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Digital Payroll Accounting Information System and PPh 21 Compliance for Staple Food MSMEs in Wanaherang Traditional Market

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Abstract: Payroll management is one of the main obligations of entrepreneurs as tax collectors (tax withholding system) based on Indonesian tax law, particularly in the context of Article 21 of the Income Tax Law (PPh). However, many Micro, Small, and Medium Enterprises (MSMEs) in Indonesia still rely on manual payroll systems accompanied by incomplete administrative records, resulting in inaccurate tax calculations and potential non-compliance with applicable tax regulations. This study aims to: (1) identify whether MSMEs in the study sample still use manual or digital payroll systems, and (2) assess the completeness of payroll administration documents required for accurate PPh Article 21 reporting. This study uses a descriptive qualitative method, using a structured questionnaire distributed to 30 MSMEs engaged in the staple food (sembako) trading sector at Wanaherang Market, Bogor Regency. A total of 20 questionnaires were returned and analyzed, with a response rate of 66.7%. The results show that the majority of respondents still rely on manual payroll methods with incomplete administrative documentation. The 20 MSME respondents, only 9 entities (45%) had complete payroll documentation across all seven assessed components: employee data, revenue components, insurance deductions, Article 21 Income Tax calculations, supporting data, tax reporting documents, and internal control systems. The weakest component was internal control (only 40% complete), followed by completeness of supporting data (55%). As a contribution, this study proposes a conceptual digital payroll accounting information system framework consisting of six integrated stages employee data input, automated tax calculation, document generation, system validation, multi-level approval, and payroll disbursement designed to improve compliance efficiency for MSMEs. This prototype is planned to be implemented through community service activities targeting MSMEs that have not yet adopted a digital payroll system.

Keyword: Payroll Accounting Information System, Income Tax Article 21, Digitalization, MSMEs, Tax Compliance.

INTRODUCTION

Every country has an obligation to meet the needs of all its operational activities. Tax revenue is the backbone of national development financing. Tax contributions to the State Budget (APBN) consistently exceed 80% annually, making optimizing tax compliance a top priority in fiscal policy (Suwardi et al., 2024). One of the strategic tax revenue instruments is Income Tax (PPh) Article 21, namely income tax on salaries, wages, honorariums, allowances and other income related to the position of domestic individual taxpayers (Mardiasmo, 2018). MSMEs are crucial to the Indonesian economy, contributing more than 61% of Gross Domestic Product and absorbing 97% of the national workforce. However, their contribution to tax revenue remains far from proportional (Fuest et al., 2022). One of the main causes is weaknesses in the payroll administration system, which directly impacts inaccurate calculations and reporting of Article 21 Income Tax (Herfina, 2022). Many MSMEs still rely on manual record-keeping, informal employment relationships, and non-standardized payroll management. This leads to inaccurate tax deductions, inadequate archiving of supporting data, and weak internal control systems over the payroll process (Nur'aida & Sasanti, 2024).

Payroll Accounting Information Systems (AIS) are a solution that has long been recognized in accounting literature as an instrument to improve efficiency, accuracy, and compliance in the payroll process. Pristiwantiyasih & Suhartono., (2024) shows that the implementation of adequate payroll AIS significantly improves the effectiveness of internal control in the studied entities. Yadiati et al., (2024) also found that the implementation of a comprehensive AIS, including payroll, cash receipts, and sales modules, had a positive impact on the overall internal control system. At a more macro level, digital transformation in tax administration, including the implementation of Coretax by the Directorate General of Taxes, plays a significant role in encouraging MSME compliance (Teguh et al., 2025).

However, there are problems reflected in the significant research gaps in the literature as follows: (1) Most studies on payroll AIS have been conducted on large entities or the public sector, while specific studies on MSMEs in the informal trade sector which actually dominate the business structure in Indonesia are still very limited (Nur'aida & Sasanti, 2024); (2) Research that directly links the completeness of payroll administration components with the level of compliance with Article 21 Income Tax at the MSME level has not been widely conducted, even though the relationship between the two is very close in the context of the withholding system (Marin, 2024); (3) Although the design of digital payroll systems has been widely studied on an enterprise scale, the development of a payroll AIS prototype that is adapted to the limited technical capacity and resources of MSMEs is still an area that has not received adequate attention in Indonesian accounting literature (Treasure, 2022; Kokina & Blanchette, 2019).

Based on the gapThis study aims to: (1) Identify whether respondent MSMEs still use a manual payroll system or have adopted a digital system. (2) Assess the completeness of payroll administration in each entity based on the seven components required for accurate PPh Article 21 reporting. and (3) Design a prototype of a digital payroll accounting system that can be adapted to the needs of MSMEs, as an academic contribution as well as a basis for implementation in community service programs.

Accounting Information System (AIS) is a system that collects, records, stores, and processes data to produce information for decision makers (Romney et al., 2021). This conceptual framework, AIS is not just software, but an ecosystem consisting of six integrated components: (1) Human resources that operate the system; (2) Data collection procedures and instructions; (3) Organizational data; (4) Data processing software; (5) Information technology infrastructure; (6) Internal control and data security. Romney et al., (2021) These six components work synergistically to ensure that transaction data is processed accurately, timely, and reliably as a basis for managerial decision-making.

In the context of the business cycle Romney et al., (2021) identified the payroll cycle (human resources management and payroll cycle) as one of the key transaction cycles in the AIS, alongside the revenue, expenditure, and production cycles. The payroll cycle encompasses all activities from recruitment, employee data recording, compensation calculation, tax and contribution deductions, payments, and reporting to tax authorities. Failure at any point in this cycle has the potential to create significant compliance risks, particularly in fulfilling Article 21 Income Tax obligations, as a tax withheld through the withholding system.

Payroll Accounting Information System is an integrated system designed to automate, manage, and optimize the entire employee compensation process within an organization. Nur'aida & Sasanti., (2024) defines it as a system that combines hardware, software, database, procedures, and human resources components to produce payroll information that is accurate, timely, and relevant for both management and regulatory compliance purposes. Pristiwantiyasih & Suhartono., (2024) expands this definition by emphasizing the system's function as a bridge connecting the Human Resources, Finance, Accounting, and Management departments, enabling a real-time flow of information that can be accessed by every stakeholder according to their authority and powers.

The development of payroll systems has undergone significant evolution. From a manual era based on hand calculations and physical documentation, the computerization era of the 1980s introduced spreadsheets that automated basic calculations (Nur'aida & Sasanti, 2024). The 1990s marked the birth of specialized payroll systems like ADP and Paychex, which offered comprehensive solutions spanning payroll calculation, tax compliance, and reporting. The internet revolution ushered in the Software as a Service (SaaS) model, enabling browser-based access. Riyadli et al., (2020) The current era integrates artificial intelligence for predictive analytics, Robotic Process Automation (RPA) for the automation of repetitive tasks, and blockchain for data transparency and security (Kokina & Blanchette, 2019).

Implementing a digital payroll system provides multiple benefits to organizations. Yadiati et al., (2024) demonstrated that implementing a comprehensive AIS, including payroll, cash receipts, and sales modules, significantly impacted the effectiveness of a company's internal control system. Their literature review confirmed that a robust AIS improves financial reporting transparency through a structured audit trail, automated data validation, and role-based access control. Treasure., (2022) The quality of the payroll recording system is directly correlated with the accuracy of income tax reporting, namely that manual systems consistently produce higher rates of withholding errors than digitalized systems (Marin, 2024).

Internal control is a critical component of the payroll system and is often a point of weakness in small entities. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework, first published in 1992 and updated in 2013, establishes five interrelated components of internal control: (1) Control environment; (2) Risk assessment; (3) Control activities; (4) Information and communication; (5) Monitoring (COSO, 2013). These five components are hierarchical and interdependent; a weakness in any one component will weaken the effectiveness of the entire control system.

In the context of payroll, effective control activities require automated data validation to ensure consistency, an audit trail that records any data changes, multi-level authorization procedures (dual approval) before disbursement, and user access restrictions based on authority. Khasanah et al., (2021), Rahmania., (2022) in his study of Indonesian banking institutions concluded that the effectiveness of internal control is largely determined by the quality of the underlying payroll accounting system entities with unstructured payroll systems consistently demonstrated weaknesses in the control and monitoring activities component of the COSO framework. This finding is relevant to the context of MSMEs, where limited human resources and technology make internal control the most vulnerable component.

Digital payroll information systems in MSMEs cannot be separated from the perspective of user behavior towards new technology. The Technology Acceptance Model (TAM) developed by Davis., (1989) is a theoretical framework that is often used to explain and predict the acceptance of technology by users. TAM postulates that a person's acceptance of a technology is determined by two main constructs: (1) Perceived usefulness, namely the belief that using the technology will improve their job performance. (2) Perceived ease of use, namely the belief that the technology does not require excessive effort to operate (Davis, 1989). These two constructs together form the user's attitude which determines the behavioral intention to use or reject a system.

The relevance of TAM in the context of this research lies in explaining why most MSMEs still use manual payroll systems despite the availability of digital systems (Rahmania, 2022). When MSMEs do not perceive digital systems as useful for their business scale, or when the systems are considered too complex to operate without specialized training, resistance to adoption will remain high. Davis., (1989) Therefore, the design of a payroll information system aimed at MSMEs must explicitly consider these two TAM dimensions, namely ease of interface and tangible benefits that can be directly felt by users.

From a tax compliance perspective, employer behavior in deducting and reporting Article 21 Income Tax can be explained through the Slippery Slope Framework developed by(Kirchler et al., 2008). This framework postulates that tax compliance is determined by two main dimensions: (1) Taxpayer trust in the tax authority, which encourages voluntary compliance. (2) The power of the tax authority to enforce compliance through audits and sanctions, which encourages forced compliance (Wijayanti & Anwar, 2020). Optimal compliance conditions are achieved when both trust and power of the tax authority are equally high. From a tax compliance perspective, employer behavior in withholding and reporting Article 21 Income Tax can be explained through the Slippery Slope Framework developed by Kirchler et al., (2008). This framework postulates that tax compliance is determined by two main dimensions: (1) Taxpayers' trust in the tax authority, which encourages voluntary compliance. (2) The tax authority's power to enforce compliance through audits and sanctions, which encourages forced compliance. Optimal compliance conditions are achieved when both trust and power of the tax authority are high.

The application of this framework to the context of MSMEs and Article 21 Income Tax is highly relevant. The findings of this study indicate that the components with a 100% completeness rate in the MSME respondents BPJS insurance deductions, income components, and SPT documents are coercive and actively monitored by authorities (forced compliance). Conversely, components with weak internal control systems (40%) and supporting data (55%) are components that are not directly monitored in the short term. This is consistent with the Slippery Slope Framework's prediction that voluntary compliance based on trust and understanding, rather than simply fear of sanctions, requires deeper systemic intervention, including through digitizing payroll systems that help taxpayers fulfill their obligations more easily and accurately (Teguh et al., 2025).

Article 21 income tax is a tax on income in the form of salary, wages, honorarium, allowances and other payments in any name and form in connection with work or position, services and activities carried out by domestic tax subjects, as referred to in Article 21 of the Income Tax Law.(Mardiasmo, 2018). Article 21 Income Tax Withholding Agents are individual or corporate taxpayers, including Permanent Establishments, who have the obligation to withhold tax on income related to work, services and the activities of their employees (PMK 168 of 2023, 2023).

Subjects of PPh 21 tax are: (1) Employees. (2) Recipients of severance pay, pensions or retirement benefits, old age benefits or old age security including heirs. (3) Non-employees who earn income. However, recipients of income can be categorized as not being subject to PPh 21 tax if: (1) Diplomatic representative officials. (2) Representative officials of international organizations that have been appointed by the Ministry of Finance (PMK 168 Tahun 2023, 2023)

Calculation of taxable income is a reference as the basis for the amount of income tax. Determination of taxable income consists of gross income minus (1) Job costs of 5% maximum Rp. 6,000,000 per year, (2) Pension contributions of 5% maximum Rp. 2,400,000 per year, (3) Old age security contributions and (4) non-taxable income, according to marital status and dependents, as in the following table.

Table 1. Non-taxable income

Single Men/Women (Rp)		Married Men (Rp)		Husband and wife combined (Rp)	
TK/0	54,000,000	K/0	58,500,000	K/I/0	112,500,000
TK/1	58,500,000	K/1	63,000,000	K/I/1	117,000,000
TK/2	63,000,000	K/2	67,500,000	K/I/2	121,500,000
TK/3	67,500,000	K/3	72,000,000	K/I/3	126,000,000

Source: PMK 101/PMK.010/2016

The Article 21 Income Tax rate is calculated using a progressive rate based on the Tax Regulation Harmonization Law. UU Harmonisasi Peraturan Perpajakan., (2021) Number 7 of 2021, as presented in Table 2. It should be noted that PMK Number 168 of 2023 introduces the Average Effective Rate (TER) mechanism which simplifies the monthly calculation of Article 21 Income Tax, a regulatory development that directly demands an update to the payroll system to remain compliant with the latest provisions.

Table 2. Progressive income tax rates

Taxable Income Layers	Tax Rates
Up to Rp. 60,000,000	5%
Above Rp. 60,000,000 – Rp. 250,000,000	15%
Above Rp. 250,000,000 – Rp. 500,000,000	25%
Above Rp. 500,000,000 – Rp. 5,000,000,000	30%
Above Rp. 5,000,000,000	35%

Source: UU HPP, 2021

Framework

Based on the synthesis of the theoretical foundations above, this study builds a framework of thought that integrates four theoretical perspectives coherently; (1) SIA Framework (Romney et al., 2021) used to identify and assess the completeness of the payroll administrative components that each employer entity should have; (2) Framework (COSO, 2013) serve as a reference for assessing the quality of internal control in the payroll cycle, particularly in the aspects of data validation, audit trail, authorization, and archiving; (3) TAM. Davis., (1989), explains the behavioral factors that determine the willingness of MSMEs to adopt the proposed digital payroll system; (4) Slippery Slope Framework (Kirchler et al., 2008). Provides a perspective for interpreting the compliance pattern of Article 21 Income Tax found in respondent MSMEs, why compliance with the coercive component is high, while administrative compliance which requires awareness and technical ability is still low

METHOD

Population and Sample

The population of this study is Micro, Small, and Medium Enterprises (MSMEs) engaged in the trade of nine basic commodities (sembako) in the Wanaherang Market area, Bogor Regency. Based on initial data collection, there are 30 MSMEs that meet two inclusion criteria: (1) Carrying out obligations as taxpayers who deduct and report Article 21 Income Tax. (2) Having a minimum of 6 employees so that the obligation to deduct Article 21 Income Tax is active and relevant (Saunders, M.N.K., Lewis, P. and Thornhill, 2019).

The research subjects consisted of staff or owners in the payroll and tax reporting departments who understood the payroll procedures and Article 21 Income Tax reporting for each MSME. Questionnaires were distributed through direct visits to respondents' business locations at Wanaherang Market during the research period. In addition to the questionnaires, researchers also conducted direct observations of the condition of payroll documentation seen during the visits (e.g., the presence of payroll cash books, printed pay slips, and tax archive folders) as supporting data for triangulation. These observations were not included in the questionnaire scores but were used to confirm the consistency of respondents' answers.

The sampling technique used saturated sampling, meaning all members of the population were made the research subjects. This method was chosen because the population was relatively small (30 MSMEs) and the researcher wanted a full representation of the phenomenon being studied.(Sugiyono, 2022)The questionnaires were distributed directly to all 30 MSMEs by the researchers. Of the 30 questionnaires distributed, 20 were returned and analyzed, resulting in a response rate of 66.7%.

Research Instrument: Payroll Administration Completeness Questionnaire

The research instrument was a structured questionnaire based on seven components of payroll administration completeness required for accurate reporting of Article 21 Income Tax. The instrument was developed based on the payroll cycle framework.(Romney et al., 2021). internal control framework(COSO, 2013), and the provisions of PMK Number 168 of 2023 concerning the Average Effective Rate of Income Tax Article 21. The questionnaire was filled out by staff in the payroll and tax reporting section who understand the procedures for payroll to reporting Income Tax Article 21 for each respondent's MSME.

The questionnaire consists of two parts. Part A contains general information about the entity (business name, commodity type, number of employees, length of operation, and payroll system usage status: manual or digital). Part B contains 28 closed-ended questions divided into seven completeness assessment components, each with four items on a dichotomous scale (Yes = 1 / No = 0). The instrument outline is presented in the following table.

Table 3. Payroll Administration Completeness Questionnaire Instrument

No	Component	Question Items (Representative)	Amount	Reference
1	Employee data	Does the entity have NIK, NPWP, PTKP status, and position data for each employee?	4	Romney et al. (2021); PMK 168/2023
2	Income Components	Does the entity record basic salary, fixed allowances, non-fixed allowances, in-kind benefits, and THR separately?	4	UU PPh No 36/2008
3	Insurance Deductions	Does the entity calculate and deduct BPJS Health and BPJS Employment contributions according to the provisions?	4	PP No. 44/2015; PP No. 85/2013
4	Calculation of PPh 21	Does the entity calculate PPh 21 by taking into account gross, job costs, pension contributions, PTKP, and TER rates?	4	PMK No. 168/2023
5	Supporting data	Does the entity regularly file tax periods, tax	4	UU KUP Article 28

No	Component	Question Items (Representative)	Amount	Reference
		object codes, and tax credit lists?		
6	Tax Return & Withholding Certificate	Does the entity create pay slips, 1721-A1 withholding tax certificates, PPh 21 Periodic Tax Returns, and annual salary recaps?	4	PMK No. 168/2023
7	Internal Control System	Does the entity have data validation, audit trails, data backups, and user access restrictions?	4	COSO (2013)
	Total		**28**	

Source: Previous Research and Regulations

The assessment of the completeness of each respondent was carried out using a dichotomous score.(Cresswell, 2018)per component. Each component consists of 4 questions with the answers Yes (score 1) and No (score 0) with a maximum score per component of 4. The following table shows the criteria for determining the completeness of payroll administration.

Table 4. Criteria for Determining the Completeness of Payroll Administration

Per Component	**Complete**	**Score ≥ 3 out of 4 items (≥ 75%)**	**All core points are met**
Per Component	Incomplete	Score < 3 out of 4 items (< 75%)	There are substantive weaknesses
Per Entity	Complete Documentation	≥ 6 of 7 components Complete (≥ 85.7%)	Adequate payroll system
Per Entity	Incomplete Documentation	≤ 5 of 7 components Complete	There are tax compliance risks

Source: Nur'aida & Sasanti (2024); Romney et al. (2021)

Data Analysis Techniques

This study uses a qualitative descriptive approach to analyze data obtained from questionnaires (Sorola, 2022; Creswell, 2018). The analysis was carried out through the following four stages.

1) Data reduction. Questionnaire responses were verified for completeness and coded into a 7 × 20 scoring matrix (7 components × 20 respondents). Unanswered items were given a score of 0 as a representation of incompleteness.
2) Data presentation. Scores are compiled into a frequency table showing the number and percentage of respondents with Complete and Incomplete status for each component. Distribution patterns are visualized in bar graphs to facilitate comparative interpretation across components.
3) Drawing conclusions. Findings are interpreted in the context of the theoretical basis.(COSO., 2013; Romney et al., 2021; Kirchler et al., 2008) and relevant previous literature, to identify the most critical components and explain the patterns of forced versus voluntary compliance found among respondents.
4) System prototype development. Based on the identified weakness patterns, the researchers designed a digital payroll accounting information system flow that integrates the seven components as functional modules. The design was developed by considering the limited technical capacity of MSMEs in accordance with the principles of perceived usefulness and perceived ease of use in TAM. Davis., (1989), and is planned to be implemented through community service programs.

RESULT AND DISCUSSION

Respondent Characteristics

The study used primary data collected through structured questionnaires distributed to 30 MSMEs in the Wanaherang Market area. Of the 30 distributed questionnaires, 20 were returned and could be analyzed (a response rate of 66.7%). The 10 respondents who did not return the questionnaires were deemed not to significantly affect the validity of the data because their business characteristics did not differ substantially from those of the participating respondents.

All respondents are MSMEs engaged in the trading sector of nine basic commodities (sembako) with a minimum of 6 employees and an estimated average turnover of under IDR 3,000,000,000 per year, thus fulfilling the definition of MSMEs based on Law Number 20 of 2008. Most respondents (70%) have 6 to 8 employees, and 45% of them (9 out of 20) record complete payroll documentation.

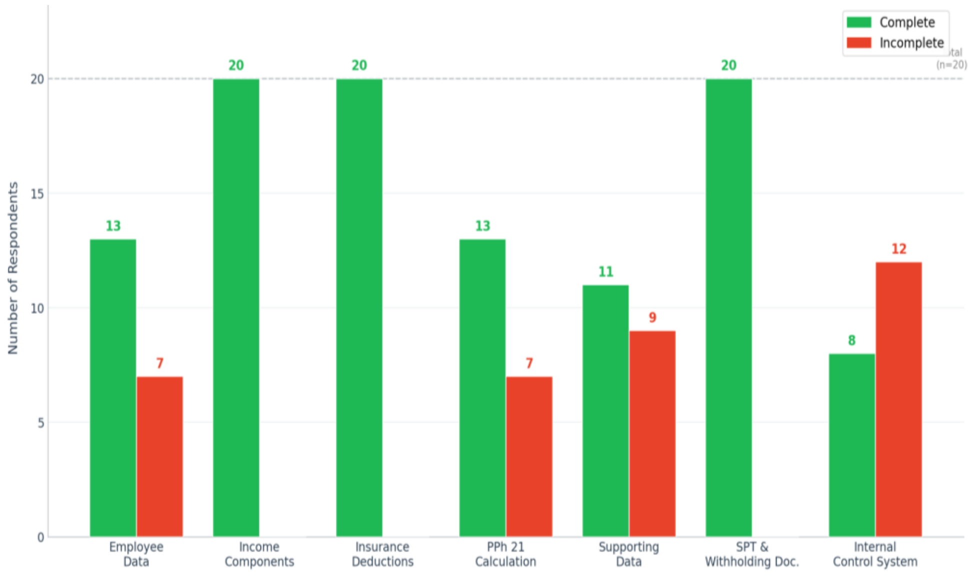
Payroll System Status

The questionnaire results showed that the majority of respondents still rely on a manual payroll system, based on direct agreements between employers and employees without standardized written procedures. This pattern reflects the characteristics of informal employment relationships commonly found in MSMEs in the traditional trade sector. Payroll is more personal and trust-based, so orderly administration is not yet a top priority for business managers.

Of the 20 respondents, only 9 entities (45%) were categorized as having complete payroll documentation for all or nearly all of the components assessed. The remaining 11 entities (55%) still had one or more substantive weaknesses in their payroll administration. This finding is consistent with the results of the study. Nur'aida & Sasanti., (2024) which found that many MSMEs in Indonesia have not implemented a comprehensive payroll Accounting Information System, especially in the aspects of internal control and tax data archiving.

Payroll Administration Completeness

Assessment of the completeness of payroll administration is carried out on seven components based on a questionnaire instrument developed with reference to the payroll cycle framework (Romney et al., 2021). Provisions of PMK Number 168 of 2023, and the framework COSO., (2013) The assessment results for each component are presented in Figure 1 and Table 5. The assessment of the seven components of payroll administration showed varying results among the 20 MSME respondents. Three components recorded a perfect completeness level (100%), namely the income component, BPJS insurance deductions, and SPT and 1721-A1 withholding slips. The high level of compliance in these three components is coercive (enforced compliance). The income component is the basis of payroll transactions and cannot be ignored, while BPJS deductions and reporting of Periodic SPTs are actively monitored by authorities with strict sanctions for non-compliance. Kirchler et al., (2008) The next two components recorded moderate completeness. Employee data and Article 21 Income Tax calculations were each completed by only 13 of the 20 respondents (65.0%). MSMEs with incomplete employee data generally did not differentiate between positions and employment status, resulting in inaccurate determination of job costs in the Article 21 Income Tax form. In the calculation component, 7 respondents only calculated tax based on gross income minus the Non-Taxable Income Tax (PTKP) without taking into account job costs and pension contributions, resulting in income tax deductions exceeding the actual obligation and potentially leading to refunds.



Source: Research results

Figure 1. Completeness of payroll administration among respondents

The two components with the lowest completeness were tax support data (55.0%, only 11 out of 20 respondents) and internal control systems (40.0%, only 8 out of 20 respondents). In the supporting data component, the majority of MSMEs do not archive tax documents regularly and consider the obligation to file after reporting, even though Article 28 of the Tax Law requires a minimum of 5 years of retention. This condition poses a serious risk in the event of an audit by the Directorate General of Taxes. The internal control system is the most critical point, with 12 out of 20 respondents (60.0%) lacking adequate data validation mechanisms, audit trails, data backups, or user access restrictions. The absence of a structured control system opens up the opportunity for undetected errors and abuse in the payroll process, as confirmed by the framework COSO., (2013) and findings Rahmania., (2022).

Table 5. Completeness of Payroll Administration in Respondent MSMEs

No	Payroll Administration Components	Incomplete (n)	Complete (n)	Total (n)	% Complete	Information
1	Employee Data (Identity, NIK, NPWP, PTKP Status, Position, Employment Status)	7	13	20	65.0%	MSMEs with incomplete records generally record employees without differentiating between positions, groups or employee status.
2	Income Components (Basic salary, fixed/non-fixed allowances, in-kind benefits, THR)	0	20	20	100.0%	All respondents recorded income components, although not all ideal components were available in the administration.
3	Insurance Deductions (BPJS Health & BPJS Employment)	0	20	20	100.0%	All respondents recorded insurance deductions because it is an obligation set by the government.
4	Calculation of Article 21 Income Tax (Gross Income, Net Income, Taxable Income, Income Tax Payable, Income Tax Withheld)	7	13	20	65.0%	Incomplete MSMEs generally only calculate Gross minus PTKP without taking into account office costs and pension contributions.
5	Supporting Data (Tax	9	11	20	55.0%	Many MSMEs do not archive

No	Payroll Administration Components	Incomplete (n)	Complete (n)	Total (n)	% Complete	Information
	period, tax object code, applicable rates, tax credit list)					supporting data regularly; documents are considered complete after reporting.
6	SPT Report & Withholding Certificate (Pay slip, withholding certificate 1721-A1, PPh 21 Periodic SPT, annual salary recap)	0	20	20	100.0%	All respondents completed the reporting documents, although some still used receipts as a substitute for pay slips.
7	Internal Control System (Data validation, audit trail, data backup, user access)	12	8	20	40.0%	The majority of MSMEs do not have adequate control systems; payroll management is still individualized without standard procedures.

Source: Research data

A consistent and significant pattern can be observed across the seven components. The components demonstrating perfect compliance (100%) are BPJS insurance deductions and SPT reporting, which are coercive and actively monitored by authorities, so non-compliance will immediately result in sanctions. Conversely, the components demonstrating low compliance the internal control system (40%), supporting data (55%) and PPh 21 calculation (65%) are administrative and technical components that are not routinely monitored in the short term.

This pattern directly supports the predictions of the Slippery Slope Framework. Kirchler et al., (2008) MSME compliance is driven more by the power of authority than by trust and awareness. Consequently, efforts to improve compliance with Article 21 Income Tax in the MSME segment are not sufficient simply by increasing sanctions but require interventions that increase administrative convenience and awareness, including through the digitalization of payroll accounting information systems designed to suit MSME capacity (Teguh et al., 2025). This finding also confirms the relevance of the prototype design of the digital payroll accounting information system proposed in this study.

Discussion

1. Dominance of Manual Systems and Incomplete Payroll Administration

The research results show that of the 20 MSME respondents, the majority still use manual payroll systems. Only 9 entities (45%) have complete payroll documentation based on the seven assessed components. This finding aligns with Nur'aida & Sasanti., (2024) which concluded that many public and private sector entities in Indonesia still face obstacles in implementing comprehensive payroll Accounting Information Systems (AIS), particularly in the internal control aspect. Similarly, Rahmania., (2022) found that the effectiveness of internal control is closely related to the quality of the payroll accounting system implemented by an entity.

The conditions found among MSME respondents at Wanaherang Market reflect the general reality faced by small businesses in Indonesia: working relationships are personal and informal, record-keeping is based on custom rather than standardized procedures, and orderly administration is not yet a top priority for entrepreneurs. This aligns with the findings of Marin, (2024), which states that the relationship between payroll systems and income tax compliance is significantly influenced by the quality of the employer's recording system. When the payroll system is inadequate, the risk of inaccurate withholding and reporting of Article 21 Income Tax increases significantly.

2. Most Critical Components: Control Systems and Supporting Data

Of the seven components assessed, the internal control system was the least complete, with only 8 of 20 respondents (40%) assessing it as having an adequate control system. The supporting data component followed with a completeness rating of 55% (11 of 20 respondents). These two findings indicate that while MSMEs are capable of conducting routine payroll deductions and tax reporting, they have not yet established a control infrastructure that ensures consistency, traceability, and auditability of the payroll process.

Within the COSO (Committee of Sponsoring Organizations of the Treadway Commission) framework, an effective internal control system requires at least five components: control environment, risk assessment, control activities, information and communication, and monitoring. Khasanah et al., (2021), the findings of this study indicate that MSME respondents only meet a small portion of these requirements, namely only in basic control activities (BPJS deductions and payroll recording). Audit trails, automated data validation, and user access management are almost entirely absent, as reported by Treasures, (2022) in his study on the transparency of financial reports based on accounting information systems.

The low completeness of supporting data (55%) also has serious implications for long-term compliance. Indonesian tax regulations require taxpayers to retain tax documents for a minimum of five years (Article 28 of the Tax Law). When supporting data is not properly archived, MSMEs face the risk of administrative sanctions if audited by the Directorate General of Taxes. Digitizing the payroll system equipped with an automated archiving module is a relevant solution to address this weakness (Kokina & Blanchette, 2019).

3. Implications of Digitalization on Compliance with Article 21 Income Tax

From a tax compliance perspective, incomplete payroll administration found in 11 of the 20 respondents has the potential to cause underpayment or misreporting of Article 21 Income Tax. In particular, 7 respondents (35%) who were incomplete in calculating Article 21 Income Tax have the potential to calculate taxes based on gross income minus PTKP, without taking into account job costs (maximum IDR 6,000,000 per year) and pension contributions (maximum IDR 2,400,000 per year) as regulated in PMK Number 168 of 2023. This not only results in incorrect tax payments but also harms employees who should receive a larger reduction.

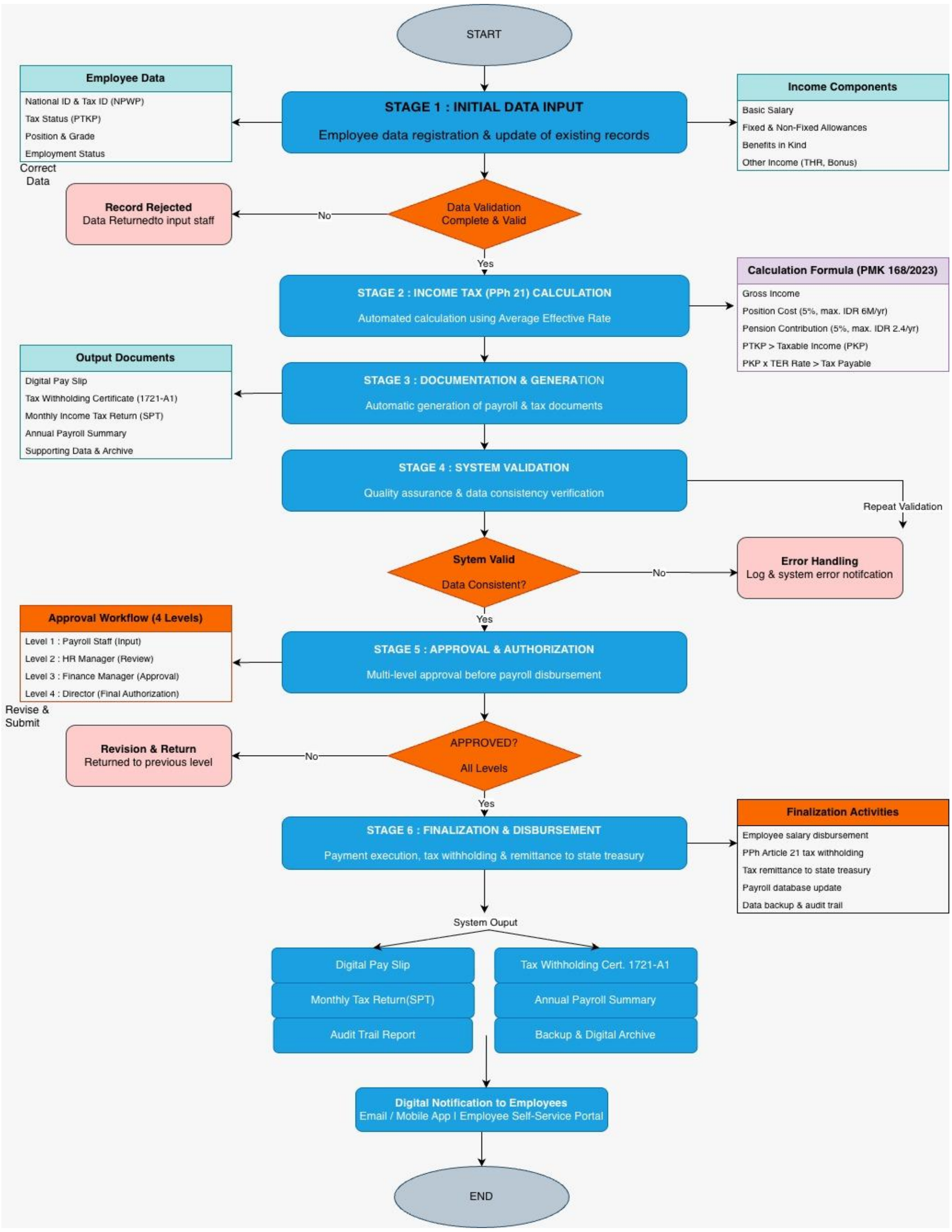
Teguh et al., (2025)In their study on the digital transformation of tax administration in Indonesia, they emphasized that improving MSME compliance is highly dependent on easy access to systems tailored to their capacity and digital literacy. A simple payroll accounting information system designed to be compatible with DGT reporting platforms like Coretax can be a catalyst for improving compliance with Article 21 Income Tax in the MSME segment.

4. Digital Payroll Information System Design as a Solution

Based on the research findings, the researcher developed a conceptual design of a digital payroll accounting information system consisting of six integrated stages, as depicted in Figure 2. This design was built based on the actual needs of respondents identified through questionnaires and took into account the limited technical capacity of MSMEs in the trade sector.

The first stage (employee data collection) addresses the weakness of seven respondents who reported incomplete employee data by providing a structured form containing all mandatory data for calculating Article 21 Income Tax, including PTKP status. The second stage (automatic calculation) automates a process that has been carried out manually and is prone to errors by integrating the TER (Average Effective Rate) rate in accordance with PMK 168/2023. The third stage (documentation) produces pay slips along with the amount of tax deductions that will be input into the DJP Coretax application system. The fourth to sixth stages (validation, approval, and finalization) strengthen internal controls, which are currently the weakest point in the respondents' MSME payroll ecosystem.

This design has advantages over enterprise payroll systems, which are generally too complex and expensive for the MSME segment. By prioritizing ease of use and automation of tax calculations, this system has the potential to improve compliance with Article 21 Income Tax and MSME operational efficiency, in line with findings.(Pristiwantiyasih & Suhartono, 2024)regarding the impact of payroll AIS on internal control. The results of this study support the urgency of developing and implementing such a system through a community service program as a further stage of research.



Source: Development of research results

Figure 2. Six-stage digital payroll SIA prototype

CONCLUSION

The majority of MSME respondents still use manual payroll systems. The lack of digitalization makes the payroll process vulnerable to calculation errors, data inconsistencies, and inaccurate tax reporting.

The lowest level of tax administration completeness is the internal control system. Conversely, components with full compliance (100%) are mandatory insurance deductions (BPJS), income components, and SPT reporting documents. This indicates that MSMEs fulfill coercive obligations (mandated and monitored) but are weak in administrative and technical aspects.

As a research contribution, a prototype six-stage digital payroll accounting information system was designed that can be adapted to the needs of MSMEs with limited technical resources. This system integrates employee data collection, documentation, validation, multi-level approval, and payroll finalization.

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