

The Effect of Information Technology and Perceived Risk in Anticipating Tax Evasion

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The Effect of Information Technology and Perceived Risk in Anticipating Tax Evasion

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Abstract. This study aimed to determine the dynamics of tax evasion and the risk perception of using tax information technology. The study also investigated perceived risk as a moderating variable in the relation between information technology (IT) and tax evasion. A total of 100 questionnaires were collected from individual taxpayers and analysed using Partial Least Squares (PLS). The result showed that IT can reduce tax evasion, and the moderating test result also discovered that taxpayers' risk perception can increase the effect of IT usage to reduce tax evasion. These results highlighted the situation that society's acceptance of information technology is more of an effort of doing taxation duties that would help them avoid tax inspection and penalty. Risk is believed to be attached to IT and so eases inspection and detection of tax fraud, a consideration by taxpayer when doing tax evasion. This signifies the success of tax authorities in modernising tax administration in order to minimise tax evasion while also increasing tax service quality by optimising the usage of information technology.

Keywords: Information technology, tax evasion, risk perception

INTRODUCTION

Tax evasion is a massive problem for tax authorities and government in many countries that rely on tax revenue as their main source of income. Studies have proven the background of tax evasion to be the taxpayers' moral issue added with bad financial state management, allowing various misappropriations of state funds that originate from tax payments (Bird & Zolt, 2018; Yamen et al., 2020). The usage of technology in taxation system can significantly reduce the opportunities for taxpayers to do tax evasion and fraud (Babici et al., 2019; Bananuka et al., 2019; Raphael & Adeniyi, 2017; Prichard et al., 2019), since technically, cash provides the opportunity for taxpayers to create fictitious tax invoice, report lower sales, and overstate discounts (OECD, 2017). Applying information technology in the form of e-registration, e-billing, e-filing, e-form, and e-tracking in tax administration are efforts to implement the principles of tax collection: simplicity, equity, efficiency, effectiveness, and transparency, in order to strengthen tax compliance while also reducing tax fraud. Using IT is a form of improvising the administration to reduce human interactions, producing quality data that, through tax audit, can test taxpayers' compliance. Even so, Carter et al., (2011) picked up some psychological factors on taxpayers related to the attached risks of IT. These include misuse of personal data by irresponsible officials and tax authorities' ability to detect taxpayers' fraudulent activities faster. Therefore, taxpayers' usage of the IT system depends on the perceived attached risks (Azmi et al., 2012; Rifat et al., 2019).

These risks in this study are called perceived risk, and is often used in marketing studies to understand consumers' response or behaviour on new products and services. Bashir & Madhavaiah (2015) in their research suggested that researchers explore the uncertainty surrounding consumers coming with the appearance of new products or services, especially for digital banking service; although ultimately, digital banking is customers' preference that serves as competitive advantage. Perceived risk relates to uncertainty, discomfort, or anxiety that arises in the process of decision-making the use of IT (Rifat et al., 2019). Generally, studies on the benefits of IT use the concept of TAM (Technology Acceptance Model). In the context of TAM, studies regarding IT are more often on acceptance of a technology in the shape of new service or product. TAM is a model built to recognise what factors cause a technology to be accepted, in relation to its perceived advantages and ease of use (Zaidi et al., 2017). The development of TAM model is done by adding constructions, one of which being perceived risks. Risk identification in tax information technology are usually associated with data security. Taxpayers who are concerned with data privacy and security will show resistance in using digital services to fulfil

their tax obligations (Chu et al., 2019). This risk is said to be one of the main barrier for the public to use information technology (Schaupp & Carter, 2010).

Featherman & Pavlou (2003) and Bashir & Madhavaiah (2015) tried to develop this concept by examining what drawbacks are felt by taxpayers when using IT. From their results it was found that taxpayers wished for low attached risk in regards to IT implementation in taxation service. Bashir & Madhavaiah also noted that reducing risks for the digital service is of higher priority compared to ease of use or utility. The government and tax authorities implement taxation IT to anticipate for tax evasion, however taxpayers see that IT may contain future risk. The perceived convenience and benefit of IT, the safety of data in e-filing, the concern on misuse of personal data by dishonest officials, or the possibility that tax authorities will become highly responsive to taxpayers' data for investigation, all affect the possibility of tax evasion. Perceived risk is one of the indicator to measure uncertainty, uneasiness, or apprehension that appear in the decision-making process of IT usage (Featherman & Pavlou, 2003). Information technology may also induce lack of face-to-face interaction and data leak caused by hackers. The inclusion of personal financial information in the electronic filing of Annual Tax Report may cause discomfort to taxpayers (Schaupp & Carter, 2010). Thus, perceived risk is relevant in considering taxpayers' desire to use information technology.

Based on this description, a question is raised in how taxpayers behave when adopting ¹⁴ information technology in response to tax authorities' anti-fraud scheme. Therefore, the focus of this study is to investigate the effect and connection of taxpayers' behaviour in the adoption of IT. Specifically, the study aims to test the effect of IT on tax fraud, while also examining the role of perceived risk as a moderator in the influence of IT on tax fraud.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Information Technology and Tax Evasion

In 2005, the Indonesia Directorate General of Taxes released a tax administration ¹⁸ system that utilised information technology, named e-System (Electronic System). The systems are e-Registration, e-Filing, e-SPT, and e-Billing. To add, the government through Presidential Regulation No. 40 Year 2018 on An Update on Tax Administration System has provided the legal basis for tax authorities to rejuvenate the tax collection administration system. One of the new updates is in the field of information technology and database. The goals of the update are to reduce the administrative load of both taxpayers and tax institution, to create a comprehensive and accurate database, to develop a reliable and trustworthy data processing, and to build an adequate infrastructure of the information system. Mangoting (2020) explained that electronic tax filing (e-filing) positively affects taxpayers' satisfaction when there are functional benefits gained from using IT.

Tax authorities cannot relax simply because the administration has adopted an IT system. To optimise tax information system (IS), there needs to be a legal protection to ensure third-party financial transaction data will flow and be saved in the tax authorities' data centre (Bagchi, 1993). This legal protection also anticipates taxpayers' resistance in the event authorities would require access to third-party financial data, including from financial institution. Even though in the view of Raphael & Adeniyi (2017) IT usage may negatively affects tax evasion, it is not easy to ask taxpayers to use a new service without examining its disadvantages first. Bigger taxpayers in the study by Lymer et al. (2012) tend to be more cautious in using tax IT compared to small-company taxpayers which are more flexible, even experiencing a significant benefit when using IT. Taxpayers are troubled that the tax IS would be able to profoundly monitor their economic transaction.

Aggressive tax evasion has become a serious problem for the government for the last few years. Tax evasion is an illegal form of tax avoidance. It is done so that taxpayers' obligations become smaller by reporting only a few of, or even none at all, the earned revenues; creating fictitious deductions; and violating tax regulations to reduce the amount of tax paid (Prebble & QC, 2010). One of the reasons why tax evasion is unavoidable is ineffective tax administration system that creates chances to evade taxes (Baaq et al., 2018).

Slemrod & Yitzhaki (2002) examined an opportunity to reduce tax evasion by inserting a risk factor of tax evasion while also exploring IT as an additional element on top of traditional factors such as enforcing law and tax rates. There is a notion that difficult tax administration can raise the motivation to evade and even defraud tax. Digital taxation service in the shapes of e-registration, e-filing, and e-billing minimise physical interaction between taxpayer and tax officials. E-filing is believed to simplify

and ease tax reporting such that taxpayers no longer need to use papers. It also lowers delivery costs with immediate confirmation that e-filing is already received, and decreases the risk of lost tax reports. Even with such benefits, Alm et al. (2020) still requested that tax authorities and the government to be careful, as while IT has removed most tax fraud variables, it also opens up different opportunities for fraudulent behaviour. Based on this description, the following hypothesis is constructed:

H1: Information technology affects tax evasion.

Perceived Risk in the Relation between Information Technology and Tax Evasion

The theory of perceived risk can be used to understand customers' behaviour in marketing theory. Perceived risk becomes a deliberating factor by consumers when buying a product. Perceived risk theory is usually associated with TAM in the context of IT research. Most individuals experience concern or anxiety when trying out a service that has just adopted IT for the first time (Im et al., 2008). Perceived risk explains the uncertainty of an individual when considering to buy a new product or service. Pelaez et al. (2017) provided an instance where a person feels a high risk of insecurity when placing large amounts of money in an online transaction, such that they decide to stop the transaction. Taylor (1974) asserted that risk is related to the uncertainty of result and consequences that each must be addressed by the service provider, for example by adding a complete, easy-to-use information channel, or by suggesting the handling of a potentially harmful risk. In the digital banking industry, perceived risk is affiliated with customers' worry in using electronic banking services; therefore, it is important that service operators reduce the perceived risk by supplying detailed information regarding the advantage and security of using electronic transaction (Kaur & Arora, 2020).

In the context of this study, perceived risk places taxpayers in a situation that is both beneficial and harmful when related to tax evasion. On one hand, IT can improve the administrative obedience of taxpayers; on the other hand, it raises the concern on the privacy of data and the discretion of tax authority in using taxpayers' data for the sake of investigation. Other than the above studies, the affirmation on the existence of attached risk in tax IT is also stated by Akram et al. (2019) and Carter et al. (2016). Relating to IT usage in tax, perceived risk would be defined as the extent of uncertainty and anxiety that may be felt by taxpayers when using taxation technology, with the attached risk causing apprehension to taxpayers leading to low technology usage. In this study, perceived risk is assumed to be able to moderate the relationship between IT usage and tax evasion. Based on this description, the following hypothesis is constructed:

H2. Perceived risk will moderate the effect of information technology on tax evasion.

METHODS

The sample in this study was 100 Indonesian taxpayers. The sampling method was simple random sampling, where the sample is taken randomly with every population member having an equal chance of being picked. The data was collected through an online questionnaire. The measurement of the tax evasion variable was adapted from Baaj et al. (2018) and McGee et al. (2012). To measure the information technology variable, the methods as used by Raphael & Adeniyi (2017) and Bird & Zolt (2018) was used, while measuring the perceived risk variable adopted the methods by Damayanti et al. (2017) and Wahda et al. (2018). All items were measured with Likert scale from 1 (strongly disagree) to 5 (strongly agree). Data was analysed using structural equation modelling – partial least squares (SEM-PLS) with the software WarpPLS.

Three variables were used in this study. Tax information technology is an effort by the government in taxation to support taxpayers in doing their administration duties in a modern way; in this case, carrying out the procedures and tax administration governance in accordance to regulations. Perceived risk is the uncertainty felt regarding possible negative consequence when using a product or service; an expectation of a possible loss caused by certain actions. Tax evasion is an illegal form of tax avoidance as it violates the existing regulations. The respondents in this study were individual taxpayers with earnings from trading and service sectors. There were 53 male respondents (53%) and 47 female respondents (47%). Most respondents (66 individuals, equal to 66%) run a business in service. Categorized by age, 46 people (46%) were aged between 21 and 30 years old, 17 individuals (17%) aged between 41 and 50 years old, and 31 (31%) of the respondents were above 50 years of age.

DISCUSSION AND ANALYSIS

Measurement Model

Before testing the hypothesis to predict the relationship between variables in a structural model, first an evaluation of the measurement model was done, in order to verify the indicators and testable latent variables. Table 1 shows the value of indicator reliability that has eliminated the reflective indicator of the measurement model which has a factor loading of less than 0.7. On the testing of factor analysis there were six IT item questions, seven perceived risk items, and seven tax evasion items that had to be taken out as they had factor loading < 0.7, and so failed to fulfil the criteria.

Table 1. Combined loading and cross-loading

Variable	Indicator	TP	PR	TE	AVE
Tax Information Technology (TI)	Tax Information Technology can anticipate the infringement of tax regulation (TI1)	0.738	-0.133	-0.192	0.663
	Tax Information Technology is responsive in checking taxpayers' data (TI2)	0.783	0.025	0.004	
	Tax Information Technology helps the access of information (TI3)	0.749	-0.019	0.021	
	Tax Information Technology helps accelerate the reporting of Annual Tax Return (TI4)	0.762	-0.146	-0.112	
Perceived Risk (PR)	Tax audit is an instrument to test taxpayers' compliance (PR2)	0.079	0.766	0.039	0.672
	Weak tax audit detection capability raises the opportunity for taxpayers' disobedience (PR8)	-0.063	0.798	-0.057	
	Weak detection capability and low tax sanctions compared to the amount of tax savings open up opportunities for taxpayers' fraud (PR9)	-0.072	0.747	-0.087	
Tax Evasion (TE)	There is no need to report all assets owned, whether taxable or non-taxable (TE5)	0.017	-0.029	0.692	0.704
	Does not pay annual tax based on actual income (TE6)	-0.029	0.174	0.784	
	Does not comply to personal tax obligations as other taxpayers are non-compliant (TE7)	0.260	-0.106	0.784	

Variable	Composite reliability	Cronbach's alpha	Conclusion
TI	0.887	0.829	Reliable
PR	0.859	0.753	Reliable
TE	0.877	0.788	Reliable
PR*TP → TE	0.901	0.789	Reliable

Table 1 informs that all indicators have a factor loading larger than 0.7. This result means that more than 70% of each indicator variant can be explained by variables information technology, tax evasion, and perceived risk. The Average Variance Extracted (AVE) measurement is used to evaluate convergent validity with standard of > 0.5. The AVE value explains the correlation between the indicators that make up a construct has met the minimum standard of > 0.5. Based on composite reliability testing result and the value of Cronbach's alpha, all instruments are deemed reliable with a coefficient of ≥ 0.70. Therefore, the reliability of instruments has fulfilled the requirements.

Table 2. Square Root of AVE and Correlation Coefficient: - Correlations among latent variables and errors. – Correlations among latent variables with square root of

	TI	PR	TE	PR*TP → TE
TI	0.814	0.356	-0.369	-0.149
PR	0.360	0.820	-0.434	-0.127
TE	-0.369	-0.434	0.839	0.088

PR*TP →TE -0.149 -0.127 0.088 0.661

The discriminant validity in this study as shown on Table 2 has met the requirements based on the value of diagonal column, which shows larger value from correlation between independent variables in the same column. This indicates that discriminant validity existed on each variables.

Table 3. Model Fit and Quality Indices

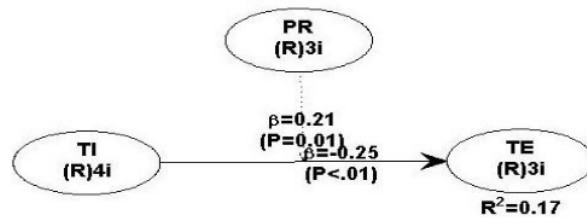
No.	Model Fit and Quality Indices	Criteria Fit Result	Result	Description
1.	Average path coefficient (APC)	$p < 0.01$	0.280 ($p=0.001$)	Accepted
2.	Average R-squared (ARS)	$p < 0.01$	0.168 ($p=0.002$)	Accepted
3.	Average adjusted R-squared (AARS)	$p < 0.05$	0.238 ($p=0.003$)	Accepted
4.	Average block VIF (AVIF)	Acceptable if ≤ 5 , ideally ≤ 3.3	1.518	Ideal
5.	Average full collinearity VIF (AFVIF)	Acceptable if ≤ 5 , ideally ≤ 3.3	1.303	Ideal
6.	Tenenhaus GoF (GoF)	Small ≥ 0.1 , medium ≥ 0.25 , large ≥ 0.36	0.371	Medium
7.	Sympton's paradox ratio (SPR)	Acceptable if ≥ 0.7 , ideally = 1	1.000	Ideal
8.	R-squared contribution ratio (RSCR)	Acceptable if ≥ 0.9 , ideally = 1	1.000	Ideal
9.	Statistical suppression ratio (SSR)	Acceptable if ≥ 0.7	1.000	Ideal
10.	Nonlinear bivariate causality direction ratio (NLBCDR)	Acceptable if ≥ 0.7	1.000	Ideal

Based on the estimation value of 10 indices for model fit and quality indices on Table 3, it can be said the research model as a whole has a good fit and is considered feasible, where the p-values for APC, ARS, and AARS are < 0.05 with APC = 0.226, ARS = 0.248, and AARS = 0.223. The same is true for AVIF and AFVIF values being < 3.3 , meaning there are no multicollinearity problems between indicators and exogenous variables. Indices SPT, RSCR, SSR, and NLBCDR also show fit models, meaning there is no causality problems in the research model. The coefficient of determination as indicated through R-squared testing aims to examine how far the independent variables explain the dependent variables. The value of tax evasion variable R-squared (R^2) being 0.168 indicates that the variable is only 16.8% influenced by tax information technology and moderated by perceived risk, while the rest of 83.2% is explained by other constructs outside of the study. The tax evasion Q-squared value is larger than zero, being 0.151, which means that predictive validity is considered good.

Hypothesis Testing

Picture 1 displays the result of the path analysis which is also described in Table 4.

Picture 1. Research Model



Statistic testing results in Table 4 show that tax technology affects tax evasion with p-value < 0.01. The original sample estimate value is -0.25 , meaning the direction effect of information technology on tax evasion is negative. This result means that H1 in this study is accepted. Moderation test result shows that perceived risk is incapable of moderating the relation between information technology and tax evasion, as indicated by p-value 0.213 and original sample estimate of a positive 0.013, and so H2 in this study is also accepted.

Table 4. Hypothesis and Moderating Variable Testing

Hypothesis	Path Coefficient	P-value	Explanation
TP → TE	-0.251	<0.01	Significant
PR*TP → TE	0.213	0.013	Significant

The result is in line with Raphael & Adeniyi (2017), Bananuka et al. (2019), and Babici et al. (2019) in that higher use of IT in tax system leads to lower tax evasion. The reasons are: easier for IT to identify fraud and the availability of accurate data for tax audit, quicker access to information, and more efficiency and effectiveness in tax reporting. On one hand, taxpayers admit that IT will help tax authorities to assess tax compliance by utilising the data reported in e-filing, and identifying tax offences by taxpayers. On the other hand, taxpayers also realise that IT facilitate the fulfilment of tax obligation, such as reporting. Taxpayers also consider the long-term risks if they resisted using tax digital service. These risks are particularly related to efficiency, time effectiveness, and cost incurred because of tax sanctions. For corporate taxpayer, Hamilton & Stekelberg (2017) underlined that firms which use higher-quality information technology optimise tax payments while also bear less tax risk, compared to firms with lower-quality IT.

Prichard et al. (2019) suggested that tax authorities cannot merely rely on taxpayers' trust, morality, and law enforcement to increase tax compliance while ignoring the facilities that supported tax administration. Developing tax facilities is part of the effort to modernise tax administration that aims to simplify tax system, provides easy access to information on tax obligations and reporting, presents a simple method for tax payments, reduces face-to-face interaction with tax officials, and for tax authorities, facilitates the expansion of audit capacity. The conclusion is modernisation of tax administration as part of service reform will form a positive motivation for paying taxes, resulting in the decrease of fraudulent behaviours.

Moderating test result in Table 4 demonstrates that perceived risk is able to moderate tax IT and tax evasion. It explains that taxpayers, as this study's respondents, are generally risk-averse. Low-risk taxpayers have high motivation to use IT in doing their obligations and to do it in accordance to tax regulations. This result is different to Akram et al. (2018) who found that attached risk in tax IT will cause concern among taxpayers, which results in low use of information technology.

Taxpayers realise that weak fraud detection and sanction provide the opportunity to commit fraud with the addition of large tax savings through tax evasion. However, taxpayers in this study do not exploit this opportunity, as proven by hypothesis test result where IT negatively affects tax evasion. Taxpayers consider sanctions and risk of investigation when committing fraud. IT implementation in tax administration helps the accessibility on taxpayers' data that supports and eases compliance test through tax audits. Institute of Chartered Accountants in England and Wales (ICAEW) in its report stated that digitalising tax services as a whole will make it easier for taxpayers to do administrative duties such as registration, payment, and tax reporting, so that taxpayers experience the benefit of IT and the process of tax compliance becomes easier. For tax officials, IT will increase the quality of internal and external third-party data in that tax authorities will be able to carry out compliance test through tax audits (ICAEW, 2019). This study also supports the findings by Azmi et al. (2012) who

stated that perceived risk significantly affects the perceived easiness in technology, meaning taxpayers consider possible risks when using information technology. The perceived risk will affect taxpayers' motivation to use IT in fulfilling their tax obligations.

CONCLUSION

The implementation of information technology in this study can affect taxpayers' fraudulent behaviour. IT offers substantial benefits for its users, in this case taxpayers, not only in terms of effectiveness but also report time efficiency and ease of information access. At the same time, this study also proved that taxpayers realise that information technology will help tax authority in auditing tax and also detecting tax frauds. This does not deter taxpayers from using information technology, as they feel that the benefits they experience is bigger than the advantages felt by tax authorities.

This study also examined the perceived risk that may moderate the relation between information technology and tax evasion. The finding suggested that taxpayers considered two related concepts in IT usage, perceived benefit and perceived risk. Perceived benefit does not only increase information technology usage, but also lowers fraudulent behaviours. Perceived risk is a point of consideration for taxpayers because they realise IT is more capable at detecting frauds, and the consequence of tax audit as a tool to measure compliance through self-assessment. The consideration, however, has made taxpayers not avoid using information technology.

The findings in this study provided theoretical and practical contributions to the adoption of information technology in tax administration. The two contributions are: 1) this study supported TAM in that perceived benefits, which are easy access and speed in tax reporting, have improved the use of IT, and 2) perceived risks are considerations that may influence taxpayers' behaviour in using tax IT. Practicality-wise, for regulators, this study confirmed that higher use of IT can reduce tax evasion. The attached risk in information technology also strengthens IT usage, meaning taxpayers positively respond to regulations that approved using information technology. The fear that taxpayers will reject information technology because of uncertainty and long-term loss is unproven. Even though this study has succeeded in explaining the behaviour of IT adoption, there is a limitation in that several variable indices must be removed for their small factor loading. Future studies are suggested to do a pilot study in order to test the effectiveness of the survey instrument, such as a questionnaire, as a communication tool between researcher and respondents.

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