

## Determinants of the Success of E-Faktur Tax Application Implementation: A Quantitative Study

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**Abstract:** This study aims to analyse the factors that influence the success of e-Faktur application implementation, such as the role of perceived usefulness, perceived ease, and perceived complexity in influencing the level of acceptance and use of digital taxation systems among taxpayers at the Tax Counselling and Consultation Service Office (KP2KP) in Sungguminasa. This study uses a survey method. Data were collected through a questionnaire distributed to 330 respondents who are users of the e-Faktur application and then analysed using SEM-PLS to test the influence of the three independent variables on the dependent variable. The results indicate that perceived usefulness and ease of use positively and significantly influence the success of e-Faktur application implementation. Perceived complexity has a negative and significant influence on the use of digital tax systems. This study contributes to the development of the Technology Acceptance Model theory.

**Keywords:** Perceived Usefulness; Perceived Ease; Perceived Complexity; Success of E-Invoice Implementation; Technology Acceptance Model (TAM).

**Abstrak:** Penelitian ini bertujuan untuk menganalisis faktor-faktor yang memengaruhi kesuksesan implementasi aplikasi e-Faktur seperti peran persepsi kegunaan, persepsi kemudahan, dan persepsi kerumitan dalam memengaruhi tingkat penerimaan dan penggunaan sistem perpajakan digital pada Pengusaha Kena Pajak di Kantor Pelayanan Penyuluhan dan Konsultasi Perpajakan (KP2KP) Sungguminasa. Penelitian ini menggunakan metode survei. Data dikumpulkan melalui kuesioner yang disebarkan kepada 330 responden pengguna aplikasi e-Faktur kemudian dianalisis menggunakan SEM-PLS untuk menguji pengaruh dari ketiga variabel independen terhadap variabel dependen. Hasil penelitian menunjukkan bahwa persepsi kegunaan dan persepsi kemudahan berpengaruh positif dan signifikan terhadap kesuksesan implementasi aplikasi e-Faktur. Persepsi kerumitan berpengaruh negatif dan signifikan terhadap penggunaan sistem perpajakan digital. Penelitian ini memberikan kontribusi terhadap pengembangan teori Model Penerimaan Teknologi.

**Kata Kunci:** Persepsi Kegunaan; Persepsi Kemudahan; Persepsi Kerumitan; Kesuksesan Implementasi E-Faktur; Technology Acceptance Model (TAM).

## INTRODUCTION

As a developing country, Indonesia possesses significant economic potential, which is reflected in the diversity of industries across various sectors at both the local and international levels and substantial foreign investment. Along with the development of the business sector, business actors must also comply with tax obligations, ranging from business registration and tax debt calculation to tax reporting and the issuance of tax invoices. A tax invoice is a document issued by a Taxable Business Entity (PKP) as evidence of tax collection for the delivery of Taxable Goods (BKP) or Taxable Services (JKP), as stipulated in Article 1 of the Value-Added Tax Law No. 42 of 2009 and the



Directorate General of Taxes Regulation No. PER-31/PJ/2017 (Sirait, 2021). However, in practice, the regulations have not been fully implemented for VAT reporting and collection by PKP. There is a phenomenon of fictitious tax invoices being issued by some PKP, which causes losses to the state, prompting the Directorate General of Taxes (DJP) to reform the VAT administration system as outlined in the DJP roadmap from 2011 to 2015. One of the forms of this reform is the launch of e-Faktur, an electronic tax invoice created through the DJP system and integrated with the reporting of the Monthly Tax Return (SPT Masa). E-Faktur enables automatic validation of invoice serial numbers and facilitates oversight of the consistency between output tax and input tax. On the other hand, e-Faktur is also expected to strengthen local tax governance through payment transparency and promote the optimisation of Local Original Revenue (PAD) through an efficient and integrated system.

Previous studies have indicated that several key factors determine the success of e-invoicing implementation. (Gunawan, 2021) states that perceived usefulness and ease of use positively influence implementation success, while complexity has a negative impact. Frameworks such as the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB) are also relevant in explaining taxpayer behaviour in adopting technology, where perceived usefulness indirectly influences users' intentions to use tax applications (Safitra, 2021). Furthermore, factors such as perceived legitimacy, trust, norms, attitudes, and behavioural intentions also influence the adoption of this system. However, studies on similar e-government systems, such as e-Filing, indicate that their implementation has not fully met the success criteria based on DeLone & McLean's Information System Success Model, emphasising the importance of continuous evaluation and improvement (Ariyanto et al., 2022). Recent studies also highlight that information quality, system quality, and usage intent significantly influence the net benefits of the e-Filing system (Marfiana & Kusumawati, 2024). Social factors, tax understanding, and IT readiness also contribute to adopting this system (Triwibowo et al., 2024). On the other hand, various challenges such as regulatory limitations, inadequate facilities, and insufficient human resources remain obstacles to the effectiveness of implementation (Septian & Kriswibowo, 2024). Technical obstacles such as registration difficulties, slow verification, and login problems are still encountered in using this system (Hasbiyah, 2024); therefore, it is necessary to improve staff competence and public understanding of the technical aspects (Hasbiyah, 2024).

Although previous studies have discussed implementing digital taxation systems, such as e-filing and e-faktur, most research remains conceptual, focusing on general aspects of technology adoption, including perceived usefulness and ease of use. The theoretical framework used is primarily based on the Technology Acceptance Model (TAM) and Theory of Planned Behaviour (TPB) (Gunawan, 2021; Safitra, 2021), without integrating a more comprehensive evaluative framework such as DeLone & McLean's Information System Success Model, which includes dimensions of system quality, information quality, and net benefits. On the other hand, research conducted by (Aminah & Saksono, 2021) shows that the implementation of e-government systems has not fully met all the criteria for information system success, indicating a need to reassess the implementation strategy and design of the e-Faktur system. Furthermore, empirical studies that directly test the influence of factors such as system complexity, IT infrastructure readiness, user trust, and subjective norms on the success of e-Faktur are still minimal. Some recent studies, such as those conducted by (Marfiana & Kusumawati, 2024) and



(Triwibowo et al., 2024), have evaluated the technical and social aspects of the e-Filing system, but have not specifically explored the unique dynamics faced in the implementation of e-Faktur.

This study offers novelty in context and empirical approach, specifically evaluating the success of e-Faktur implementation among Taxable Entrepreneurs in Indonesia through a quantitative approach. Unlike previous studies that have mostly discussed e-government systems in general or focused on e-Filing, this study directly measures the factors determining the success of the e-Faktur system, including perceived usefulness, ease of use, complexity, user trust, and technological infrastructure readiness. Additionally, based on actual data, this study makes practical contributions by explicitly identifying the challenges and opportunities faced in implementing e-Faktur in the field. Therefore, this study aims to empirically identify and analyse the determinants of the success of e-Faktur application implementation, providing data-driven insights to tax authorities for formulating strategies that improve the system and enhance taxpayer compliance sustainably.

## **THEORETICAL REVIEW**

**Technology Acceptance Model (TAM).** TAM is a theoretical model (Davis, 1989) developed to explain the extent to which a person is willing to accept and use information technology. This model emphasises two primary constructs, perceived usefulness and ease of use, which are believed to be the main determinants of an individual's behavioural intention to use a technology system. Perceived usefulness is the extent to which an individual believes using a particular technology can improve task performance. On the other hand, perceived ease refers to the belief that using the technology does not require much effort. In electronic taxation systems like e-Faktur, TAM is highly relevant for understanding how Taxable Entrepreneurs (PKP) form perceptions and attitudes toward the system. (Ariyanto et al., 2022) affirm that the two main factors in TAM significantly influence users' decisions to adopt online systems, particularly in the post-pandemic context of higher education. On the other hand, (Noor, 2024), through his systematic review, also shows that the TAM model remains the dominant approach in explaining the adoption of new technology, emphasising how users assess the efficiency, effectiveness, and ease of use of the system. Therefore, in the context of taxation, understanding these two constructs is crucial for assessing the extent to which e-invoicing can optimally adopt by PKP in Indonesia.

The Technology Acceptance Model (TAM) application is not limited to education or online services. However, it has also been widely used to evaluate various forms of technology in public services and the healthcare sector. (Lee et al., 2025) Their study on adopting artificial intelligence in the healthcare sector in the United Arab Emirates showed that perceived usefulness significantly influences healthcare workers' willingness to accept new systems. Technology perceived as valuable and capable of improving work efficiency is more easily accepted by users, even in complex environments such as medical services. In another context, (Zoccarato et al., 2024) found that ease of use is a key factor driving early adopters to adopt digital glucose monitoring systems. When users find a system easy to understand and use, they are more likely to use and utilise it optimally. A similar finding was reported by (Al-Adwan et al., 2023) in their study on the adoption of metaverse



technology in higher education. They emphasised that perceptions of ease and usefulness play a central role in shaping the intention to use immersive technology-based systems. Based on these findings, the TAM model remains relevant in analysing technology adoption behaviour across various sectors. In the context of taxation, such as e-Faktur, understanding user perceptions is crucial in designing functional, widely accepted, and used systems.

**Perceived usefulness.** Perceived usefulness is widely recognised as one of the most critical constructs in understanding individual acceptance and use of technology. It refers to an individual's belief that using a particular technology will enhance task performance (Sutisna & Fachril, 2023). Davis introduced this concept within the Technology Acceptance Model (TAM) and has since become foundational in many empirical studies on information systems and technology adoption. Perceived usefulness captures not only the tangible benefits that users expect, such as time-saving and task efficiency, but also reflects their broader expectations regarding how the technology can contribute to their professional effectiveness. In practical terms, this belief often translates into a greater willingness to explore, adopt, and continuously engage with technological systems. (García et al., 2024) Illustrated this point in their study on online learning during the post-pandemic era. They found that students who perceived online learning systems as beneficial demonstrated a more substantial commitment to using them consistently, highlighting that belief in utility drives long-term usage. In the context of tax administration, particularly with the e-Faktur system in Indonesia, perceived usefulness becomes highly relevant. The system is specifically designed to automate and simplify the process of issuing, recording, and reporting tax invoices, which previously required substantial manual effort. When Taxable Entrepreneurs (PKP) perceive that e-Faktur improves accuracy and reduces administrative burdens, their inclination to adopt and continue using the system increases significantly. This reinforces that perceived usefulness is vital to successful technology implementation, especially in bureaucratic or regulatory environments.

In addition to its functional relevance, perceived usefulness is strategically important in assessing user readiness and the likelihood of long-term technology adoption. It is a predictive indicator for how individuals assess whether a new system aligns with their needs, supports their goals, and minimises friction in task execution. For developers and policymakers, understanding perceived usefulness is critical for designing and improving systems that are technically sound and widely accepted by users. When users evaluate a technology as applicable, it often leads to enhanced trust in the system, increased motivation to learn and adapt, and a greater sense of empowerment in completing tasks efficiently. In the case of the e-Faktur system, this means that the more PKP recognise the advantages of using digital tax applications—such as real-time validation of tax invoice serial numbers, automated reconciliation between output and input tax, and ease of archiving—the more they are likely to integrate the system into their regular business processes. The application becomes more than a compliance tool; it transforms into a value-adding resource that supports operational excellence. Furthermore, this perception can influence individual behaviour and organisational routines, especially for SMEs that lack dedicated tax or IT personnel.

Perceived usefulness has also been validated across multiple sectors and disciplines, demonstrating its broad applicability and importance in technology acceptance literature. A systematic review by (Granić & Marangunić, 2019) found that perceived usefulness was





the most frequently investigated and consistently significant variable in studies assessing technology adoption across education, business, and government sectors. They concluded users are likelier to embrace new technologies when they believe the systems offer direct, tangible benefits. This belief reduces resistance and fosters smoother implementation. For instance, in the healthcare sector, (Zoccarato et al., 2024) discovered that patients were more willing to adopt continuous glucose monitoring technologies when they perceived those systems as beneficial to their health autonomy. The findings suggest that even in sensitive or high-stakes environments, usefulness perceptions outweigh technical complexity if users recognise personal or operational gains. Similarly, in the education sector, (Meng et al., 2024) found that students' intention to adopt metaverse-based platforms depended heavily on their belief that the technology added meaningful value to their learning experience. In the context of renewable energy, (Billanes & Enevoldsen, 2021) highlighted perceived usefulness as one of the top ten factors influencing the adoption of alternative energy solutions, reflecting how utility beliefs extend beyond digital tools to physical technologies.

**Perceived ease of use.** Perceived ease of use is an individual's belief that using a technology system will not involve significant physical or mental effort and will be relatively simple to learn and operate (Mandasari, 2024). This concept is one of the foundational constructs in the Technology Acceptance Model (TAM), first introduced by Davis, and has been extensively validated in subsequent technology adoption research. It plays a critical role in shaping users' initial impressions and interactions with a system, often determining whether they proceed to engage further or abandon usage altogether. The relevance of this factor is extreme in environments where the system is introduced to users with varying levels of technological proficiency. In a study by (García et al., 2024), the significance of perceived ease of use was highlighted in a post-pandemic university setting, where students expressed greater intent to continue utilising online learning platforms when they found them easy to use. This underscores that when users do not perceive technological systems as a burden or overly complex, they are far more likely to integrate them into their routine activities. Similarly, through developing the Q-TAM model, (Ramkumar et al., 2019) found that ease of use and system quality led to higher acceptance levels for online learning systems.

The significance of perceived ease of use extends across various domains and user populations, demonstrating its universal applicability in influencing technology adoption. (Legramante et al., 2023) A study integrating TAM with an information quality framework was conducted, and it was found that ease in accessing system features, navigating the interface, and understanding operational workflows were directly linked to increased user satisfaction and sustained usage. This evidence suggests that even if a system is technically robust and functionally rich, it may fail to be adopted if it lacks intuitive usability. Technology developers must prioritise user-centred design, emphasising accessibility, simplicity, and technical sophistication. (Jan et al., 2024) This conclusion was supported by a cross-cultural study comparing TAM applications in Spain and China. Although the intensity of influence varied slightly between cultural groups, perceived ease of use remained a significant predictor of acceptance in both countries. This consistency highlights ease of use as a universal design imperative, transcending geographic, cultural, and demographic boundaries. Similarly, (Şahin & Yıldız, 2024) found that students with special needs demonstrated greater commitment to mobile learning systems when they found them easy to use. Their findings emphasised that usability fosters acceptance and



inclusivity, enabling diverse populations to benefit from technological innovations. In digital public services like taxation, where user groups are highly heterogeneous, ease of use becomes even more critical. Systems that minimise friction and support diverse capabilities are more likely to achieve widespread acceptance and utilisation.

In the specific context of taxation systems such as e-Faktur, the concept of perceived ease of use holds particular importance due to the diverse background of users, many of whom may have limited technological proficiency or experience with digital government platforms. The e-Faktur system is utilised by a broad spectrum of Taxable Entrepreneurs (PKP), ranging from tech-savvy business professionals to small enterprise owners with limited digital exposure. Given this diversity, the perception that the system is easy to use—characterised by straightforward navigation, intuitive menus, responsive input forms, and clear guidance—is fundamental to its successful implementation. When designed with user-friendly features and adequate support mechanisms, such as tutorials, FAQs, and help desks, e-Faktur can reduce user anxiety and increase operational confidence. As observed in previous studies, systems perceived as easy to operate are more likely to be accepted, even among reluctant or less-experienced users. (García et al., 2024), (Ramkumar et al., 2019), and (Şahin & Yıldız, 2024) consistently stress that ease of use contributes significantly to long-term user satisfaction and ongoing system utilisation. By creating a system that feels accessible from the first interaction, developers of e-Faktur not only improve taxpayer compliance but also enhance the overall efficiency of tax administration. This is crucial in building trust in digital taxation, particularly in developing countries with high scepticism toward government technology.

**Perceived complexity.** Perceived complexity refers to an individual's perception of how complex a technology is to understand, learn, and use when performing specific tasks. This concept is especially crucial in technology adoption, as high levels of perceived complexity often lead to rejection or hesitation in using a system. Users who believe a technology is overly complicated or mentally demanding may avoid it regardless of its potential benefits. As highlighted by (Kaine & Wright, 2022), the adoption rate of a system tends to decline when users perceive it as highly complex, unless those complexities can be effectively reduced through thoughtful system design or appropriate user support mechanisms. This finding underscores the fact that technology implementation success does not rely solely on the utility or functional benefits of the system; instead, it also depends on the user's ability to access, comprehend, and operate the system efficiently. In this context, complexity becomes not just a technical obstacle but also a psychological barrier. (Hartono, 2007) noted that among many business actors, especially those with lower levels of digital literacy, perceived complexity significantly hinders the broader digitalisation process. When users lack technical understanding, they are more likely to feel intimidated or overwhelmed by new systems, directly affecting their confidence and willingness to engage with technology.

The effects of perceived complexity are not uniform across all user groups and contexts; instead, they are shaped by cultural, organisational, and operational environments. For instance, (Bandinelli et al., 2023) emphasise that while complexity generally poses a barrier to technology adoption, the magnitude of this effect varies depending on a society's openness to innovation. In progressive or technology-embracing cultures, users may be more willing to invest time in learning a complex system, provided that the long-term benefits are evident. Conversely, in more conservative or risk-averse environments, even minor technological challenges can result in high resistance to



adoption. System designers and policymakers must consider the socio-cultural context when introducing new digital platforms.

Furthermore, (Pappas et al., 2021) provide insight into how operational realities within organisations—especially small and medium-sized enterprises—can intensify perceptions of complexity. Their research on IoT implementation revealed that complicated decision-making structures and complex system integration are among the leading causes of low adoption rates. Technologies that require extensive manual input or ongoing technical oversight tend to discourage use, particularly in resource-constrained environments. When employees or organisational leaders perceive that a system will disrupt existing workflows or require frequent troubleshooting, they are less inclined to adopt it.

In addition to structural and cultural factors, perceived complexity is further compounded by system-specific design elements, particularly in emerging technologies. For instance, (Al-Kfairy et al., 2024) investigated complexity in the context of metaverse technology adoption and found that interface design and the requirement for advanced hardware played a significant role in shaping user intention. Systems that require high-performance devices or technical prerequisites are seen as inaccessible, especially by general users or small businesses. This perception directly impacts adoption rates, even when the system's functionality is promising. Similar concerns arise in public sector applications, such as implementing digital taxation platforms like e-Faktur. The user base for such systems is highly diverse, ranging from tech-savvy entrepreneurs to small business owners with limited digital experience. When the system is not intuitively designed, with complicated workflows, poorly labelled functions, or insufficient support, users will likely view it as daunting. This negative perception can lead to low engagement, increased error rates, and even avoidance of compliance altogether. Therefore, as the studies consistently suggest, user experience should be a central consideration in system development. Designers must prioritise simplicity, responsiveness, and guided learning to reduce the perception of complexity. Systems like e-Faktur must be functionally effective and accessible to users of varying backgrounds. Without this focus, even well-intentioned digital transformations risk being underutilised or outright rejected by their intended users.

## METHODS

This study employs a quantitative approach with an explanatory research design, aiming to investigate the influence of several independent variables on dependent variables, both partially and simultaneously. A quantitative approach was chosen because this study relies on collecting and analysing numerical data to test previously formulated hypotheses. The primary focus of this design is to explain the cause-and-effect relationships among variables and measure the extent of their influence through structured and standardised statistical procedures (Lim, 2024). The population in this study comprises all Taxable Entrepreneurs (PKP) registered at the Tax Counselling and Consultation Service Office (KP2KP) in Sungguminasa in 2024, totalling 2,678 PKP. The research sample was determined using a non-probability sampling approach, specifically a purposive sampling technique. The sample used in this study consists of Taxable Entrepreneurs who directly visited and sought tax consultation or services at the KP2KP Sungguminasa during the data collection period, totalling 330 respondents. This sample



selection was conducted to ensure respondents had direct experience using the e-Faktur application.

The data analysis technique used in this study employed the Partial Least Squares Structural Equation Modelling (PLS-SEM) approach, as this method is suitable for testing research models with high complexity, relatively small to medium sample sizes, and does not require the assumption of normal multivariate data distribution (Hair et al., 2022). The data analysis process was conducted in two main stages: outer model testing and inner model testing. In the outer model testing stage, convergent validity was evaluated by considering the Average Variance Extracted (AVE) value, which must be greater than 0.500. Construct reliability is evaluated by calculating the Composite Reliability (CR) value, requiring the CR value to be at least 0.700. Discriminant validity testing is conducted using the Fornell-Larcker criteria and the Heterotrait-Monotrait Ratio (HTMT), which ensures that each construct in the model is distinct and does not overlap with other constructs.

The analysis proceeds to the inner model testing stage after the measurement model meets the validity and reliability criteria. At this stage, the relationships between constructs are tested by evaluating the path coefficient values to determine the direction and magnitude of the influence between the latent variables being studied. Next, the R-squared ( $R^2$ ) value is calculated to determine the proportion of variance in the dependent variable that the independent variables in the model can explain. The significance of the influence between variables is tested by considering the t-statistic and p-value obtained through the bootstrapping procedure.

## RESULTS

**Outer Model.** The evaluation of the outer model aims to ensure that the latent constructs in the model are measured validly and reliably by their indicators. According to (Hair et al., 2022), the quality of the measurement model in the Partial Least Squares Structural Equation Modelling (PLS-SEM) approach can be assessed based on three main criteria. First, the outer loading value of each indicator must be more than 0.700 to indicate a substantial contribution to its construct. Second, discriminant validity is met if the square root of the Average Variance Extracted (AVE) of each construct is higher than the correlation between other constructs (Fornell-Larcker criterion). Third, convergent validity is achieved if AVE is more than 0.500, while construct reliability is indicated by a Composite Reliability (CR) value more than 0.700.

The outer loading results are presented in **Table 1**. All indicators have loading values above 0.700, indicating they adequately represent the construct. For example, indicator IK3 has a loading value of 0.864 for the Success Implementation (IK) construct, indicating a powerful representation. Meanwhile, indicator PKM5 (0.744) for the Ease of Perception construct (PKM) shows the lowest loading value but is still within the acceptable tolerance range. Therefore, all indicators are deemed valid and retained in the model.





**Table 1.** Outer Loading Results

Construction	Indicator	Outer Loading
IK	IK1	0.852
IK	IK2	0.823
IK	IK3	0.864
PKG	PKG1	0.817
PKG	PKG2	0.763
PKG	PKG3	0.800
PKG	PKG4	0.769
PKG	PKG5	0.795
PKM	PKM1	0.803
PKM	PKM2	0.785
PKM	PKM3	0.779
PKM	PKM4	0.848
PKM	PKM5	0.744
PKR	PKR1	0.885
PKR	PKR2	0.749
PKR	PKR3	0.826

*Source: Primary data processed (2025)*

**Table 2** shows the results of reliability and convergent validity testing. All constructs have Cronbach's Alpha values above 0.700, indicating adequate internal reliability (Hair et al., 2022).

In addition, all composite reliability values ( $\rho_a$  and  $\rho_c$ ) exceed 0.700, reinforcing the conclusion that all constructs have good reliability. Furthermore, the Average Variance Extracted (AVE) values of all constructs exceed the minimum threshold of 0.500, indicating that the measured constructs can explain more than 50 per cent of the variance in the indicators. For example, the Implementation Success (IK) construct has an AVE value of 0.717, while the Perceived Ease (PKM) construct has an AVE of 0.628. Thus, the reliability and convergent validity test results indicate that all constructs meet the required criteria and are empirically valid.

**Inner Model.** The inner model evaluation aims to measure the extent to which exogenous constructs influence endogenous constructs and assess the model's predictive power. Two main aspects are used: the R-squared value to assess explanatory power (explained variance) and the path coefficient value to test the direction and significance of the influence between constructs.

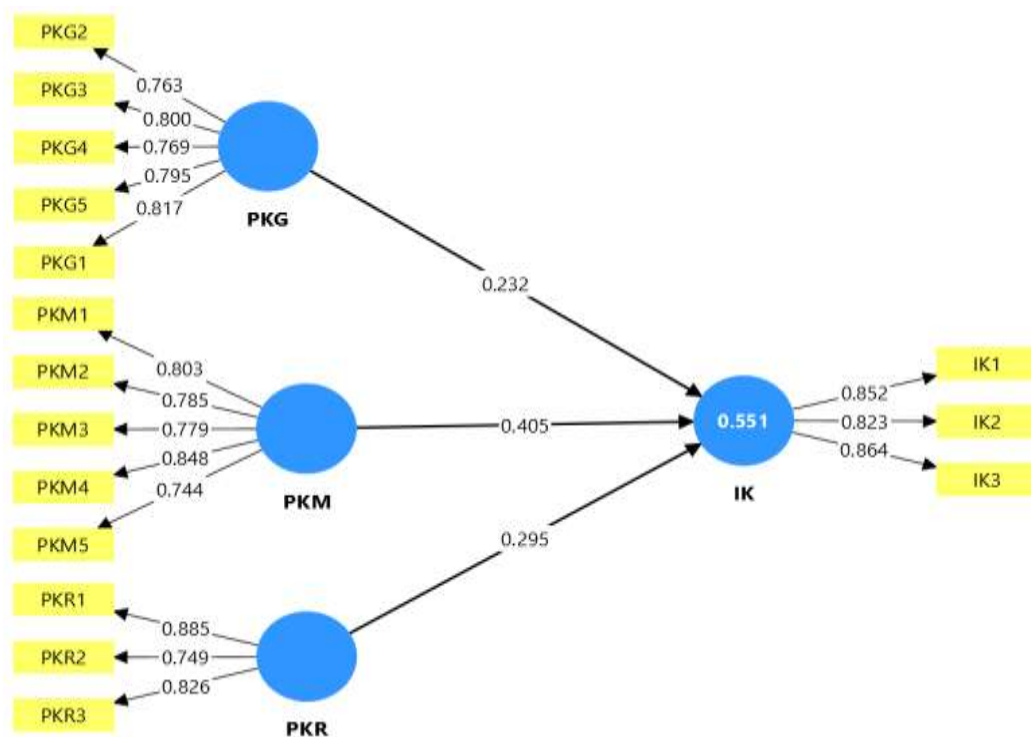
**Table 2.** Discriminant Validity – Fornell-Larcker Criteria

Construction	Cronbach's Alpha	Composite Reliability ( $\rho_a$ )	Composite Reliability ( $\rho_c$ )	Average Variance Extracted (AVE)
IK	0.803	0.808	0.883	0.717
PKG	0.851	0.855	0.892	0.622
PKM	0.852	0.856	0.894	0.628
PKR	0.757	0.756	0.861	0.675

*Source: Primary data processed (2025)*

Referring to (Hair et al., 2022), a model is categorised as having moderate predictive ability if the R-squared value exceeds 0.500. The significance of the path relationship is achieved if the t-statistic value is greater than 1.960 and the p-value is less than 0.050.

**Figure 1** shows the R-square test result of 0.551, indicating that the constructs of Perceived Usefulness (PKG), Perceived Ease (PKM), and Perceived Complexity (PKR) collectively explain 55.100 per cent of the variance in Implementation Success (IK). In other words, factors outside the model influence approximately 44.900 per cent of the variance in Implementation Success. According to the R-square classification proposed by (Hair et al., 2022), the value of 0.551 falls within the moderate category, suggesting that the structural model demonstrates a reasonably good explanatory power in identifying the factors that influence implementation success.



**Figure 1.** Structural Models and Path Coefficient Values

Furthermore, to test the direct influence of each exogenous construct on the endogenous construct, a path analysis was conducted using the bootstrapping method with 5,000 subsamples. The significance criteria were set at a p-value of less than 0.050 and a t-statistic of more than 1.960. The results of the direct influence estimation are presented in **Table 3**.

**Table 3.** Path Coefficient Results and Path Significance

Relationship	Path Coefficient	T-statistics	P-value
PKG → IK	0.232	2.590	0.010
PKM → IK	0.405	4.716	0.000
PKR → IK	0.295	3.187	0.001

*Source: Primary data processed (2025)*

Based on the results of testing the relationship between variables in the structural model presented in **Table 3**, it is known that the construct Perceived Ease (PKM) has a

significant effect on Implementation Success (IK). This is indicated by a path coefficient value of 0.405, with a t-statistic of 4.716 and a p-value of 0.000. A positive coefficient indicates that the relationship between PKM and IK is unidirectional, with a positive direction. Since the t-statistic value exceeds the critical limit of 1.960 and the p-value is less than 0.050, the relationship between PKM and IK is statistically significant. Thus, the hypothesis stating that Perceived Ease influences Successful Implementation is accepted.

Furthermore, the construct Perceived Complexity (PKR) also significantly affects Implementation Success (IK), with a coefficient value of 0.295, a t-statistic of 3.187, and a p-value of 0.001. The direction of the relationship between PKR and IK is positive, as indicated by the positive coefficient value. Referring to the t-statistic value above 1.960 and the p-value less than 0.050, the relationship between PKR and IK is statistically significant.

Meanwhile, the construct Perceived Usefulness (PKG) also significantly affects Implementation Success (IK), with a coefficient of 0.232, a t-statistic value of 2.590, and a p-value of 0.010. The positive direction of the relationship suggests that an increase in perceived usefulness will lead to an increase in implementation success. These values meet the criteria for statistical significance, so the hypothesis regarding the influence of Perceived Usefulness on Implementation Success is accepted.

## DISCUSSION

**The Influence of Perceived Usefulness on the Successful Implementation of Invoices.** The findings of this study indicate that perceived usefulness plays a vital role in influencing the successful implementation of the e-Faktur system among Taxable Entrepreneurs (PKP). The results suggest that the more users perceive the application as beneficial, the more likely they are to engage with it actively and integrate it into their tax reporting practices. This perception reflects users' confidence in the system's ability to support their work processes by enhancing effectiveness and efficiency. Respondents generally agreed with key indicators of usefulness, demonstrating their belief that the e-Faktur system has positively transformed routine tax administration tasks. Users identified improvements in performance and productivity as significant benefits of adopting e-Faktur. The system allows tax invoices to be created and submitted without interrupting other work activities, offering significant convenience to users who manage multiple responsibilities. It reduces the burden of manual documentation and enables faster completion of invoice-related tasks. Before its implementation, many processes required printing, manual entry, and duplicate data input into the Value-Added Tax (VAT) reporting system. With e-Faktur, these steps are streamlined into a single, efficient digital platform. Users also benefit from the system's flexibility, which permits remote access and use anytime, eliminating the need to be physically present at a tax office or tied to rigid administrative schedules. These user experiences highlight how digital tools, when effectively designed, can lead to meaningful improvements in workflow and operational efficiency in tax compliance.

The significance of these findings lies in the clear demonstration that perceived usefulness is not just an abstract concept but a lived experience that shapes behaviour (Linus et al., 2025). Users recognised that e-Faktur enhances their ability to perform administrative tasks more effectively, directly supporting compliance obligations. This

perception establishes a positive feedback loop in which efficiency gains reinforce trust in the system and trust, in turn, sustains consistent use. The study confirms that when individuals perceive that a digital system contributes to their productivity, they are more inclined to adopt it fully. This positive outcome shows that perceived usefulness directly and significantly influences implementation success, answering the research hypothesis affirmatively.

This interpretation aligns with the foundational concepts within the Technology Acceptance Model (TAM), as introduced by Davis. The model asserts that an individual's intention to use a particular technology is significantly influenced by their perception of its usefulness. In this context, perceived usefulness refers to the degree to which individuals believe a system will enhance their job performance. The connection between this theory and the study findings is evident in the responses of PKP, who consistently viewed e-Faktur as a tool that enables them to complete their work more accurately and efficiently. The system is not only regarded as a regulatory necessity but as a platform that adds genuine value to the user's professional activities. TAM emphasises that a technology system will be more readily adopted when users see clear advantages and improvements in their tasks. In the case of e-Faktur, perceived usefulness is shaped through direct interaction with the system, where users observe time savings, process simplification, and reduced administrative errors. As such, these experiences build a positive perception, supporting sustained adoption and consistent usage. Therefore, the conceptual relevance of perceived usefulness becomes a key indicator for assessing the likelihood of technology adoption in a regulatory environment such as taxation.

The implications of these findings are significant for both policymakers and system designers. For policymakers, the evidence suggests that mandating the use of a digital tax system is not sufficient by itself to guarantee success. (Bruya & Tang, 2018) Instead, attention must also be paid to ensuring that users genuinely perceive the system as beneficial. This means that training programs, user support services, and system improvements should focus on reinforcing the application's usefulness in day-to-day work. For designers, the findings highlight the importance of creating systems that minimise administrative burdens, reduce unnecessary steps, and allow users the flexibility to access the platform remotely. When such benefits are clearly experienced, users are more willing to engage consistently, and compliance levels increase naturally. The implication is clear: usefulness is not only a theoretical construct but a practical factor that determines whether a system will be integrated successfully into the work routines of its intended users.

When situated within the broader literature, the findings of this study are consistent with several previous studies that emphasise the significance of perceived usefulness in the successful adoption of technology-based systems. For example, (Lawata et al., 2020) concluded that perceived usefulness strongly influences the implementation success of digital tax systems. Their findings suggest that users are more likely to utilise systems like e-Faktur when they see practical benefits that directly support their professional routines. The current study reinforces this conclusion, proving that usefulness perceptions are central to fostering acceptance and maximising system utilisation. Similarly, Gunawan's research supports the present findings, highlighting that individuals who perceive a system as applicable are more likely to use it in the long term. In his analysis of e-Faktur, Gunawan pointed out that continued usage depends on the ability of the system to provide consistent benefits that align with users' operational needs. This study echoes that assertion by demonstrating that PKP value e-Faktur not merely as a compliance tool but as a system





that helps them optimise administrative efficiency and reduce complexity in tax invoice management. (Natalia et al., 2019) further emphasised that perceived usefulness is one of the most influential factors shaping user behaviour toward digital tax applications. Her research suggests that when individuals recognise the practical advantages offered by a system, they are more inclined to continue using it, regardless of external pressures or regulatory mandates. The present study supports this perspective, demonstrating that users' commitment to e-Faktur is strongly linked to their recognition of its benefits in simplifying their tax responsibilities. The system's ability to minimise repetitive tasks, eliminate redundant data entry, and improve accuracy in reporting fosters trust and reinforces user satisfaction.

**Perceived Ease of Implementation of Successful Invoicing.** The findings of this study reveal that perceived ease of use significantly contributes to the successful implementation of the e-Faktur system among Taxable Entrepreneurs (PKP). The greater the perceived ease with which the application can be operated, the more likely users will accept and consistently utilise the system. This finding underscores the importance of simplicity and accessibility in digital taxation platforms. Respondents in this study largely agreed with items indicating the ease of system interaction, particularly in understanding the menu structure, navigating through features, and executing reporting functions. This reinforces the notion that when users perceive a system as straightforward and intuitive, they are more inclined to use it consistently and integrate it into their routine administrative processes. One of the most tangible indicators of ease of use in e-Faktur is the simplicity of learning the system. The availability of official manuals and tutorials provided by the Directorate General of Taxes (DJP) facilitates independent learning, enabling users to operate the system effectively without requiring advanced training. This support mechanism significantly lowers the cognitive barrier to adoption.

Furthermore, importing data from internal recording systems using CSV files offers substantial convenience to PKP, which already has established data management processes. This feature reduces the need for redundant manual input, streamlines the transition from older systems, and supports a smoother adaptation to e-Faktur. The system's design prioritises simplicity in data input, tax calculation, and reporting, enabling users to fulfil their tax obligations more efficiently and with fewer obstacles.

The reason why perceived ease of use has a substantial effect can be understood by examining how simplicity shapes user acceptance. Ease of use lowers the psychological and technical barriers that prevent adoption. (Fitria et al., 2024) When a system feels simple and accessible, users are more confident they can manage tasks without frustration. This perception of simplicity directly contributes to consistent utilisation. Conversely, overly complex or unintuitive systems discourage users, even when they provide useful features. In taxation, where users are often pressured to comply with regulations, unnecessary complexity can lead to resistance or non-compliance. Thus, the positive effect of ease of use on implementation success is explained by its ability to create confidence, reduce frustration, and make the technology feel more approachable to a broad user base.

Theoretically, these findings align with the Technology Acceptance Model (TAM), particularly the perceived ease of use concept. According to TAM, ease of use refers to the extent to which individuals believe that utilising a particular technology will be free of effort. The theory posits that when users perceive a system as easy to operate, they are more likely to adopt and continue using it. In this study, respondents perceived the e-Faktur system as a technically and procedurally user—friendly platform, contributing directly to



higher acceptance levels. This supports TAM's core argument that ease of use is a fundamental predictor of technology acceptance and long-term utilisation. The connection between this theoretical foundation and the empirical findings of this study confirms that system usability plays a crucial role in the digitalisation of administrative processes, particularly in taxation. Ease of use also serves as a psychological enabler, shaping the user's emotional and cognitive response to technology. Systems perceived as complicated or frustrating tend to generate resistance and reluctance, even if they offer functional benefits.

On the other hand, systems that offer straightforward navigation, clean interfaces, and clear operational instructions reduce user anxiety and promote confidence. In the case of e-Faktur, users reported that the application interface was well-structured and that the system's core functions could be easily executed without extensive technical knowledge. This user-centred design contributes to increased adoption rates and overall satisfaction, which are essential for sustaining long-term engagement with the platform.

The implications of these findings extend both to policy and to system development. For policymakers, the evidence suggests that simply mandating a digital tax system is insufficient to guarantee compliance or successful implementation. Instead, authorities must ensure that the system is designed and maintained with user-friendliness as a core principle. (Mandasari, 2024) This includes providing adequate user support, clear guidance, and ongoing improvements that reduce unnecessary complexity. For system developers, the findings emphasise the importance of intuitive design. Features such as easy-to-understand menus, logical navigation paths, and seamless integration with existing data management processes lower the threshold for adoption. Moreover, the ability to import data through CSV files is not just a technical detail but a critical enabler that makes the transition from traditional systems smoother and less burdensome. System designers can foster confidence and satisfaction by prioritising simplicity and usability, strengthening compliance and long-term system engagement.

The findings of this study are also in strong agreement with previous research that highlights the importance of perceived ease of use in digital tax system adoption. (Tahar & Sabiqoh, 2020) found that users are more likely to accept and utilise the e-Faktur application if they perceive the system as easy to understand and operate. Their study emphasised that ease of use reduces hesitation and technical frustration, making users more confident in fulfilling their tax responsibilities through digital platforms. Similarly, (Parso et al., 2024) observed that higher levels of perceived ease correlate with greater success in system implementation. Their work illustrated that ease of navigation, simplified data input, and flexible reporting tools are critical components that directly impact user engagement with e-tax systems. In line with these conclusions, Satrio's research also highlighted that e-tax applications such as e-Faktur must be designed with accessibility, particularly considering the wide range of users from different technological backgrounds. According to his findings, overly complex systems tend to exclude users unfamiliar with digital tools.

Therefore, simplicity in system architecture and intuitive interface design become key determinants in whether a system will be broadly accepted and effectively used. This resonates with the current study's finding that ease of use is not just a preference but a prerequisite for widespread implementation success.

**The Effect of Perceived Complexity on the Successful Implementation of Invoicing.** The findings of this study demonstrate that perceived complexity significantly



hinders the successful implementation of the e-Faktur system among Taxable Entrepreneurs (PKP). The more complex the application is perceived to be, the lower the likelihood of its acceptance and continuous use. This relationship suggests that technological adoption depends not solely on the functionality or innovation embedded in a system but on how users perceive the overall usability and manageability. In the case of e-Faktur, respondents frequently expressed that operating the application requires substantial effort, especially in navigating the interface, ensuring data accuracy, and managing disruptions to other work activities.

These issues contribute to a broader perception that the system is overly complicated, thus discouraging consistent engagement and undermining its intended purpose of facilitating efficient tax reporting. Specifically, users identified several pain points contributing to this perception of complexity. One of the primary concerns involves the high precision required during data input. Errors in inputting tax information may lead to serious reporting inaccuracies, thereby increasing the burden of vigilance on users. This requirement to constantly double-check data introduces cognitive load and delays in workflow, particularly for users unfamiliar with the system's technical structure. In addition, the e-Faktur platform is resource-intensive, placing strain on computing systems—especially among users operating on lower-specification devices. This can result in slow performance, interruptions to other critical applications, and a diminished user experience. Such technical obstacles reduce productivity and make the system feel less accessible and more burdensome to operate daily.

Another source of perceived complexity stems from concerns over the system's stability and the possibility of data loss. Respondents expressed anxiety regarding system errors and potential malfunctions that could result in incomplete submissions or lost financial information. These concerns, whether based on past experiences or general apprehension, reduce trust in the system's reliability. When users fear that their data may be compromised or that the platform may fail during essential tasks, they are more likely to seek alternatives or avoid using the system altogether. Thus, the perception of complexity encompasses both the operational difficulty and the psychological hesitation created by a lack of confidence in the system's dependability.

This dynamic explains why the negative relationship between complexity and system adoption is so significant. Users who perceive a system as too demanding are not motivated to continue engaging with it, even when they acknowledge potential benefits. In the case of e-Faktur, the perception of complexity erodes confidence, slows workflows, and undermines the sense of efficiency that the system was designed to promote.

This interpretation of perceived complexity corresponds with theoretical perspectives found in the literature. (Turner & Baker, 2019), Drawing on the foundational work of (Rogers & Shoemaker, 1971), complexity is defined as the extent to which a system is perceived to be challenging to understand and use. The key insight here is that complexity is not simply an objective characteristic of a system—it is a subjective experience shaped by users' expectations, capabilities, and previous interactions with technology. Depending on their digital literacy and working context, a system that may seem manageable to one user may feel overwhelming to another. In the case of e-Faktur, many PKP represent small and medium-sized enterprises with limited technological expertise, making perceptions of complexity even more acute. This theoretical framing helps clarify why the perception of difficulty can become a critical barrier to system



adoption. What matters is how the system is designed, interpreted, and experienced by the end users.

Further theoretical support is found in the work of Igarria et al. (1996), who proposed that complexity can be assessed by the time and effort required to complete system-related tasks and the difficulties in integrating the technology into daily workflows. Their framework helps explain why users in this study viewed e-Faktur as an obstacle rather than a solution. The added time for checking accuracy, navigating unfamiliar menus, and troubleshooting issues reduces overall efficiency and increases frustration. These experiences discourage users from fully adopting the system, even when they recognise the broader benefits of digitalisation. By connecting the empirical findings with these theoretical perspectives, the study highlights how complexity is not just a technical property of e-Faktur but a lived reality for its users.

The implications of these findings are considerable. They suggest that policymakers and system designers cannot assume that functionality alone will guarantee adoption. Even when a system provides compliance benefits and aligns with regulatory requirements, it will fail to achieve its goals if users perceive it as excessively complicated. The evidence here points to the importance of reducing operational obstacles, addressing technical inefficiencies, and strengthening user trust in system reliability. For organisations, this means investing in training, improving system stability, and developing features that minimise the burden on computing resources. For developers, the lesson is that intuitive design and robust performance are essential if digital platforms are to become sustainable tools in tax administration. Without such considerations, complexity becomes not just a design flaw but a barrier to the very purpose of digital transformation.

The findings of this study are also consistent with previous empirical research. (Thompson et al., 1991) argued that the more complex a technological innovation is perceived, the lower its adoption rate will be. Their study found that users often reject systems that appear difficult to use, regardless of potential advantages. This supports the present study's observation that although e-Faktur offers efficiency and compliance benefits, its complexity discourages its intended users from readily adopting it. Similarly, (Saha, 2025) identified a clear negative relationship between perceived complexity and the actual usage of information systems. Users who find a system complex are much less likely to use it consistently or integrate it into their routine processes. Their research underlines that usability is not just a design feature but a critical determinant of whether a system will fulfil its purpose in real-world environments.

Prior research by (Lewis & Sauro, 2021) confirmed a strong correlation between perceived complexity and low system usage. Their work emphasised that complexity is one of the most significant barriers to technology acceptance, particularly in organisational settings where users may be balancing multiple tasks and face competing demands for their attention. This aligns with the present study's findings, as PKP reported difficulties balancing e-Faktur with other business activities, especially when the system's operations are interrupted or delay their work.

## CONCLUSION

This study investigated the impact of perceptions of usefulness, ease, and complexity on the successful implementation of the e-Faktur application among taxable entrepreneurs.





This study investigated how these three perception variables can serve as key determinants in supporting the successful adoption of electronic taxation systems. Through a quantitative approach, this study provides an empirical description of technology acceptance patterns in the taxation environment, particularly among users who interact directly with the e-Faktur system in their daily tax administration practices. This study also highlights the importance of individual perceptions of a technology as the basis for user behaviour in accepting and using new systems.

Scientifically, this study contributes to the development of technology adoption theory, particularly by strengthening the role of perception construction in the Technology Acceptance Model (TAM). This study is original in that it focuses on testing TAM in the context of digital taxation in Indonesia, which has rarely been discussed in depth in local literature. Practically, the results of this study are helpful for the Directorate General of Taxes and tax application developers in understanding user perceptions of e-Faktur. The managerial implications of these findings suggest the need for a user-centred approach in developing systems, emphasising enhancing usability, ease of access, and reducing feature complexity. Socialisation strategies, training, and responsive, interactive guidelines are essential for strengthening technology acceptance among taxpayers from diverse business backgrounds.

This study has several limitations. First, the scope of the study was limited to only one administrative region, namely KP2KP Sungguminasa, so generalisation of the results to the national level still requires further verification. Second, the approach used is purely quantitative, so it does not explore the subjective experiences of users in depth, which may be more complex. Therefore, suggestions for future research include expanding the study's scope to various regions with different demographic characteristics and levels of digital literacy and considering a mixed-methods approach to explore user perceptions comprehensively. Additionally, other variables, such as trust in the system, technical support, and external factors that may influence the success of tax technology implementation in the future, should be considered.

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