 4 (H4) investigate the role of digital tax regulations (Z_1) as mediating variables in the relationships between e-wallet usage and digital financial literacy, respectively, and tax awareness. Digital tax regulations, by simplifying compliance and clarifying tax procedures, are expected to strengthen the positive effects of e-wallet usage and digital financial literacy on tax awareness. The mediation effects of digital tax regulations are therefore essential in evaluating the broader influence of digitalization and financial capability on tax compliance behavior among freelancers.

3.8. Data Analysis

The collected data were analyzed using path analysis to examine the direct and indirect relationships among the variables proposed in the hypotheses. Path analysis enables the testing of complex structural models by assessing the relationships between independent variables (X_1 and X_2), mediating variables (Z_1), and dependent variables (Y). Prior to conducting the path analysis, the validity and reliability of the measurement instruments were evaluated through factor analysis and Cronbach's alpha testing to ensure the accuracy and consistency of the data.

3.9. Classical Assumption Tests

Before conducting the path analysis, classical assumption tests were carried out to ensure that the basic assumptions of linear regression were not violated. These included tests for normality, multicollinearity, heteroskedasticity, and autocorrelation.

3.10. Regression Diagnostics

Prior to the regression analysis, several diagnostic tests were conducted to ensure that the model satisfies the classical linear regression assumptions. These include tests for normality, multicollinearity, and heteroskedasticity. The multicollinearity diagnostic was performed to identify any potential high intercorrelations among the independent variables. The results show that all predictors have Variance

Inflation Factor (VIF) values below 10 and Tolerance values above 0.10, indicating no multicollinearity issues. Accordingly, e-wallet usage and digital financial literacy were retained in the regression model, as they represent conceptually distinct constructs that exert independent influences on freelancers' tax awareness. This finding confirms that the inclusion of both variables enhances the model's explanatory power without redundancy.

3.11. Limitations of Methodology

This study acknowledges certain methodological limitations. First, the use of non-probability sampling (purposive and convenience) may limit generalizability to all freelancer populations. Second, self-reported data may introduce response bias, as participants could overstate their awareness or compliance levels. Third, the cross-sectional design restricts causal inference; longitudinal or mixed-method studies may provide richer insights into behavioral dynamics over time. Despite these limitations, the chosen method remains suitable for exploratory analysis in emerging digital finance contexts and offers valuable empirical contributions to understanding freelancers' tax awareness in Indonesia's growing digital economy.

4. Result and Analysis

This chapter presents the results of the quantitative data analysis conducted using multiple linear regression. This analytical approach was employed to examine the influence of e-wallet usage and digital financial literacy on freelancers' tax awareness, as well as to assess the moderating effect of tax regulations. Prior to performing the regression analysis, the collected questionnaire data were subjected to validity and reliability tests to ensure the accuracy and internal consistency of the research instruments. Additionally, normality and classical assumption tests were conducted to confirm the appropriateness of the data for regression analysis.

Table 1.
Model Summary.

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.911	0.830	0.828	5.347

The regression model is strong and significant, with an R value of 0.911 indicating a very strong positive correlation between e-wallet usage, digital financial literacy, and tax awareness. The R Square of 0.830 shows that 83% of the variation in tax awareness is explained by the two predictors, while the Adjusted R Square of 0.828 confirms model stability. The F value of 479.221 (Sig. = 0.000) indicates that the predictors jointly have a significant effect, and the Durbin-Watson value of 2.133 shows no autocorrelation. Overall, e-wallet usage and digital financial literacy strongly and significantly influence freelancers' tax awareness.

Table 2.
Characteristics of the Respondents.

Education Background	Senior High School	42%
	Diploma (Level 1-4)	32%
	Bachelor's Degree (S1)	26%
Working Period	<1 Year	32%
	1-3 Years	36%
	>3 Years	32%
Own a Tax Identification Number (NPWP)	Yes	78%
	No	22%

The reliability analysis conducted using Cronbach's Alpha produced coefficients of 0.98 and 0.975 for the independent variables (E-wallet Usage and Financial Digital Literacy), 0.97 for the dependent variable, and 0.981 for the moderating variable. All coefficients exceeded the recommended threshold

value of 0.6, thereby demonstrating a high level of internal consistency among the measurement instruments.

Table 3.

Multiple Regression Analysis.

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t.	Sig.	Collinearity Tolerance	Statistics VIF
		B	Std. Error					
1	(Constant)	4.178	1.773		2.356	0.019		
	X ₁	0.412	0.087	0.724	4.741	0.000	0.037	26.953
	X ₂	0.177	0.143	0.189	1.241	0.216	0.037	26.953

E-wallet usage ($B = 0.412$, $\beta = 0.724$, $\text{Sig.} = 0.000$) has a strong and significant positive effect on freelancers' tax awareness, while digital financial literacy ($B = 0.177$, $\beta = 0.189$, $\text{Sig.} = 0.216$) shows a positive but insignificant influence. The constant (4.178) reflects the baseline of tax awareness, and the high VIF (26.953) indicates multicollinearity between the predictors. Overall, e-wallet usage has a dominant and significant impact on freelancers' tax awareness.

Table 4.

Multiple Regression Analysis.

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.923	0.851	0.849	5.007

The model is very strong and significant, with an R value of 0.923 indicating a strong positive relationship. The R Square of 0.851 suggests that 85.1% of freelancers' tax awareness is explained by e-wallet usage, digital financial literacy, and digital tax regulations. The Adjusted R Square of 0.849 confirms the model's reliability, while the Sig. F change of 0.000 and the Durbin-Watson value of 2.071 demonstrate high significance and no autocorrelation. Overall, the three variables jointly have a strong, positive, and significant effect on freelancers' tax awareness.

Table 5.

Multiple Regression Analysis.

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t.	Sig.	Collinearity Tolerance	Statistics VIF
		B	Std. Error					
1	(Constant)	4.261	1.661		2.566	0.011		
	X ₁	0.391	0.081	0.688	4.805	0.000	0.037	27.013
	X ₂	0.000	0.137	0.000	0.001	0.999	0.035	28.601
	Z ₁	0.220	0.041	0.269	5.354	0.000	0.301	3.324

E-wallet usage ($B = 0.391$, $\beta = 0.688$, $\text{Sig.} = 0.000$) and digital tax regulations ($B = 0.220$, $\beta = 0.269$, $\text{Sig.} = 0.000$) significantly enhance freelancers' tax awareness, while digital financial literacy ($B = 0.000$, $\beta = 0.000$, $\text{Sig.} = 0.999$) has no effect. Despite high VIF values indicating multicollinearity, e-wallet usage and digital tax regulations remain the key factors driving freelancers' tax awareness.

Table 6.
Correlation Test.

Correlations		Y	X ₁	X ₂
Pearson Correlation	Y	1.000	0.910	0.900
	X ₁	0.910	1.000	0.981
	X ₂	0.900	0.981	1.000
Sig. (1-tailed)	Y	.	0.000	0.000
	X ₁	0.000	.	0.000
	X ₂	0.000	0.000	.
N	Y	200	200	200
	X ₁	200	200	200
	X ₂	200	200	200
Correlations		Y	X ₁	X ₂
Pearson Correlation	Y	1.000	0.910	0.900
	X ₁	0.910	1.000	0.981
	X ₂	0.900	0.981	1.000
Sig. (1-tailed)	Z ₁	0.837	0.825	0.836
	Y	.	0.000	0.000
	X ₁	0.000	.	0.000
N	X ₂	0.000	0.000	.
	Z ₁	0.000	0.000	.
	Y	200	200	200
N	X ₁	200	200	200
	X ₂	200	200	200
	Z ₁	200	200	200

Without moderation, e-wallet usage ($r = 0.910$) and digital financial literacy ($r = 0.900$) both show very strong, significant positive correlations with tax awareness, and are highly correlated with each other ($r = 0.981$). With digital tax regulations ($r = 0.837$) added as a moderating variable, all correlations remain strong and significant, indicating that e-wallet usage, digital financial literacy, and digital tax regulations are positively linked to freelancers' tax awareness and strengthen the model's overall relationships.

Overall, the statistical results confirm that e-wallet usage and digital financial literacy collectively explain a substantial proportion of freelancers' tax awareness, with e-wallet usage exerting the most dominant and significant influence. However, the non-significant effect of digital financial literacy and the strong moderating role of digital tax regulations warrant deeper theoretical interpretation. Therefore, the following section discusses these findings in relation to existing theories and prior research.

4.1. Theoretical Implications

This research extends existing models of technology adoption and tax compliance by showing how digital regulation moderates the impact of e-wallet usage and financial literacy. It contributes to fintech and behavioral tax literature by emphasizing that digital engagement, not only knowledge, drives compliance intention among freelancers.

4.2. Practical Implications

Policymakers should link e-wallet systems with tax platforms to simplify compliance processes. Financial institutions can provide in-app tax education to enhance awareness. Training programs should emphasize hands-on digital use, not just theoretical literacy, to make freelancers more responsive to tax obligations.

5. Discussion

The results show that e-wallet usage has a strong and significant effect on freelancers' tax awareness, while digital financial literacy is positive but insignificant. The moderating role of digital tax regulation enhances the model's explanatory power, confirming the importance of policy infrastructure in shaping digital compliance behavior.

Consistent with the Technology Acceptance Model [24] and UTAUT [25], the significant β value of e-wallet usage indicates that perceived usefulness and ease of use drive behavioral adoption. Frequent e-wallet use familiarizes freelancers with transparent, traceable transactions, fostering accountability and tax awareness. In contrast, the insignificance of digital financial literacy highlights that knowledge alone is insufficient without active engagement through digital tools.

These findings align with prior studies, Alm [27] and Gosal and Nainggolan [13], but diverge from earlier evidence that identified digital financial literacy as a significant determinant of financial well-being [19]. The discrepancy suggests that for freelancers, behavioral change depends more on system integration than on conceptual understanding. The moderating effect of digital tax regulation supports this perspective, emphasizing that digital transformation policies enhance voluntary compliance by linking financial and tax systems.

Theoretically, this study extends TAM by demonstrating that digital regulation moderates behavioral outcomes in fintech ecosystems. Practically, it implies that improving financial literacy must go hand in hand with accessible digital tax systems to translate knowledge into compliant action. The gap between understanding and behavior underscores the need for experiential learning through digital platforms rather than solely cognitive education.

6. Conclusion

The findings of this study reveal that e-wallet usage and digital financial literacy collectively exert a strong and significant influence on freelancers' tax awareness. Among the two, e-wallet usage demonstrates the most dominant positive effect, underscoring the pivotal role of digital payment platforms in fostering financial transparency, transaction traceability, and responsible tax behavior. As freelancers increasingly integrate e-wallets into their daily financial activities, they become more familiar with formalized financial systems that promote accountability and accurate recordkeeping, key components of effective tax awareness and compliance.

Conversely, while digital financial literacy shows a positive association with tax awareness, its direct effect is not statistically significant. This suggests that conceptual knowledge alone is insufficient to drive behavioral change in tax compliance. Freelancers may understand digital financial principles but fail to apply them without consistent interaction with digital tools. Thus, the study highlights the importance of experiential engagement, where financial literacy must be reinforced through the practical use of digital platforms such as e-wallets and digital accounting applications to translate knowledge into compliant actions.

The introduction of digital tax regulations as a moderating variable substantially enhances the model's explanatory power, indicating that policy frameworks play a crucial enabling role. The presence of clear, technology-driven tax systems amplifies the positive influence of both e-wallet usage and financial literacy by creating an environment conducive to compliance. This finding demonstrates that well-designed digital tax policies, such as online tax filing systems, automated tax reporting, and data integration with financial platforms, can significantly strengthen the link between fintech adoption and tax awareness among freelancers.

Overall, this study underscores the synergistic importance of combining digital technology adoption, financial literacy development, and supportive regulatory frameworks to foster tax compliance in the digital era. Theoretically, it contributes to the growing body of literature on digital financial behavior by integrating perspectives from technology adoption, financial education, and tax compliance within a single analytical model. This study enriches the emerging body of digital tax compliance literature by empirically confirming the moderating role of digital tax regulation within fintech

ecosystems.

Practically, the results provide actionable insights for policymakers, tax authorities, and financial institutions to design interventions that promote both digital engagement and fiscal responsibility. By fostering a comprehensive ecosystem that encourages technological participation, financial education, and regulatory accessibility, stakeholders can collectively cultivate a more transparent and compliant freelance economy. Ultimately, these insights emphasize the transformative role of financial technology not only in shaping individual taxpayer behavior but also in advancing sustainable fiscal governance and inclusive digital economic growth.

6.1. Limitations and Future Research

This study used non-probability sampling, limiting generalization. Future research could use larger or more diverse samples and longitudinal designs to capture behavior over time. Additional factors, such as trust in government or perceived fairness, may also be explored to deepen understanding of digital tax compliance.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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References

- [1] M. Javaid, A. Haleem, R. P. Singh, and A. K. Sinha, "Digital economy to improve the culture of industry 4.0: A study on features, implementation and challenges," *Green Technologies and Sustainability*, vol. 2, no. 2, p. 100083, 2024. <https://doi.org/10.1016/j.grets.2024.100083>
- [2] V. D. Dinh, "Digital economy and the electronic payment behavior: An empirical analysis," *Transnational Corporations Review*, vol. 16, no. 4, p. 200078, 2024. <https://doi.org/10.1016/j.tncr.2024.200078>
- [3] E. M. Struckell, P. C. Patel, D. Ojha, and P. Oghazi, "Financial literacy and self employment—The moderating effect of gender and race," *Journal of Business Research*, vol. 139, pp. 639-653, 2022. <https://doi.org/10.1016/j.jbusres.2021.10.003>
- [4] M. Yang, A. A. Mamun, M. Mohiuddin, N. C. Nawi, and N. R. Zainol, "Cashless transactions: A study on intention and adoption of e-wallets," *Sustainability*, vol. 13, no. 2, p. 831, 2021. <https://doi.org/10.3390/su13020831>
- [5] N. Imjai, S. Aujirapongpan, and Z. Yaacob, "Impact of logical thinking skills and digital literacy on Thailand's generation Z accounting students' internship effectiveness: Role of self-learning capability," *International Journal of Educational Research Open*, vol. 6, p. 100329, 2024. <https://doi.org/10.1016/j.ijedro.2024.100329>
- [6] Y. Asmayawati and E. Yetti, "Pedagogical innovation and curricular adaptation in enhancing digital literacy: A local wisdom approach for sustainable development in Indonesia context," *Journal of Open Innovation: Technology, Market, and Complexity*, vol. 10, no. 1, p. 100233, 2024. <https://doi.org/10.1016/j.joitmc.2024.100233>
- [7] M. Yadav and P. Banerji, "Systematic literature review on digital financial literacy," *SN Business & Economics*, vol. 4, p. 142, 2024. <https://doi.org/10.1007/s43546-024-00738-y>
- [8] R. Bhaskar, A. I. Hunjra, S. Bansal, and D. K. Pandey, "Central bank digital currencies: Agendas for future research," *Research in International Business and Finance*, vol. 62, p. 101737, 2022. <https://doi.org/10.1016/j.ribaf.2022.101737>
- [9] M. Barroso and J. Laborda, "Digital transformation and the emergence of the Fintech sector: Systematic literature review," *Digital Business*, vol. 2, no. 2, p. 100028, 2022. <https://doi.org/10.1016/j.digbus.2022.100028>
- [10] E. R. Fitrianingsih and B. A. Fianto, "Factors affecting recommendation to use of sharia e-wallet in Indonesia and Malaysia," *Asian Journal of Islamic Management*, vol. 4, no. 1, pp. 1-14, 2022. <https://doi.org/10.20885/ajim.vol4.iss1.art1>
- [11] A. Daragmeh, A. Saleem, J. Bárczi, and J. Sági, "Drivers of post-adoption of e-wallet among academics in Palestine: An extension of the expectation confirmation model," *Frontiers in Psychology*, vol. 13, p. 984931, 2022. <https://doi.org/10.3389/fpsyg.2022.984931>

[12] G. Prakasha, J. Shruti, J. Jestic, S. Mathai, and S. Thirumalesha, "The influence of social aspects on the saving behavior of freelance students in relation to financial literacy and self-control," *Kontakt*, vol. 25, no. 4, p. 298, 2023. <https://doi.org/10.32725/kont.2023.042>

[13] G. G. Gosal and R. Nainggolan, "The influence of digital financial literacy on Indonesian SMEs' financial behavior and financial well-being," *International Journal of Professional Business Review*, vol. 8, no. 12, p. 11, 2023. <https://doi.org/10.26668/businessreview/2023.v8i12.4164>

[14] N. A. Zargar, B. Niroula, N. Fatimah, A. A. K. Arif, U. Ali, and S. K. Singh, "Towards a digital revolution: Investigating the impact of GDP, tax collection, and interest rates on cashless economy in India," *Journal of Population and Development*, vol. 4, no. 1, pp. 91-111, 2023. <https://doi.org/10.3126/jpd.v4i1.64243>

[15] A. Fratila, M. Păunescu, E.-M. Nichita, and P. Lazăr, "Digitalization of Romanian public administration: A panel data analysis at regional level," *Journal of Business Economics and Management*, vol. 24, no. 1, pp. 74-92, 2023. <https://doi.org/10.3846/jbem.2023.18574>

[16] V. I. Bratcev and A. M. Simachkova, "Digital transformation of management resources for a comfortable tax environment," *SHS Web of Conferences*, vol. 125, p. 04001, 2021. <https://doi.org/10.1051/shsconf/202112504001>

[17] P. Kemuning, Y. Djaelani, and D. Y. A. S. Fala, "The influence of the implementation of E-filing and e-billing on individual taxpayer compliance with tax socialization and understanding of the internet as moderating variables," *Economics, Business, Accounting & Society Review*, vol. 1, no. 1, pp. 27-36, 2022. <https://doi.org/10.55980/ebasr.v1i1.2>

[18] T. Kounadeas, "The effectiveness of digital payments in tackling tax evasion in Greece," *International Journal of Economics and Business Administration*, vol. 11, no. 2, pp. 3-21, 2023. <https://doi.org/10.35808/ijeba/805>

[19] A. Aulia, R. Rahayu, and A. Bahari, "The influence of digital financial literacy on financial well-being with financial behavior as a moderation variable: Communities in West Sumatra," *Jurnal Akuntansi*, vol. 13, no. 2, pp. 141-149, 2023. <https://doi.org/10.33369/jakuntansi.13.2.141-149>

[20] H. Halimatusyadiah, N. Nikmah, I. Coryanata, T. Pratiwi, I. Wijayanti, and D. Emilia, "The effect of paper title the effect of tax compliance, financial inclusion, financial literacy, and the use of digital paymentsa on SME performance," *Journal of Economics Finance and Management Studies*, vol. 8, no. 01, pp. 424-434, 2025. <https://doi.org/10.47191/jefms/v8-i1-39>

[21] R. Rahayu, S. Ali, A. Aulia, and R. Hidayah, "The current digital financial literacy and financial behavior in Indonesian millennial generation," *Journal of Accounting and Investment*, vol. 23, no. 1, pp. 78-94, 2022. <https://doi.org/10.18196/jai.v23i1.13205>

[22] A. Nurkholik, "Trends in digital financial literacy research on the Indonesian millennial generation: A systematic literature review," *RSF Conference Series: Business, Management and Social Sciences*, vol. 3, no. 3, pp. 253-263, 2023. <https://doi.org/10.31098/bmss.v3i3.670>

[23] E. Indriyanto, "The mediating role of tax awareness: Understanding and sanctions on taxpayer compliance," *Atestasi: Jurnal Ilmiah Akuntansi*, vol. 4, no. 2, pp. 430-445, 2021. <https://doi.org/10.57178/atestasi.v4i2.711>

[24] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Quarterly*, vol. 13, no. 3, pp. 319-340, 1989. <https://doi.org/10.2307/249008>

[25] V. Venkatesh and H. Bala, "Technology acceptance model 3 and a research agenda on interventions," *Decision sciences*, vol. 39, no. 2, pp. 273-315, 2008. <https://doi.org/10.1111/j.1540-5915.2008.00192.x>

[26] B. S. Frey and L. P. Feld, "Deterrence and morale in taxation: An empirical analysis," *Available at SSRN 341380*, 2002. <https://doi.org/10.2139/ssrn.341380>

[27] J. Alm, "What motivates tax compliance?," *Journal of Economic Surveys*, vol. 33, no. 2, pp. 353-388, 2019. <https://doi.org/10.1111/joes.12272>

[28] M. G. Allingham and A. Sandmo, "Income tax evasion: A theoretical analysis," *Journal of Public Economics*, vol. 1, no. 3-4, pp. 323-338, 1972. [https://doi.org/10.1016/0047-2727\(72\)90010-2](https://doi.org/10.1016/0047-2727(72)90010-2)

[29] K. S. Mbise and L. Baseka, "The impact of the digital tax administration system on compliance among SMEs," *The Journal of Informatics*, vol. 2, no. 1, pp. 70-82, 2023. <https://doi.org/10.59645/tji.v2i1.94>

[30] R. B. Cialdini, *Influence: Science and practice*. Boston, MA: Allyn & Bacon, 2001.

[31] E. Kirchler and V. Braithwaite, *The economic psychology of tax behaviour*. Cambridge, UK: Cambridge University Press, 2007.