

# DIGITALIZATION OF ACCOUNTING INFORMATION IMPACT ON MSMEs' PROFITABILITY AND PRODUCTIVITY

Mutoharoh<sup>1</sup>  
Winarsih<sup>2</sup>  
Siti zahrah Buyong<sup>3</sup>

## ABSTRACT

*This study aims to examine the impact of digitalization of accounting information on MSMEs profitability and productivity. The population in this study was MSMEs in Semarang which were registered at the Cooperative and UMKM Agency of Semarang as of October 2019 totaling 17.010 units. There are 300 cases selected using purposive sampling method with the criteria that the companies use computerize transaction recording and/or utilize smart devices for business communication. The primary data were collected from MSMEs' manager through questionnaire that was distributed in several public events such as exhibition and seminars. The study took the simple regression analysis utilizing SPSS 22.0 software. The findings show that that digitalization of accounting information has significant impacts on increasing profitability. Another finding shows that digitalization of accounting information does not affect the companies' productivity. This research is based on the Technological Acceptance Model (TAM) theory and the Schumpeterian theory. In practice, the results of this study can be socialized to the MSMEs managers so that they can use this to evaluate the implementation of accounting information in their business. This study can also be used by government and others related parties to consider in providing business assistance for MSMEs to improve the impact of digitalization of accounting information*

**Keyword : Digitalization, Profitability, Productivity**

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## ABSTRAK

Penelitian ini bertujuan untuk menguji pengaruh digitalisasi informasi akuntansi terhadap profitabilitas dan produktivitas UMKM. Populasi dalam penelitian ini adalah UMKM di Semarang yang terdaftar pada Dinas Koperasi dan UMKM Kota Semarang per Oktober 2019 yang berjumlah 17.010 unit. Terdapat 300 kasus yang dipilih dengan menggunakan metode purposive sampling dengan kriteria perusahaan menggunakan pencatatan transaksi secara komputerisasi dan atau menggunakan perangkat pintar untuk komunikasi bisnis. Data primer diperoleh dari pengelola UMKM melalui kuisioner yang disebar di beberapa acara publik seperti pameran dan seminar. Penelitian ini mengambil analisis regresi sederhana dengan menggunakan software SPSS 22.0. Hasil penelitian menunjukkan bahwa digitalisasi informasi akuntansi berdampak signifikan terhadap peningkatan profitabilitas. Temuan lain menunjukkan bahwa digitalisasi informasi akuntansi tidak mempengaruhi produktivitas perusahaan. Penelitian ini mendasarkan pengujian dengan mengaplikasikan teori Technological Acceptance Model (TAM) dan teori Schumpeterian. Dalam prakteknya, hasil penelitian ini dapat disosialisasikan kepada pengelola UMKM agar dapat dimanfaatkan untuk mengevaluasi penerapan informasi akuntansi dalam usahanya. Kajian ini juga dapat dimanfaatkan oleh pemerintah dan pihak terkait lainnya untuk dipertimbangkan dalam memberikan bantuan usaha bagi UMKM guna meningkatkan manfaat dari digitalisasi informasi akuntansi.

**Kata Kunci : Digitalisasi, Profitabilitas, Produktivitas**

## Introduction

The needs the era of the industrial revolution 4.0 provides significant opportunities and challenges to the growth of tje Micro, Small, and Medium

<sup>1</sup> Corresponden Author : Lecturer at Faculty Economics UNISSULA, Semarang  
Telp. 089663472849  
Email : [mutoharoh@unissula.ac.id](mailto:mutoharoh@unissula.ac.id)

<sup>2</sup> Second Author : Lecturer at Faculty Economics UNISSULA, Semarang, Email : [winarsih@unissula.ac.id](mailto:winarsih@unissula.ac.id)

<sup>3</sup> Third Author : Lecturer at Universitas Teknologi Mara, Malaysia, Email : [siti280@uitm.edu.my](mailto:siti280@uitm.edu.my)

Enterprises (MSMEs) industry in Indonesia. On one hand, marketing activities is more effective and efficient in order to meet costumers in a wider area with the help of advance technologies (Raymond et al.,2013, and Taipaleenmäki and Ikäheimo 2013). However, it also opens up broader competition among businesses (Raymond et al., 2013). The expanding market and sharp demand fluctuations also requires the companies to prepare its products in any conditions. The above issues challenge MSMEs to improve its performance which includes profitability and productivity. Profitability is needed to convince potential creditors and investors to provide funding, whereas productivity is needed to manage the sales efficiency in order to avoid cost overruns while keeping the product availability in the significant ups and downs of demands.

Along with the technological advancement, efforts have been done by MSMEs managers in increasing performances. Several MSMEs managers decide to switch their conventional way into modern technological system to build information including digitalize the accounting information. Accounting information in MSMEs activities is very important to support business development (Grande et al.,2011). Systematic bookeping and transaction records that bring in a good preparation of financial statement can help managers in making decisions (Alnajjar 2017 and Napitupulu 2018). Accounting information also helps managers in controlling business operation so that it prevents fraud or cost wasting. In addition, creditors and investors also need information of companies' profitability (Margaretha and Supartika 2016, and Yazdanfar 2013) to assess whether a business is feasible to obtain loan and potential to provide expected returns. Clear and complete financial records can be a reference for managers to find out whether all business activities have been carried out effectively and efficiently so that business productivity can be achieved (Sihombing 2018).

Therefore, linking technology and accounting information to be implemented in the MSMEs sector is an interesting issue. As MSMEs criteria that have lower asset value compared to large industries, investment in information technology by MSMEs should be managed appropriately. This research raises the existing phenomena in recent decades faced by MSMEs in various countries, including Indonesia in terms of the implementation of accounting information system. Relying on some previous research, this research tries to develop them with different areas of respondents at different levels and geographic cultures. In addition, differences also occur in the number of respondents and the methods used. In 2010 Research by Grande et al., (2011) have been done through an empirical test toward 74 MSMEs in Spain, that is included as developed countries. They search the relationship between the use of the Accounting Information System and the improvement of company performance and productivity of SMEs in Spain. The results obtained from ANOVA statistic test indicated that there is a positive relationship between the used of AIS by SMEs on performance indicators. However, Grande et al., (2011) did not find the same relationship with productivity. Research related to the implementation of AIS by SMEs in developed countries was also carried out by (Alnajjar, 2017). This study tries to analyze the impact of accounting information systems on management performance and organizational performance. With a total of 74 MSMEs in the

UAE data obtained from the trade, service and manufacturing sectors, regression analysis tests were applied for data analysis. Alnajjar (2017) found that the accounting information system had a significant impact on management performance and organizational performance.

Adebisi and Adekola (2016) and Arendt et al.,(2019) in their research on MSMEs in Nigeria point out that the companies experience serious obstacles in the application of digital accounting due to lack of IT infrastructure, human awareness and human resources. According to Kinitzki et al., (2018), MSMEs managers faced a difficult situation and experienced the significant impact of the digital revolution due to lack competencies in facing the challenges of digital transformation. However, many other companies obtained huge benefits of the use of technology in accounting system as previous studies done by Margaretha and Supartika (2016), Nurhayati and Susanto (2017), Raymond et al., (2013). They found that accounting information systems that have been run comprehensively by large industries are very helpful to generate profits and control production activities more effectively and efficiently. Lim (2013) stated that computerized accounting information systems improve business performance as the result of simplified transaction processes and efficient operations.

Theoretically, this study rely on the theory of Technology of Acceptance Model or known as TAM (Davis 1986) and the theory of schumpeterian (Schumpeter 1939) . In connection with the TAM theory, this study deals with the application of ICT in the MSME accounting system based on the perceived usefulness and ease of use. The more significant the impact of digital accounting on financial performance, the more this technology is utilized. Besides that, the easier it is to use, the more MSMEs implement it (Ogundana et al., 2017). While related to Schumpeterian theory, this study involves one of the innovations supported in the theory related to the application of technological processes in digital accounting at MSMEs. Soininen, (2013) argued that Schumpeterian theory supports the creation of new ideas, novelty, experimentation, and creative processes that can produce new products, services, or technological processes.

As the above explanation, this study aimed to analyze whether digitalization of accounting information has an impact on MSMEs profitability and productivity. Even in the realm of globalization, the advancement of technology and digitalization issue has been existing for so long, still becomes ongoing challenge for MSMEs (Abate, 2019, and Arendt et al., 2019) that need to be discussed more. Consequently, this study is important to add the insight for MSMEs managers and governments as well as other related parties in the effort to keep MSMEs are struggling to face digital revolution era. This study specifically relates the digitalization of accounting information towards ROE and ROE as the benchmark of profitability as well as productivity of MSMEs. Different to the previous study this study was applied to MSMEs in Semarang Indonesia and focused on the digitalization of Accounting Information. In this city, the amount of MSMEs is huge, however the awareness and capability the company that utilizing digital accounting is still very limited. Moreover, there has been very limit study as well that focus on this area related to the digitization of accounting information for MSMEs. The results of this study are expected to contribute to the

development of MSMEs. Practically, MSMEs managers can use this study in order to improve their implementation of digital accounting information. In addition, stakeholders such as government and other related parties can also utilize this study to consider in providing business assistance on technology management for MSMEs so that it can be used more effectively then gives more impact on the performance improvement.

## **Literature Review**

### **Theory of Technology Acceptance Model (TAM)**

The Technology Acceptance Model or known as TAM (Davis 1986) is a derivative of the Theory of Reasoned Action which was first developed by Fishbein and Azjen's (1975). TAM is concerned with predicting the acceptance of a device and the modifications required to make a system acceptable to its users (Davis, 1986, and Davis, 1989). There are two perceptions that become the principle of acceptance in this theory, namely the perception of usefulness and the perception of convenience. The definition of usability in this case is the extent to which a person believes that the use of information systems will improve performance whereas the definition of convenience refers to the extent to which one believes that the use of the system will be easy to follow.

According to Taherdoost (2018), TAM is used in connecting Information and Communication Technology with the MSME Accounting system, in this case, namely the application of digitizing accounting information. Based on the perception of the usefulness of MSMEs to adopt the digitalization of accounting information only if they believe that the decision is useful enough to improve their activity and financial performance. Meanwhile, based on the perception of convenience, the integration of ICT in the accounting information system will be carried out if they think its use will be very easy and at a minimum cost. In Ogundana et al. (2017) observation towards SMEs in Nigeria, most SMEs feel very comfortable using traditional methods of recording accounting so that they do not want change and feel they do not need to adopt the digitization of accounting information

### **Theory of Schumpeterian**

According to Lee et al., (2014), innovation is an important component that reflects the trends of Schumpeterian Theory. This theory supports new ideas, novelty, experimentation, and creative processes that can produce new products, services, or technological processes (Schumpeter 1939) . The implementation of Schumpeterian resulted in the replacement of old components with new, more efficient versions. It is possible that there will be a decrease in demand when the investment in innovation has not been implemented. a decrease in demand will have an impact on the company's balance sheet and the availability of internal finance. As a result, companies that are weak and less efficient in innovating will be forced to lose in the market (Mehmood et al., 2019, and Soininen 2013). The Schumpeterian theory of the MSME industry is applied in all aspects of business activities including the digitized accounting information system. Lee et al., (2014) stated that innovation in an accounting information system that is digitized opens-

up opportunities for information efficiency in every company transaction. With a more efficient flow of information, company staff will receive information more quickly so that performance will be more productive, and more requests will be served.

### **Digitalization of Accounting Information System**

Higher level of uncertainty in the competitive market today challenges company to improve the information system and data processing capacity to survive and deal with competition in the digital era. Such improvement includes digitalizing business information which can provide great benefits on the company's strategies (Taipaleenmäki and Ikäheimo 2013). Nguyen and Nguyen (2020) describes the accounting information system as a system in collecting, recording, storing, and processing data to create information that is useful for making decision. The accounting information system involving people and tools which are designed to convert data both financial and non-financial into information that can be communicated to any type of decision makers (Romney and Steinbart, 2015). While, in terms of digitalization accounting information, Alnajjar (2017) stated that many companies applied online and digital information in their accounting information system for better decision-making.

As MSMEs have limited asset criteria, not all MSMEs are able to implement the digitalization of accounting information in their whole company's activity. Investing in sophisticated digital devices requires a huge cost (Arendt et al., 2019, and Ulas, 2019). Simpler digitalization of accounting information can be applied by MSMEs in any way. Such digitalization can be applied by utilizing company websites/blogs or online technology to distribute information and archive document (Lim 2013, and Taskinsoy 2019). Ulas (2019) explain that utilizing smart devices as the company's Standard Operating Procedure for systemized financial transactions is also one of the implementation of simple digitalization that can be applied with a limited budget. However, it does not rule out the possibility that MSMEs with proficient human resources in utilizing computers or other smart devices will help MSMEs to increasingly develop in this digitalization era (Alnajjar 2017). Investing in accounting information technology will strengthen companies in facing continuous changes.

### **Profitability**

Many researchers discussed the MSMEs profitability in various points of view. It is one of the ratios in measuring business performance and knowingly becomes primary aspect of financial reporting. Margaretha and Supartika (2016) connected the profitability with the company's ability in resulting profit of certain period. Profitability is often used as a judgment consideration to convince investors that the business will continue to survive. Abate (2019) mentioned that poor accounting records and practices were the factors that largely subverted the profitability of MSMEs in Ethiopia.

Managers need to understand the determinant of profitability to develop an effective profitability strategy (Gitman and Zutter 2012). Some determinant such as lagged profit rate, productivity level, firm size and sector effects are considered

in previous literature. Others also relied on the adoption of digital accounting information system as the factor that increase firm profitability (Arendt et al., 2019; Grande et al., 2011; Ulas, 2019). In Alnajjar (2017), it is stated that new computer devices and information society that dealings with customers and suppliers in the accounting information system resulting in saving time while making transactions. As the consequence, more transactions were served, and sales were increasing. While, Toanca (2016) found that the companies turn to robots and intelligent “things” increases their viability and profitability.

Bouwman, Nikou and de Reuver (2019) suggested that the use of subjective measures of performance is a valid proxy. Using data of large Australian firm by Erina and Lace, (2013) utilize Return on Asset (ROA) and Return on Equity (ROE) as an indicators for the profitability. Other researcher also measured profitability using ROA and ROE such as that have been done by Grande et al.,(2011), Biancone and Radwan (2015), and Arendt et al., (2019). ROA is the ratio that explain the company’s ability in generating profit to return all assets they owned (Ehrhardt and Brigham, 2011). It is related to the company profitability in measuring capability to generate earnings at certain income, asset and capital stock levels. In terms of ROE, Wahasusmiah (2015) mentioned that high ROE ratio means that the owner position of the company is strong. ROE is the ratio to measure net income after tax compared to the equity. The ratio shows the efficiency of the equity usage (Ehrhardt and Brigham, 2011).

### **Productivity**

Asset limitation require company to increase productivity levels at the optimum level (Margaretha and Supartika, 2016). Sihombing (2018) define productivity as a ratio that measure the output quantity of the input quantity used to generating output. It can be indicated by the used of labor cost or capital that should be efficiently and effectively in resulting the increase of sales. Similar productivity indicator was analysed by Raymond et al.,(2013) which is implemented for manufacturing firms. It is measured by the gross profit per employee ratio. Previous study analysed factors that influences the improvement of productivity. Karltorp (2017) found that changes in the information flow and decision processes across the organisation are used to improve productivity within an organization. The proper use of IT innovation also inceases productivity (Chen, Jaw, and Wu 2016; Grande et al., 2011; Raymond et al.,2013)

Abate (2019) revealed that the projected growth of a business, especially MSMEs, basically requires an understanding of the interaction between the information technology implementation and the level of productivity. However, lack of support in information technology put the some companies in Malaysia experience lower productivity, higher costs and less on-time delivery performance (Thaker et al.,2019). Finding by Raymond et al.,(2013) explains that the integration of information technology disables innovation capabilities with regard to productivity. This can be affected by human and technical problems as well astime needed to introduce the process. Efforts have been done by companies to stimulate productivity as mentioned by Margaretha and Supartika (2016) such as aplying more bonuses and building a good environmen in the workplace to

comfort the employee. These are expected to enhance the employee loyalty so that they will be more productive.

### **Digitalization of Accounting Information for Profitability**

Study by Ulas, (2019) prove that there is a positive relationship between the development of accounting information systems and SME performance strategies. Grande et al., (2011) relied on ROA and ROE as the profitability measurement in the case of SMEs in Spain. This study found that that the usage of accounting information system for fiscal and bank management resulted in better performance measures. By implementing information systems and technology, the scope of business activities will be broader and the management administration be more efficient covering the need of various stakeholders (Raymond et al.,2013). In Indonesia there is a general opinion that using information technology has helped companies in expanding business markets and saving commercial management costs. Given that information technology is a basic component of the simple application of the digitalization of accounting information, it is necessary to consider whether the application of the digitalization of accounting information contributes to increasing company profits (Gitman and Zutter 2012).

As of the theory of TAM, the usefulness aspect is expected to be exist in the implementation of accounting information by SMEs in Semarang as respondents in this study. Innovations that are applied in improvising the use of technology in the effectiveness and efficiency of accounting records and business communications are also part of the support for the Schumpeterian theory. MSME's profitability indicators can be represented by operating profits as indicated by ROA and ROE. Based on the results of previous studies and the above thoughts, hypotesis is developed:

**H1: Digitalization of accounting information has a positive impact on ROA**

**H2: Digitalization of accounting information has a positive impact on ROE**

### **Digitalization of Accounting Information for Productivity**

Research that links IT with productivity mostly supports the claim that the use of appropriate IT in accounting information can increase company productivity and, thus, have an influence on company growth (Abate 2019; Ogundana et al., 2017; Ulas 2019). Previous findings support the benefit aspects raised in theory of TAM on the usefulness of technology to increase productivity with complete support, including the readiness of the company's human resources. With the help of technology and management readiness, it is hoped that services to consumers will be more effective, which as a result can increase sales and reduce operational costs. According to Raymond et al., (2013) countries that invest most in information technology are leaders in productivity growth. However, in the case of manufacturing SMEs in Canada, they found that the integration of information technology disables innovation capabilities with regards to productivity.

The projected growth of a business, especially MSMEs, basically requires an understanding of the interaction between the information technology implementation and the level of productivity (Abate 2019). Moreover, lack of

support in IT innovation put the some companies in Malaysia experience lower productivity, higher costs and less on-time delivery performance (Thaker et al.,2019). Optimal innovation requires management readiness with regards to financial, human skills and organizational skills. The failure to optimize productivity is in line with the Schumpeterian theory which acknowledges the possibility of a decrease in demand when the investment in innovation has not been implemented appropriately, even waste will occur in a period. In recent years, the value and evolution of productivity of Indonesian MSMEs is lower than other major economic indicators (Sihombing 2018). Santamaría et al., (2010) have shown that IT implementation on the accounting system stems from decreased work time and has an impact on cost reduction. The productivity indicator in this study is the operational expense per sale (Sihombing 2018)SI. Based on the above explanation the hypothesis is developed:

**H3 : Digitalization of accounting information has a positive impact on productivity levels**

### **Research Method**

#### **Data Types and Sources**

This study processes quantitative data which were collected from primary data. Respondents' answers were obtained through a questionnaire distribution. Questions regarding the implementation of digitalization of accounting information are converted into a Linkert scale, while questions regarding financial performance are presented through direct entry questions.

#### **Population and Samples**

The populations of data in this study are MSMEs in Semarang. Based on the data from Cooperative and MSMEs Office as of October 2019 the total of MSMEs in Semarang was 17.010 units. This population determination is adjusted to the flexibility of the researchers reach to obtain information from respondents. The samples were selected using purposive sampling method with the criteria that the companies use computerize transaction recording and/or utilize smart devices for business communication. There were 300 cases selected that met the sample criteria from the 363 questionnaires which have been received from the respondent.

#### **Data Collection Method**

The data in this study were collected through distributing questionnaires to respondents who met the selection criteria. The distribution of questionnaires was carried out in several mass activities such as exhibitions and seminars. Questions are divided into several sections. The first part contains general questions about the respondent's personal and business identity. The second part contains questions related to the research variables.

#### **Operational Definition and Variables Measurement**

The variables used in this study consist of one independent variable namely Digitalization of Accounting Information (X) and three dependent variables namely ROA (Y1), ROE (Y2), and Productivity (Y3). ROA and ROE as



proxy from profitability variable. The relationship between dependent and independent variables will be tested separately to obtain specific results related to the effect of the independent variable on the dependent variable.

### **Digitalization of Accounting Information (X)**

Digitalization of Accounting Information is a system in collecting, recording, storing, and processing economic transaction which involves technology (Romney and Steinbart, 2015). The measurement of Digitalization of Accounting information in this research is adopted from Lim (2013) and Taskinsoy (2019) which consists of: 1) Computerized of financial transactions bookkeeping; 2) Utilization of the internet for financial statements distribution and document archives; 3) Utilization of smart devices for internal and external communication; 4) Paperless documentation.

### **Return On Asset (Y1)**

ROA is the ratio to measure the company's ability to generate profits compared to the assets value used in operation (Ehrhardt and Brigham 2011). It is related to the company profitability in measuring capability to generate earnings at certain income, asset and capital stock levels. ROA is calculated as follow:

$$ROA = \frac{\text{total net income}}{\text{total asset}} \times 100\%$$

### **Return On Equity (Y2)**

ROE is the ratio to measure net income after tax compared to the equity. The ratio shows the efficiency of the equity usage (Ehrhardt and Brigham 2011). ROE is calculated as follow:

$$ROE = \frac{\text{total net profit after tax}}{\text{total equity}} \times 100\%$$

### **Productivity (Y3)**

Productivity is the ratio of the output quantity compared to the input quantity used to generating output (Sihombing 2018). It can be indicated by the used of labor cost or capital that should be efficiently and effectively in resulting the increase of sales. In this research, productivity is calculated as follow:

$$\text{Productivity} = \frac{\text{cost of operating}}{\text{totnet sales}} \times 100\%$$

### **Technique of Analysis**

In processing data, researchers use SPSS tools with analytical techniques that consist of: Descriptive Statistic, Classic Assumption Test, and simple regression Analysis. The first technique is used to describe the collected data without intending to draw conclusions. Data is explained by its minimum value, maximum value, average value, standard deviation, and summary (Ghozali 2016). The classic assumption test is used in this study consist of normality test of Kolmogorov-Smirnov test (K-S), linearity test of compare means, and heteroscedasticity test of Gletser test. It is useful to find out whether the data in this study is biased or not so that the data fulfils the aspect of Best Linear Unexpected Estimator or called BLUE (Ghozali 2016). Simple regression analysis is used to simply predict the value of a dependent variable based on the value

of other variables. Regression analysis can also be used to see the effect of the independent variable (X) on the dependent variable (Y) so it will find out whether or not there is an impact between the independent variable (X) towards the dependent variable (Y). In this study the regression formulation was used as follows:

$$Y1 = \alpha + \beta X + e$$

$$Y2 = \alpha + \beta X + e$$

$$Y3 = \alpha + \beta X + e$$

Keterangan :

Y1 : ROA

Y2 : ROE

Y3 : Productivity

$\alpha$  : Constants

$\beta$  : Coefficient Regression Model

X : Digitalization of Accounting Information

e : Error term model / residual

## Results

### Descriptive Statistic

Table 1 is the result of descriptive statistic test for ROA, ROE, and Productivity.

**Table1. Descriptive Statistics Results**

Variables	N	Mean	Median	Min	Max	Std Deviation
ROA	300	1,59	1,50	0,80	3,40	0,44
ROE	300	2,17	2,01	0,67	6,67	0,78
Productivity	300	3,04	3,00	1,50	5,00	0,73
Valid N (list wish)	300					

Source: Data Primer Proceeds (2019)

The average ROA of all respondents showed a value of 1.59 out of a minimum value of 0.80 and a maximum value of 3.40 while the average ROE of all respondents indicated a value of 2.17 from a minimum value of 0.67 and a maximum value of 6.67. In terms of productivity, on average the ratio of productivity showed the values of 3,04 with standard deviations of 0,73 respectively. Of the three variables, there is no negative minimum value that indicates a loss. Even on average, the selected companies have a good level of ROA, ROE, and productivity.

Performance indicators as seen from the ROA and ROE as well as the productivity value indicators of a company are highly depending on the level of the company. As the respondents in this study are companies in the micro, small and medium scale that have small assets, equity, and sales, the average calculated ratio tends to be small. However, at least all respondents produced a positive ratio that reflects a good level of income and return. The higher the ratio value, the better the company's financial performance. The profit they generate in operational activities to return assets and owner's capital is considered quite good with an average ROA ratio of 1.59% or net income obtained by 0.159 times of assets and an average ROE of 2.17%

or 0.217 times of owner's capital. Regarding productivity, it appears on average the company, which every 0.304 rupiah of operating expenses incurred will result in 1 rupiah of net sales income.

### Classic Assumption Test

Before conducting regression testing, the data and forecasting models that have been compiled must meet the BLUE criteria. As the purpose of this study relies on a simple regression test with primary data that is carried out one time without any time series applied, the classical assumption test used only consists of tests of normality, linearity, and heteroscedasticity. It can be seen from table 2 that depicts the summary of classic assumption test result.

**Table2. Summary of the Classic Assumption Test Result**

Dependent Variable	Independent Variable	Normality test		Linearity test		Heteroscedasticity	
		K-S	Sig.	F	Sig.	T	Sig.
ROA	DAI	,086	,135	1,265	.044	-.998	,319
ROE	DAI	,081	,069	3,111	.002	-.043	,965
Productivity	DAI	,097	,200	3,866	,050	-.920	,358

Source: Data Primer Proceeds (2019)

Based on the normality test that relies on the Kolmogorov Smirnov (K\_S) test, it appears for all the variable tested, the data is normally distributed with a sig. value of more than 5%. Then, compare means function in testing the linearity of the model shows that there is linear relationship between Digitalization of Accounting information towards each dependent variable (ROA, ROE, Productivity) that were tested separately. Subsequent tests were conducted to examine heteroscedasticity. It was found that heteroscedasticity does not occur in the classical assumption test of the impact of Digitalization of accounting information on ROA, ROE, and Productivity as the sig. value shown the number >0.05.

### Simple Linier Regression Analysis

Simple linear regression analysis is a linear relationship between one independent variable and one the dependent variable. This study applying three simple regression tests with the result as shown in table 3 for simple regression analysis of Digitalization of Accounting Information to ROA, 4 for simple regression analysis of Digitalization of Accounting Information to ROE, and 5. for simple regression analysis of Digitalization of Accounting Information to Productivity.

**Table3. Simple linier regression of DAI to ROA**

Model	Coefficients <sup>a</sup>		Standardized Coefficients Beta	T	Sig.
	Unstandardized Coefficients B	Std. Error			
1 (Constant)	1.674	.080		20.804	.000
Digitalization of Accounting Information	.007	.006	.065	1.125	.044

a. Dependent Variable: ROA

Source: Data Primer Proceeds (2019)

In terms of the regression test, the coefficient value of Digitalization of Accounting Information towards ROA based on unstandardized coefficient is 0,007 which means that in this test, 1% increase in the level of digitization of accounting information converted to the Linkert scale is followed by an increase in ROA of 0.007. In addition, the calculated t value indicates a number of 1,125 with significance value of  $0.044 < 0.05$  which indicates that there is an influence of Digitalization of accounting information on ROA.

**Table5. Simple linier regression of Digitalization of Accounting Information to ROE**

Model	Coefficients <sup>a</sup>			T	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
1 (Constant)	2.410	.144		16.754	.000
Digitalization of Accounting Information	.019	.011	.102	1.764	.002

a. Dependent Variable: ROE

Source: Data Primer Proceeds (2019)

The regression coefficient value for the second hypothesis shows a value of B is 0.019 which indicates a positive unidirectional relationship between digitizing accounting information and ROE, while a constant value of 2,410 describes that ROE consistency value is 2.41 if there is no digitization of accounting information. value  $t=1,764$  with a significance of 0.002 indicating that the digitalization of accounting information affects ROE.

**Table 6. Simple linier regression of Digitalization of Accounting Information to Productivity**

Model	Coefficients <sup>a</sup>			T	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
1 (Constant)	11.161	.539		20.720	.000
Digitalization of Accounting Information	.080	.041	.113	1.966	.081

a. Dependent Variable: Productivity

Source: Data Primer Proceeds (2019)

Regression test for Digitalization of Accounting information towards productivity shows coefficient value of unstandardized 0,080 which means the addition of each 0.001 value of the digitization of accounting information is followed by 0.080 increase in productivity. However, t value shows a significance of 0.081 which is higher than the probability value of 0,05. Hence it means that digitalization of accounting information has no effect on productivity. Based on the above result, it can be concluded that H1 and H2 are accepted while H3 is rejected.

## Discussion

### Digitalization of Accounting Information Impact on Profitability

The result was found that H1 and H2 were accepted as it is known that as the benefit of a neat and easily traceable administrative arrangement in a digital

record helped companies to improve financial performance. Operating income as a representation of return has increased more and more during the application of the digitalization of accounting information. The results of this study are in line with Margaretha and Supartika (2016), Nurhayati and Susanto (2017), Raymond et al.,(2013) who state the positive impact of digitizing accounting information in generating company profits. In addition, these results also support Alnajjar (2017) and Lim (2013) who state that the performance of MSMEs will increase due to computerized accounting information systems. This proves that, systematic bookkeeping and transaction records that bring in a good preparation of financial statement can help managers in making decisions.

The more companies feel the benefits in the implementation of digitalization of accounting information, the more companies will accept the introduction of technology in their activities. This is in accordance with the TAM theory which supports the acceptance of a technology model. In this case, the application of simple technology for accounting information systems were applied on MSMEs in one of the areas in developing countries namely Semarang City. Simple model adjustment makes it easy for ordinary users to feel comfortable with new tools in their activities and experience better results than the manual method they usually use (Ogundana et al. 2017). As the result, the digitalization of accounting information generates a positive impact on companies ROA and ROE. This adjustment is also an innovation in business processes that supports the Schumpeterian theory. Innovation is needed to introduce new ways in the financial and corporate information cycle to make it more effective and efficient.

Accounting information helps managers in controlling business operation so that the companies run effectively and efficiently. Digitalization of accounting information makes it easy for companies to conduct periodic supervision of financial performance. From time to time with digital records, the MSMEs manager can conduct an evaluation to ensure the achievement of sales targets and profitability. In addition, a more systematic recording helps the company to control the portion of ownership of assets and capital of the company by its stakeholders so that the profit targets they set can cover the need for asset acquisition and cover the working capital requirements.

### **Digitalization of Accounting Information Impact on Productivity**

Digitalization of accounting information apparently did not have a significant positive effect on productivity (H3 was rejected). The result of this study is in line with Grande et al., (2011), Adebisi and Adekola, (2016) and Arendt et al. (2019) that revealed the use of accounting information systems does not affect productivity. Although it was mentioned earlier that a recording system that is more structured with the use of computers and smart devices provides managers with ease in exercising control over business activities, an increase in costs at the beginning of the period of its installment cannot be avoided. Increase on production results are not compensated by balanced in sales income and significant reduction in costs so that increased productivity does not occur due to the implementatin of digitalization of accounting information (Arendt et al., 2019 and Kinitzki et al.,2018). It is possible that this will not happen so long because

basically investing in technology requires a fairly-high capital, especially for MSMEs. However, great benefits will be obtained in the long-term including managers will be easier to compare the acquisition costs for raw materials for their products and other supporting materials through the use of the internet. Thus they can get the most affordable prices with goods quality that suit for business needs.

The costs of communication become more efficient with the use of long distance communication applications that do not require a person to always meet and face to face to negotiate. Other operational costs can also be reduced by applying digitalization of accounting information such as the provision of office equipment and promotional costs due to the use of the internet, computers, and smart devices. Digitalization is indeed undeniable that it requires large capital for infrastructure, but along with the efficiency and effectiveness generated, an increase in profits is also better able to be achieved by the company in the long run. In addition, although large capital was needed at the beginning of its application, along with it also decreased other technical costs that occur when the company did everything manually in a longer period of time.

The results in this third hypothesis also support the TAM and Schumpeterian theory. Productivity is more related to the production aspects of the company which include labour, production machines, marketing and sales. Digitalization of information is the application of a technology model for recording and distributing information. Indirectly, this information is also useful for production managers and sales managers. However, productivity is more directly influenced by the activities of sales input and output and operational costs. So that in this study it was found that there was no direct effect of the digitization of accounting information on productivity. In fact, according to Schumpeterian theory, the innovation in information technology will result in higher operating expenses if the company does not have professionals who are competent in operating technology. In the beginning of its implementation, the costs tend to be higher for investment in equipment and training. However, this will be considered as non-operating expense because it is not directly related to the company's primary activities.

### **Conclusion**

1. The implementation of digitalization of accounting information has an impact on the increase of ROA and ROE. An evaluation of performance can be done at any time to ensure the achievement of sales targets and control the portion of ownership of assets and capital of the company.
2. The digitalization of accounting information has no significant effect on productivity. The implementation of digitalization at the beginning of the period requires very high capital both in terms of infrastructure and human resources (HR).

### **Limitation**

The Limitations in this study occur since the data is only obtained from respondents in one city, so that the results of the research cannot be generalized to

other regions or larger areas such as all regions in Central Java and Indonesia. In addition, the performance indicators in this study are only obtained from ROA and ROE, namely the return ratio related to assets and equity. Consequently, for interests other than assets and owner's capital, the variables used will be fewer representatives, such as levels of investment, profit margin and others. Another limitation occurs because the data collection method used by using a questionnaire can contain subjectivity and reflect unreal circumstances

### Suggestion

For further research, it can be done to test differences in company performance when implementing digitizing accounting information so that it can cover the other interest in valuing companies' performance. This performance can be represented both related to profitability and productivity with other indicators or other variables. Research can also be expanded by comparing research results from different regions or countries with more modern business unit backgrounds. Moreover, the design of the questionnaire for future research can be better in term of avoiding subjectivity, or it can also be supported by physical documents.

### Implication

The results of this study can be implicated in improving the quality of technology management by MSMEs managers. As should the use of technology provide an increase in the performance of MSMEs but in this study, it was found that the effect of digitalization of accounting information had not yet had an impact on productivity, so a deeper evaluation is needed for this issue. Then, this research also can be implicated to increase of the quality of assistance to MSMEs by the government and other social institutions or fund provider.

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