

A Digital World: Role of Electronic Invoice for Personal Taxpayer Compliance

Meilinda Stefani Harefa^{1*}, Amran Manurung¹, Eldaa Yuannda Harefa¹

¹ Universitas HKBP Nommensen, Indonesia.

Received: October 12, 2023
Revised: November 15, 2023
Accepted: December 25, 2023
Published: December 31, 2023

Corresponding Author:
Meilinda Stefani Harefa
meilindastefani@uhn.ac.id

DOI:
[10.29303/jppipa.v9iSpecialIssue.6624](https://doi.org/10.29303/jppipa.v9iSpecialIssue.6624)

© 2023 The Authors. This open access article is distributed under a (CC-BY License)



Abstract: The digital world has inevitably entered various fields of human life in carrying out their duties as world leaders. Technology is an important tool to ease the human workload, including in this discourse is human resource management. This study aims to reveal the perceptions of Taxable Entrepreneurs (PKP) and the Tax Service Office (KPP) on the implementation of e-invoicing and the impact of e-invoicing on taxpayer compliance. The focus of this research is to reveal PKP's perception of the implementation of e-invoicing from the aspects of inputting, data processing, and output. KPP perceptions from the aspects of tax administration and tax evidence, and taxpayer compliance assessed from the aspects of calculation, deposit and reporting. This research is qualitative research with a case study approach. Data analysis is carried out interactively starting from data collection, data reduction, data presentation, and conclusion drawing. According to PKP, the advantages of e-invoicing are more efficient processing time, more accurate tax calculation results, easier and safer storage because it has a QR code, but the weaknesses of e-invoicing are repetitive work in inputting input tax values, the system is not yet able to read invoice codes and the application is vulnerable to viruses. According to KPP, the application of e-invoicing is very helpful for the tax office in fully controlling in real time all tax invoices uploaded and reported by PKP. From the research results, there is not enough evidence that e-invoicing has an impact on improving taxpayer compliance, especially in tax calculations. According to the Tax Office, the application of e-invoicing can improve taxpayer administrative compliance in terms of calculating, depositing and reporting so that tax revenue will be increased.

Keywords: Digital Architecture; E-invoicing; Taxpayer Compliance

Introduction

The benefits of digital technology are well documented, leaving no doubt that it can also ease tax compliance, reduce tax collection costs, and increase administrative efficiency (Bird & Zolt, 2008; Slemrod, 2019). Yet detailed analysis of consequences is crucial to these efforts (Chen et al., 2017). In the era of globalization and digital revolution, businesses can no longer ignore the role of technology in streamlining operations and improving efficiency. One such innovation that is currently in the limelight is Electronic Invoice, or better known as E-Invoice. What exactly is E-Invoicing, and

how can its implementation provide real benefits for business development (Hartanto, 2021).

The awareness to transform the financial operation from manual works into information system aroused by the company needs of automatic financial information, electronic document exchange, and digital financial transaction process. One of the most implemented financial information system in corporate level is Electronic Invoicing, or widely known as E-Invoice (Amalina & Suryani, 2020; Pappel et al., 2017; Tiwari et al., 2023).

The issuance of tax invoices is an important part of the VAT collection procedure (Regulation of the Director General of Taxes, 2022). The tax crediting mechanism in

How to Cite:

Harefa, M. S., Manurung, A., & Harefa, E. Y. (2023). A Digital World: Role of Electronic Invoice for Personal Taxpayer Compliance. *Jurnal Penelitian Pendidikan IPA*, 9(SpecialIssue), 1328–1333. <https://doi.org/10.29303/jppipa.v9iSpecialIssue.6624>

Value Added Tax (VAT) which requires a tax invoice as proof of collection makes unscrupulous taxable entrepreneurs look for loopholes to be able to commit fraud on tax invoices. The factor that encourages taxpayers to issue fictitious tax invoices is to obtain personal benefits, namely in the form of VAT refunds (Khairani & Mukharromah, 2015; Mascagni et al., 2019).

These adverse effects can be avoided by using an online tax invoice application. The online tax invoice application has been based on the latest law, namely PER-03 / PJ / 2022. The main difference between paper tax invoices and e-invoices is the ease, convenience, and security obtained by PKP in fulfilling its tax obligations. Other advantages of e-invoicing are that the format has been determined by the Directorate General of Taxes (DGT); can use electronic signatures; not required to print paper; PKP has been specifically determined by the DGT; reporting directly to the DGT and getting DGT approval.



Figure 1. Illustration of Electronic Invoice
Source : <https://www.hashmicro.com>

VAT reporting through e-invoicing is part of tax regulations that are constantly changing in accordance with the focus and targets that the government wants to achieve (Bellon et al., 2022; Harianto et al., 2020; Rodarte Soto, 2015). This makes research on taxation including VAT important to study because if every change in VAT regulations and related systems is not upgraded by taxpayers / PKP, it can become an obstacle to the smooth operation of the company. For example, changes in taxable and non-taxable goods and services regulations that previously referred to the VAT Law are now based on the Harmonization of Tax Regulations Law (Government of the Republic of Indonesia, 2021). This change in taxable goods and non-taxable goods has a relationship with changes in the treatment of tax facilities which will have an impact on the reporting of Periodic VAT Returns through e-invoicing.

Method

The type of research used in this study is descriptive research with a qualitative approach (Hantono et al., 2018). The data taken, identified in the following order: (1) data collection (2) data sorting (3) data analysis (4) conclusion making. As for data analysis, there is a predetermined sequence in accordance with the empirical steps taken, namely as follows: (1) Examination of data (2) suspected data findings, (3) Data confirmation (4) Diagnosis, (5) Action (Grieshaber, 2020).

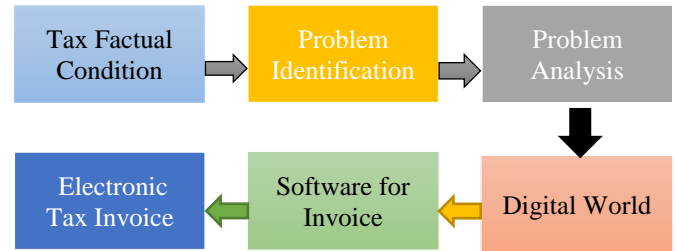


Figure 2. Flow of Logic

This research is qualitative research with a case study approach (Raco, 2018). The case study approach is a research strategy in which researchers carefully investigate a programme, event, activity, process or group of individuals (Rianto, 2016). In case study research, the data collected comes from various sources and the results of the research only explain the case under study. Researchers chose this type of qualitative research because they wanted to analyse more deeply the application of the e-invoice application in the VAT periodic tax return reporting and its impact on PKP and KPP.

Result and Discussion

E-Invoice and Machine Learning

Machine Learning is a big umbrella. Under it, we find visual recognition, voice recognition, natural language processing, expert systems, affective computing, and robotics (Siregar et al., 2020). Some of the scientists involved were Allen Newel, Herbert Simon, Marvin Miskey, Oliver Selfridge, and John McCarthy. Since then, experts began to work hard to create, discuss, change and develop until it to the point of full progress. Starting from the laboratory to the implementation of real work (Kalsum, 2022).

In the beginning, Machine Learning existed only in universities and research laboratories, and very few - if any - practical products had been developed. Towards the end of the 1970s and early 1980s, it began to be fully developed and the results gradually came to market. Today, many research results are being and have been 1

are being converted into real products that bring benefits to the users (Berg & Vance, 2017; Kalsum, 2022).

office to issue a Tax Invoice that is not implemented (Safitra, 2019).

Including tax system, the HR department must welcome digital transformation in HR and must also upgrade the policy of HR according to the need for digital transformation (Sen, 2020). Digital Human resources management faces many challenges and difficulties in order to give the best quality of work for the organization across the world. In order to achieve in the competitive market structure organization must expand the trading globally (Burke & Ng, 2006; Varadaraj & Al Wadi, 2021).

In recent years, AI has evolved into a technology that enables the administration of massive datasets and the application of algorithms that, despite their complicated structure, provide results that can be comprehended. Two tasks performed by the tax authorities that may be accomplished using AI are tax audits and tax collecting. This can be accomplished by the utilization of work automation using computer-controlled tools and the use of AI. Several approaches may adopt AI to enhance services for tech-savvy taxpayers. Artificial Intelligence (AI) is helping marketers predict what their customers want and is a key contributor to more seamless customer experiences (Kumari, 2021).

Additionally, applying AI in taxes might help tax authority analysis risks and spot unusual commercial practices. Thus, the development of new analytical tools has dramatically improved the efficiency and efficacy of tax administration, such as the enhanced identification of potential non-compliance via better risk assessment modeling and employing advanced analytical approaches (Nkundabanyanga et al., 2017; Russell, 2010; Scarella, 2019). But while there are many uses for AI in the operation of a financial institution, this chapter focuses on the use of AI in the provision of credit (Odinot, 2021). There is a fashion element to discussions about AI, particularly in marketing, where the boundary between advanced analytics and AI is definitely fuzzy (Merlin Stone, 2020).

Perception of the application of Tax e-invoicing

PKP's perception of the application of e-invoicing is reviewed from three aspects including data input, data processing, and output. According to PT ARBI as a PKP interviewed, the e-invoice application really helps the work of the tax department in terms of input tax and output tax administration so that the calculation of the VAT value is faster and more accurate because everything is processed by the system. In addition, the physical attachment of the tax invoice is in the form of a softcopy which is very specific because it has a QR code so that it cannot be copied. However, from an administrative point of view, the weakness of tax

A reference data architecture for AI innovation streamlines the design process.

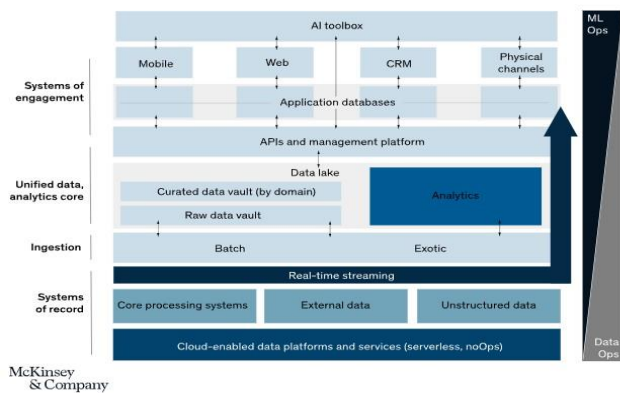


Figure 3. Data Architecture for Any Purpose
Source : <https://www.mckinsey.com>

The financial and economical patterns of the world have been integrated with better advancement. In today's digital world where digital human resource management plays a prominent function when compared to conventional human resource management due to the demand of the organization. (Varadaraj & Al Wadi, 2021).

The utilization of technology architecture in the realm of digital taxation is frequently linked with the gathering and reporting of taxes on digital transactions, a pivotal facet of contemporary tax systems. This entails employing technology to streamline the identification, collection, and reporting of taxes on digital transactions and services. As defined by Bhuvan Unhelkar, technology architecture is a system that outlines the infrastructure necessary to support applications, operations, and reporting demands.

The fact of the dominance of tax revenue, especially VAT as a source of state revenue, encourages tax authorities in the world to make improvements continuously. One of the milestones in tax administration changes in the world is the development of electronic data-based tax administration. One significant change is the development of an electronic tax invoice mechanism, known as e-tax invoices. South Korea and Chile are the countries that first implemented (Safitra, 2019).

For Southeast Asia, there are Thailand and Indonesia which implement it, although with a slightly different scheme. This study compares the implementation of e-tax invoices in the four countries and concludes that the application of e-tax invoices in Indonesia resembles the application of e-tax invoices in South Korea. However, the application of e-Tax Invoice in South Korea has the Automatic Response System (ARS) call service channel or comes to the nearest tax

invoices is that the input tax value from the supplier must be inputted again by PKP if they want to make a tax invoice, resulting in repetitive work. The e-faktur application still cannot read the invoice code for the inputted transaction. For example, for transactions with invoice code 01, the application should not allow inputted taxable goods with a nominal price of zero rupiah if the item is a tax object. However, in the e-invoice application, PKP can input the price of BKP / JKP submitted with a nominal value of zero rupiah even though the goods / services are tax objects. This provides an opportunity for PKP to not follow the procedure for inputting the value of BKP / JKP. The input and processing of tax invoices is also highly dependent on internet connections and internet-connected systems are also very vulnerable to viruses so PKP must backup data for all company tax invoices.

According to KPP Medan Petisah as an interviewed informant, the application of e-invoicing by PKP is very helpful for KPP to know/get information on the input tax value of each PKP registered at KPP. The system designed to work in real time and online gives full control to the Tax Office starting from supervision, the reporting inspection process, and the provision of Tax Invoice Serial Numbers for all tax invoices that have been reported by PKP so that the risk of misuse of tax invoices by naughty PKP can be minimized. However, KPP Medan Petisah also said that the weakness of the current e-invoice is that e-invoicing is highly dependent on a good internet connection and the digital certificate has an expiration date so PKP must regularly check the validity period of the electronic certificate.

Compliance of PKP as a taxpayer is seen from the aspects of calculation, deposit and reporting. In July 2022, PT ARBI corrected the underpayment due to a VAT calculation error. This error was caused by tax invoice code 01 which delivered zero value taxable goods and there was a delay in issuing the output tax invoice. PT ARBI explained that the zero IDR value of taxable goods was inputted because the taxable goods were given as free gifts from the supplier so that the value stated in the input tax was zero rupiah.

To avoid losses, PT. ARBI sells the BKP at a price of zero rupiah because no input tax is credited if the goods are sold at a price according to the tax base. The delay in issuing the output tax invoice occurred because there was no invoice for the goods delivered to the supplier, only the road letter report for the delivery of goods. The invoice has not been issued because the goods are needed urgently and must be received at that time. This condition causes PKP to have to make corrections to the VAT Periodic Tax Return and there is an underpayment status. The inclusion of zero rupiah for taxable goods delivered/sold and the delay in issuing tax invoices indicate taxpayer non-compliance even though this

condition does not occur intentionally. PT ARBI as a Taxable Person for VAT Purposes makes payment for the underpayment status and reports the VAT Monthly Return before the due date.

According to KKP Pratama Medan Petisah in terms of tax calculation, there is no visible impact of the application of e-invoicing on the compliance of PKP as a taxpayer because the calculation is done automatically by the application so that PKP only follows the procedure and the VAT value displayed by the system. With the existence of e-invoicing, the number of PKPs that submit tax returns is increasing as well as the number of PKPs that deposit and report Periodic VAT Returns.

Perceptions of PT ARBI and KPP on the implementation of e-invoicing: (a) E-invoicing makes it easy for PT ARBI to input taxes quickly, accurately, and more efficiently. E-invoicing also has a good level of security because it has a QR code. However, the e-invoice application is not yet able to detect / read tax invoice codes, is highly dependent on internet connections and is vulnerable to viruses, (b) E-invoicing makes it easier for KPP to control, supervise, assist in the reporting inspection process, and provide Tax Invoice Serial Numbers for all tax invoices that have been reported by PKP so that the risk of misuse of tax invoices by naughty PKP can be minimised.

The impact of e-invoice implementation on taxpayer compliance according to PT ARBI and from the KPP perspective: (a) The application of e-invoicing according to PT ARBI has not been able to improve taxpayer administrative compliance, especially in the aspect of calculation so that even though the calculation is carried out by the system with the aim of minimising errors, cases of correction of SPT Masa PPN are still possible, (b) The application of e-invoicing according to KPP Pratama Medan Petisah can improve taxpayer administrative compliance in terms of calculation, deposit and reporting. Increased compliance of PKP as a taxpayer will help increase state tax revenue.

Some taxpayers that have already interviewed mentioned e-commerce taxation is not clear yet, but they felt there is unfairness in practices between e-commerce (online) stores and conventional brick and mortar (offline) stores. Based on analysis above about e-commerce transaction, we can conclude that socialization of e-commerce taxation and monitoring to e-commerce taxpayers are important. Directorate General of Taxation must coordinate with other institutions like e-commerce businesses association, Ministry of Communication and Information Technology, Directorate General of Customs and Excise, banks, delivery companies, etc (Cockfield, 2005; Hartanto, 2021).

Directorate General of Taxation must develop regulations to close loopholes for tax avoidance and tax evasion in e-commerce industry. Regulation based on significant economic presence should be made as new nexus in line with substance over form principle and Unified Approach (Pillar One) of OECD to gain revenue for government. Clear and fair tax regulations are needed to keep fairness between conventional businesses and e-commerce businesses. This research has limitation in amount of interviewees due to time limitation and some interviewees felt that taxation is secrecy matter (Hartanto, 2021).

Conclusion

The e-invoice application should be upgraded by the Directorate General of Taxes, especially the system is able to read the invoice code so that the inputted taxable goods must have a value/price so that the system can automatically issue the VAT rate and the DPP of VAT. Taxable Person for VAT Purposes must be firm against the counterparty. Refusal of requests to postpone the issuance of e-invoices is one form of complying with proper VAT Return reporting procedures. Further researchers are expected to involve Tax Consultants as respondents in their research and add mixed method research methods, namely combining qualitative approaches through interviews, observations, and documentation with quantitative approaches through questionnaires. The impact of e-invoice implementation on taxpayer compliance according to PT ARBI and from the KPP perspective that application of e-invoicing according to PT ARBI has not been able to improve taxpayer administrative compliance, especially in the aspect of calculation so that even though the calculation is carried out by the system with the aim of minimizing errors, cases of correction of SPT Masa PPN are still possible.

Author Contribution

The authors i.e M.S.H, A.M, and E.Y.H are jointly cooperative to complete this article at each stage.

Funding

This research received no external funding.

Conflicts of Interest

The authors declare no conflict of interest.

References

- Amalina, D., & Suryani, E. (2020). Evaluating the Success of E-Invoice Implementation at a State-Owned Enterprise. *IPTEK Journal Proceedings Series*, 1(1), 388–396.
- Bellon, M., Dabla-Norris, E., Khalid, S., & Lima, F. (2022). Digitalization to improve tax compliance: Evidence from VAT e-Invoicing in Peru. *Journal of Public Economics*, 210, 104661. <https://doi.org/10.1016/j.jpubeco.2022.104661>
- Berg, L. P., & Vance, J. M. (2017). Industry use of virtual reality in product design and manufacturing: a survey. *Virtual Reality*, 21, 1–17. <https://doi.org/10.1007/s10055-016-0293-9>
- Bird, R. M., & Zolt, E. M. (2008). Technology and taxation in developing countries: From hand to mouse. *National Tax Journal*, 61(4), 791–821. <https://doi.org/10.17310/ntj.2008.4S.02>
- Burke, R. J., & Ng, E. (2006). The changing nature of work and organizations: Implications for human resource management. *Human Resource Management Review*, 16(2), 86–94. <https://doi.org/10.1016/j.hrmr.2006.03.006>
- Chen, J. (Cecilia), Grimshaw, S., & Myles, G. D. (2017). Testing and Implementing Digital Tax Administration. *Digital Revolutions in Public Finance, Oecd 2008*, 363. Retrieved from <https://shorturl.asia/jEgngi>
- Cockfield, A. J. (2005). The rise of the OECD as informal world tax organization through national responses to e-commerce tax challenges. *Yale JL & Tech.*, 8, 136. Retrieved from <https://shorturl.asia/D4e9v>
- Grieshaber, S. (2020). Equity and research design. In *Doing early childhood research* (pp. 177–191). Routledge. <https://doi.org/10.4324/9781003115403-12>
- Hantono, D., Sidabutar, Y. F. D., & Hanafiah, U. I. M. (2018). Kajian Ruang Publik Kota Antara Aktivitas Dan Keterbatasan. *Langkau Betang: Jurnal Arsitektur*, 5(2), 80. <https://doi.org/10.26418/lantang.v5i2.29387>
- Harianto, H., Mus, A. R., & Lannai, D. (2020). Analysis of the application of E-Invoicing in increasing Taxable Entrepreneur compliance. *Point of View Research Accounting and Auditing*, 1(3), 77–87. <https://doi.org/10.47090/povraa.v1i3.46>
- Hartanto, S. (2021). Tax Challenges of Digital Economy in Indonesia. *Jurnal Informasi, Perpajakan, Akuntansi, Dan Keuangan Publik*, 16(2), 159–178. <https://doi.org/10.25105/jipak.v16i2.6181>
- Kalsum, U. (2022). Pengenalan Kecerdasan Buatan (Artificial Intelligence) Kepada Para Remaja. *Procedia Computer Science*, 166, 310–314. Retrieved from <https://eprints.binadarma.ac.id/15964/>
- Khairani, D., & Mukharromah, A. (2015). *Lebih Mudah, Aman dan Nyaman dengan E-Faktur, Inside Tax*. Jakarta: Darussalam. Retrieved from <https://shorturl.asia/schf1>

- <https://shorturl.asia/YPgEj> *Marketing Role of Artificial Intelligence (AI) in Marketing View project*. August. Retrieved from <https://shorturl.asia/l3fp9>
- Mascagni, G., Mukama, D., & Santoro, F. (2019). An analysis of discrepancies in taxpayers' VAT declarations in Rwanda. *International Centre for Tax and Development Working Paper*, 92. Retrieved from <https://shorturl.asia/uMn3G>
- Merlin Stone. (2020). *Artificial Intelligence (AI) in Strategic Marketing Decision-Making: A research agenda Professor Merlin Stone St Mary ' s University , London , UK ; University of Portsmouth UK ; Merlin Stone Consulting Dr Eleni Aravopoulou St Mary ' s University , Lon.* Retrieved from <https://shorturl.asia/41Asj>
- Nkundabanyanga, S. K., Mvura, P., Nyamuyonjo, D., Opiso, J., & Nakabuye, Z. (2017). Tax compliance in a developing country: Understanding taxpayers' compliance decision by their perceptions. *Journal of Economic Studies*, 44(6), 931-957. <https://doi.org/10.1108/JES-03-2016-0061>
- Odinet, C. K. (2021). Fintech Credit and the Financial Risk of AI. *Iowa Legal Studies Research Paper*, 1093(2019), 2021-2060. Retrieved from <https://shorturl.asia/YPgEj>
- Pappel, I., Pappel, I., Tampere, T., & Draheim, D. (2017). Implementation of e-invoicing principles in Estonian local governments. *The Proceedings of 17th European Conference on Digital Government ECDG 2017*, 127. Retrieved from <https://shorturl.asia/5twJP>
- Raco, J. (2018). *Metode penelitian kualitatif: jenis, karakteristik dan keunggulannya*. <https://doi.org/10.31219/osf.io/mfzuj>
- Rianto, P. (2016). Modul Metode Penelitian. In *Metode penelitian* (Vol. 5, Issue July). Retrieved from
- Rodarte Soto, F. (2015). *Electronic invoicing in the VAT reporting process of small and medium size companies in Finland*. Retrieved from <https://www.theseus.fi/handle/10024/96473>
- Russell, B. (2010). Revenue administration: Developing a taxpayer compliance program. *Technical Notes and Manuals*, 2010(017). <https://doi.org/10.5089/9781462314218.005>
- Safitri, D. A. (2019). Implementasi E-Tax Invoice: Sebuah Studi Komparatif. *JURNAL PAJAK INDONESIA (Indonesian Tax Review)*, 2(1), 95-105. <https://doi.org/10.31092/jpi.v2i1.508>
- Scarcella, L. (2019). Tax compliance and privacy rights in profiling and automated decision making. *Internet Policy Review*, 8(4). Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3933264
- Sen, S. (2020). *Digital HR strategy: Achieving sustainable transformation in the digital age*. Kogan Page Publishers.
- Siregar, H., Setiawan, W., & Dirgantari, P. D. (2020). Isu Proses Bisnis Berbasis Artificial Intelligence untuk Menyosong Era Industri 4.0. *Jurnal Bisnis Strategi*, 29(2), 89-100. <https://doi.org/10.14710/jbs.29.2.89-100>
- Slemrod, J. (2019). Tax compliance and enforcement. *Journal of Economic Literature*, 57(4), 904-954. <https://doi.org/10.1257/jel.20181437>
- Tiwari, A. K., Marak, Z. R., Paul, J., & Deshpande, A. P. (2023). Determinants of electronic invoicing technology adoption: Toward managing business information system transformation. *Journal of Innovation & Knowledge*, 8(3), 100366. <https://doi.org/10.1016/j.jik.2023.100366>
- Varadaraj, D. A., & Al Wadi, D. B. M. (2021). A Study on Contribution of Digital Human Resource Management towards Organizational Performance. *The International Journal of Management Science and Business Administration*, 7(5), 43-51. <https://doi.org/10.18775/ijmsba.1849-5664-5419.2014.75.1004>