The Influence of Accounting Systems and Information Systems on the Village Development Index
(a Study in Villages in Central Sulawesi Province)

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Abstract: *By measuring the village development index, this study aims to determine how accounting and information systems affect village development. The village development index comprises of three measurements, specifically the social, financial and environmental resilience index. Utilizing quantitative strategies and cross-sectional data from 1,842 towns in Central Sulawesi territory in 2021. The study's conclusions demonstrate that while the information system significantly influences village development, the accounting system has no impact on village development. These findings show that the use of information and communication innovation has an impact on village improvement. This disclosure found that cell phones have an impact on village development including social, financial and environmental and internet signals have an influence on village development including economic and social but not the environment.*

Keywords: *Development, Accounting, Information, Resilience*

1. INTRODUCTION

The government continues to encourage village development to continue to develop so that it can provide prosperity to the community. The development of a village can be seen from its success in the village development index. The development of village innovation systems and technology is one of the keys to village success as noted by Adamowicz & Zwolińska-Ligaj, (2020) and (Yin et al., 2022). Development can be done by developing the village financial system and information technology. This is in accordance with what was said by Murniati, (2020) which states that the government has responsibility in the economic and social fields.

Village Development Development of the village financial system is necessary to end poverty. This has been noted by (Zhu et al., (2021) :Zhao & Li, (2021) :Wang et al., (2023)). In fact, a lot of in-depth research has been carried out, such as (Liu et al., (2021):Ge et al., (2022):Sun et al., (2023)) who researches digital financial systems. Meanwhile, information technology is one of the things that cannot be separated from everyday life, both for business activities, education, health and others, especially regarding developments in rural areas. Great utilize of information and communication innovation can boost rural communities' wellbeing and economy, as multiple studies have shown Sulina et al., (2017) and Hübler & Hartje, (2016). There has been a lot of in-depth research on information technology such as Furqana et al., (2023) and Xia, (2010) also (Zhang & Zhang, 2020). Even though the

research above has extensively examined the role of financial and information systems, more in-depth research is needed. Therefore, this research aims to determine the influence of financial systems and information systems on the village development index.

Developing villages is a multifaceted challenge due to the diversity of customs, cultures, and languages within them. Developing village has been research in dept by (Hartoyo et al., 2024) and (Sarapung et al., 2024). The diversity of villages sonsequently, make development of both financial and social systems is essential. Accounting system is a structured set of procedures and methods designed to manage, record, and report financial transactions within a company. These systems are integral to financial systems because accounting forms a part of financial information systems. A financial system encompasses financial institutions, financial infrastructure, financial markets, as well as non-profit organizations and households, all interacting to provide funding or financing for economic growth. Conversely, an accounting information system enhances value for users by supplying diverse financial information crucial for planning, controlling, and decision-making processes, which ultimately contributes to the overall improvement of a company's performance.

Previous research has identified several key findings in this regard. Firstly, the financial system has influences the village development. While prior studies primarily focused on the financial system's impact on government performance, this research explores its role in enhancing village development specifically at the local level. The results of the research contribute to explaining that although previous research has had a positive influence in improving government performance, this has not yet determined whether it can improve village development. Second, information systems have a positive influence on village development. If, previous research have clarified how information and communication technologies might enhance government performance. So, the results of this research have a contribution in providing an explanation of the research conducted by Xia, (2010) which explains the importance of information and communication technology for village development

(Smith, 1937) widely recognized as the founder of modern economics, emphasized the importance of free markets and the impact of the "invisible hand" on economic advancement. While some aspects of his theory are not extensively detailed, Smith's principles cover various topics, including the evolution from barter systems to the use of precious metals such as gold and silver, and the subsequent incorporation of monetary systems into economic activities. Smith has indirectly explained an economic system that is

always developing. This is why the economic system needs to continue to develop, especially in the financial aspect, where the digital financial system and its applications are currently developing. It is hoped that the development of digital financial systems and financial system applications will be able to improve the economy, especially in the town area, so that it can be used for improvement of the village itself. This transformation has a concept that is relevant to other Smith concepts, namely increasing village assets, both physical and financial capital, which is essential for sustainable economic growth.

The Developing Village Index (IDM) serves as a tool utilized by the Indonesian government for evaluating the welfare and developmental status of villages nationwide. IDM incorporates multiple aspects of development such as economic indicators, human and social roles, and infrastructure, offering a holistic overview of village conditions and advancement (Douglas, 2005).

The guidelines governing the Village Development Index (IDM) are outlined in (Ministerial Regulation number 17 of 2015 on Villages, Development of Disadvantaged Regions, and Transmigration). This regulation establishes a detailed methodology for measuring and evaluating IDM, emphasizing the importance of regular surveys and monitoring to assess village development progress. Additionally, Law No. 5 of 2014 on Villages provides a robust legislative framework to support IDM initiatives, promoting transparent, accountable, and participatory governance at the village level. This law also legitimizes activities related to measuring and evaluating village development performance, ensuring adherence to democratic principles and good governance practices.

According to Murniati, (2020) The government has a big responsibility in managing its territory, especially in the social and economic fields, so knowing the government's success can be seen from measuring the government's performance. Government performance needs to be measured to determine its success in holding its responsibilities. Government performance is influenced by the accounting system, especially in finance, this is in accordance with research conducted by Saptomo et al., (2022) and Watulingas et al., (2019) also Lestari, (2020) which states that the village financial system has an influence on government performance. To increase government efficiency, Badan Pengawas Keuangan dan Pembangunan (BPKP) created a village financial system application. The village financial system application was formed with the aim of assisting village governments in managing village finances effectively and efficiently and increasing transparency and accountability of village finances.

H1. The financial system has a positive effect on the village development index

(Primawanti & Ali, 2022) define information systems as the integration of information and communication technology within business enterprises, while information technology encompasses the amalgamation of computerization and interactive technologies that constitute software and hardware. Song et al., (2020) argue that the digital divide is evident in disparities related to access, utilization, and the benefits derived from information and communication technology. Venkatesh & Sykes, 2013) underscore the critical importance of addressing these discrepancies in rural areas, particularly in developing countries, as they are crucial for socio-economic development. Adamowicz & Zwolińska-Ligaj, (2020), states that the innovation system is the main key for socio-economic development, this is also in line with research Yin et al., (2022) which states that rural innovation systems are very important to achieve village revitalization and encourage socio-economic growth. Although there is still a gap between urban and rural areas in terms of broadband Townsend et al., (2013) and Humphreys, (2019),. Broadband is very important for the economic and social development of villages, this can be seen from various studies carried out by Ma et al., (2020) and Hübler & Hartje, (2016), which show that using mobile phones and the internet in rural regions can boost income from agriculture and on-farm activities as well as income for rural households. Therefore, ownership of cell phones and cell phone signals among rural communities is very important to increase village growth in the economic and social fields. In conclusion, it can be said that improving information and communication technology in rural areas can encourage village economic and social development and can reduce disparities between regions. Thus, the hypothesis proposed:

H2. Information systems have a positive effect on the village development index

2. METHODS

The research desaign was according to a quantitative reaserch, namely using statistical tecnique for proven the research hypotesis, and explaining for each variable studied (Exploratory research). The study utilized data sourced from local governments, specifically focusing on village-level data from Central Sulawesi. The dataset encompassed information from 1,842 villages in the year 2021. Detailed village-specific information was obtained from the Central Sulawesi Village Government, as documented by the badan pusat statistik, (2022). Data analysis was conducted using STATA-14 analytical tools.

To address research problems, the empirical framework for assessing research proportions is described as follows:

$$IDMt = \beta0 + \beta1S\text{-}Financialt + \beta2S\text{-}Informationt + \beta3Cellphonet + \beta4Internett + \beta5Topografyt + \varepsilon t..e$$

Table 1. General Description of the Research Sample

Name	Variable Operations	Data source
IDM	Village performance is measured by 3 components, namely the social resilience index, economic resilience index and environmental resilience index which is a composite of the Village Development Index (IDM).	Ministry of Village, Development of Disadvantaged Religions.
Financial System	The variable that shows the development of the village financial system which is measured using a category scale of "2" is existing and being updated, "1" is existing but not being updated and "0" is not existing.	Central Statistics Agency (BPS)
Information Systems	The variable indicating the presence of a village information system is measured using a category scale of "2" exists and is updated, "1" exists but is not updated and "0" does not exist	Central Statistics Agency (BPS)
Cellphone	The variable that shows the cell phone internet Network in most sub-district village areas is measured using a scale of categories "3" most residents have a cell phone, "2" a small number of residents have a cell phone to "1" no residents have a cell phone.	Central Statistics Agency (BPS)
Internet	The variable that shows the presence of residents who use mobile phones network is measured using a scale of categories scale of "4" 4G/LTE, "3" 3G/Jam/Jam+/EVDO, "2"2.5 G/E/GPRS to "1"no network	Central Statistics Agency (BPS)
Topography	Variable that shows the area of the sub-district village, which is measured using dummy data which means "1" Peak/Cliff, "2" Slope, "3" Plain, "4" Valley.	Central Statistics Agency (BPS)

Data Source: Processed by Researchers, 2023

IDM_t represents a variable assessing village development performance, comprising three components: the Social Resilience Index (IKS), Economic Resilience Index (IKE), and Environmental Resilience Index (IKL). These components form a composite index within IDM, measured through scores and categories: villages with a Score <0.50 are considered very underdeveloped, those scoring between 0.50-0.60 are categorized as underdeveloped, while villages scoring 0.60-0.70 are labeled as developing. Villages scoring 0.70-0.80 are classified as developed, and those with a score >0.80 are deemed independent. The *S-Financial$_t$* variable is related to the development of the village financial system which is measured using a category scale, namely 2 (existing and being updated), 1 (existing but not being updated) and 0 (not existing). *S-Information$_t$* refers to the existence of existing information systems in rural areas which is measured using a categorical scale, namely from 0 (not present), 1 (not updated) and 2 (existing and updated).

There are other variables related to information systems, namely other $Internet_t$ variables related to the presence of cellphone internet networks in most sub-district village areas which are measured using a category scale with a score range of "4"4G/LTE, "3" 3G. /Hour/Hour+/EVDO, "2"2.5 G/E/GPRS to "1"no network. The $Cellphone_t$ variable refers to the presence of residents who use cell phones which is measured using a categorical scale 3 (most residents have cell phones), 2 (a small proportion of residents have cell phones) to 1 (no residents have cell phones). Meanwhile, $Topography_t$ uses dummy data which means "1" Peak/Cliff, "2" Slope, "3" Plain, "4" Valley.

3. RESULTS

Table 2 below provides a detailed explanation of the descriptive statistics for all the variables in this study.

Table 2. Descriptive statistics

Information	Mean	Std Dev	Min	Max
IDM	0.64	0.07	0.37	0.89
S-Financial	1.83	0.48	0	2
S-Information	1.31	0.89	0	2
Cellphone	2.78	0.43	1	3
Internet	3.62	0.81	1	4
Topography	2.32	0.49	1	4
Number of Observations = 1842				

Data source: processed by researchers, 2023

According to Table 2, the mean value of the Village Development Index (IDM) variable is 0.64. It means that Central Sulawesi's typical village is a developing village. Regardless, a small number of communities continue to fall into the undeveloped category, with the lowest value 0.37. In contrast to the information system variable, which has an average of 1.31, the financial system variable displays an average of 1.83, indicating that the village has developed its financial system even though some communities have yet to adopt it.

There are several other variables, such as the cellphone variable, which has an average of 2.78, which shows that the majority of village residents already have cellphones. Apart from that, the internet variable is also a factor in the development of information systems. It can be seen that the internet network has an average of 3.62, which shows that the internet

network in the village is strong for use by the village community. Topography has a mean of 2.32.

Table 3. Correlation Analysis

Variable	IDM	S-Information	S-Finance	S-Internet	T-Celluler	Topography
IDM	1,000					
S-Finance	0.068** (0.033)	1,000				
S-Information	0.216** (0.000)	0.273*** (0.000)	1,000			
Cellphone	0.137*** (0.000)	0.014 (0.537)	0.057** (0.013)	1,000		
Internet	0.241*** (0.000)	-0.010 (0.664)	0.095** (0.000)	0.088*** (0.001)	1,000	
Topography	0.144*** (0.000)	0.006 (0.780)	0.028 (0.223)	0.079*** (0.006)	0.139*** (0.000)	1,000
Number of Observations = 1842 ***,** = significant P-value 1% 5%						

Data source: processed by researchers, 2023

The findings of the variable correlation study are displayed in Table 3, which demonstrates the positive and substantial association that exists between IDM and the research variables S-Financial, S-Information, and Cellphone.The findings of the variable correlation study are displayed in Table 3, which demonstrates the positive and substantial association that exists between IDM and the research variables S-Financial, S-Information, and Cellphone.The data also shows that the existence of innovation systems such as financial systems and information systems has a very important influence on village development. Not only that, the influence of Cellphone ownership by village communities also has positive and significantly impact on the village development index, this can be seen from table 3. Meanwhile, the Internet variable has no correlation with IDM and the Topography variable has a correlation with IDM. This shows that with the improvement of the financial system owned by the village and the increasing development of information systems, the development of village development will increase so that there is a need to introduce and increase the development of financial systems and information systems to prioritize village growth and development.

Table 4. Hypothesis Test Results

Variable	Expected Sign	Model 1 IDM	Model 2 IKS	Model 3 IKE	Model 4 IKL
Cons		0.475 (0.000)	0.580 (0.000)	0.231 (0.000)	0.614 (0.000)
S-Finance	H1= −	0.002 (0.425)	0.005 (0.146)	0.007 (0.256)	-0.003 (0.498)
S-Information	H2=+	0.014*** (0.000)	0.013*** (0.000)	0.015*** (0.000)	0.015*** (0.000)
Cellphone	+/−	0.016*** (0.000)	0.018*** (0.000)	0.035*** (0.000)	-0.002 (0.607)
Internet	+/−	0.018*** (0.000)	0.018*** (0.000)	0.028*** (0.000)	0.007*** (0.011)
Topography	+/−	0.015*** (0.000)	0.011*** (0.001)	0.024*** (0.000)	0.009** (0.049)
Prob>F		0,000	0,000	0,000	0,000
R-squared		0.118	0.106	0.086	0.024
VIF Means		1.05	1.05	1.05	1.05
Number of Observations = 1842					
***,** = P-value 1% 5%					

Source: Secondary Data, output STATA (Processed 2023)

4. DISCUSSION

In general, the research results in table 4 explain that the method used uses a multiple linear regression method using robust standards. The results of the tests carried out show that the IDM score shows an R-squared value of 0.118, while IKS with an R-squared of 0.106, IKE with an R-squared of 0.086 and IKL with an R-squared of 0.024 at a significant value of 1% and mean VIF of 1.05.

Table 4 shows the findings that the S-Financial Variable test has no influence on IDM with an F test coefficient of 0.002, IKS with a coefficient of 0.005, IKE with a coefficient of 0.007 and IKL with a coefficient of -0.003 at a significant level of 1%. This means that the first hypothesis test is rejected. Furthermore, in testing the S-Information variable it has a positive and significant influence on IDM with an F test coefficient of 0.014, IKS with a coefficient of 0.013, IKE with a coefficient of 0.015 and IKL with a coefficient of 0.015 at a significant level of 1%. This supports the second hypothesis.

The test results for other variables are the control variables which include the variables Cellphone, Internet and Topography which have a positive influence on IDM, IKS and IKE at a significant level of 1%. Meanwhile, T-Cellular and topography have no influence on IKL, and S-Internet has a significant influence on IKL.

The findings of this research have several important implications, namely the first finding, this research cannot support previous research conducted by Sulina et al., (2017) and Watulingas et al., (2019) which states that the village financial system has an influence on government performance, this is because the variable used as test material is research into the Village Development Index (IDM) with quantitative tests.

Second finding, The research results support the research conducted by Xia, (2010) which emphasizes the importance of promoting the use of information and communication technology and its impact on rural development in China. Information systems are very important to develop in rural areas, this is not only to improve village development but also to overcome the problem of gaps that exist between urban and rural areas. The information system being developed requires the necessary strategies to be able to maximize the use of information systems, especially in the information and communication technology section. The use of information and communication technology is needed primarily for public services and village development programs. The use of appropriate technology and information can improve village development, this can be seen from other research such as (Devaraj & Kohli, (2003):Pramanik et al., (2017):Furqan et al., (2023)) which has explored the impact of information and communication technology on government performance. there is also research Hübler & Hartje, (2016) and Rashid & Elder, (2009) also Masuki et al., (2010), as well as Nguyen et al., (2022), which has explored information and communication technology research more deeply, namely researching the influence of internet and cell phone signals on rural communities.

5. CONCLUSION

The main aim of this research is to analyze the role of accounting systems and information systems in village development. So it is hoped that it can provide insight into the factors that support village development. The results of the research are that the accounting system does not have a significant influence on the village development index. This indicates that the accounting system has no influence on village development. Meanwhile, information systems have a very important influence and role in village development which has great potential in driving economic, social and environmental development. The existence of the use of information and communication technology can provide faster development so that there is a need for government or policy maker intervention so that it can provide implementation in improving information systems in villages.The results of this research reaffirm the importance of implementing information

systems in villages so that there is a need for intervention from the government. However, it is also necessary to provide training and knowledge to village communities because with the development of existing information and communication technology, there is a need for sufficient preparation to be able to implement information systems in villages.

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