Utilization of big data and cloud computing platforms for the smooth processing of financial accounting system data and its implications for the success of village development

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CHRONICLE	ABSTRACT
	This research aims to analyze the direct and indirect influence of the use of Big Data and Cloud Computing Platforms on the smooth processing of financial accounting system data and its implications for the success of village development. This research used quantitative methods, using Saturation sampling techniques, and obtained a sample of 131 respondents who were village financial information system operators, consisting of 131 villages in Pringsewu Regency, Lampung Province, Indonesia. The data collected from the surveys was then analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS). The research and data analysis demonstrate that Cloud Computing Platforms significantly enhance the efficiency of processing financial accounting system data. Additionally, Cloud Computing Platforms have a direct and positive influence on the success of village development. Moreover, the efficient handling of financial accounting system data directly and significantly impacts the progress of village development. Furthermore, the application of Big Data has a direct and substantial impact on the effective processing of data in financial accounting systems, as well as on the achievement of success in village development. Ultimately, the efficient data processing of the Financial Accounting System serves as a partial intermediary between the utilization of Big Data and Cloud Computing Platforms, and the achievement of village development in Pringsewu Regency, Lampung Province, Indonesia. Because the independent variable is able to significantly influence both directly and indirectly the dependent variable. © 2024 by the authors; licensee Growing Science, Canada.

1. Introduction

In village development, both physical and non-physical, village financial management is very important. "Republic of Indonesia Law Number 6 of 2014 which regulates the freedom of villages for a village to become an independent and autonomous state, including having its own government, controlling village assets and funds for welfare and improving the quality of life." The government provides funds from the State Revenue and Expenditure Budget (APBN) every year to be used and managed as best as possible for physical and non-physical development. Apart from that, fund managers must carry out transparent, accountable and participatory accounting. With the village fund policy, it is hoped that the economy and community welfare will improve (Zhu et al., 2021). Managing village funds is a common problem. Insufficient resources to manage village finances is a major problem for village financial information system operators. Second, there are no human resources capable of managing large amounts of funds, while no one calculates the RAB for materials, tools and wages. Apart from that, RPJMDes, RKPDes, Design, and RAB and APBDes are needed. Third, the technology used in financial management does not function well. This technology will help users increase performance and productivity. Successful implementation of the

system will produce information that is acceptable and meets expectations in a timely (timely), accurate (accurate) and trustworthy manner (Suyanto & Pudjianto, 2015).

One step that villages can take is to obtain direction from the central government to implement an easily accessible internet-based system that will help users with their work. Siskeudes, a village financial system application, was developed by BPKP and the Directorate General of Village Government Development, Ministry of Home Affairs to improve village financial governance (Permen, 2014). The success of a system implementation can be measured by determining how efficiently and effectively the goals created for the system are achieved and how easy it is for users to achieve their work goals. Therefore, the measure of success of the Siskeudes application is if village officials have used it as a tool for managing village finances from the planning to reporting or accountability stages, and if the application also offers benefits and convenience for its users (Zhou et al., 2023). However, there are several variables that influence the success of implementing Siskeudes, including behavioral aspects. According to several studies, the success of system implementation is influenced by two factors: technical capabilities and user behavioral aspects (Graydon et al., 2022; Kato, 2016; Kwac & Rajagopal, 2015).

According to "Article 4 of Law Number 6 of 2014 concerning Villages, Village regulations aim to improve the economy of Village communities and overcome national development gaps by encouraging initiative, movement and participation of Village communities in developing Village potential and assets for shared prosperity. For many years, villages have been seen more as objects of development, so they are very dependent on central government assistance". As a result, very few villages can maximize their potential. To achieve village development goals, all institutions and community leaders must recognize existing potential, both physical and non-physical, and understand how to develop this potential to maximize community prosperity. Apart from that, the development of village potential must be adapted to the problems or needs of the community so that the results can be measured to improve general welfare in accordance with the goals that have been decided (Hlaváček et al., 2023; Y. Li et al., 2022). To support the progress of village development, "the government has implemented the Village Fund Allocation (ADD) policy since Law Number 6 of 2014 concerning Villages. The amount of funds received by villages from village fund allocations varies depending on their conditions and potential. According to Law Number 6 of 2014, the distribution of village funds is intended to protect and empower villages to be strong, advanced, independent and democratic. It is hoped that Village Funds can help develop and empower villages to create a just, prosperous and prosperous society."

Village funds have helped a lot in village development since they were given in 2005. Until 2022, Village Funds have produced various achievements in village development in Indonesia, including infrastructure. However, the achievement of village fund allocation in the infrastructure sector does not affect poverty reduction in the village (Tahir, 2018). In contrast, it has exerted a beneficial influence on economic expansion. This is mostly attributed to the temporal discrepancy between infrastructure development, which occurs in the short term, and its limited impact on the economic growth of villages in the medium and long term. Therefore, the Village Fund allocation policy must be changed to support the progress of Village development (Zhou et al., 2023).

Village economic development is one of the important approaches in development to improve the welfare of village communities. This is a process in which village governments and communities use existing resources and form collaborations between village governments and the private sector to create new jobs and encourage economic growth (Bahransyaf & Probosiwi, 2013). Village economic development can enable residents to live enjoyable, healthy lives and with high life expectancy.

"With the enactment of Republic of Indonesia Law Number 6 of 2014 on January 15 2014, village communities are happy because every village will receive government funds for development". According to this law, each village will receive government funding for development, and the focus is to make more changes for the village and its community through development. The new village funding policy issued from the Regional Revenue and Expenditure Budget (APBD) supports this agenda (Permen, 2014). According to article 24 letter g of Law Number 6 of 2014 concerning Villages, the implementation of accountability-based village governance ensures that village residents can be held accountable for all actions and results (Permen, 2014).

Regulations are made to help village governments carry out their work correctly and in accordance with regulations. "Minister of Home Affairs Regulation Number 133 of 2014 regulates village financial management and includes planning, implementation, administration, reporting and accountability of village finances". According to Permendagri (2014), government plays a very important role in financial management and village operational performance. So that every village is not left behind by the modern era, village governments are expected to increase their development and increase the use of existing resources (Xu et al., 2022; Zang et al., 2023). Therefore, administrative and substantive errors, as well as errors in reporting and financial responsibility, are very dangerous in managing the village budget. This does not make sense because the budget obtained from various provincial and district budget sources (APBN and APBD) has many risks. Therefore, the management of village funds must be clear, accountable and not misused (Li et al., 2022).

The development budget is provided in the Village Income and Expenditure Budget (APBDes) for rural development through the Village Fund Allocation (ADD), which is allocated in the Village Transfer Group, and is part of the government's concern for rural development (Permen, 2014). Therefore, there are still many problems that arise when village funds are used for

development and empowerment. This failure will lead to problems such as misuse of village funds that are not in accordance with their intended purpose. This is because village officials do not have sufficient knowledge to manage village funds (Xu et al., 2022; Zang et al., 2023; Zhou et al., 2023). The government must use accounting systems to achieve organizational goals, not just to monitor financial processes. The accounting system helps regional and city governments report and be accountable to the district government.

In the industrial era 4.0, technological innovation brings new perspectives. The internet is the main technology that makes things easier for people in their daily lives. Accounting in the 4.0 era requires high awareness to recognize emerging opportunities and track developments in the industrial revolution (Zuraidah, 2019). Because the internet has a big influence on human life, the use of digital internet in the world of work will also have an impact. One thing that will be discussed is how the use of digital internet such as big data, cloud computing, and artificial intelligence affects work in the accounting field, especially how company accounting runs. Countries may face several challenges while adopting Industry 4.0. These include resistance to demographic and social change, political instability, unavailable resources, risk of natural disasters, and demands for environmentally friendly technologies (Balmaseda et al., 2023; Feng et al., 2023). Despite some bottlenecks, the field of accounting has evolved over the centuries. Technological advances have enabled almost all business sectors to be automated. A combination of digital, analog, and biological technologies and methods will change social interactions and human life (Zang et al., 2023). According to Krassowska et al., (2022) accounting is one of the jobs most affected by the 4.0 era, or the performance of accountants. This is the result of major advances in accounting during the Big Data era. The variable concept of applying big data is how accountants can use big data to manage lots of data without using conventional methods (Gunasekaran et al., 2018). Big data consists of volume, variety, and velocity, with some types of data adding V, such as value and veracity (Jiang et al., 2020).

Policy makers use information on development achievements to plan national development. This is happening in the current era of Sustainable Development Goals (SDGs), Data Revolution, Big Data, and Nawacita. The National Socio-Economic Survey (Susenas), conducted by BPS, provides information about the socio-economic conditions of society. Regional autonomy causes data needs at the district and city level. District and city governments need this data to make policies and assess development programs. To meet these needs, Susenas data was collected in March 2015 with a sample of 300,000 households. In 2022, the March Susenas sample will be increased to 345,000 households (BPS, 2022). To achieve the expected goals for successful village development, factors such as the use of Big Data, Cloud Computing Platforms, smooth processing of financial accounting system data are very important to improve. There are several factors influencing the increase in tax revenue from the manufacturing sector, based on several studies conducted by Hu et al., (2022, 2023); Li et al., (2019); Matridi et al., (2015); Robert et al., (2021); and Shen & Chou (2022) stated that Cloud Computing Platforms can have a positive and significant influence on the success of village development.

Apart from that, research conducted by Kshetri (2016); Lee et al., (2019); Lin et al., (2014); O'Donovan et al., (2019); and Zissis & Lekkas (2011) stated that Cloud Computing Platforms can have a positive and significant influence on the success of village development. Then research conducted by Dumreicher (2008); Hilmawan et al., (2023); Karaivanov (2012); Wickramasinghe & Hopper (2005); and Yuan et al., (2024) which states that the smooth processing of financial accounting system data can have a positive and significant influence on the success of village development.

From the information above, further research is needed regarding efforts to achieve successful village development, therefore researchers are interested in using this theme.

2. Literature review

2.1 Utilization of Big Data to Smooth Financial Accounting System Data Processing

Utilizing big data enables accountants within an organization to swiftly retrieve transaction data and handle transactions of significant magnitude. Apart from that, other units in the organization that need accounting data can also easily access it in real-time (Willetts et al., 2022). Big data refers to a large number of data sources with disparate sources, complex and many types, higher processing speed, and the value can be reproduced many times, with the quality of very large volume, variety, fast results, and population density The low one (Kwac & Rajagopal, 2015). Big data includes various types of data. Currently, accounting information is mostly collected through structured data (Rao et al., 2022). Simultaneously, unstructured data plays a crucial role in financial decision-making. In the era of big data, firms are required to gather unstructured data, expand the quantity of unstructured data gathered, and analyze and comprehend this data in order to enhance the precision of decision-making. This is of course related to the smooth processing of financial accounting system data. The Financial Accounting System (SAK) is a sub-system of SAI which is a series of interconnected procedures for processing document sources in order to produce information for preparing balance sheets and financial reports in accordance with applicable regulations (Vinogradov & Makhlouf, 2021; Yan, 2022). The accounting system generally applied in the Village is a cash-based accounting system towards accruals, namely the recognition of a cash basis for recognition of income, expenditure and financing in the Budget Realization Report and an accrual basis for recognition of assets, liabilities and equity (Menne et al., 2024). In accordance

with current developments, Village Financial Reports are directed to use an accrual basis in carrying out accounting and presenting financial reports on assets, liabilities and equity in the Balance Sheet (Kumar et al., 2023).

Research conducted by Li et al., (2023); Murugan (2023); Qiu et al., (2023); Singh et al., (2022); and Singh et al., (2022) which states that the use of Big Data can have a positive and significant influence on the smooth processing of financial accounting system data. Given the information provided, the following hypothesis is formulated:

H₁: *The use of Big Data influences the smooth processing of financial accounting system data.*

2.2 Cloud Computing Platforms for Smooth Financial Accounting System Data Processing

Information technology is clearly progressing along with technological developments, especially in industry 4.0 which is developing rapidly. With advances in technology, information can be accessed anytime and anywhere. As a result, accounting will definitely develop in the industrial era 4.0 (Zhang et al., 2022). As we have previously known, most on-premise (desktop) based accounting and database software can be accessed and changed by employees in the organization. Accounting software developed very rapidly after Industry 4.0 emerged. This has resulted in many new products, such as cloud computing, block-chain, and big data (Shinde et al., 2023). The cloud computing model enables flexible and convenient access to computing resources, including servers, storage, applications, and services, which may be rapidly processed from any location and at any time through the network. In this research, cloud computing is referred to as cloud accounting because it is used in accounting (Rath et al., 2021). Cloud accounting is cloud-based accounting where users can store and access data via remote servers, which keeps user data safe. Because it is not accompanied by software upgrades and ongoing system maintenance costs, cloud-based accounting has advantages in cost efficiency compared to previous accounting systems (Kumar et al., 2023). Desktop accounting software does not require an internet connection to run its applications, but cloud-based accounting requires an internet connection. Without an internet connection, users cannot use cloud-based accounting software. New demand for accounting skills is emerging as a result of the adoption of cloud accounting. Recognized that cloud accounting is "the future of accounting", the accounting profession faces many opportunities and risks due to digital disruption and rapidly evolving technology (Krassowska et al., 2022). Nowadays, it is expected that accountants have better analytical skills. In addition, they are expected to understand the entire industrial environment to understand industrial business and finance. With the rapid development of technology and the shift from product-based to platform-based, accountants are expected to be able to adapt to this situation. So there is no stigma that software will replace accountants. To get a better understanding, if accounting software makes the accountant's job easier, there may be problems with the new business conditions (Balmaseda et al., 2023). Cloud accounting systems also increase operational efficiency and provide access to real-time data. But they are worried about the security of data stored due to the use of cloud accounting systems. Users still have questions about the data security policy, although experts have provided some explanations. Additionally, it was stated that some accountants were against the new model and believed that the new system would destroy accounting (Feng et al., 2023).

In research conducted by AL-Jumaili et al., (2023); Jyoti & Efpraxia (2023); Li et al., (2023); Samha (2023); and Tchao et al., (2021) which states that Cloud Computing Platforms can have a positive and significant influence on the smooth processing of financial accounting system data. Given the information provided, the following hypothesis is proposed:

H₂: *Cloud Computing Platforms influence the smooth processing of financial accounting system data.*

2.3 Utilization of Big Data for the Success of Village Development

Digital smart villages are a concept implemented in Indonesia to optimize the potential of technology in improving the welfare of village communities. There are several technologies used in this digital smart village (Kato, 2016). Big Data is a technology used to collect, process and analyze large amounts of and diverse data (Graydon et al., 2022). In digital smart villages, this technology is used to gain insight and information that is useful for decision making (Kwac & Rajagopal, 2015). For example, data on agricultural production, public health and infrastructure can be analyzed to determine appropriate steps to improve community welfare (Zhou et al., 2023; Zhu et al., 2021). Research conducted by Hu et al., (2022, 2023); Y. Li et al., (2019); Matridi et al., (2015); Robert et al., (2021); and Shen & Chou (2022) stated that Cloud Computing Platforms can have a positive and significant influence on the success of village development. Based on this description, the following hypothesis is formulated:

H₃: *The use of Big Data influences the success of village development.*

2.4 Cloud Computing Platforms for the Success of Village Development

Cloud computing is a technology that combines computer technology with an internet-based network. Cloud computing is a technology that allows users to access data and information via the internet and makes the internet a central server for managing user data and applications (Rath et al., 2021). It also allows users to run programs without having to install the application first (Patgiri et al., 2023). There has been previous research on the use of cloud technology in government (Coutinho et al., 2017), which looks at the use of cloud computing for public organizations in central government. This research identifies and compares the IT management currently used by central government public organizations with the potential benefits of

cloud computing technology. In this research, various aspects of IT management are considered: software development, maintenance, costs and investments, capacity, business continuity, IT organization and human resources, innovation, access, availability, and security (Zang et al., 2023). The research found that cloud computing technology can improve the IT management of the public bodies studied. Additional research on the use of cloud computing is research by Amanda & Yusuf (2014), who designed the concept of cloud computing for government. This research finds that cloud computing can help in designing an optimal IT organizational structure, which makes the structure more efficient but still fulfills the functions needed to run IT processes. This study discusses how to conceptualize a secure cloud computing system and how to pave the way for implementing it across the board in government. The result is that a cloud computing system concept design that meets the security and infrastructure aspects of the system can be applied in government. Previously, an empirical study was also carried out at the Indonesian Institute of Sciences regarding the implementation of the idea of a virtual private government data center based on cloud computing (Xu et al., 2022).

By considering various previous research results, this research shows that the use of cloud technology in Public Information Openness is something real and useful for LIPI in carrying out its duties and functions. Apart from that, this is an innovation that can be used by other government institutions to realize the effectiveness and effectiveness of ICT management. Utilizing cloud computing can save costs in investing in computing resources. The benefits of adopting cloud computing technology include the cost of purchasing hardware and software as well as system maintenance costs. Apart from saving money, implementing cloud computing can also increase work productivity. In an effort to support the success of village development in the era of digitalization, the important role of cloud computing is an unavoidable priority in today's developments which demand all digitalization, therefore in village development efforts, the touch of digitalization is an important factor.
Research conducted by Kshetri (2016); Lee et al., (2019); Lin et al., (2014); O'Donovan et al., (2019); and Zissis & Lekkas (2011) stated that Cloud Computing Platforms can have a positive and significant influence on the success of village development. Based on this description, the following hypothesis is formulated:

H₄: *Cloud Computing Platforms influence the smooth processing of financial accounting system data.*

2.5   Smooth Processing of Financial Accounting System Data on the Success of Village Development

An accounting information system is a collection of resources, such as people and equipment designed to convert financial and other data into information (Krassowska et al., 2022), the information is communicated to decision makers (Feng et al., 2023). The smooth processing of financial accounting system data will help village governments increase the success of village development (Y. Li et al., 2022). Therefore, there needs to be an important role for village financial information system operators in realizing the success of optimal village development (Hlaváček et al., 2023). In managing village funds, of course the smooth processing of data in the financial accounting system is the most important factor for the income and expenditure of funds used for development to be more measurable, as well as effective and efficient. Research conducted by Dumreicher (2008); Hilmawan et al., (2023); Karaivanov (2012); Wickramasinghe & Hopper (2005); and Yuan et al., (2024) which states that the smooth processing of financial accounting system data can have a positive and significant influence on the success of village development. Based on this description, the following hypothesis is formulated:

H₅: *The smooth processing of financial accounting system data influences the success of village development.*

H₆: *The use of Big Data influences the success of village development with smooth processing of financial accounting system data as an intervening.*

H₇: *Cloud Computing Platforms influence the smooth processing of financial accounting system data with the smooth processing of financial accounting system data as an intervening.*

3. Research methodology

The research method used uses associative quantitative research methods by looking for relationships between variables, data collection is conducted through survey methodologies, employing questions that are delivered to participants. This investigation was conducted in 131 villages located in the Pringsewu Regency, which is part of the Lampung Province in Indonesia. The research theory study was also taken from several references from relevant previous research, from electronic data references and from library references. Meanwhile, the primary research data uses data obtained from questionnaire data. Once the researcher has established the extent of the study, they proceed to identify the specific group of individuals and samples that will be examined. The population sample for this study consisted of 131 individuals who were Village Financial Information System Operators. The research employed the saturation sampling technique, resulting in a sample size of 131 respondents. The number of respondents is considered representative to obtain writing data that reflects the situation of the entire population. The method for collecting data is to use accidental sampling techniques (Ghozali, 2018). The data analysis used in this research is quantitative analysis. Quantitative analysis is used to answer problems using Partial Least Square (PLS) analysis, PLS as an alternative to Structural Equation Modeling, which has a weak theoretical basis, can be used as theory confirmation (Hair et al., 2017). PLS is a method that uses the SEM (Structural Equation Modeling) model which is

used to overcome the problem of relationships between complex variables but the data sample size is small, The SEM method has a minimum data sample size of 100 (Ghozali & Latan, 2017).

4. Results and Discussion

4.1 Results

4.1.1 Structural Model Testing (Inner Model)

Inner model describes the relationship between latent variables based on substantive theory. In assessing the model with PLS, start by looking at the R-squares for each dependent latent variable, The results of inner model testing can see the relationship between constructs by comparing the significance and R-square values of the research model (Ghozali & Latan, 2017).

Table 1
R-Squares Value

Endogenous Variables	R-Square
Smooth Processing of Financial Accounting System Data	0.759
Successful Village Development	0.818

Source: Processed data, 2023.

The R-square value of the Financial Accounting System Data Processing Fluency variable of 0.795 in Table 1 shows that 79.5 percent of the Financial Accounting System Data Processing Fluency variable is explained by the Utilization of Big Data and Cloud Computing Platforms variables while 20.5 percent is explained by variables outside the model (Processed data, 2023). Likewise, the Village Development Success variable with an R-Square value of 0.818 means that 81.8 percent of the variability is explained by the variables Utilization of Big Data, Cloud Computing Platforms, and Smooth Processing of Financial Accounting System Data, while 18.2 percent is explained by external variables model (Processed data, 2023). The R-square values displayed in Table 1 are 0.759 and 0.818, indicating a reasonable level of correlation. The Q^2 value of structural model testing is determined by assessing its predictive relevance. The formula to calculate Q^2 is as follows:

$Q2 = 1 - (1-R1)\ (1-R2)$
$Q2 = 1 - (1-0.759)\ (1-0.818)$
$Q2 = 0,\ 0.956$

The results of the Q^2 calculation show that the Q^2 value is 0.956. According to Hair et al., (2012), the Q^2 value can be used to measure how good the observation values produced by the model and its parameter estimates are, a Q^2 number greater than zero implies satisfactory model performance, while a Q^2 value less than zero suggests insufficient predictive relevance. In this research model, the construct or endogenous latent variable has a Q^2 value > 0 (zero) so that the predictions made by the model are considered relevant (Processed data, 2023).

4.2.2 Direct Effect Testing

Hypothesis testing regarding the influence of the variables Utilization of Big Data, Cloud Computing Platforms, Successful Village Development, Smooth Processing of Financial Accounting System Data is presented in Fig. 1.
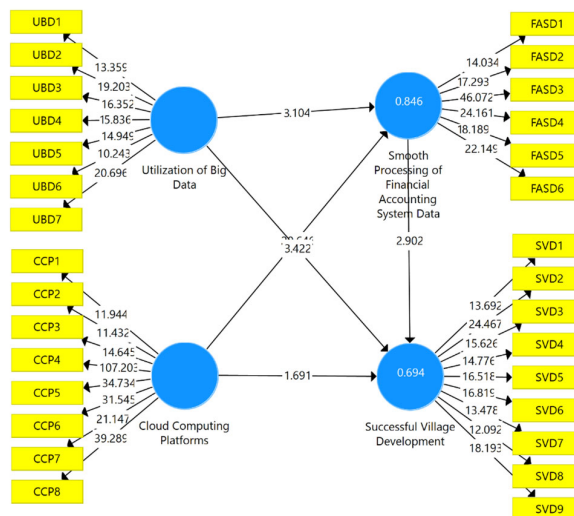

Fig. 1. Statistical t value of the Path Analysis Model
Source: Processed data, 2023

The PLS approach employs simulations to test hypotheses for each hypothesized association. In this scenario, the sample is subjected to the bootstrap method. The bootstrap method also serves to mitigate the issue of non-normality in the study data employed. The T-table value with a significance level of 5% was previously established as 1.656 in this investigation. All path coefficients have statistical t values above 1.656 (Processed data, 2023).

Table 2
Direct Effect

	T Statistics (|O/STDEV|)	P Values
Cloud Computing Platforms → Smooth Processing of Financial Accounting System Data	12.646 > 1.656	0.000 < 0.05
Cloud Computing Platforms → Successful Village Development	1.691 > 1.656	0.013 < 0.05
Smooth Processing of Financial Accounting System Data → Successful Village Development	2.902 > 1.656	0.004 < 0.05
Utilization of Big Data → Smooth Processing of Financial Accounting System Data	3.104 > 1.656	0.017 < 0.05
Utilization of Big Data → Successful Village Development	3.422 > 1.656	0.025 < 0.05

Source: Processed data, 2023

According to the data in Table 2, it can be inferred that the variable "Utilization of Big Data and Cloud Computing Platforms" has a partially positive and considerable impact on the efficient processing of financial accounting system data. This conclusion is since the t-statistic value is more than the critical t-table value (1.656). The variables Utilization of Big Data and Smooth Processing of Financial Accounting System Data have a positive and significant influence on the Success of Village Development, as indicated by the t-statistic value exceeding the t-table value (1.656). However, Cloud Computing Platforms partially have no effect on the success of village development because the t-statistic value is less than the t-table value (1.656) (Processed data, 2023).

Table 3
Indirect Influence

	T Statistics (|O/STDEV|)	P Values
Cloud Computing Platforms → Smooth Processing of Financial Accounting System Data → Successful Village Development	2.763 > 1.656	0.007 < 0.05
Utilization of Big Data → Smooth Processing of Financial Accounting System Data → Successful Village Development	2.643 > 1.656	0.047 < 0.05

Source: Processed data, 2023

Table 3 indicates that the variable Utilization of Big Data and Cloud Computing Platforms has an indirect, positive, and considerable impact on the success of village development. This impact is achieved through the efficient processing of financial accounting system data. This may be observed from the t-statistic value, which exceeds the t-value in table (1.656).

4.3   Discussion

4.3.1   The Effect of Using Big Data on the Smooth Processing of Financial Accounting System Data

The research findings indicate that the adoption of Big Data has a favorable and significant impact on the efficient processing of financial accounting system data in Pringsewu Regency, as hypothesized. This suggests that there is a positive correlation between the extent of Big Data utilization and the efficiency of processing financial accounting system data in Pringsewu Regency. Therefore, to increase the smooth processing of financial accounting system data in Pringsewu Regency, it is also necessary to increase the use of big data. Utilising big data enables accountants within an organisation to swiftly retrieve transaction data and handle transactions of significant magnitude. Apart from that, other units in the organization that need accounting data can also easily access it in real-time (Willetts et al., 2022).

Big data refers to a large number of data sources with disparate sources, complex and many types, higher processing speed, and the value can be reproduced many times, with the quality of very large volume, variety, fast results, and population density The low one (Kwac & Rajagopal, 2015). Big data includes various types of data. Currently, accounting information is mostly collected through structured data (Rao et al., 2022). Simultaneously, unstructured data is crucial for making financial decisions. In the era of big data, businesses are compelled to gather unstructured data, augment the quantity of unstructured data acquired, and scrutinize and comprehend this data to enhance the precision of decision-making. This is of course related to the smooth processing of financial accounting system data. The Financial Accounting System (SAK) is a sub-system of SAI which is a series of interconnected procedures for processing document sources in order to produce information for preparing balance sheets and financial reports in accordance with applicable regulations (Vinogradov & Makhlouf, 2021; Yan, 2022). The accounting system generally applied in the Village is a cash-based accounting system towards accruals, namely the recognition of a cash basis for recognition of income, expenditure and financing in the Budget Realization Report and an accrual basis for recognition of assets, liabilities and equity (Menne et al., 2024). In accordance with current developments, Village Financial Reports are directed to use an accrual basis in carrying out accounting and presenting financial reports on assets, liabilities and equity in the Balance Sheet (Kumar et al., 2023). This research supports research conducted by Li et al., (2023); Murugan (2023); Qiu et al., (2023); J. Singh et al., (2022); and Singh et al., (2022) which states that the use of Big Data can have a positive and significant influence on the smooth processing of financial accounting system data.

4.3.2 The Influence of Cloud Computing Platforms on the Smooth Processing of Financial Accounting System Data

The research findings indicate that Cloud Computing Platforms have a favorable and significant impact on the efficient processing of financial accounting system data in Pringsewu Regency, as stated in the second hypothesis. This indicates that the higher the Cloud Computing Platforms, the higher the Smooth Processing of Financial Accounting System Data in Pringsewu Regency. Therefore, in an effort to improve the smooth processing of financial accounting system data in Pringsewu Regency, it is also necessary to improve Cloud Computing Platforms. Information technology is clearly progressing along with technological developments, especially in industry 4.0 which is developing rapidly. With advances in technology, information can be accessed anytime and anywhere. As a result, accounting will definitely develop in the industrial era 4.0 (Zhang et al., 2022). As we have previously known, most on-premise (desktop) based accounting and database software can be accessed and changed by employees in the organization. Accounting software developed very rapidly after Industry 4.0 emerged. This has resulted in many new products, such as cloud computing, blockchain, and big data (Shinde et al., 2023). The cloud computing concept enables flexible and convenient access to computing resources, including servers, storage, applications, and services, which may be rapidly processed from any location and at any time via the network. In this research, cloud computing is referred to as cloud accounting because it is used in accounting (Rath et al., 2021). Cloud accounting is cloud-based accounting where users can store and access data via remote servers, which keeps user data safe.

Because it is not accompanied by software upgrades and ongoing system maintenance costs, cloud-based accounting has advantages in cost efficiency compared to previous accounting systems (Kumar et al., 2023). Desktop accounting software does not require an internet connection to run its applications, but cloud-based accounting requires an internet connection. Without an internet connection, users cannot use cloud-based accounting software. New demand for accounting skills is emerging as a result of the adoption of cloud accounting. Recognized that cloud accounting is "the future of accounting", the accounting profession faces many opportunities and risks due to digital disruption and rapidly evolving technology (Krassowska et al., 2022). Nowadays, it is expected that accountants have better analytical skills. In addition, they are expected to understand the entire industrial environment to understand industrial business and finance. With the rapid development of technology and the shift from product-based to platform-based, accountants are expected to be able to adapt to this situation. So there is no stigma that software will replace accountants. To get a better understanding, if accounting software makes the accountant's job easier, there may be problems with the new business conditions (Balmaseda et al., 2023). Cloud accounting systems also increase operational efficiency and provide access to real-time data. But they are worried about the security of data stored due to the use of cloud accounting systems. Users still have questions about the data security policy, although experts have provided some explanations. Additionally, it was stated that some accountants were against the new model and believed that the new system would destroy accounting (Feng et al., 2023). This research supports research conducted by AL-Jumaili et al., (2023); Jyoti & Efpraxia (2023); K. Li et al., (2023); Samha (2023); and Tchao et al., (2021) which states that Cloud Computing Platforms can have a positive and significant influence on the smooth processing of financial accounting system data.

4.3.3 The Effect of Using Big Data on the Success of Village Development

According to the research findings, the third hypothesis suggests that utilizing Big Data can significantly and positively impact the success of village development in Pringsewu Regency. This suggests a positive correlation between the extent of Big Data utilization and the level of success in village development within Pringsewu Regency. Hence, to enhance the efficacy of village development in Pringsewu Regency, it is imperative to augment the utilization of Big Data. Digital smart villages are a concept implemented in Indonesia to optimize the potential of technology in improving the welfare of village communities (Kittie & Basrowi, 2024; Yusuf et al., 2024).

There are several technologies used in this digital smart village (Kato, 2016). Big Data is a technology used to collect, process and analyze large amounts of and diverse data (Graydon et al., 2022). In digital smart villages, this technology is used to gain insight and information that is useful for decision making (Kwac & Rajagopal, 2015). For example, data on agricultural production, public health and infrastructure can be analyzed to determine appropriate steps to improve community welfare (Zhou et al., 2023; Zhu et al., 2021). Dr. Ivanovich Agusta, Head of the Data and Information Center (Kapusdatin) of the Ministry of Villages and Development of Disadvantaged Regions and Transmigration (Kemendes PDTT), was the first resource person in the webinar discussion "Data Power and Mutual Cooperation in the Digital Era" held by Bumdes.id on 25 May 2021, said that one of the impacts of the 4.0 revolution in this modern era is encouraging villages to immediately strengthen and master data. Kapsdatin, who is known as a village sociologist, said that during village development planning, villages were asked to master the data with total support from the Ministry of Villages.

With the help of Pusdatin, the Ministry of Villages has built a large data center, which manages 200 million data and provides information for thousands of villages throughout Indonesia. 800 people were employed in the data collection process. Apart from functioning as a large data center, the Ministry of Villages Pusdatin also functions as the main data center for all information at the Village Ministry level. Ivanovich stated that currently Pusdatin must control all information entering and leaving the ministry. This is done so that the flow of information can be managed well. Furthermore, work units under the Ministry of Villages and other government institutions can share or collaborate in managing data for planning and policy development

purposes. To manage big data on village development, the Ministry of Villages has a Village Information System (SID). SID functions as a data center for thousands of villages. The data entered can be in the form of numbers, images and writing. Additionally, they have AI and can determine village locations more accurately (Hadi et al., 2019; Nuryanto et al., 2019).

This more comprehensive dissemination of data will help villages identify their benefits and potential to better plan development. Then, the Head of Data and Information added that apart from the Ministry of Villages and village assistants, entrepreneurs and village activists could also enter data. This data democratization process allows data in the Village Information System (SID) to be adapted to conditions in the field and allows villages to participate in enriching their own data. The big data in SID will be a reference for making village development decisions in the future. planning inter-village cooperation and overseeing financial assistance. In his introduction to the discussion, Rudy Suryanto, Secretary General of the Indonesian Bumdes Forum, stated that the big data policy, or one Ministry of Village data, was a significant policy advancement. To direct village development in a more targeted direction, village governments are starting to focus on data management, AI and village digitalization.

Because most villages have not been able to utilize the 500 trillion dollar village funds that have been given to them to date. This research supports research conducted by Hu et al., (2022, 2023); Y. Li et al., (2019); Matridi et al., (2015); Robert et al., (2021); and Shen & Chou (2022) which states that the use of Big Data can have a positive and significant influence on the success of village development.

4.3.4 The Influence of Cloud Computing Platforms on the Success of Village Development

Based on the findings from the research results, in the fourth hypothesis, it can be interpreted that Cloud Computing Platforms can have a positive and significant influence on the success of village development in Pringsewu Regency. This indicates that the higher the Cloud Computing Platforms, the higher the success of Village Development in Pringsewu Regency. Therefore, in an effort to increase the success of village development in Pringsewu Regency, it is also necessary to improve Cloud Computing Platforms. There has been previous research on the use of cloud technology in government (Coutinho et al., 2017), which looks at the use of cloud computing for public organizations in central government.

This research identifies and compares the IT management currently used by central government public organizations with the potential benefits of cloud computing technology. In this research, various aspects of IT management are considered: software development, maintenance, costs and investments, capacity, business continuity, IT organization and human resources, innovation, access, availability, and security (Zang et al., 2023). The research found that cloud computing technology can improve the IT management of the public bodies studied. Additional research on the use of cloud computing is research by Amanda & Yusuf (2014), who designed the concept of cloud computing for government.

This research finds that cloud computing can help in designing an optimal IT organizational structure, which makes the structure more efficient but still fulfills the functions needed to run IT processes. This study discusses how to conceptualize a secure cloud computing system and how to pave the way for implementing it across the board in government. The result is that a cloud computing system concept design that meets the security and infrastructure aspects of the system can be applied in government. Previously, an empirical study was also carried out at the Indonesian Institute of Sciences regarding the implementation of the idea of a virtual private government data center based on cloud computing (Xu et al., 2022). By considering various previous research results, this research shows that the use of cloud technology in Public Information Openness is something real and useful for LIPI in carrying out its duties and functions (Alexandro & Basrowi, 2024b, 2024a; Purwaningsih et al., 2024).

Apart from that, this is an innovation that can be used by other government institutions to realize the effectiveness and effectiveness of ICT management. Utilizing cloud computing can save costs in investing in computing resources. The benefits of adopting cloud computing technology include the cost of purchasing hardware and software as well as system maintenance costs. Apart from saving money, implementing cloud computing can also increase work productivity. In an effort to support the success of village development in the era of digitalization, the important role of cloud computing is an unavoidable priority in today's developments which demand all digitalization, therefore in village development efforts, the touch of digitalization is an important factor. This research supports research conducted by Kshetri (2016); J. Lee et al., (2019); Lin et al., (2014); O'Donovan et al., (2019); and Zissis & Lekkas (2011) which states that Cloud Computing Platforms can have a positive and significant influence on the success of village development.

4.3.5 The Influence of Smooth Processing of Financial Accounting System Data on the Success of Village Development

The research findings indicate that the smooth processing of financial accounting system data has a favorable and significant impact on the success of village development in Pringsewu Regency, as stated in the fifth hypothesis. This suggests that there is a positive correlation between the proficiency of Financial Accounting System Data Processing and the level of success in Village Development in Pringsewu Regency. Hence, to enhance the efficacy of village development, it is imperative to

enhance the streamlined processing of financial accounting system data in Pringsewu Regency. An accounting information system is a collection of resources, such as people and equipment designed to convert financial and other data into information (Krassowska et al., 2022), the information is communicated to decision makers (Feng et al., 2023).

The smooth processing of financial accounting system data will help village governments increase the success of village development (Y. Li et al., 2022). Therefore, there needs to be an important role for village financial information system operators in realizing the success of optimal village development (Hlaváček et al., 2023). Efficient management of village funds relies heavily on the seamless processing of data in the financial accounting system. This feature is crucial for ensuring that the income and expenditure of funds allocated for development may be accurately measured and effectively utilized. In order to facilitate the advancement of rural areas, the government has enacted the Village Fund Allocation (ADD) policy as stipulated in Law Number 6 of 2014 about Villages. Village fund allocation refers to the financial assistance granted by the government to village governments.

The allocation of cash to communities is contingent upon the state and prospects of each hamlet. The objective of distributing village money, as stipulated in Law Number 6 of 2014, is to safeguard and enhance the strength, progress, self-reliance, and democratic nature of villages. The purpose of Village Funds is to facilitate the development and empowerment of villages, with the aim of fostering a fair and successful community. The allocation of village finances in 2005 has significantly contributed to the growth of the community. From 2022 onwards, Village Funds in Indonesia have successfully facilitated several accomplishments in the realm of village development, notably in the area of infrastructure. The allocation of village finances towards infrastructure development has contributed to economic growth, however, it has not effectively alleviated poverty in the villages.

This can be attributed, in part, to the temporal discrepancy between infrastructure development, which occurs in the short term, and its limited impact on the economic growth of villages in the medium and long term. Hence, it is imperative to revise the Village Fund allocation policy in order to facilitate the advancement of Village development. This research supports research conducted by Dumreicher (2008); Hilmawan et al., (2023); Karaivanov (2012); Wickramasinghe & Hopper (2005); and Yuan et al., (2024) which states that the smooth processing of financial accounting system data can have a positive and significant influence on the success of village development.

4.3.6 *The Effect of Using Big Data on the Success of Village Development through Smooth Processing of Financial Accounting System Data*

Testing the sixth hypothesis is whether the use of Big Data has a substantial positive effect on the success of village development through the mediation of smooth processing of financial accounting system data in Pringsewu Regency. The results of this research reveal that the smooth processing of financial accounting system data has a substantial beneficial mediation effect between the usage of big data and the success of village development in Pringsewu Regency. This shows that the use of Big Data can directly influence the success of village development or indirectly through mediation on the smooth processing of financial accounting system data in Pringsewu Regency. The type of mediation formed is Partial Mediation with Competitive Partial Mediation. This means that the independent variable is able to directly and indirectly influence the dependent variable significantly, then if the coefficient is positive then competitive partial mediation occurs.

4.3.7 *The Influence of Cloud Computing Platforms on the Success of Village Development through Smooth Processing of Financial Accounting System Data*

Testing the seventh hypothesis is whether Cloud Computing Platforms have a significant positive effect on the success of village development through the mediation of smooth processing of financial accounting system data in Pringsewu Regency. The results of this research indicate that the smooth processing of financial accounting system data has a significant positive mediating effect between Cloud Computing Platforms and the success of village development in Pringsewu Regency. This shows that Cloud Computing Platforms can directly influence the success of village development or indirectly through mediation on the smooth processing of financial accounting system data in Pringsewu Regency. The type of mediation formed is Partial Mediation with Competitive Partial Mediation. This means that the independent variable is able to directly and indirectly influence the dependent variable significantly, then if the coefficient is positive then competitive partial mediation occurs.

5. Conclusion

The objective of this study is to examine the direct and indirect impact of utilizing Big Data and Cloud Computing Platforms on the efficient handling of financial accounting system data, and its consequences for the advancement of villages in Pringsewu Regency, Lampung Province, Indonesia. Empirical evidence and statistical analysis indicate that: Cloud computing platforms have a direct and substantial impact on the efficient processing of financial accounting system data. They also have a direct and significant influence on the success of village development. The efficient processing of financial accounting system data directly contributes to the positive and significant success of village development. Utilizing Big Data has a direct

and substantial impact on the efficient processing of financial accounting system data. Additionally, the use of Big Data directly contributes to the success of village development. The Financial Accounting System's efficient data processing can partially facilitate the utilization of Big Data and Cloud Computing Platforms, contributing to the success of village development in Pringsewu Regency, Lampung Province, Indonesia, because the independent variable is able to significantly influence both directly and indirectly the dependent variable.

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