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Accounting Information System and SMEs' Financial Performance in Indonesia

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Abstract

This study aims to investigate the effect of accounting information system (AIS) characteristics, namely broad scope, timeliness, aggregation and integration to financial performance of Small and Medium Enterprises (SMEs) in Indonesia. This study employs quantitative method and collects data from SMEs who do bookkeeping either manually or use more advance technologies. Multiple regression was applied in the analysis. The study's findings indicate that AIS has positive impact on SMEs' financial performance, particularly due to the broad scope and timeliness aspects. This study, therefore, recommends SMEs to adopt AIS that employs those aspects in order to assist them to generate better performance.

Keywords: Accounting Information System, Broad Of Scope, Timeliness, Aggregation, Integration, and Financial Performance

Abstrak

Penelitian ini memiliki tujuan untuk mengetahui pengaruh karakteristik sistem informasi akuntansi (SIA) yaitu *broad scope*, *timeliness*, *aggregation* dan *integration* terhadap kinerja keuangan Usaha Kecil dan Menengah (UKM) di Indonesia. Penelitian ini menggunakan metode kuantitatif dan data dikumpulkan dari UKM yang melakukan pembukuan baik secara manual maupun menggunakan teknologi yang lebih maju. Analisis dilakukan menggunakan regresi berganda. Hasil penelitian menemukan bahwa SIA berdampak positif terhadap kinerja keuangan UKM, terutama pada karakteristik *broad scope* dan *timeliness*. Oleh karena itu, penelitian ini merekomendasikan UKM untuk mengadopsi SIA dengan menggunakan aspek-aspek tersebut untuk membantu dalam menghasilkan kinerja yang lebih baik.

Kata Kunci: Sistem Informasi Akuntansi, *Broad Scope, Timeliness, Aggregation, Integration*, dan *Financial Performance*

Introduction

Small and Medium Enterprises (SMEs) plays a significant part in Indonesia. Many big companies went bankrupt when 1997 Asian monitary crisis hit Indonesia, while SMEs survived and even exploded at that time (Afriza, 2021). Further, SMEs also survived the economic crisis in 2008 (LPPI & BI, 2015). The same thing happened recently when Covid-19 hit globally including Indonesia and one of the factor that helped Indonesia recover is the creativity of its micro, small and medium enterprises that in 2021 it has contributed 61,97% to Indonesia's GDP (*Gambaran UMKM Indonesia*, n.d.). In Indonesia, SMEs itself is categorized as followed:

Table 1
SMEs' Characteristics

	Small Enterprise	Medium Enterprise
Net Asset	50 – 500 mio	500 mio – 10 bio
Gross Income	300 mio – 2,5 bio	2,5 bio – 50 bio

Source: Micro, Small, and Medium Enterprises (2008)

In running its business, any companies, including SMEs, need technology for its operation. As technology gets more sophisticated, business has grown more extensive and progressive since its business relation is faster, more precise and more competent (T Santosh, 2018). One of the technology used in business is information technology. Previous research found that information and communication technology (ICT) have a positive influence to organization performance (Huang et al., 2022). Research found that in improving productivity through information and communication technology investment is not straightforward as the organization also need investment and change in human capital and organization's innovation (Nikoloski, 2014). To carry out operations that convert data into information, every information system makes use of human resources, hardware, software, data, and networks. (O'Brien & Marakas, 2010).

A report generated by an information system is then sent to a manager and other business professionals. One of the uses of ICT in business is for its accounting and is called accounting information system, defined as a group of interconnected, physically and virtually linked subsystems that work together to transform transactions or any knowledge about financial matters into financial data (Azhar, 2008). In other terms, it is a computer-based technique used to monitor accounting activity in respect to information technology resources. This system enables a firm to carry out tasks from data collecting to reporting for use by interested parties such as auditors, managers, CFO, tax agencies, etc (Fontinelle, 2022).

ICT is utilized to increase an organization's effectiveness and the accuracy of its accounting data (Ganyam & Ayoor, 2019). Companies are now shifting its accounting system from manual bookkeeping to computerized accounting system (Phyu & Vongurai, 2020). This change provide impact on the work environment, that become more effective and efficient (Muhammad & Ismail, 2022). However, many companies do not realize the importance of computerized accounting system, especially SMEs as their human resources have low capabilities (Lu et al., 2012). This is in consistent with earlier research that found that SMEs are faced with problems such as incomplete records, lack of finance, staff's lack of experience and others

(Căpușneanu et al., 2020). On the other hand, small business owners who have a better financial literacy tend to implement accounting (Herawati et al., 2020).

Information accounting system allow companies to use accounting software to operate its daily accounting activities where this software is easy to use so that accounting function in timely and accurate manner (Xu, 2020). Companies can use desktop-based or cloud-based software for its accounting system or even Microsoft excel for its bookkeeping. Where desktop-based software allows user to download the application to the computer used for companies' accounting, cloud-based software can be used in any devices as long as it is connected to the internet. Each system has its own benefits and is used based on the company's condition.

Planning and directing operations to address problems is done through accounting information system management (Soobaroyen & Poorundersing, 2008). Further, companies used it to make investment decision, regulation review, activity monitoring and regulation procedure (Besusparienė et al., 2018). Therefore, effective accounting information system will help companies to gain competitive advantage. In other words, accounting information system influence company's financial and non-financial side (Abu Afifa & Saleh, 2022).

There are four characteristics in accounting information system management, namely broad scope, timeliness, aggregation and integration. Broad scope contains outside, non-financial information, including knowledge about the future. Timeline includes frequency in presenting reports. Aggregation contains analytical information in a manner suitable for the decision model, as well as aggregate data based on time periods and/or functional domains. Integrity comprises data on the relevant goals for different activities, their connections among organizational sub-units, and reporting on interactions within a sub-unit.

Based on some studies, good accounting information system should posseses these aspects in order to provide better impact on SMEs' performance (Abu Afifa & Saleh, 2022; Ghasemi et al., 2019; Irawati & Ardianshah, 2018; Manossoh et al., 2022). However, inconsistency is still found among those studies because studies conducted by Afifa and Saleh found only timeliness and integration aspect that affect SMEs' performance, while studies organized by Ghasemi et al (2018) found all aspect except integration affect company's performance. Irawati and Ardianshah (2018) found that only timeliness and aggregation aspect affect company's performance, while Manossoh et al (2022) found all characteristics affect company's performance.

Further, up to the extend of our knowledge, only limited study that has tested effect of accounting information system in Indonesia. This study, therefore aims to investigate how accounting information system influence SMEs' financial performance in Indonesia in order to provide recommendations for SMEs in Indonesia to have better performance so that they can continue to contribute to economic growth and stability.

Literature Review and Hypothesis

Accounting Information System

Accounting information system is described as is a transaction-based information system

that addresses the economic events occurring in the organization (Kumar, 2009). This economic events is its day-to-day operation. Accounting information system is done through a software as accounting software has ability to provide timely, accurate, and reliable information. In relation thereto, most companies need accounting software to operate (Thottoli, 2021). Companies who have low knowledge on accounting information, such as SMEs, still do its accounting manually resulting in difficulty to control company's health and therefore could not achieve its goals (Alhatabat, 2020). According to research, the success or failure of SMEs or other businesses is significantly influenced by the accounting function (Hernandez, 2020). Computerized accounting system made the job done successfully and improve the quantity and quality of the work (Tychalas & Karatza, 2020). However, SME has faced issues in adopting accounting information system, such as difficulty in operating the software, no support or guidance from the vendor, issue in managing the accounting tasks due to lack of knowledge in accounting principle and tax regulation (Bakr, 2020; Thi Bui et al., 2020).

Many research has been done to see the influence of accounting information system characteristics to other variable in organization's context such as uncertainty of external environment (Abu Afifa & Saleh, 2022; Pedroso et al., 2020), top management support and task uncertainty (Pedroso et al., 2020), technology (Ghasemi et al., 2019) and many more. To be able to endure in a hostile and evolving environment, accounting information system helps organization by providing information from planning activities to decision making (Soobaroyen & Poorundersing, 2008). An ideal accounting management system will direct companies to be in a better position where the company's performance is improved (Dahlan & Rasli, 2019).

Financial Performance

Company's performance can be seen from three specific areas, which are shareholder return, product market performance and financial performance (Richard et al., 2009). Financial performance refers to aspects such as profits, return on assets (ROA), return on investments (ROI) and many others. Profitability measures the company's returns and growth measures the business's capacity to increase the size. Company's financial performance is associated with information and communication technology (Gallego et al., 2015). A study found that information and technology communication significantly improve firm performance as it could increase sales (Masyhuri et al., 2021)

Accounting measures is used in assess financial performance, such as earnings, net profit, cash flow, sales, return on asset, and many others (Richard et al., 2009). There is also study that calculated the company's performance using the metrics of market share, growth rate, profitability, and inventiveness (Dzenopoljac et al., 2018). Azam, (2014) assess financial performance using sales, profitability and overall performance. Kwarteng & Aveh, (2018) used overall profitability consisting of EBITDA margin, net income/revenues, return on equity (ROE), return on investment (ROI), and economic value added. Most research ask their respondents to assess their companies' financial performance.

Effect of Accounting Information System to Financial Performance

Chenhall & Morris, (1986) found that management accounting information system should possess four characteristics and they are broad of scope, timeliness, aggregation and integration. In other words, these four characteristics are used as measurement to see the effectiveness on company's accounting information system (Ghasemi et al., 2019; Soobaroyen & Poorundersing, 2008). There have been numerous studies done to see the relationship between these

characteristics and organizational or business performance. However, previous research provide various results in regards to the influence of each accounting information system characteristics to financial performance. Some research in Indonesia found that all accounting information system characteristics, individually, positively influence organization's performance (Manossoh et al., 2022) while other research found that only timeliness and aggregation positively influence organization's performance (Irawati & Ardianshah, 2018).

Ghasemi et al.(2019) discovered that broad of scope has positive influence on financial performance, while Abu Afifa & Saleh (2022) found an insignificant influence between the two variable. However, timeliness and aggregation positively influence financial performance (Abu Afifa & Saleh, 2022; Ghasemi et al., 2019; Irawati & Ardianshah, 2018). Abu Afifa & Saleh, (2022) found that integration positively influence financial performance while Ghasemi et al., (2019) found that there is an insignificant influence between integration and financial performance.

Even though each research has different result, overall, accounting information system has influenced the company's financial performance positively (Abu Afifa & Saleh, 2022; Al-Dmour et al., 2023; Kwarteng & Aveh, 2018). Therefore, the hypothesis to investigate the effect between the variables are as follow:

H1 Broad scope characteristic positively influence SME's financial performance

H2 Timeliness characteristic positively influence SME's financial performance

H3 Aggregation characteristic positively influence SME's financial performance

H4 Integration characteristic positively influence SME's financial performance

Methodology

Research Design

This study employs a descriptive quantitative method to interpret the data. A questionnaire-based survey design strategy is employed as commonly used in social science studies (Creswell, 2013). The questionnaire is sent to 200 Small and Medium Enterprises (SMEs) and to be filled with owner or financial or accounting manager to produce valid results. The content of the questionnaire were adopted from earlier research. The questionnaire includes closed-ended questions that participants can only respond to by selecting one of the predetermined options. This particular study uses a five-point Likert scale, where 1 represents strongly disagreeing to 5 strongly agreeing, and also open-ended question. The completion of the questionnaire depends on the condition of the firm.

The classical assumption test is conducted to determine the relation between the variables. Multiple regression is also conducted to examine the interaction effect among the four characteristics and financial performance.

Measurement of Variables

This current study has the objective to ascertain relationship between SME financial performance and accounting information systems. Below are the measurement of each variable:

Table 2
Variable Items

Variable	Indicator
Independent Variable	
Broad Scope	Information on possible future events, non-economic matter, productivity, market, calculation on the probability of upcoming events
Timeliness	Information provided upon request and automatically after processing completed, report frequency, reports from different division, information reported without delay
Aggregation	Information on effect of an event on particular time period, cashflow analysis, profit increases/expense report/income analysis, credit policy analysis, information required to perform 'what-if' analysis
Integration	Information on the influence of others' decision, information on the impact of decision, information on precise target for activities in department, information on impact of the decision for organization
Dependent Variable	
Asset, gross income and profit growth	Total assets, gross income and profit in 2021 and 2022
Control Variable	
Total employees, one year revenue, company age	

Results and Discussions

Respondents Profile

Based on the questionnaires distributed, 189 questionnaires can be processed. This study uses several factors to profile the company and they are company's sector, total employees, company's revenue in a year, and company age. Below are the profile of the respondents:

Table 3
Respondents profile

Company's Profile	Freq.	%
Business Sector		
- Healthcare	17	9,0
- Culinary	38	20,1
- Manufacture	29	15,3
- Transportation	12	6,3
- Service	36	19,0
- Finance	5	2,6
- Rental	15	7,9
- Trading	37	19,6
Total Employees		
- <25	82	43,4
- 25 - 50	70	37,0
- >50	37	19,6
Annual Revenue		
- <500 mio	39	20,6
- 500 mio - 1 bio	44	23,3
- 1 - 2 bio	36	19,0
- 2 - 5 bio	37	19,6
- >5 bio	33	17,5
Company Age		
- <5 years	42	22,2
- 5 - 10 years	81	42,9
- >10 years	66	34,9

Instruments Testing

Validity testing is done by comparing r value to r table. If the r value is greater than r table, the instrument is considered valid. The r table for 189 respondents is 0,142 with α = 0,05. A valid instrument will be used to measure the variable in this study. Below are the result of validity testing:

Table 4
Validity Test

Item	r Value
Broad Scope	
X1.1	0,893
X1.2	0,843
X1.3	0,883
X1.4	0,882
X1.5	0,866
X1.6	0,917
Timeliness	
X2.1	0,887
X2.2	0,926
X2.3	0,917
X2.4	0,895
X2.5	0,919
Aggregation	
X3.1	0,914
X3.2	0,914
X3.3	0,918
X3.4	0,928
X3.5	0,919
Integration	
X4.1	0,869
X4.2	0,933
X4.3	0,928
X4.4	0,933

Based on the validity testing, all instruments are valid. The next step is reliability testing using Alpha Cronbach. Below are the reliability test result:

Table 5
Reliability Test

Variable	Alpha Cronbach
Broad Scope	0,942
Timeliness	0,946
Aggregation	0,952
Integration	0,942

Based on the reliability testing, all the Alpha Cronbach is more than 0,6, therefore the instruments are reliable. In conclusion, the instruments can be used for this study.

Classical Assumption Test

In order to the regression model to be unbiased, this study must fulfil the classical assumption test which consist of normality, autocorrelation, multicollinearity and heteroscedasticity test.

Normality Test

Normality test is conducted using one sample Kolmogorov-Smirnov in order to find if the data has normal spread of a distribution. The Kolmogorov-Smirnov test shows that the result of normality test is 0,099. As the result of normality test is greater than 0,05, therefore the data has normal distribution.

Autocorrelation Test

The autocorrelation test is used to determine whether values of the same variables correlate with one another. using Durbin-Watson Test. The result of Durbin-Watson Test shows that (Du < D < 4-Du) 1,8981 < 1,903 < 2,1019. Based on the result, no autocorrelation is found in the model.

Multicollinearity Test

Multicollinearity test is conducted to determine whether the independent variables in the regression model correlate with one another. This test use Variance Inflation Factor (VIF) and Tolerance value. The multicollinearity test results are shown below:

Table 6
Multicollinearity Test

Variable	Tolerance	VIF
Broad Scope	0,288	3,472
Timeliness	0,319	3,132
Aggregation	0,269	3,723
Integration	0,404	2,473
Total employee		
<25	0,330	3,028
25 – 50	0,424	2,358
One Year Revenue		
<500 mio	0,436	2,293
500 mio – 1 bio	0,442	2,260
1 – 2 bio	0,523	1,911
2 – 5 bio	0,533	1,877
Company Age		
<5 years	0,472	2,120
5 – 10 years	0,552	1,812

The decision whether the variable has multicollinearity or not is the cut off value which is 0,10 for tolerance value and 10 for VIF value. Therefore, the value above indicate that no multicollinearity found between the variables.

Heteroscedasticity Test

The heteroscedasticity test is conducted to identify the difference of variance among the data category, using Park test. Below are the results of heteroscedasticity test:

Table 7
Heteroscedasticity Test

Variable	Sig.
Broad Scope	0,051
Timeliness	0,094
Aggregation	0,133
Integration	0,220
Total Employee	
<25	0,881
25 – 50	0,954
One Year Revenue	
<500 mio	0,181
500 mio – 1 bio	0,143
1 – 2 bio	0,102
2 – 5 bio	0,456
Company Age	
<5 years	0,388
5 – 10 years	0,858

The decision whether the variable has heteroscedasticity or not is when the significance is greater the α, which is 0,05. Considering the preceding table, the significance value indicate that there is no heteroscedasticity on all variables.

Hypothesis Testing

The multiple linear regression analysis approach and SPSS 25.0 software are used for the hypothesis testing in this study. In order to ensure that the regression model is appropriate, goodness of fit is measured with the value of adjusted R^2, t value, and F value.

The independent variables in this regression model are broad scope, timeliness, aggregation and integration. The dependent variable is financial performance which consist of four points and they are asset growth, revenue growth, profit growth, and return on asset. The control variables are total employees, company age, and and company's one year revenue.

Findings

Below are the results from the hypothesis testing:

Table 8
Regression Result on Asset Growth

Variable	Coef.	Sig.
Broad Scope	-0,392	0,695
Timeliness	0,862	0,390
Aggregation	-0,160	0,873
Integration	1,481	0,140
Total Employee		
<25	-1,170	0,243
25 – 50	-1,985	**0,049****
One Year Revenue		
<500 mio	1,149	0,252
500 mio – 1 bio	1,349	0,179
1 – 2 bio	1,511	0,132
2 – 5 bio	1,014	0,312
Company Age		
<5 years	0,059	0,953
5 – 10 years	0,756	0,451
F_{value}	1,174	0,305
Adjusted R Square	0,011	

Table 9
Regression Result on Revenue Growth

Variable	Coef.	Sig.
Broad Scope	-1,371	0,172
Timeliness	3,394	**0,001***
Aggregation	1,266	0,207
Integration	0,842	0,401
Total employee		
<25	-0,611	0,542
25 – 50	-1,589	0,114
One Year Revenue		
<500 mio	0,380	0,705
500 mio – 1 bio	-0,735	0,463
1 – 2 bio	-0,763	0,446
2 – 5 bio	-1,098	0,274
Company Age		
<5 years	-0,844	0,400
5 – 10 years	0,512	0,610
F_{value}	5,021	**0,000***
Adjusted R Square	0,204	

Table 10
Regression Result on Profit Growth

Variable	Coef.	Sig.
Broad Scope	-0,484	0,629
Timeliness	2,847	**0,005***
Aggregation	1,137	0,257
Integration	0,780	0,437
Total Employee		
<25	-1,022	0,308
25 – 50	-0,850	0,396
One Year Revenue		
<500 mio	0,573	0,568
500 mio – 1 bio	0,826	0,410
1 – 2 bio	-0,860	0,391
2 – 5 bio	-1,346	0,180
Company Age		
<5 years	-1,452	0,148
5 – 10 years	0,077	0,938
F_{value}	5,228	**0,000***
Adjusted R Square	0,226	

Table 11
Regression Result on ROA

Variable	Coef.	Sig.
Broad Scope	3,722	**0,000***
Timeliness	-1,012	0,313
Aggregation	-0,089	0,929
Integration	0,701	0,484
Total Employee		
<25	1,755	**0,081*****
25 – 50	-0,333	0,740
One Year Revenue		
<500 mio	0,583	0,561
500 mio – 1 bio	0,440	0,661
1 – 2 bio	1,022	0,308
2 – 5 bio	2,242	0,026
Company Age		
<5 years	0,728	0,468
5 – 10 years	0,839	0,403
F_{value}	3,979	**0,000***
Adjusted R Square	0,160	

Notes: *) Significant at 0,01, **) Significant at 0,05, *), Significant at 0,1**

Tables 8 to 11 display the findings of the multiple regression analysis. Table 8 shows the result on asset growth, table 9 shows the result on revenue growth, table 10 shows the result on profit growth and table 11 shows the result on return on asset (ROA).

Based on table 8, the result shows that simultaneously all accounting information system characteristics together with total employee, one year revenue and company age as control variable have no influence on asset growth. Further, the adjusted R^2 is amounted to 0,011. This means that accounting information system characteristics, total employee, one year revenue and company age together only explain 1,1% asset growth. Partially, no characteristic is found significant. However, total employee has significant influence on asset growth. Result shows that total of 25 employees is negatively significant compared to total of >50 employees at (P) 0,049 < 0,05 significance level with coefficient of -1,985.

Based on table 9, the result shows that simultaneously all accounting information system characteristics together with total employee, one year revenue and company age as control variable have significant influence on revenue growth at (P) 0,000 < 0,01 significance level. Further, the adjusted R^2 is amounted to 0,204. This means that accounting information system characteristics, total employee, one year revenue and company age together explain 20,4% revenue growth. Partially, among all characteristics, only timeliness has a positive significant influence on revenue growth at (P) 0,001 < 0,01 significance level with coefficient of 3,394. There is no influence found between all control variable and revenue growth.

Based on table 10, the result shows that simultaneously all accounting information system characteristics together with total employee, one year revenue and company age as control variable have significant influence on profit growth at (P) 0,000 < 0,01 significance level. Further, the adjusted R^2 is amounted to 0,221. This means that accounting information system characteristics, total employee, one year revenue and company age together explain 22,1% profit growth. Partially, among all characteristics, only timeliness has a positive significant influence on revenue growth at (P) 0,001 < 0,01 significance level with coefficient of 2,847. There is no influence found between all control variable and profit growth.

Based on table 11, the result shows that simultaneously all accounting information system characteristics together with total employee, one year revenue and company age as control variable have significant influence on return on asset at (P) 0,000 < 0,01 significance level. Further, the adjusted R^2 is amounted to 0,160. This means that accounting information system characteristics, total employee, one year revenue and company age together explain 16% return on asset. Partially, among all characteristics, only broad scope has a positive significant influence on revenue growth at (P) 0,001 < 0,01 significance level with coefficient of 3,722. Further, both total employee and one year revenue have significant influence on return on asset. Result shows that total of <25 employees is positively significant compared to total of >50 employees at (P) 0,081 < 0,1 with coefficient of 1,755 and one year revenue of 2 – 5 billion is positively significant compared to one year revenue of >5 billion at (P) 0,026 < 0,05 significant level with coefficient of 2,242.

In conclusion, simultaneously accounting information characteristics together with total employee, one year revenue and company age have significant influence on financial performance of SMEs. This means that a company with better accounting information system has better financial performance. This finding is similar with research by Huang et al., (2022) that found information and communication technology positively influence financial performance and research by (Al-Dmour et

al., 2023) that found accounting information quality positively influenced business performance.

The result shows that only timeliness and broad scope has positive influence on financial performance. While timeliness positively influence revenue growth and profit growth, broad scope positively influence return on asset. However, partially not all characteristics are positively influence financial performance. This is due to the fact that each quality works in harmony with the others to ensure system management inside the firm (Abu Afifa & Saleh, 2022). Using accounting information system resulting in better and faster decision making and therefore influence overall performance (Pedroso et al., 2020).

The outcome demonstrates that broad scope has a positive influence on asset growth. This means that broad scope positively influence financial performance. Therefore, H1 is accepted. This outcome supports previous studies (Ghasemi et al., 2019; Manossoh et al., 2022). Accounting information system plays a big role in delivering information with big scale or broad scope, which not only economically but also non economic informations, therefore contribute in achieving company's goals (Abu Afifa & Saleh, 2022; Manossoh et al., 2022).

The result indicates that timeliness has a positive influence on revenue growth and profit growth. This means that timeliness positively influence financial performance. Therefore, H2 is accepted. This result supports previous research (Abu Afifa & Saleh, 2022; Ghasemi et al., 2019; Irawati & Ardianshah, 2018; Manossoh et al., 2022). Timeliness characteristics provide information on time and therefore influence the decision making process by manager (Irawati & Ardianshah, 2018).

Meanwhile, the result demonstrates that aggregation has no influence on financial performance since no significant influence found on asset growth, revenue growth, profit growth, or return on asset. Therefore, H3 is rejected. This result is in line with previous study by Abu Afifa & Saleh, (2022) that also did not find the influence between the two variables. Even though aggregation contribute in decision making by the manager, there is no effect found and most likely due to the company's size which is considered small or medium.

The result also shows that there is no influence found between integration and financial performance, neither on asset growth, revenue growth, profit growth, nor return on asset. Therefore, H4 is rejected. This finding supports studies by Abu Afifa & Saleh, (2022), Irawati & Ardianshah, (2018), Manossoh et al., (2022). Integration covers goals or target measured by the interaction process on sub unit, where it is more likely needed by big companies with more complexity and so that each sub unit is interdependent (Irawati & Ardianshah, 2018). Information and communication technology in bigger and more complex companies plays role in product or service value added and also facilitate a new form of production and organization as response to a fast market change (Song & Mueller-Falcke, 2006).

Conclusion and Recommendation

Conclusion

This study has the objective to examine the effect of accounting information characteristics namely broad scope, timeliness, aggregation and integration to financial performance of SMEs in Indonesia which is measured by SMEs' asset growth, revenue growth, profit growth and return on asset, while is controlled by control variable such as total employee, one year revenue and company age.

The result found that accounting information system positively influence SMEs' financial performance and this is in line with previous studies. However, not all

characteristic have positive influence on financial performance. This study discovered that only broad scope and timeliness characteristic positively influence financial performance, while there is no significant influence of aggregation and integration. However, all characteristics complete each other.

Recommendation

As accounting information system positively influence SMEs' financial performance, it is suggested to SME in Indonesia to adopt accounting information system and to manage the system well because financial performance improves with improved accounting information system management.

Reference

Abu Afifa, M. M., & Saleh, I. (2022). Management accounting systems effectiveness, perceived environmental uncertainty and companies' performance: the case of Jordanian companies. *International Journal of Organizational Analysis*, *30*(2), 259–288. https://doi.org/10.1108/IJOA-07-2020-2288

Afriza, E. S. D. (2021). Indonesian Small Medium Enterprise (SME) Can Survive During Covid-19: Facts or Illusions?". *International Journal of Business, Economics and Law* , *24*(2), 11–20.

Al-Dmour, A., Zaidan, H., & Al Natour, A. R. (2023). The impact knowledge management processes on business performance via the role of accounting information quality as a mediating factor. *VINE Journal of Information and Knowledge Management Systems*, *53*(3), 523–543. https://doi.org/10.1108/VJIKMS-12-2020-0219

Alhatabat, Z. (2020). The impact of ERP system's adoption on management accounting practices in the Jordanian manufacturing companies. *International Journal of Business Information Systems*, *33*(2), 267. https://doi.org/10.1504/IJBIS.2020.105163

Azam, Md. S. (2014). *Diffusion of ICT and SME Performance: The Mediating Effects of Integration and Utilisation*. Curtin University.

Azhar, S. (2008). *Sistem Informasi Akuntansi: Struktur Pengendalian Risiko Pengembangan (Edisi Peranda)*. Lingga Jaya.

Bakr, S. A. (2020). *The Adoption of the International Financial Reporting Standard for Small and Medium-Sized Entities (IFRS for SMEs) in the Kingdom of Saudi Arabia*. Royal Holloway University of London.

Besusparienė, E., Vitunskaitė, E., & Butėnas, R. (2018). The Importance of Financial Accounting Information for Business Management. *Proceedings of the 5th International Scientific Conference - FINIZ 2018*, 75–81. https://doi.org/10.15308/finiz-2018-75-81

Căpușneanu, S., Topor, D. I., Maria (Oprea) Constantin, D., & Marin-Pantelescu, A. (2020). *Management Accounting in the Digital Economy* (pp. 156–176). https://doi.org/10.4018/978-1-7998-1005-6.ch011

Chenhall, R. H., & Morris, D. (1986). The Impact of Structure, Environment, and Interdependence on the Perceived

Usefulness of Management Accounting Systems. *The Accounting Review*, *61*(1), 16–35.

Creswell, J. (2013). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th Edition). SAGE.

Dahlan, M., & Rasli, A. Md. (2019). The Effect of Management Accounting Systems and Interactive Budget Use on Job Performance. *Asia Proceedings of Social Sciences*, *3*(1), 50–53.

Dzenopoljac, V., Alasadi, R., Zaim, H., & Bontis, N. (2018). Impact of knowledge management processes on business performance: Evidence from Kuwait. *Knowledge and Process Management*, *25*(2), 77–87. https://doi.org/10.1002/kpm.1562

Fontinelle, A. (2022). *Introduction To Accounting Information Systems (AIS)*. Investopedia.

Gallego, J. M., Gutierrez, L. H., & Lee, S. H. (2015). A firm-level analysis of ICT adoption in an emerging economy: evidence from the Colombian manufacturing industries. *Industrial and Corporate Change*, *24*(1), 191–221. https://doi.org/10.1093/icc/dtu009

Gambaran UMKM Indonesia. (n.d.).

Ganyam, A., & Ayoor, I. (2019). Effect of Accounting Information System on Financial Performance of Firms: a Review of Literature. *Journal of Business and Management*, *21*(5), 39–49.

Ghasemi, R., Habibi, H. R., Ghasemlo, M., & Karami, M. (2019). The Effectiveness of Management Accounting Systems: Evidence from Financial Organizations in Iran. *Journal of Accounting in Emerging Economies* , *9*(2), 182–207.

Herawati, N. T., Candiasa, I. N., & Yadnyana, I. K. (2020). The Influence of Gender and Financial Literacy on Accounting Implementation in Small and Micro Business (SMES). *International Journal of Innovation, Creativity and Change*, *12*(4), 36–50.

Hernandez, A. A. (2020). Exploring The Factors to Green IT Adoption of SMEs in The Philippines. *Start-Ups and SMEs: Concepts, Methodologies, Tools, and Applications, IGI Global*, 907–926.

Huang, J., Li, W., Guo, L., & Hall, J. W. (2022). Information and Communications Technology Infrastructure and Firm Growth: An Empirical Study of China's Cities. *Telecommunication Policy* , *46*(3).

Irawati, A., & Ardianshah, R. (2018). Pengaruh Karakteristik Sistem Informasi Akuntansi Manajemen Terhadap Kinerja Manajerial dengan Desentralisasi Sebagai Variabel Moderating. *Jurnal Akuntansi & Keuangan*, *9*(1), 34–53.

Kumar, M. (2009). *Business Information Systems*. Vikas Publishing House.

Kwarteng, A., & Aveh, F. (2018). Empirical examination of organizational culture on accounting information system and corporate performance. *Meditari Accountancy Research*, *26*(4), 675–698. https://doi.org/10.1108/MEDAR-01-2018-0264

LPPI, & BI. (2015). *Profil Bisnis Usaha Mikro, Kecil dan Menengah (UMKM)*. LPPI dan Bank Indonesia.

Lu, K., Fu, Y., Gu, C., & Zhang, L. (2012). Problems and Solutions of

Popularization of Accounting Computerization. *Physics Procedia*, *33*, 1155–1159. https://doi.org/10.1016/j.phpro.2012.05.190

Manossoh, S. M., Alexander, S. W., & Kalalo, M. Y. B. (2022). Pengaruh Karakteristik Sistem Informasi Akuntansi Manajemen Terhadap Kinerja Manajerial Pada PT. Bank SulutGo Cabang Tahuna. *Jurnal LPPM Bidang EkoSosBudKum*, *6*(1), 315–324.

Masyhuri, M., Niadianti, E., Rizky, S. N., & Nurhajati, N. (2021). Effect of Information Communication and Technology Use and Its Implications To Firm Performance In SME. *IQTISHODUNA*, *17*(2), 114–125. https://doi.org/10.18860/iq.v17i2.13472

Muhammad, G., & Ismail, T. (2022). Computerized Accounting Systems and SMEs Performance in Developing Countries: A Mediating Role of Internal Control System. *GMJACS*, *12*(2), 01–19. https://doi.org/10.59263/gmjacs.12.02.2022.250

Nikoloski, K. (2014). The Role of Information Technology in the Business Sector. *International Journal of Science and Research*, *3*(12), 303–309.

O'Brien, J. A., & Marakas, G. M. (2010). *Introduction to Information Systems* (15th edition). McGraw-Hill Companies.

Pedroso, E., Gomes, C. F., & Yasin, M. M. (2020). Management accounting systems: an organizational competitive performance perspective. *Benchmarking: An International Journal*, *27*(6), 1843–1874. https://doi.org/10.1108/BIJ-12-2019-0547

Phyu, K. K., & Vongurai, R. (2020). Impacts on Adaptation Intention Towards Using Accounting Software in Terms of Technology Advancement at Work in Myanmar. *AU-GSB e-Journal*, *12*(2), 98–111.

Micro, Small, and Medium Enterprises, Pub. L. No. 20, Law of the Republic of Indonesia (2008).

Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring Organizational Performance: Towards Methodological Best Practice. *Journal of Management*, *35*(3), 718–804. https://doi.org/10.1177/0149206308330560

Song, G.-S., & Mueller-Falcke, D. (2006). The Economic Effects of ICT at Firm-Levels. In *Information and Communication Technologies for Development and Poverty Reduction: The Potential of Telecommunications* (pp. 166–184). John Hopkins University Press.

Soobaroyen, T., & Poorundersing, B. (2008). The effectiveness of management accounting systems. *Managerial Auditing Journal*, *23*(2), 187–219. https://doi.org/10.1108/02686900810839866

T Santosh. (2018). Impact of Technology in Business. *International Journal of Management and Humanities (IJMH)*, *3*(6), 6–9.

Thi Bui, N., Thi Tu Le, O., & Thi Thanh Nguyen, P. (2020). Management Accounting Practices among Vietnamese Small and Medium

Enterprises. *Asian Economic and Financial Review*, *10*(1), 94–115. https://doi.org/10.18488/journal.aefr.2020.101.94.115

Thottoli, M. M. (2021). Knowledge and use of accounting software: evidence from Oman. *Journal of Industry-University Collaboration*, *3*(1), 2–14. https://doi.org/10.1108/JIUC-04-2020-0005

Tychalas, D., & Karatza, H. (2020). A Scheduling Algorithm for a Fog Computing System with Bag-of-Tasks Jobs: Simulation and Performance Evaluation. *Simulation Modelling Practice and Theory*, *98*, 101982. https://doi.org/10.1016/j.simpat.2019.101982

Xu, X. (2020). *Application Research of Accounting Archives Informatization Based on Big Data* (pp. 55–62). Springer, Singapore. https://doi.org/10.1007/978-981-15-1468-5_9