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Determinants of Perceived Usefulness and End-User Accounting Information System in SMEs

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Abstract

Accounting Information Systems (AIS) play an important role for retail SMEs. Problems occur in the successful management of financial data using AIS that can transform financial data into financial statements. This research data displays the effects of perceived ease of use, the quality of system and information about end-user satisfaction of accounting information through the perception of the usefulness of Small and Medium Enterprises (SMEs) in East Java, Indonesia. The data collection process was carried out through a survey method using a questionnaire and collected by giving a likert scale score to SME retailer respondents. Then the data is analyzed using Structural Equation Modeling (SEM) to test the hypothesis so that the relationship between variables is reported.

Keywords: *Perceived Usefulness, Perceived Ease of Use, End-User Accounting Information Satisfaction, System Quality, Information Quality*

1 Introduction

The information system is the medium to facilitate the delivery of information (Hasan et al., 2013) and plays an important role in business transactions to run easier and get benefits by processing data into information (McLeod, 1998; Solaymani et al., 2012; Kadir, 2013). It is useful for leaders in decision making (Zimmerman, 1997; Hanifi and Taleei, 2015; Buljubasic and Ilgun, 2015) and makes Small Medium Enterprises (SMEs) able to compete in free market era. Furthermore, Ong JW and Ismail HB (2008) explain the use of IT is to strengthen SMEs to face of competitive advantage. Indonesia is one of developing countries according to Tan, Tyler, and Manica (2007); Walsham et al. (2007); Walsahm and Sahay (2006). SMEs in developing countries do not get much benefit from the information system due to lack of understanding about the importance of information and technology systems (Tang and Ghobakhloo, 2013). In Indonesia AIS, medium scale SMEs that understand and realize the information and technology system are caused they have been using the Accounting Information System (AIS) manually and computerized.

The current problem is whether the selected application of AIS which is used by SMEs categorized as successful or failed. The AIS selection is capable of generating information according to user needs so satisfaction of the information user as the benchmark of the system's success. This is in agreement with some researchers: DeLone and McLean (2016); Hasan et al. (2013); Halawi et al. (2008); Peter et al. (2008); Al-Khaldi and Wallace (1999); Gelderman (1998); Ditsa and MacGregor (1996); Ditsa and MacGregor (1995); Szajna and Scamell (1993); Schiffman, Meile and Igbaria (1992); Lytinen (1988); Montazemi AR (1988); Srinivisan (1985); Bailey and Pearson (1983); Ives et al. (1983); Ginzberg (1981); Debrabander and Edstrom (1977). Previous researchers who measured the success of information systems use are Inanloo and Beigi (2018); Mekadmi, S and Louati, R (2018); Yu P and Qian S (2018); Ghobakhloo and Tang (2015); DeLone and McLean (1992). They use the final variable satisfaction of accounting information which is directly influenced by system quality, information quality, and service quality. In addition, Armstrong et al. (2005) conducted a study in SMEs by developing Seddon et

al. (1994) study where they use two variables, besides using end computer user satisfaction variable also using PU variable which are directly influenced by system quality and information quality variable. Besides, Alsoof et al. (2011) use system quality variables, information quality, PU, and perceive ease of use (PEOU) which are directly affected by end-user satisfaction. Unlike Ghobakhloo et al. (2015), they insist that PEOU is a moderating variable on system quality, information quality, and user performance. However, F.D. Davis et al. (1989); Venkatatesh and Davis (1996), Kim et al. (2010) explains that PEOU directly affects PU. Also et al. (2011) agree with DeLone and McLean (1992) and F.D.Davis et al. (1989) by using system quality, information quality, PEOU, and PU which influence the success of information systems acceptance and end-user satisfaction.

However, this study refers to Kim et al. (2010) study which uses PEOU and PU as moderating variable and adapts TAM models (F.D.Davis et al., 1989) and DeLone and McLean IS success (DeLone and McLean, 1992). Besides, this refers to Hasan et al. (2013) who state that end-user satisfaction is the response to output use of the information system. The output is the final result of the information system according to Halawi et al. (2008). Moreover, the output use of information systems is on the report results and websites (Peter et al., 2008; Mitrovic, 2016) and according to Bodnar and Hopwood (2001) information systems are created to convert financial data into financial information. Then, Charles, Ezeagba (2017) explain that financial reporting of SMEs is required for the contribution of facilities in accordance with specified standards (Modugu and Eragbhe, 2013). The difference from this study is PEOU, the quality of the system, and the quality of information becoming independent variables directly affect PU and the satisfaction of end-user information becoming dependent variables. Based on the above description, the problem is (i) how the influence of PEOU, system quality, and quality of information on PU ?, (ii) how does PEOU, system quality, and information quality affect the end user satisfaction of accounting information? (iii) how the influence of PU on the end user satisfaction of accounting information?, and (iv) how the influence of PEOU, the system quality, and the information quality on the end users satisfaction of accounting information through PU?

This study produces some valuable contributions. First, the result of development model of technology acceptance and the success of information systems contribute to the AIS. Second, it provides input for SME leaders or managers to measure AIS use success through PU and end users satisfaction of accounting information whether dealing with the needs of SMEs and it can be used in decision making for medium-sized SMEs leaders or managers. Finally, it becomes reference to the next researcher to find out other factors that cause technology is acceptable or unacceptable and the end users satisfaction of accounting information.

2. Literature Review and Theoretical Framework

What Factors are Determinants of Perceived Usefulness and End-User Accounting Information Satisfaction?. The end-user satisfaction of the information system is how far the user believes that information systems can meet the information needs (Garrity and Sanders, 1957; Locke, 1976) and the linkages of information systems, information, and end-user satisfaction are information systems used to meet information needs and end-users will be satisfied when information systems are increasing, and vice versa (Cyert and March, 1963). End-user satisfaction is part of the system's effectiveness in which the process begins from Shannon and Weaver (1949); Mason (1978); Chung and Megginson (1981); and Campbell (1989) who describe an effective system occurs when the resulting output is greater than the achieved target. This can be seen from the success of the system, its goals, and satisfaction of the program, input and output levels, and goals achieved. Previous researchers measured level of effectiveness by using system quality, information quality, and end-user satisfaction after DeLone and McLean (1992) it was developed by Seddon et al. (1994); Seldon (1997); Rouibah et al (2009); Hasan et al. (2013). DeLone and McLeon (1992) created the information system success model with reference to the previous theory of system effectiveness which one of its variables was the system quality, the information quality, and end-user satisfaction.

Some previous researcher defines end-user satisfaction in information systems such as Bailey and Pearson (1983); Ajzen and Fishbein (1985); DeLone and McLean (1992); Doll and Torkzadeh (1988); Seddon et al. (1994); Armstrong et al. (2005); Mahmood (2000); Rouibah et al. (2009); Alsoof et al. (2011); Ajoye and Nwagwu (2014); Ghobakhloo et al. (2015); Inanloo and Beigi (2018) as the satisfaction of using information systems. Morever, end-user satisfaction from external information systems such as Ajoye and Nwagwu (2014); Hasan et al. (2013); Rouibah, et al. (2009); Jogiyanto (2007); Mahmood (2000); Ginzberg (1981); Bailey and Pearson (1983) means the user responding satisfaction on the output use of the information system. The output is the final result of information system. According to Srinivisan (1985); Swanson (1974); Halawi et al. (2008); and Peter et al. (2008) end-user satisfaction is the output use from information system in the report results and websites (Ives et al., 1983; Doll and Torkzadeh, 1988; Omar 1993). Based on the above description, it can be concluded that the end user satisfaction consists of two; the end user satisfaction in the information system and the satisfaction from the external information system. This study uses the end-user satisfaction of accounting information obtained from the AIS which is used for decision making, financial reports and supporting reports.

PEOU is defined as the use of new technologies that will improve or correct its performance (Mangin et al., 2008) as well as the degree to which a person believes that using a particular system would be free of effort (F.D.Davis et al., 1989). The PEO indicator is ease of learning, effort to become skilled, and easy to use (F.D.Davis et al., 1989). No indicator is used because it is adapted to the situation and condition of the object investigated. Then, PU is defined as the degree to which a person believes that using particular system would enhance his or her job performance (F.D.Davis et al., 1989). PU indicators according to Joo and Sang (2013) are effective work, complete tasks faster, and work more easily. PEOU and PU are the variables that have a major influence on IS behavior (F.D.Davis et al., 1989). Ease of users to receive IS according to what is desired (Iqbaria et al., 1997) is a signal that they *feel* the benefit of using IS in accomplishing tasks (Goodhue and Thomson, 1995). In addition, PEOU is an independent variable that has a significant effect on PU as dependent variable (B.Tove, 2016) and becomes an important component of end-user information satisfaction (Doll and Torkzadeh, 1988).

Jogiyanto (2007) says that usefulness occur when the system use on the basis of obligation and the absence of the intensity quality of the system use for all users. This statement is based on a previous study that replaces the system use into usefulness, including Seddon et al. (1994); Seddon (1997); Rouibah et al. (2009) and supported by Hasan et al. (2013) and Andarwati, M et al. (2018). Then, the relationship between PEOU and PU according to Ghobakhloo et al. (2015) which examines PEOU and PU variables is as moderating variables (Chirchir L.K et al (2019); Kim et al. (2010)). Nevertheless, Chung J.E et al. (2010) get findings that disagree with predictions F.D.Davis et al. (1989). They claim that there is no influence of PEOU on PU because characteristics of information system users require new skills and optimal use. PEOU is probably insignificants in PU for users who are accustomed to use existing information systems and features. It can be concluded that the use of PU variables does not affect the mandatory use and PEOU does not affect PU if the user is accustomed to use information system, does not require skills, and optimal information system.

Based on the above description, this study aims to (i) analyze the relationship between PEOU, system quality, and information quality to PU; (ii) analyze the relationship between PEOU, system quality, and information quality to the end user satisfaction of accounting information; (iii) analyze the relationship of PU to the end user satisfaction of accounting information; and (iv) analyzing the relationship between PEOU, system quality, and information quality to final consumer information satisfaction through PU. PEOU has a significant effect on PU, this is supported by B.Tove (2016) where PEOU is an independent variable and PU is as a dependent variable. According to F.D.Davis et al. (1989), PEOU and PU are receiving behavior variables of information systems that affect each other and eminently their influence. Nevertheless, results study of Chung J.E et al. (2010) do not agree with B.Tove (202016) and F.D.Davis et al. (1989) by concluding that there is no influence of PEOU on PU. In addition, system quality and information quality has a significant effect on PU (Andarwati et al., 2019; Nirwanto and

Andarwati, 2019; Andarwati et al., 2018; RB Panjaribu, 2016; Hasan et al., 2013; Armstrong et al., 2005; Seddon, 1997; Seddon et al., 1994). System quality and information quality have a significant effect on end-user satisfaction (Chirchir LK et al., 2019; Buana and Wirawati, 2018; Rouibah, 2009; Armstrong et al., 2005; DeLone and McLean, 2003; Seddon et al., 1994; DeLone and McLean, 1992). Therefore, the hypothesis proposed in this study is:

> H1: *Perceived ease of use (PEOU), system quality, and information quality have a significant effect on perceived usefulness (PU).*

> H2: *Perceived ease of use (PEOU), system quality, and information quality have a significant effect on the end user satisfaction of accounting information.*

According to Nirwanto and Andarwati (2019); Y Kim and HS Lee (2014); Pinar et al., (2012); Rouibah (2009); Armstrong et al., (2005); Seddon et al. (1994) PU affects end-user satisfaction because perceived benefits are non-mandatory and if the system used is obliged to be used then there is no intensity quality use for all users using usefulness (Andarwati et al., 2018; Jogiyanto, 2007) so end-user accounting information feels satisfied because it is non-mandatory. This is in agreement with previous study by Seddon et al. (1994); Seddon (1997); Rouibah et al. (2009); Hasan et al. (2013) that claims to use the usefulness variable to achieve satisfaction for end users. Thus, the hypothesis proposed in this study is:

> H3: *Perceived usefulness (PU) has a significant effect on the end user satisfaction of accounting information.*

The previous study uses PU as moderating variables (Andarwati et al., 2019; Nirwanto and Andarwati, 2019; Andarwati et al., 2018; Kim et al., 2010) because PU strengthens the influence of system quality variables and information quality to end-user satisfaction. Different studies were PEOU and PU as moderating variables for system quality and information quality (Ghobakhloo et al., 2015) and other PEOU and PU research as independent variables (F.D.Davis et al., 1989). Meanwhile, this study uses hypothesis test on PEOU variable as independent variable and PU as moderating variable. So, the hypothesis proposed in this study is:

> H4: *Perceived ease of use (PEOU), system quality, and information quality significantly affect the satisfaction of end users of accounting information through perceived usefulness (PU).*

3. Data and Methods

3.1. Data Collection

This research re-took data located in SMEs East Java Province, Indonesia. Based on the data from Cooperative Office in 2018-2019, the number of micro enterprises scale is 6.533.694 (95.72%); small business scale is 261.827 (3.84%); and medium scale businesses 30,410 (0.45%). Meanwhile, population in this research is medium-scale SME management with a total of 1,318 SMEs units. Firstly, this study conducted a preliminary survey on populations in the medium-scale SMEs of East Java Province, Indonesia with the aim of obtaining samples in accordance with the SME identity data with the criteria set. The sampling technique used was purposive sampling method. This sampling is based on the criteria that have been determined with the criteria of sample selection. The criteria are (i) the management of SMEs has been doing the business development, (ii) the management of SMEs in the middle scale has been using AIS at least one year, (iii) SMEs managers have produced financial reports and support reports on a regular basis, and (iv) the results of AIS use are used for decision making by SME managers.

Based on these criteria, SMEs that meet the qualification as much as 183 medium scale SMEs. The number of 183 questionnaires is still appropriate to be used as a sample because according to Ferdinand (2000) the number of samples corresponding to the SEM equation is between 100-200 and the sample size guidelines depend on the number of indicators multiplied by 5 to 10.

3.2. Models

This study aims to analyze how SME managers in the medium scale affect end-users accounting information satisfaction indirectly through PU. It is proposed that PEOU, system quality, information quality affect end-user satisfaction (EUS) indirectly through PU in medium scale SMEs. The proposed model is illustrated in figure 1 below by referring to TAM and DM IS Success models.
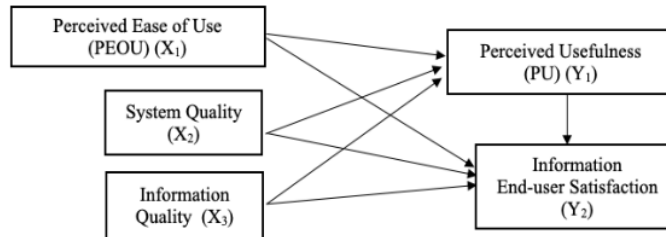

Figure 1. Proposed Research Model

There is a relationship between PEOU, system quality, and information quality and on the other hand there is relation with EUS according to Chirchir L.K et al. (2019); Buana and Wirawati (2018); RB Pasaribu (2016); Rouibah (2009); Armstrong et al. (2005); DeLone and McLean, (2003); Seddon et al. (1994); DeLone; and McLean (1992). The information end-user satisfaction obtained from information system is best when user considers the information system useful. Y Kim and HS Lee (2014); Hasan et al. (2013); and Pinar et al. (2012) show that the perceived benefits are an important factor that affects end-user satisfaction. Research on this model suggests that integrating into one will provide a better AIS utilization model than split each of them separately.

3.3. Variables and Analysis Design

3.3.1. Variables: Model and hypothesis on the research *examine* influence of PEOU, the system *quality*, and information quality on PU and its impact on end-users accounting information satisfaction. Measurement scale used is interval scale using Likert scale and weight 1 (very disagree) up to 5 (strongly agree). Besides, dependent variable consists of perceived usefulness (Y1) and end-user accounting information satisfaction (Y2). Items on PU variables are usefulness, availability, reliability, adjustment, response time (Joo and Sang, 2013). Meanwhile, items of the accounting information end-user satisfaction are content, accuracy, format view, and punctuality (Doll and Torkzadeh, 1988).

Futhermore, independent variables consist of PEOU (X1), system quality (X2), and information quality (X3). Respondents choose statements (1-strongly disagree to 5-strongly agree) on AIS's ease of use with ease of studying AIS, AIS's use skills, ease of operating AIS (F.D.Davis et al., 1989); quality of AIS used by SMEs with items: how to use AIS, AIS availability, AIS reliability, AIS adjustment, and time response by AIS (DeLone and McLean, 2003); the information quality from source documents and supporters as data inputs for AIS with items as followings: complete documents, relevant documents, easy-to-understand documents, security documents, personalization documents (DeLone and McLean, 2003). Respondents also provide information related to biography such as working period, software used, long software, sex, education level and how many times follow the integrated software training.

3.3.2. Analysis Design: This study analyzes the effect of how satisfied SMEs managers with the results of accounting information in form of financial report after using SI. Benefits perceived by SME managers happened when the system is easy used, the system used in accordance with the

needs, information in the form of source documents and supporting documents can meet the needs of AIS. This study is categorized descriptive study by testing hypothesis. Descriptive study describes phenomena as the basis of decision-making to solve problems and hypothesis testing aims to describe relationships phenomena among variables. This research is also categorized as a field study which is a type of research by examining correlational relationships between variables with the condition that involvement of researchers is minimum in the environment studied. This research was done by collecting research data to know the information system success at SMEs by using AIS to produce information output that is financial statement. Moreover, data collection was done through survey method using questionnaire and operationalization in the form of variables measured by scoring on Likert scale

4. Methodolgy, Results, and Discussion

4.1. Methodology and Results

Table 1 describes respondents answer of each questionnaire items formed from end-user satisfaction, PU, PEOU, information quality, and system quality.

Table 1. Frequency Distribution Questionnaire Item

Indikator/item	STS		TS		N (3)		S (4)		SS (5)		Ra
Perceived Ease of Use (X₁)											3
IT is easy to learn ($X_{1.1}$)					2		5		1		3
Easily and skilled of using IT (X					2		4		2		3
IT is easy operated ($X_{1.3}$)					1		5		2		3
System Quality (X₂)											3
Utility ($X_{2.1}$)					2		4		2		4
Availability ($X_{2.2}$)					2		4		2		
Capability ($X_{2.3}$)					2	1	6		1		3
Adjustment ($X_{2.4}$)					2	1	6		1		3
Time responded ($X_{2.5}$)					2		4				3
Information Quality (X₃)											3
Complete					1	1	6		1		3
Relevant					2	1	5		1		3
Understandable					3						3
Security					2		4		2		2
Personalized					2		4		2		3
Perceived Usefulness (Y₁)											2
Effective work					2	1	6		1		3
Complete task faster					2	1	6		1		3
Work easier					3		4		2		3
End-User Satisfaction (Y2)											2,97
Content					2	1	6		7		3
Accuracy						1	6		1		3
Format performance					1	1	7		9		3
Punctual					2	1	6		1		3

Source: primary data processed 2019

The average value that most contributes to PEOU is 3.99%. It means that respondents feel IT ease of use when respondents are skilled with IT so that all financial records are easy to do. There are 47.5% (87 respondents) agree and 25.1% (46 respondents) strongly agree that having the skills will make it easy to use IT. Then, the average value that contributes most to the system quality is 4.02%. This shows that AIS is useful for the process of making financial reports and supporting reports. There are 44.3% (79 respondents) agree and 29.5% (54 respondents) strongly recommend that the AIS is useful for generating financial reports and supporting reports. Next, the average value that most contributes to the information quality is 3.99% (completeness and personalization). It expresses information quality is information in the form of source documents and complete supporting documents for use as input data on financial reports. In completeness, there are 65.6% (120 respondents) tend to agree and 16.9% (31 respondents) strongly agree if completeness of source documents and supporting by stating documents is needed for input data.
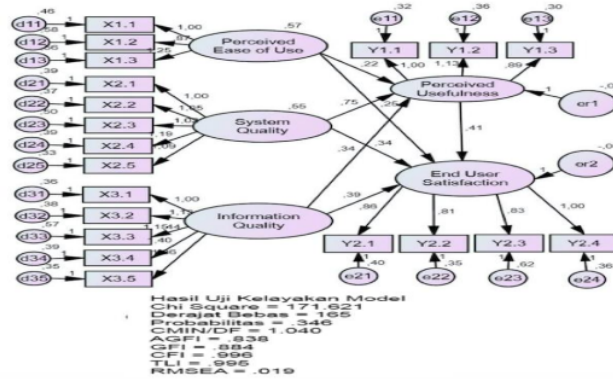

Hasil Uji Kelayakan Model
Chi Square = 171,621
Derajat Bebas = 166
Probabilitas = .346
CMIN/DF = 1.040
AGFI = .838
GFI = .884
CFI = .996
TLI = .995
RMSEA = .019

Figure 2.
Structural Relationships Between The Different Variables of The Model

On personalization 42.1% (77 respondents) agreed and 28.4% (52 respondents) strongly agreed if the view from source documents and supporting documents were able to adjust to AIS needs. Next, the average value that most contributes to PU is 3.96%. By utilizing AIS, works become easier. This means that the process of making accounting information using AIS is easier than ever and 43.2% (79 respondents) agree and 26.2% (48 respondents) expressly agree that they get benefits of using AIS because it is easy used.

Lastly, the average value that most contributes to end-user satisfaction is 3.97%. It means that the accounting information generated from AIS is accurate. Accurate means accuracy of accounting information in the form of financial report and supporting reports in prove that 67.2% (123 respondents) agree and 14.8% (27 respondents) strongly agree if accounting in formation provides accurate information for respondents.

The results of SEM analysis in Figure 2 show influence coefficient of each dependent variable on dependent variable. The direct effect of PEOU on PU is 0.224, while the effect of system quality on PU is 0.754, and information quality of on PU is 0.339. So that, the system quality has the greatest influence on PU. The direct influence of PEOU on the end-users satisfaction is 0.251, while the effect of system quality on end-user satisfaction is 0.336, and information quality on end-user satisfaction is 0.388. So, it can be said that information quality has the greatest influence on end-user satisfaction. The influence of PU on end user satisfaction is 0.408.

Table 2. Value of goodness of-fit Indeces and cut-off of SEM Model

Criteria	Cut-of Value	Model Test Results
Chi-square	≤ 195.973	171.621

Free degree	-	165
Probability significance	≥ 0.05	0.346
CMIN/DF	≤ 2.00	1.040
RMSEA	≤ 0.08	0.019
GFI	≥ 0.90	0.884
TLI	≥ 0.90	0.995

Source: primary data processed 2019

H1: Perceived ease of use (PEOU), system quality, and information quality on perceived usefulness (PU).

Effect of PEOU on PU. The regression coefficient of PEOU with PU is 0,224 with C.R of 3,459 and p-value = 0,000 (smaller than 0,05) is positive and significant which indicate the relationship between them is in the same direction. If the PEOU gets better, it means the greater benefit of using AIS.

Effect of system quality on PU. The regression coefficient of system quality with PU is 0.754 with C.R of 6.058 and p-value = 0.000 (smaller than 0. is positive and significant indicating that the relationship is in the same direction. It means that the better quality of the system the much benefit, the user get from AIS. Effect of quality information on PU. The regression coefficient of PEOU with PU is 0.339 with C.R of 2.825 and p-value = 0.05 (smaller than 0.05) is positive and significant indicating that the relationship is in the same direction. This indicates the better information quality the greater benefit the user get from AIS.

Thus, hypothesis 1 which states that PEOU, system quality, and information quality positively and significantly influence PU is tested and the finding of the results study is that system quality has the greatest influence on PU.

H2: Perceived ease of use (PEOU), system quality, and information quality have a significant effect on end-user satisfaction of accounting information.

The effect of PEOU on end-user accounting information satisfaction. The regression coefficient of PEOU with accounting information end-user satisfaction is 0.251 with C.R of 2.853 and p-value = 0.004 (<0.05) is positive and significant indicating that the relationship is the same if PEOU is getting better, end-user accounting information satisfaction becomes greater.

Effect of system quality on end-user accounting information satisfaction. Regression coefficient of system quality with end-user accounting information satisfaction is 0.336 with a CR of 2.561 and p-value = 0.010 (<0.05) is positive and significant indicating that the relationship is in the same direction. The better the system quality, greater end-user accounting information satisfaction. Effect of information quality on end-user accounting information satisfaction. The regression coefficient of PEOU with accounting information end-user satisfaction is 0.388 with a CR of 2.309 and p-value = 0.21 (less than 0.05) is positive and significant indicating that the relationship is in the same direction. This means if the information quality is better the accounting information end-user satisfaction is greater.

Thus, hypothesis 2 which states that PEOU, system quality, and information quality have a positive and significant effect on end-user accounting information satisfaction proven and findings from this study is that PEOU has the greatest influence on PU.

H3: Perceived usefulness (PU) has a significant effect on end-user accounting information satisfaction.

The influence of PU on end-users accounting information satisfaction. Regression coefficient of PU with accounting information end-user satisfaction is 0.408 with CR of 4.212 and p-value = 0.01 (less than 0.05) is positive and significant indicating that the relationship is in the same direction. When the quality information is getting better, end-user accounting information satisfaction is greater.

Thus, hypothesis 3 which states that PU has a positive and significant effect on end-user accounting information satisfaction is proven.

The results of hypothesis 4 are presented in table 3 which presents the results of testing direct, indirect, and total influences.

Tabel 3. Hypothesis Testimg

From	To	Dire	Throug	Indir	Tota
Perceived Ease of Us (PEOU)	Perceived Usefulness (PU)	0,22	-	-	0,22
System Quality	Perceived Usefulness (PU)	0,75	-	-	0,75
Information Quality	Perceived Usefulness (PU)	0,33	-	-	0,33
Perceived Usefulness	End-User Satisfaction (EUS)	0,40	-	-	0,40
Perceived Ease of Us (PEOU)	End-User Satisfaction (EUS)	0,25	Perceiv Usefuln	0,09	0.34
System Quality	End-User Satisfaction (EUS)	0,33	Perceiv Usefuln	0,30	0.64
Information Quality	End-User Satisfaction (EUS)	0,38	Perceiv Usefuln	0,13	0.52

Source: Primary data processed in 2019

H4: Perceived ease of use (PEOU), system quality, and information quality have a significant effect on end-user accounting information satisfaction through perceived usefulness (PU)

There is indirect effect of PEOU on accounting information end-user satisfaction through PU with a coefficient of 0.092. The direct effect of PEOU on PU and the direct influence of PU on end-user accounting information satisfaction are both significant. It can be concluded that PEOU has an indirect and significant effect on end-user accounting information satisfaction through PU, PEOU has a direct and significant effect on end-user accounting information satisfaction is 0.251 and the indirect effect of PEOU on end-user satisfaction through PU is 0.092. The total effect of PEOU on end-user accounting information satisfaction is greater than the direct effect of PEOU on end-user accounting information satisfaction. This shows that PU is an intervening variable.

There is indirect effect of system quality on end-user accounting information satisfaction through PU with a coefficient of 0.308. The direct effect of system quality on PU and the direct influence of PU on end-user accounting information satisfaction are both significant. It can be concluded that system quality has an indirect and significant effect on end-user accounting information satisfaction through PU. Moreover, system quality has a direct and significant effect on end-user accounting information satisfaction is 0.336 and the indirect effect of system quality on end-user satisfaction through PU is 0.308. The total effect of system quality on end-user accounting information satisfaction is greater than the direct effect of system quality on end-user accounting information satisfaction. This shows that PU is an intervening variable.

There is indirect effect of information quality on user accounting information end- satisfaction through PU with a coefficient of 0.138. The direct effect of information quality on PU and the direct influence of PU on end-users accounting information satisfaction is both significant. It can be concluded that the information quality has an indirect and significant effect on end-user accounting information satisfaction through PU. Then, information quality has a direct and significant effect on information end-user accounting information satisfaction for 0.658 and indirect effect on the information quality on end-user satisfaction through PU 0.138. The total effect of information quality on accounting information end-user satisfaction is greater than the direct effect of information quality on accounting information end-user satisfaction. This shows that PU is an intervening variable.

Thus, hypothesis 4 states PEOU, system quality, and information quality have an indirect and significant effect on end-user accounting information satisfaction through PU, and the finding of

the research is that system quality has the greatest influence on end-user accounting information satisfaction with PU as an intervening variable.

4.2. Discussion

This study agrees with the research of Chung J.E et al. (2010) which explains that there is no effect of PEOU on PU if middle-scale SME managers have previously been accustomed to use integrated information systems and their features so that they do not require skills to be able to use AIS optimally. Besides, Nirwanto and Andarwati (2019); Andarwati et al. (2018); Y Kim and HS Lee (2014); Pinar et al., (2012); Rouibah (2009); Armstrong et al., (2005); Seddon et al. (1994) explained that there is no influence of PU on end-user accounting information satisfaction if it is mandatory. So, there is no intensity of AIS utilization for all users because non-mandatory of mid-scale SMEs managers collaborated on AIS to process data to become accounting information that is in accordance with the needs so that it is useful for end-users accounting information.

Table 4. Characteristics of Respondents

Description	Criteria	Frequency	Percentage (%)
Years of work	< 1 year	9	5%
	≥ 5 years	174	95%
Software used	Excel	134	73%
	Bought	49	27%
	Ordered	-	-
Time of using software	< 1 year	49	27%
	> 1 year	134	73%
Sex	Male	112	61%
	Female	71	39%
Education	Junior High School	53	19%
	Senior High School	108	59%
	S1	22	2%
Following integrated so training	< 5 times	53	29%
	≥ 5 times	130	71%

Source: Primary Data Processed in 2019

Based on table 4, medium-scale SMEs need AIS to produce accounting information but respondents are less skilled and not optimal in using AIS. So the middle-scale SMEs managers feel benefits of using AIS proven by participating in training so that the use of AIS becomes more optimal. There is influence of PEOU, the system quality, and the information quality on PU. However, the most influential is the system quality for PU because the middle-scale SMEs managers feel there is a match from the AIS so that it is considered a quality system. However, the majority of the AIS used is still not integrated because the knowledge and education factors are not optimal and currently the respondents are in the process of AIS training that has been integrated. Middle-scale SMEs managers also learn from guidebooks and tutorials obtained from training or education. This is supported by Fedorko et al (2018); Ghobakhloo, M. and Tang, SH. (2015); Hasan et al. (2013); Ahn, Tony et al. (2007); Armstrong et al. (2005); Seddon (1997); Seddon et al. (1994). Then, there is influence of PEOU, system quality, and information quality on end-user accounting information satisfaction. The most contributing results are the effect of information quality on end-user accounting information satisfaction because the source documents (purchase invoices and sales invoices, cash out, cash inflows) and supporting documents (shipping order letters, goods delivery reports) are used to meet data input requirements in AIS. SMEs managers pay more attention to documents especially those related to the results of debt and accounts receivable reports because according to the results of the questionnaire that 73% use Microsoft Excel and input data refers to receipts and receipts for cash and credit purchases and sales. The source of information used for data input is the purchase and sale invoice and proof of payment and proof of delivery so that it is focused on debt and accounts receivable. This is supported by Guimaraes et al. (2003) explain end-user satisfaction lies in how

users see whether information for input information systems is real. Likewise, DeLone and McLean (1992); McKiney et al. (2002); Rai et al. (2002); and Livari (2005) explained that the higher the quality of information used for information systems will further increase end-user satisfaction.

There is influence of purchases usefulness on end-user accounting information satisfaction. This is because respondents require use of AIS to make it easier to complete the work of recording hance so that SMEs managers feel satisfied with the results of accounting information on financial reports and supporting reports that are more accurate. End-user satisfaction of information systems is a response to information system output use (Andarwati et al., 2019; Nirwanto and Andarwati, 2019; Andarwati, et al. 2018; Ajoye and Nwagwu, 2014; Rouibah, et al., 2009; Mahmood, 2000; Jogiyanto, 2007; Bailey and Pearson, (1983) .This research is in line with previous studies namely Seddon et al. (1994); Seddon (1997); Rai et al. (2002); Livari (2005); Armstrong et al. (2005); and Rouibah (2009) Rai et al. explain the perceived benefits of information systems so that users are satisfied using the system.

Conceptually there is influence of PEOU, system quality, and information quality on end-user satisfaction of accounting information through PU. PU mediates PEOU, system quality, and information quality on middle-scale SMEs managers' accounting information satisfaction. Empirically, PU requires PEOU, system quality, and information quality because use of IT needs to be easy in skills. AIS used by middle-scale SME managers are really felt benefit. Source and supporting documents become complete information sources for input data in AIS. Moreover, performance of documents is tailored to AIS needs of medium-scale SMEs to produce financial and supporting reports on time with a higher accuracy level, earlier produce *reports*.

The main finding of this study is that PU is an intervening variable which is more dominant in mediating system quality towards end-user accounting information. This finding supports the research of Armstrong et al. (2005); Seddon (1997); PU for middle-scale SMEs managers in East Java Province, IndoneAIS is a non-mandatory AIS user which means using AIS on the basis of dependence on the use of AIS to produce financial and supporting reports. As research conducted by Livary (2005) and Seddon (1997) which explains users who use AIS will not feel benefits of system quality and information quality if it is compulsory and it will be difficult to measure. PU is measured if the use of AIS based on the dependence of medium scale SMEs managers. Likewise, according to Chung J.E et (2010) there is no effect of PEOU on PU if before using AIS middle-scale SMEs managers are already skilled, fully aware of AIS features, and do not optimally require AIS training.

Middle-scale SMEs managers in East Java Province, Indonesia are satisfied with the existence of AIS that can produce supporting reports rather than financial reports, especially debt and credit reports to find out their responsibility to vendors and revenues that have not been received from consumers. This happens because SMEs are individual businesses and are closed and capital is obtained from own capital so that supporting reports are more useful because they are related to account receivable (presenting turnover credit report from consumers), account payable (presenting responsibility report to vendors), and inventory report (presents goods turnover for profit). So, supporting report is more important and useful for internal parties while financial reports are more intended for external parties (the existence of cooperation, partnership, interests of financial institutions).

5. Conclusion

There are four hypotheses developed in this research and refer to F.D.Davis et al., (1989); DeLone and McLean (1992); Chung J.E et al. (2010); Y Kim and HS Lee (2014); Pinar al., (2012); Rouibah (2009); Armstrong et al., (2005); Seddon et al. (1994). The first result of this study is that the role of system quality on PU is more dominant than the role of PEOU and the information quality on PU. Second, the role of information quality on end-user accounting information satisfaction is more dominant than the role of PEOU and the system quality towards

end-user accounting information satisfaction. The role of PU directly influences the satisfaction of end-users accounting information. The role of PU as an intervening variable is more dominant in mediating system quality towards end-user accounting information satisfaction than in mediating PEOU and information quality towards end-user accounting information satisfaction.

Middle-scale SMEs managers feel satisfaction with the results of the use of AIS because SMEs managers who previously did not have skills and did not understand the features of AIS while SMEs managers need AIS to produce account receivables, account payable, and inventory reports as needed. Besides, middle-scale SME managers use AIS on a non-mandatory basis. This study agrees with other studies that explain that users will feel benefits of using AIS if it is non-mandatory because it is really needed to be able to produce reports. Ease of AIS use, information in the form of source and supporting documents that meet data input from AIS, as well as the application of AIS for medium-scale SMEs affect benefits of using AIS. The results needed by middle-scale SME managers are supporting reports (accounts receivable, debt, and inventory) that are used for internal purposes.

Limitations and future research are The growing number of SME into a larger scale of business, it is recommended that they often take part in training for SMEs managers relating to introduction of features and data input process in SMEs based on documents specifically related to the recording of debt and accounts receivable because the results of this study are SMEs prioritizes supporting reports (debt reports and accounts receivable) that function for internal decision making. It is suggested for the next research related to models development of the use of information technology and effectiveness models of information system, especially AIS that have an impact on individuals and on organization with focus on collection of accounts receivable, costs, and profits which is a continuation of the impact of end-user satisfaction on accounting information.

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