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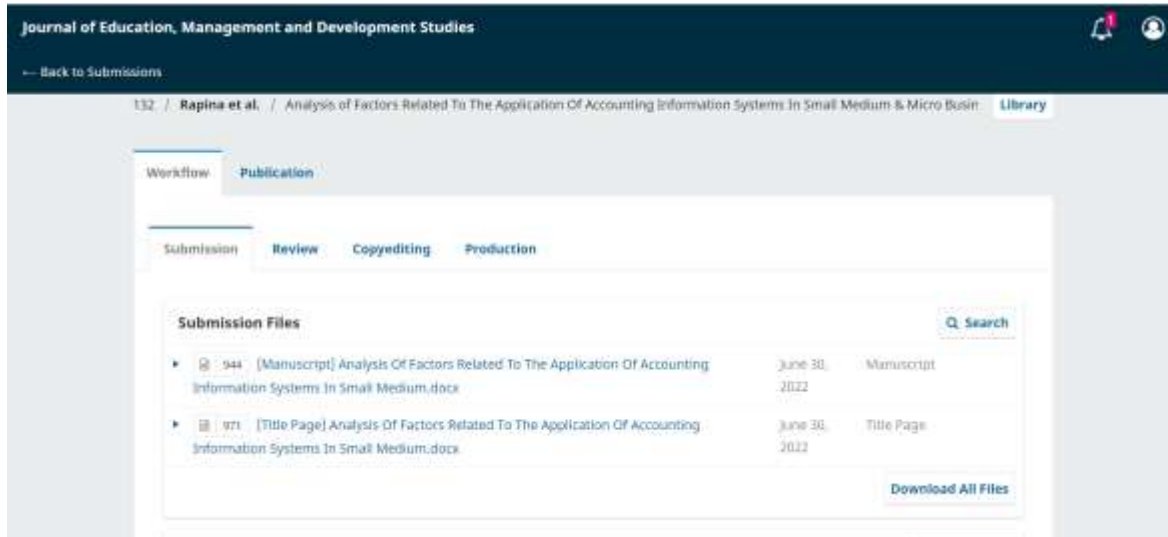
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Analysis Of Factors Related To The Application Of Accounting Information Systems In Small Medium & Micro Businesses

Abstract

The purpose of this study is to determine how big influence time constraints, financial constraints and external expertise constraints on the successful application of accounting information systems in SMEs in Indonesia. The population in this study consisted of accounting and finance staff in Indonesia. The sampling technique in this study was purposive sampling. The data that has been obtained will be processed using SEM PLS. The statistical analysis technique uses SEM because there is a causal relationship between variables and each variable is unobserved. The results are expected to show that time constraints, financial constraints and external expertise constraints affect the successful application of accounting information systems. According to the concept, it is said that the successful application of accounting information systems will help users in making decisions.

KEYWORDS:

time constraints, financial constraints, external expertise constraints, *accounting information systems*

1 INTRODUCTION

The implementation of information systems on the way often experiences rejection from users so that they fail (Kim & Kankanhalli, 2009). Barriers will be more common in small business organizations when implementing information systems due to low capital investment and lack of skilled personnel involved in it (Dwyer, 1990). In fact, if a small business organization successfully implements an information system, it will have benefits in increasing sales, increasing profitability, increasing productivity, improving decision making and securing a competitive position (Meredith, 1987). The unsuccessful application of information systems to small businesses is due to the fact that they are less able to rely on limited resources as a support for the implementation of the information system (Carter, 1990).

This is the identification of problems that will be confirmed regarding the unsuccessful application of accounting information systems in small, micro and medium enterprises. This research is more directed at the successful implementation of information systems and not on the decision to adopt an information system. In the technological innovation cycle, there are different stages in the meaning of adoption, implementation and further implementation. The adoption stage is the stage to adopt a new technology. If the adoption stage is continued, it will enter the implementation stage involving the role of technology in business. The extent to which the company can learn more about technology adoption will continue to affect the function of technology that was effectively implemented previously (Lefebvre et al, 1995).

The method of establishing an efficient decision support framework for implementing an integrated information system in MSMEs is then presented in an empirical research on small and medium-sized companies in agriculture conducted in partnership with Cranfield University. According to the study's findings, system integration can boost motivation, save time, reduce risk, and aid decision-making. (Achanga et al, 2006).

Based on some literature on case studies and surveys that discuss the success of information systems in small organizations, it is known that several factors have been identified. For example, DeLone (1988) did a research on 93 small manufacturing firms in Los Angeles, employing a questionnaire filled out by the CEOs of the firms as well as information system managers. This study examines 9 organizational factors that can affect the success of a computer-based information system (CBIS). Empirical findings also stated by Prasanna and Huggins (2016) concluded that there is a combination of psychological approach factors and mental acceptance of users in a

technology acceptance model. Furthermore, research conducted by Leyh (2014) contributes to the critical factors in implementing ERP projects with a special focus on small companies (SMEs). Through interviews with SMEs in Germany, the results showed that organizational factors had a significant influence. Similar previous studies have also been conducted by Sohal (1999), Windrum and Berranger (2002), Montazemi (2006), Hiyari et al (2013), Rapina et al (2020), Carolina et al (2020).

This research is a replication of the research that has been done by Thong (2000) by examining time constraints (top management support, user involvement, information system planning), financial constraints (investment in information systems), expertise constraints (user knowledge in information systems) and external environment (external expertise) that affect the success in the implementation of information systems. The distinction between this study and prior studies is in the dimensions and indicators that will be utilized to create the statement items in the questionnaire, as well as the respondents who will be focused on accounting users.

In truth, Indonesian firms' information systems continue to have issues. Many MSME actors still underestimate the necessity of accurate financial records and bookkeeping. In fact, with proper bookkeeping, business owners may determine whether or not their company is healthy (Ferdiansyah, 2018). Nuryanto, the Deputy for Human Resources Development of the Ministry of Cooperatives and SMEs (2019), stated the same thing, stating that MSME actors, particularly micro and small business actors, are encouraged to be able to manage their businesses professionally, including better managing their financial aspects. Many micro company players are still hesitant to record their financial aspects in an orderly and according to relevant standards, which should be done using information technology in today's fast increasing information technology era.

This research will focus on the object of research, which is top management support, user involvement, information system planning, investment in information systems, user knowledge, and successful implementation of accounting information systems, in order to follow up on the background that has been described and place it in conditions in Indonesia.

2 METHOD

This type of research is verificative (verificative research) and explanatory (causal research) or causal (causal study) based on the type of study (type of investigation), because it aims to find out what and to what extent the factors that are expected to influence a variable with the goal of testing the hypothesis (Kuncoro, 2007). The sample is part of the population, which consists of several members of the population (Sekaran, 2010). The sample selection in this study were people who worked in the finance department of the organization in the city of Bandung. The sample size used by researchers is 78 respondents. This is based on the statement of Sekaran (2010) which states that the general sample size in a study ranges from 30 to 500. The sample selection technique used in this study is purposive sampling, namely the sampling technique by determining certain criteria (Sugiyono, 2010).

3. RELATED RESEARCH

3.1. The Effect Of Top Management Support On The Implementation Of Accounting Information Systems

Zach et al (2012) stated in their empirical findings that top management plays a role in implementing information systems in small and medium-sized businesses by paying attention to all matters related to business processes in their companies. In a research done by Seliem et al. (2003), 247 managers from diverse Egyptian organizations discovered that top management support as an organizational component has a beneficial influence on the efficacy of information systems. Personnel at the top, according to Schwalbe (2010), are the main bearers of any information system deployment. According to Kljunikov et al. (2019), top management support has a major impact on the management of information security created by an information system in Slovakia's small and medium-sized firms. H1: The more top management provides support will affect the implementation of accounting information systems.

3.2. The Effect of User Involvement on the Implementation of Accounting Information Systems

Le et al (2020) developed a mediation model to explore the relationship between organizational characteristics, manager knowledge, management commitment, user involvement, information quality, and effectiveness of management information systems in small and medium enterprises in Vietnam. The results show that managers' knowledge, user involvement, and information quality play an important role in increasing the effectiveness of management information systems. The same thing was also said by Goni et al (2011) who concluded in their empirical study that there are several functional factors that must be considered in implementing a system, namely communication, collaboration, knowledge transfer, user involvement and competence of the project team. However, SMEs in Malaysia, which are the unit of analysis in the study, have not paid attention to the functional

factors mentioned earlier so they often experience system implementation problems. User involvement found to have an effect on the use of information systems is also shown in a study conducted by Rouibah et al (2009) in Arab countries. This study investigated 3 organizational factors (top management support, availability of training and user involvement) on the use of information systems and user satisfaction with the Technology Acceptance Model as a mediating variable.

H2: Successful implementation of an accounting information system requires positive user involvement

3.3. The Effect of Information System Investment on the Implementation of Accounting Information Systems.

Small firms must set aside appropriate finances for information system investment, even if funds are limited, and they must not pick the cheapest option that does not fulfill their company needs (Thong, 2001). The decision to invest in information systems can be considered as one of the major challenges that most organizations may face today (Abbassi & Khalid, 2014). The complexity of investing in information systems, however, is due to the many interrelated factors (e.g. costs, benefits and risks) that have a human or organizational dimension to an information system that are thought to facilitate organizations to increase responsiveness and reduce organizational supply chain costs (Irani et al, 2014).

H3: Investment in information systems has a positive effect on the implementation of accounting information systems.

3.4. The Effect of User Knowledge on the Implementation of Accounting Information Systems.

Competent and motivated personnel will be needed in the application of accounting information systems (Stair & Reynolds, 2012). The information system will not be established if the user does not comprehend and is unable to utilize it appropriately (Satzinger, 2016). The understanding of managers involved in accounting and finance would have an impact on accounting information systems, according to empirical results on MSMEs in Malaysia (Ismail & King, 2007).

H4: The more the user's expertise, the more likely accounting information systems will be implemented successfully.

3.5. Effect of External Expertise on the Implementation of Accounting Information Systems.

Small organizations that are often assumed to be minimal with resources for information systems, often use external expertise as their consultants (Thong, 2001). External knowledge, according to Ifinedo (2008), is the most significant aspect in adopting software for a company to integrate all of its business operations, known as ERP. Ismail and King (2007) performed the next research, which looked at numerous factors that influence the alignment of accounting information systems in small businesses. External expertise is one of the seven independent factors examined. Small businesses are less interested in hiring outside experts since the fees would be higher.

H5: External expertise has a positive effect on the implementation of accounting information system

4. RESULTS & DISCUSSION

4.1. RESULTS

The surveys were distributed and gathered by emailing a survey link in the form of a Google form and collecting 110 responses from various MSMEs in Indonesia, however only 78 responses were sufficient for further processing after filtering inconsistent replies with irregular replying patterns, excluded from the total number of responses gathered. Data analysis using Smart-PLS 3 obtained a full model path diagram, as follows:

Figure 1: Full Model Path Diagram

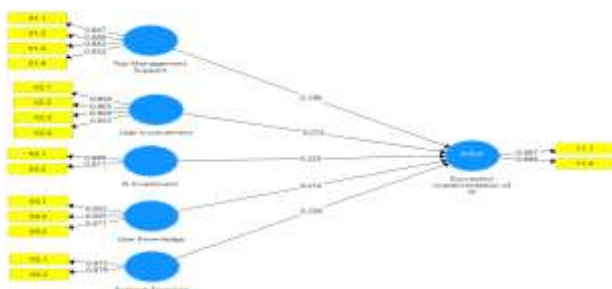
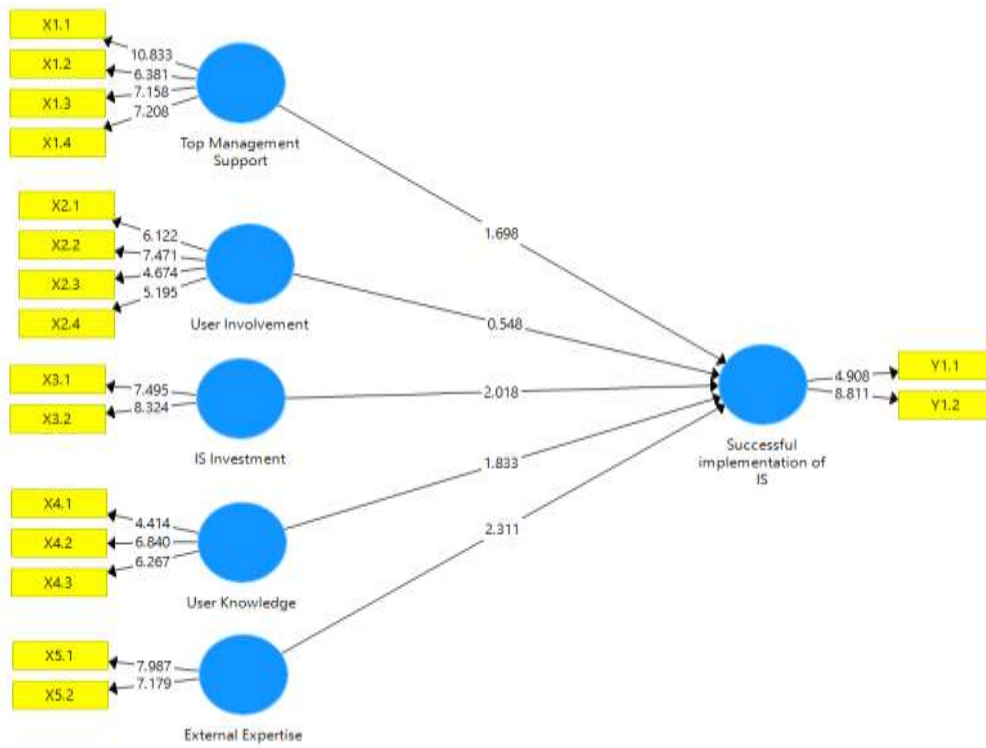


Figure 2: Full Model T-Statistics



4.1.1. Model Evaluation

In this study, all measurement models in the first stage, namely the relationship between indicators and their dimensions, are reflective measurement models. Furthermore, it can be seen that the quality of an indicator is indicated by the validity and reliability of the indicator along with the collective validity and reliability of the indicator with other indicators that measure a dimension.

4.1.1.1. Validity Test

Validity testing using confirmatory factor analysis. This factor analysis produces outputs, namely discriminant validity and convergent validity. Discriminant validity was tested using the method recommended by Hair et al. (2014) which is based on cross loadings of the indicators, with a rule of thumb for an acceptable outer loading value greater than or equal to 0.7. Convergent validity is assessed based on average variance extracted (AVE). The AVE value greater than or equal to 0.50 indicates that on average, the construct explains more than half of the variance of the indicators (Hair et al., 2014). The discriminant validity of the indicators for each dimension can be seen based on the Fornell-Larcker Criteria in table 1. In this case the criterion value of the indicators of a dimension must be greater for the dimension itself than for other dimensions (Hair et al, 2014). Furthermore, it can be seen that all criteria values for each dimension (which are on the main diagonal) are indeed greater than the criteria values for other dimensions (outside the main diagonal). Therefore, the indicators of these dimensions have good discriminant validity.

The researchers gathered as much data as possible from individuals who met the study's criteria. In the province of Bataan, nine participants qualified. Participants had to be between the ages of 30 and 60 and have lost a child to suicide between 2018 and 2020; the child's age had to be between 5 and 30 years old. Additionally, inclusion criteria must include at least a mean of 2.50 on the Post-traumatic Growth Inventory (PTGI) and a mean of 3.50 on the Texas Revised Inventory of Grief (TRIG). Meanwhile, parents on psychotropic medications and those undergoing psychological services such as psychotherapy and counseling were excluded. The participants' information is detailed in Table 1.

TABLE 1 Indicator Validity & CrossLoading between
Constructs

Indikator	EE	IS-I	SI-IS	TMS	UI	UK
EE	0.876					
IS-I	0.790	0.900				
SI-IS	0.840	0.834	0.867			
TMS	0.842	0.811	0.854	0.863		
UI	0.852	0.848	0.848	0.854	0.866	
UK	0.779	0.804	0.840	0.869	0.871	0.883

Source: Data processed 2021

Information: EE (External Expertise), IS-I (Information System Investment), SI-IS (Successful Implementation of IS), TMS (Top Management Support), UI (User Involvement), UK (User Knowledge)

TABLE 2 Convergent Validity Test Results

Variabel	Items'number	Average Variance Extracted (AVE)
EE	2	0.767
IS-I	2	0.810
SI-IS	2	0.751
TMS	4	0.745
UI	4	0.715
UK	3	0.711

Source: Data processed 2021

Information: EE (External Expertise), IS-I (Information System Investment), SI-IS (Successful Implementation of IS), TMS (Top Management Support), UI (User Involvement), UK (User Knowledge)

According to the table above, the AVE value for each construct is legitimate, ranging between 0.711 and 0.810. Because the AVE value of the indicator set for each variable exceeds the minimal criterion of 0.50 (Hair et al., 2014), this suggests that the construct explains more than half of the variation of the indicators on average or that indicators differ from one another (Convergent validity is deemed enough).

4.1.1.2. Reliability Test

The reliability test is based on the internal consistency reliability test findings, which are calculated using the Cronbach's alpha coefficient and the composite reliability coefficient value. Hair et al. (2014) believe a composite reliability value of 0.70 to 0.90 to be adequate.

TABLE 3 Reliability Test Results

Variabel	Composite Reliability Coefficient	Cronbach Alpha Coefficient
EE	0.868	0.700
IS-I	0.895	0.766
SI-IS	0.858	0.700
TMS	0.921	0.886
UI	0.909	0.867
UK	0.880	0.797

Source: Data processed 2021

Information: EE (External Expertise), IS-I (Information System Investment), SI-IS (Successful Implementation of IS), TMS (Top Management Support), UI (User Involvement), UK (User Knowledge)

Table 3 shows the reliability of the internal consistency of each construct, which is indicated by the value of Cronbach's alpha and the value of composite reliability of each construct which shows a value above the minimum threshold of 0.7 (Hair et al., 2014). These results conclude that respondents' answers are consistent in answering statement items related to research variables.

4.1.1.3. Structural Model Testing

The R Square value was used as the measuring foundation for structural model testing (Hair et al., 2014). The findings of the structural model testing are provided in table 4 below:

TABLE 4 Structural Model Testing Results (R2 Value and Q2 Value)

Path	Koefisien	t-statistik	p-value (one tailed)	R ²
EE → SI-IS	0.258	2.311	0.011	0.823
IS-I → SI-IS	0.235	2.018	0.022	0.823
TMS → SI-IS	0.199	1.698	0.045	0.823
UI → SI-IS	0.074	0.548	0.292	0.823
UK → SI-IS	0.212	1.833	0.034	0.823

Source: Data processed 2021

Information: EE (External Expertise), IS-I (Information System Investment), SI-IS (Successful

The table above shows that EE (External Expertise), IS-I (Information System Investment), TMS (Top Management Support), UI (User Involvement), and UK (User Knowledge) have an influence of 82.3% on SI-IS (Successful Implementation of IS). This R² value indicates a strong predictive power.

4.2. DISCUSSION

The Effect of Top Management Support on the Successful Implementation of Accounting Information Systems

The coefficient of the top management support path on the successful implementation of AIS is positive with a probability value (p-value) less than 0.01. As a result, it can be argued that top management support has a favorable and considerable impact on the effectiveness of AIS adoption (H1 is supported). These results support the empirical study by Zach et al. (2012) and Ključnikov et al (2019) arguing that people in top management positions are determinants of the success of information systems used by an organization. Top management support must be carried out ideally because if it is not supplied in full, the system project will become a bottleneck during the implementation phase.

The Effect of User Involvement on the Implementation of Accounting Information Systems.

From the path coefficient, it is known that user involvement on the successful implementation of AIS is positive but the probability value (p-value) is greater than 0.01. This means that the effect of user involvement on the successful implementation of AIS is not significant. This result is different from previous studies which found a significant effect between user involvement on the implementation of AIS such as that conducted by Le et al (2020) & Goni et al (2011). Users are not involved in the design, development, and implementation of accounting information systems, according to one argument. Whereas direct engagement is proof of maximal user participation, which is thought to be capable of ensuring the effective adoption of accounting information systems. When AIS is created with user expectations in mind, the subsequent output will also be in line with user expectations and needs, potentially increasing the success rate of AIS deployment.

The Effect of Information System Investment on the Implementation of Accounting Information Systems.

The IS investment path coefficient on the success of the SIA implementation is positive with a probability value (p-value) less than 0.01. Thus, it is concluded that IS investment has a positive and significant effect on the success of the implementation of AIS. These findings support the empirical studies by Abbassi and Khalid (2014) and Irani et al. (2014) on the basis that the organization must be able to measure the overall performance of the information system in order to determine the impact of the information system investment made to support the organization's business operations. Today, the use of information technology in an organization is vital not just to support corporate operations, but also as a competitive edge in an increasingly competitive business environment. The deployment of information technology necessitates a significant financial commitment, with a demonstrable rate of return.

The Effect of User Knowledge on the Implementation of Accounting Information Systems.

From the path coefficient, it is known that the user's knowledge of the successful application of AIS is positive with a probability value (p-value) less than 0.01. This suggests that user interaction had a substantial impact on the effective installation of AIS. This result is in line with previous research which found a significant effect between user knowledge on the application of AIS such as that conducted by Thong (2001) and Ismail & King (2007). The argument that can be explained is that user knowledge which has a learning dimension tells us together that system users who understand and can apply information systems adequately will have a positive influence on the success of accounting information systems that are run in an organization.

Effect of External Expertise on the Implementation of Accounting Information Systems.

The coefficient of external expertise path to the success of the implementation of AIS is positive with a probability value (p-value) less than 0.01. Thus, it is concluded that external expertise has a positive and significant impact on the success of the implementation of AIS. These results support the empirical studies by Thong (2001); de Guinea (2005) with the reason that an information system based on a website for MSME actors makes it possible to provide updated and fast information about their business. This external expertise is related to the importance of human resources in the development of Micro, Small and Medium Enterprises in order to create entrepreneurs that are independent from the community. Therefore, human resources, in this case external parties, are also needed to facilitate the successful implementation of AIS.

5. CONCLUSION

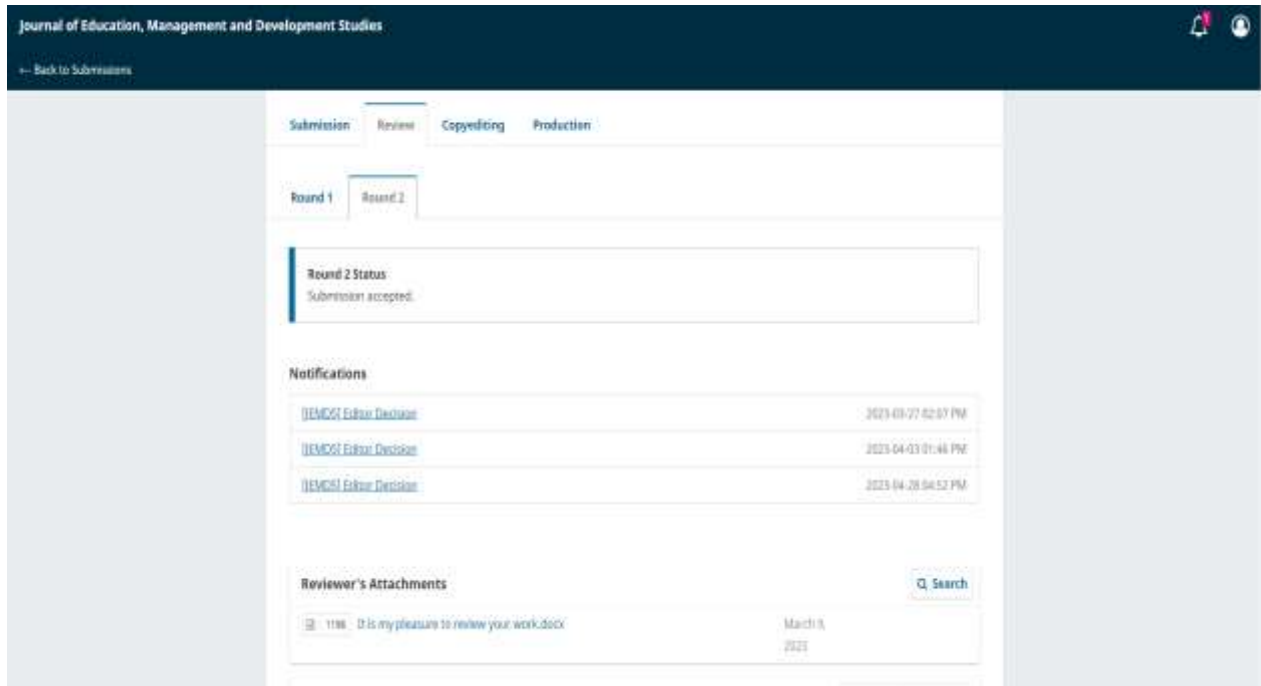
1. Top management support affects the successful implementation of AIS. Adequate understanding of top management on the implementation of AIS will enable top management to provide support by providing the necessary resources and assistance to make the implementation of AIS conducive.
2. User involvement has not had a significant effect on the successful implementation of AIS in this study. The influence of user involvement that has not been significant is one of the illustrations that user involvement is not maximized in the design, development and implementation of AIS on MSMEs.
3. IS investment affects the successful implementation of AIS. In the era of globalization, if a business runs without a system based on technology, it will inevitably be run over by competitors who are aware of technology. MSME entrepreneurs are starting to realize the importance of implementing a computer-based system in their daily activities. With this system, it is considered to provide time and energy efficiency for workers.
4. User knowledge affects the successful implementation of AIS. Information systems used by MSMEs in general cannot be understood directly by users of information systems without prior training. So far, AIS has been able to be operated by users because it has been supported by training provided to users. The training can be in an informal form which is obtained when system users run accounting information system applications/software (on the job training).
5. External expertise influences the successful implementation of AIS. Business actors from MSMEs are aware that their resources are still minimal and understand that a quality accounting information system will produce quality accounting information. This causes business actors to use the services of professional consultants in the field of information systems in order to achieve organizational goals and to achieve competitive advantage

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2. Bukti konfirmasi review dan hasil review pertama (09 Mar 2023)



Fw: [JEMDS] Editor Decision inbox



Rapina cen <rapinacen@yahoo.com>
to me

Mar 27, 2023, 8:43 PM ☆ 😊 ↶ ⋮

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— Forwarded Message —

From: "Elena Clarexe Gulane" <no-reply-journals@cspsc.edu.ph>
To: "Rapina Rapina" <rapinacen@yahoo.com>
Sent: Mon, Mar 27, 2023 at 13:07
Subject: [JEMDS] Editor Decision

Dear Rapina Rapina:

Your submission to the Journal of Education, Management and Development Studies, titled "Analysis Of Factors Related To The Application Of Accounting Information Systems In Small Medium & Micro Businesses" has been reviewed.

The referee(s) suggest that the submission may be publishable, but only after some minor revisions have been made to your manuscript. Therefore, I invite you to respond to the attached comments and revise your manuscript.

PLEASE MAKE SURE THAT THE CHANGES YOU HAVE MADE ARE CLEARLY IDENTIFIED, PREFERABLY BY USING YELLOW HIGHLIGHTING OR BY USING RED TYPE.

PLEASE INCLUDE A RESPONSE TO THE COMMENTS OF THE REFEREE/S that explains how you have revised the manuscript. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response. The response should be uploaded as a separate file attached to the Revision Panel as "Others". Please give it a meaningful name such as "Response-to-referees".

Because we are trying to facilitate timely publication of manuscripts submitted to the Journal of Education, Management and Development Studies, your revised manuscript should be uploaded as soon as possible, but no later than in TWO WEEKS. If it is not possible for you to submit your revision in two weeks, we may have to consider your paper in the next issue.

Once again, thank you for submitting your manuscript and I look forward to receiving your revision.

Reviewer A:
Recommendation: Accept Submission

Does the paper contribute to the body of knowledge?

Yes, the paper provides additional knowledge for the improvement of the MSME sector. Keeping financial records has been a common problem, thus, this research may help in identifying interventions.

Is the paper technically sound?

Yes. All parts have been well explained.

Is the subject matter presented in a comprehensive manner?

Yes.

Are the references provided applicable and sufficient?

Yes. But it is suggested that the researcher may add more updated related literature and studies.

Are there references that are not appropriate for the topic being discussed?

No

If yes, then please indicate which references should be removed.

Reviewer D:
 Recommendation: Resubmit for Review

Does the paper contribute to the body of knowledge?

Partially

Is the paper technically sound?

partially

Is the subject matter presented in a comprehensive manner?

partially

Are the references provided applicable and sufficient?

partially

Are there references that are not appropriate for the topic being discussed?

No

If yes, then please indicate which references should be removed.

Please see the attached file to see other comment. Thank you

[Journal of Education, Management and Development Studies](#)

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2 Attachments • Scanned by Gmail



It is my pleasure to review your work. I have few observations:

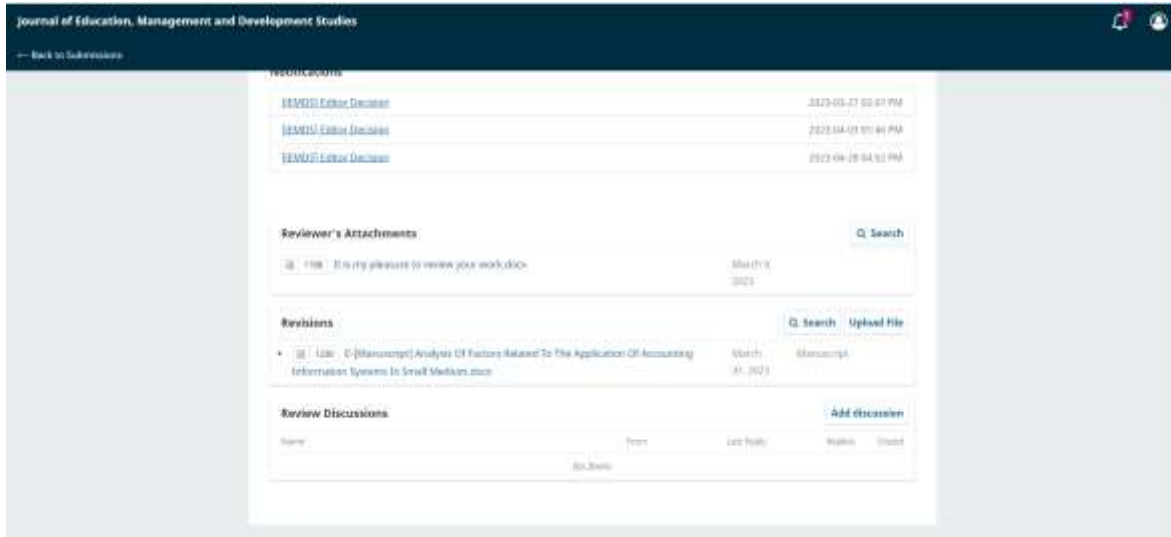
- (1) Sampling technique is purposive technique and how do you get to the sample size 78 ? what is the justification? I have shared a few articles and read and cite them properly, they will give you an idea for sampling size determination.
- (2) The population is too big...Indonesian (accounting and finance staff in Indonesia) and only 78 responses, does not sound good.
- (3) Literature review should be before method.
- (4) Literature review is not adequately done, please refer the related work shared at the end.
- (5) Please provide a detailed questionnaire at the end of the work as an appendix so items can be useful for others.
- (6) Please read the article and which is directly related to your work... Yoshikuni, A.C., Dwivedi, R., Dutra-de-Lima, R.G. *et al.* Role of Emerging Technologies in Accounting Information Systems for Achieving Strategic Flexibility through Decision-Making Performance: An

Exploratory Study Based on North American and South American Firms. *Glob J Flex Syst Manag* (2023). <https://doi.org/10.1007/s40171-022-00334-9>

(7) Following articles will be helpful for you to support your work. These articles will enhance the quality of your research work more.

- Yoshikuni, A.C., Dwivedi, R., Dutra-de-Lima, R.G. *et al.* Role of Emerging Technologies in Accounting Information Systems for Achieving Strategic Flexibility through Decision-Making Performance: An Exploratory Study Based on North American and South American Firms. *Glob J Flex Syst Manag* (2023). <https://doi.org/10.1007/s40171-022-00334-9>
- Almeida, M.C., Yoshikuni, A.C., Dwivedi, R. *et al.* Do Leadership Styles Influence Employee Information Systems Security Intention? A Study of the Banking Industry. *Glob J Flex Syst Manag* **23**, 535–550 (2022). <https://doi.org/10.1007/s40171-022-00320-1>
- [Yoshikuni, A.C.](#) and [Dwivedi, R.](#) (2023), "The role of enterprise information systems strategies enabled strategy-making on organizational innovativeness: a resource orchestration perspective", *Journal of Enterprise Information Management*, Vol. 36 No. 1, pp. 172-196. <https://doi.org/10.1108/JEIM-10-2021-0442>
- Download as .RIS
- Dwivedi, P., Alabdooli, J.I. & Dwivedi, R. Role of FinTech Adoption for Competitiveness and Performance of the Bank: A Study of Banking Industry in UAE. *JGBC* **16**, 130–138 (2021). <https://doi.org/10.1007/s42943-021-00033-9>
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3. Bukti konfirmasi submit hasil revisi (31 Maret 2023)



The screenshot displays the submission management interface for the journal "Journal of Education, Management and Development Studies". The page is titled "Back to Submissions" and shows a list of editor decisions and reviewer attachments.

Editor Decisions:

Decision	Date
REVISI Editor Decision	2023-03-27 02:07 PM
REVISI Editor Decision	2023-04-03 01:46 PM
REVISI Editor Decision	2023-04-28 04:53 PM

Reviewer's Attachments:

ID	Attachment	Date
108	It is my pleasure to review your work.docx	March 27, 2023

Revisions:

ID	File Name	Date	Status
108	0-[Manuscript] Analysis Of Factors Related To The Application Of Accounting Information Systems In Small Mediums.docx	March 27, 2023	Manuscript

Review Discussions:

Name	From	Last Reply	Status	Thread

Analysis Of Factors Related To The Application Of Accounting Information Systems In Small Medium & Micro Businesses

Abstract

The purpose of this study is to determine how big influence time constraints, financial constraints and external expertise constraints on the successful application of accounting information systems in SMEs in Bandung. The population in this study consisted of accounting and finance staff in Bandung. The sampling technique in this study was purposive sampling. The data that has been obtained will be processed using SEM PLS. The statistical analysis technique uses SEM because there is a causal relationship between variables and each variable is unobserved. Research has shown that time constraints, financial constraints, and external expertise constraints can affect the success of implementing accounting information systems. According to the concept, a successful implementation of accounting information system will help users in making decisions.

KEYWORDS:

time constraints, financial constraints, external expertise constraints, *accounting information systems*

1.INTRODUCTION

The implementation of information systems on the way often experiences rejection from users so that they fail (Kim & Kankanhalli, 2009). Barriers will be more common in small business organizations when implementing information systems due to low capital investment and lack of skilled personnel involved in it (Dwyer, 1990). In fact, if a small business organization successfully implements an information system, it will have benefits in increasing sales, increasing profitability, increasing productivity, improving decision making and securing a competitive position (Meredith, 1987). The unsuccessful application of information systems to small businesses is due to the fact that they are less able to rely on limited resources as a support for the implementation of the information system (Carter, 1990).

This is the identification of problems that will be confirmed regarding the unsuccessful application of accounting information systems in small, micro and medium enterprises. This research is more directed at the successful implementation of information systems and not on the decision to adopt an information system. In the technological innovation cycle, there are different stages in the meaning of adoption, implementation and further implementation. The adoption stage is the stage to adopt a new technology. If the adoption stage is continued, it will enter the implementation stage involving the role of technology in business. The extent to which the company can learn more about technology adoption will continue to affect the function of technology that was effectively implemented previously (Lefebvre et al, 1995).

The method of establishing an efficient decision support framework for implementing an integrated information system in MSMEs is then presented in an empirical research on small and medium-sized companies in agriculture conducted in partnership with Cranfield University. According to the study's findings, system integration can boost motivation, save time, reduce risk, and aid decision-making. (Achanga et al, 2006).

Based on some literature on case studies and surveys that discuss the success of information systems in small organizations, it is known that several factors have been identified. For example, DeLone (1988) did a research on 93 small manufacturing firms in Los Angeles, employing a questionnaire filled out by the CEOs of the firms as well as information system managers. This study examines 9 organizational factors that can affect the success of a computer-based information system (CBIS). Empirical findings also stated by Prasanna and Huggins (2016) concluded that there is a combination of psychological approach factors and mental acceptance of users in a technology acceptance model. Furthermore, research conducted by Leyh (2014) contributes to the critical factors in

implementing ERP projects with a special focus on small companies (SMEs). Through interviews with SMEs in Germany, the results showed that organizational factors had a significant influence. Similar previous studies have also been conducted by Sohal (1999), Windrum and Berranger (2002), Montazemi (2006), Hiyari et al (2013), Rapina et al (2020), Carolina et al (2020).

This research is a replication of the research that has been done by Thong (2000) by examining time constraints (top management support, user involvement, information system planning), financial constraints (investment in information systems), expertise constraints (user knowledge in information systems) and external environment (external expertise) that affect the success in the implementation of information systems. The distinction between this study and prior studies is in the dimensions and indicators that will be utilized to create the statement items in the questionnaire, as well as the respondents who will be focused on accounting users.

In truth, Indonesian firms' information systems continue to have issues. Many MSME actors still underestimate the necessity of accurate financial records and bookkeeping. In fact, with proper bookkeeping, business owners may determine whether or not their company is healthy (Ferdiansyah, 2018). Nuryanto, the Deputy for Human Resources Development of the Ministry of Cooperatives and SMEs (2019), stated the same thing, stating that MSME actors, particularly micro and small business actors, are encouraged to be able to manage their businesses professionally, including better managing their financial aspects. Many micro company players are still hesitant to record their financial aspects in an orderly and according to relevant standards, which should be done using information technology in today's fast increasing information technology era.

This research will focus on the object of research, which is top management support, user involvement, information system planning, investment in information systems, user knowledge, and successful implementation of accounting information systems, in order to follow up on the background that has been described and place it in conditions in Indonesia.

LITERATURE REVIEW

2.1. The Effect Of Top Management Support On The Implementation Of Accounting Information Systems

Zach et al (2012) stated in their empirical findings that top management plays a role in implementing information systems in small and medium-sized businesses by paying attention to all matters related to business processes in their companies. In a research done by Seliem et al. (2003), 247 managers from diverse Egyptian organizations discovered that top management support as an organizational component has a beneficial influence on the efficacy of information systems. Personnel at the top, according to Schwalbe (2010), are the main bearers of any information system deployment. According to Kljunikov et al. (2019), top management support has a major impact on the management of information security created by an information system in Slovakia's small and medium-sized firms.

H₁: The more top management provides support will affect the implementation of accounting information systems.

2.2 The Effect of User Involvement on the Implementation of Accounting Information Systems

The research conducted by Le et al. (2020) aimed to explore the relationships between various organizational factors and the effectiveness of management information systems in small and medium enterprises in Vietnam. The researchers developed a mediation model and analyzed the data using structural equation modeling. The findings of the study suggest that managers' expertise, user involvement, and information quality are crucial factors in enhancing the efficacy of management information systems. Specifically, the study found that managers' knowledge and commitment positively influenced information quality, which, in turn, positively impacted the efficacy of management information systems. User involvement was also found to have a positive and significant impact on the effectiveness of these systems. Overall, the study highlights the importance of organizational factors such as managerial expertise, user involvement, and information quality in optimizing the effectiveness of management information systems in small and medium enterprises. The same thing was also said by Goni et al (2011) who concluded in their empirical study that there are several functional factors that must be considered in implementing a system, namely communication, collaboration, knowledge transfer, user involvement and competence of the project team. However, SMEs in Malaysia, which are the unit of analysis in the study, have not paid attention to the functional factors mentioned earlier so they often experience system implementation problems. User involvement found to have an effect on the use of information systems is also shown in a study conducted by Rouibah et al (2009) in Arab countries. This study investigated 3 organizational factors (top management support, availability of training and user involvement) on the use of information systems and user satisfaction with the Technology Acceptance Model as a mediating variable.

H₂: Successful implementation of an accounting information system requires positive user involvement

2.3. The Effect of Information System Investment on the Implementation of Accounting Information Systems.

Small firms must set aside appropriate finances for information system investment, even if funds are limited, and they must not pick the cheapest option that does not fulfill their company needs (Thong, 2001). The decision to invest in information systems can be considered as one of the major challenges that most organizations may face today (Abbassi & Khalid, 2014). The complexity of investing in information systems, however, is due to the many interrelated factors (e.g. costs, benefits and risks) that have a human or organizational dimension to an information system that are thought to facilitate organizations to increase responsiveness and reduce organizational supply chain costs (Irani et al, 2014).

H₃: Investment in information systems has a positive effect on the implementation of accounting information systems.

2.4 The Effect of User Knowledge on the Implementation of Accounting Information Systems.

Competent and motivated personnel will be needed in the application of accounting information systems (Stair & Reynolds, 2012). The information system will not be established if the user does not comprehend and is unable to utilize it appropriately (Satzinger, 2016). The understanding of managers involved in accounting and finance would have an impact on accounting information systems, according to empirical results on MSMEs in Malaysia (Ismail & King, 2007).

H₄: The more the user's expertise, the more likely accounting information systems will be implemented successfully.

2.5. Effect of External Expertise on the Implementation of Accounting Information Systems.

Small organizations that are often assumed to be minimal with resources for information systems, often use external expertise as their consultants (Thong, 2001). External knowledge, according to Ifinedo (2008), is the most significant aspect in adopting software for a company to integrate all of its business operations, known as ERP. Ismail and King (2007) performed the next research, which looked at numerous factors that influence the alignment of accounting information systems in small businesses. External expertise is one of the seven independent factors examined. Small businesses are less interested in hiring outside experts since the fees would be higher.

H₅: External expertise has a positive effect on the implementation of accounting information system

3. METHOD

Using the convenience sampling method, researchers select subjects that are the easiest to access or the most convenient to take as a sample. This method is often used in qualitative research or in research with limited budgets. The questionnaire distribution is done through personal connections, and researchers ask for assistance from accounting and finance staff to send the questionnaire responses via Google Form. Additionally, the questionnaire distribution process took almost 5 months in 2021 in the city of Bandung. Structural Equation Modeling (SEM) with parameter estimation of the model using the PLS (Partial Least Squares) method will be used in this research to test the research hypothesis. This statistical analysis technique (SEM) is used because of the causal relationships between variables and each variable is an unobserved variable. According to Hair et al (2014:20), the minimum sample size for SEM-PLS can refer to the rule of thumb of ten times the number of structural paths leading to constructs in the structural model. The final sample obtained was 78 respondents who had participated in filling out the research questionnaire. This should be sufficient to meet the sample size requirements for SEM-PLS (Henseler et al., 2016). The sample size should be about 10 times the maximum arrow pointing to the dependent variable. Therefore, the actual minimum sample size is 50 respondents when considering the arrows pointing to the dependent variable, and the sample size used in this study has exceeded 50 respondents.

4. RESULTS & DISCUSSION

4.1. RESULTS

The surveys were distributed and gathered by emailing a survey link in the form of a Google form and collecting 110 responses from various MSMEs in Indonesia, however only 78 responses were sufficient for further processing after filtering inconsistent replies with irregular replying patterns, excluded from the total number of responses gathered. Data analysis using Smart-PLS 3 obtained a full model path diagram, as follows:

Figure 1: Full Model Path Diagram

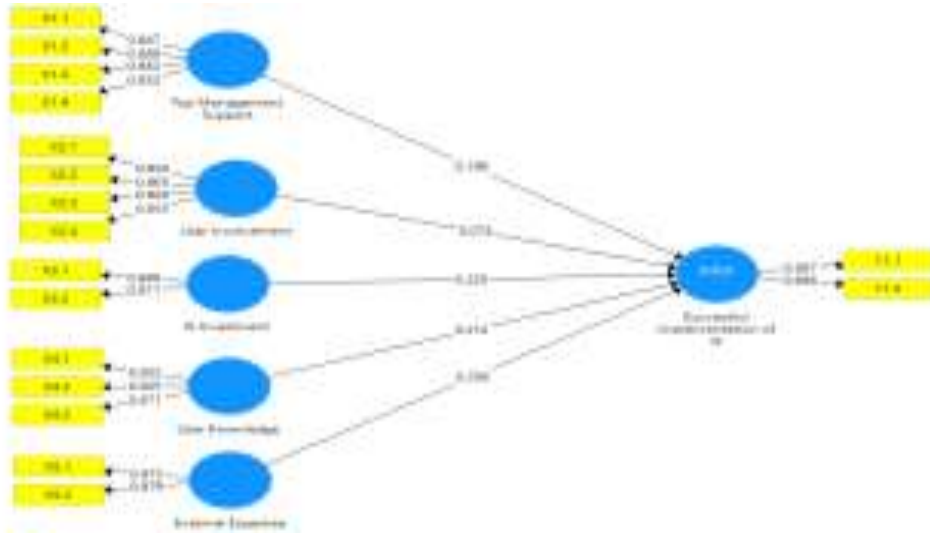
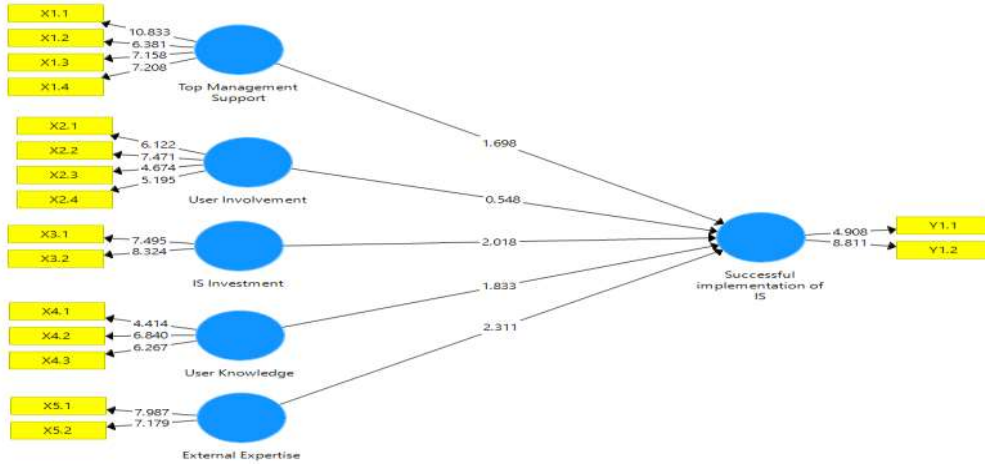


Figure 2: Full Model T-Statistics



4.1.1. Model Evaluation

In this study, all measurement models in the first stage, namely the relationship between indicators and their dimensions, are reflective measurement models. Furthermore, it can be seen that the quality of an indicator is indicated by the validity and reliability of the indicator along with the collective validity and reliability of the indicator with other indicators that measure a dimension.

4.1.1.1. Validity Test

Convergent validity and discriminant validity are two important aspects of construct validity that can be evaluated using confirmatory factor analysis (CFA). Convergent validity is assessed by examining the average variance extracted (AVE) for each construct. AVE is a measure of how much of the variation in the indicators is accounted for by the construct being measured. A value of 0.5 or greater is generally considered acceptable, as it indicates that the construct explains more than half of the variance in the indicators. Discriminant validity, on the other hand, is assessed by examining the cross-loadings of the indicators. Cross-loadings are the correlations between each indicator and the other constructs being measured. A common guideline for acceptable discriminant validity is that the indicator should have a higher correlation with its own construct than with any other construct. The method suggested by Hair et al. (2014) involves comparing the outer loading values of each indicator to the squared correlations between the constructs. An outer loading value of 0.7 or higher is generally considered acceptable for assessing discriminant validity. The discriminant validity of the indicators for each dimension can be seen based on the Fornell-Larcker Criteria in table 1. In this case the criterion value of the indicators of a dimension must be greater for the dimension itself than for other dimensions (Hair et al, 2014). Furthermore, it can be seen that all criteria values for each dimension (which are on the main diagonal) are indeed greater than the criteria values for other dimensions (outside the main diagonal). Therefore, the indicators of these dimensions have good discriminant validity.

TABLE 1 Indicator Validity & CrossLoading between
Constructs

Indikator	EE	IS-I	SI-IS	TMS	UI	UK
EE	0.876					
IS-I	0.790	0.900				
SI-IS	0.840	0.834	0.867			
TMS	0.842	0.811	0.854	0.863		
UI	0.852	0.848	0.848	0.854	0.866	
UK	0.779	0.804	0.840	0.869	0.871	0.883

Source: Data processed 2021

Information: EE (External Expertise), IS-I (Information System Investment), SI-IS (Successful Implementation of IS), TMS (Top Management Support), UI (User Involvement), UK (User Knowledge)

TABLE 2 Convergent Validity Test Results

Variabel	Items'number	Average Variance Extracted (AVE)
EE	2	0.767
IS-I	2	0.810
SI-IS	2	0.751
TMS	4	0.745
UI	4	0.715
UK	3	0.711

Source: Data processed 2021

Information: EE (External Expertise), IS-I (Information System Investment), SI-IS (Successful Implementation of IS), TMS (Top Management Support), UI (User Involvement), UK (User Knowledge)

According to the table above, the AVE value for each construct is legitimate, ranging between 0.711 and 0.810. Because the AVE value of the indicator set for each variable exceeds the minimal criterion of 0.50 (Hair et al., 2014), this suggests that the construct explains more than half of the variation of the indicators on average or that indicators differ from one another (Convergent validity is deemed enough).

4.1.1.2. Reliability Test

The reliability test is based on the internal consistency reliability test findings, which are calculated using the Cronbach's alpha coefficient and the composite reliability coefficient value. Hair et al. (2014) believe a composite reliability value of 0.70 to 0.90 to be adequate.

TABLE 3 Reliability Test Results

Variabel	Composite Reliability Coefficient	Cronbach Alpha Coefficient
EE	0.868	0.700
IS-I	0.895	0.766
SI-IS	0.858	0.700
TMS	0.921	0.886
UI	0.909	0.867
UK	0.880	0.797

Source: Data processed 2021

Information: EE (External Expertise), IS-I (Information System Investment), SI-IS (Successful Implementation of IS), TMS (Top Management Support), UI (User Involvement), UK (User Knowledge)

Table 3 shows the reliability of the internal consistency of each construct, which is indicated by the value of Cronbach's alpha and the value of composite reliability of each construct which shows a value above the minimum threshold of 0.7 (Hair et al., 2014). These results conclude that respondents' answers are consistent in answering statement items related to research variables.

4.1.1.3. Structural Model Testing

The R Square value was used as the measuring foundation for structural model testing (Hair et al., 2014). The findings of the structural model testing are provided in table 4 below:

TABLE 4 Structural Model Testing Results (R² Value and Q² Value)

Path	Koefisien	t-statistik	p-value (one tailed)	R ²
------	-----------	-------------	----------------------	----------------

EE→SI-IS	0.258	2.311	0.011	0.823
IS-I→ SI-IS	0.235	2.018	0.022	0.823
TMS→SI-IS	0.199	1.698	0.045	0.823
UI→SI-IS	0.074	0.548	0.292	0.823
UK→ SI-IS	0.212	1.833	0.034	0.823

Source: Data processed 2021

Information: EE (External Expertise), IS-I (Information System Investment), SI-IS (Successful Implementation of IS), TMS (Top Management Support), UI (User Involvement), UK (User Knowledge)

The table above shows that EE (External Expertise), IS-I (Information System Investment), TMS (Top Management Support), UI (User Involvement), and UK (User Knowledge) have an influence of 82.3% on SI-IS (Successful Implementation of IS). This R² value indicates a strong predictive power.

4.2. DISCUSSION

The Effect of Top Management Support on the Successful Implementation of Accounting Information Systems

The coefficient of the top management support path on the successful implementation of AIS is positive with a probability value (p-value) less than 0.01. As a result, it can be argued that top management support has a favorable and considerable impact on the effectiveness of AIS adoption (H1 is supported). These results support the empirical study by Zach et al. (2012) and Ključnikov et al (2019) arguing that people in top management positions are determinants of the success of information systems used by an organization. Top management support must be carried out ideally because if it is not supplied in full, the system project will become a bottleneck during the implementation phase.

The Effect of User Involvement on the Implementation of Accounting Information Systems.

From the path coefficient, it is known that user involvement on the successful implementation of AIS is positive but the probability value (p-value) is greater than 0.01. This means that the effect of user involvement on the successful implementation of AIS is not significant. This result is different from previous studies which found a significant effect between user involvement on the implementation of AIS such as that conducted by Le et al (2020) & Goni et al (2011). Users are not involved in the design, development, and implementation of accounting information systems, according to one argument. Whereas direct engagement is proof of maximal user participation, which is thought to be capable of ensuring the effective adoption of accounting information systems. When AIS is created with user expectations in mind, the subsequent output will also be in line with user expectations and needs, potentially increasing the success rate of AIS deployment.

The Effect of Information System Investment on the Implementation of Accounting Information Systems.

The IS investment path coefficient on the success of the SIA implementation is positive with a probability value (p-value) less than 0.01. Thus, it is concluded that IS investment has a positive and significant effect on the success of the implementation of AIS. These findings support the empirical studies by Abbassi and Khalid (2014) and Irani et al. (2014) on the basis that the organization must be able to measure the overall performance of the information system in order to determine the impact of the information system investment made to support the organization's business operations. Today, the use of information technology in an organization is vital not just to support corporate operations, but also as a competitive edge in an increasingly competitive business environment. The deployment of information technology necessitates a significant financial commitment, with a demonstrable rate of return.

The Effect of User Knowledge on the Implementation of Accounting Information Systems.

From the path coefficient, it is known that the user's knowledge of the successful application of AIS is positive with a probability value (p-value) less than 0.01. This suggests that user interaction had a substantial impact on the effective installation of AIS. This result is in line with previous research which found a significant effect between user knowledge on the application of AIS such as that conducted by Thong (2001) and Ismail & King (2007). The argument that can be explained is that user knowledge which has a learning dimension tells us together that system users who understand and can apply information systems adequately will have a positive influence on the success of accounting information systems that are run in an organization.

Effect of External Expertise on the Implementation of Accounting Information Systems.

The coefficient of external expertise path to the success of the implementation of AIS is positive with a probability value (p-value) less than 0.01. Thus, it is concluded that external expertise has a positive and significant impact on the success of the implementation of AIS. These results support the empirical studies by Thong (2001); de Guinea (2005) with the reason that an information system based on a website for MSME actors makes it possible to provide updated and fast information about their business. This external expertise is related to the importance of human resources in the development of Micro, Small and Medium Enterprises in order to create entrepreneurs that are independent from the community. Therefore, human resources, in this case external parties, are also needed to facilitate the successful implementation of AIS.

6. CONCLUSION

4. Top management support affects the successful implementation of AIS. Adequate understanding of top management on the implementation of AIS will enable top management to provide support by providing the necessary resources and assistance to make the implementation of AIS conducive.
2. User involvement has not had a significant effect on the successful implementation of AIS in this study. The influence of user involvement that has not been significant is one of the illustrations that user involvement is not maximized in the design, development and implementation of AIS on MSMEs.
3. IS investment affects the successful implementation of AIS. In the era of globalization, if a business runs without a system based on technology, it will inevitably be run over by competitors who are aware of technology. MSME entrepreneurs are starting to realize the importance of implementing a computer-based system in their daily activities. With this system, it is considered to provide time and energy efficiency for workers.
4. User knowledge affects the successful implementation of AIS. Information systems used by MSMEs in general cannot be understood directly by users of information systems without prior training. So far, AIS has been able to be operated by users because it has been supported by training provided to users. The training can be in an informal form which is obtained when system users run accounting information system applications/software (on the job training).
5. External expertise influences the successful implementation of AIS. Business actors from MSMEs are aware that their resources are still minimal and understand that a quality accounting information system will produce quality accounting information. This causes business actors to use the services of professional consultants in the field of information systems in order to achieve organizational goals and to achieve competitive advantage

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APPENDIX
QUESTIONNAIRE

	Pertanyaan	1	2	3	4	5
1	So far, the leadership at your workplace has been supportive in understanding the function of information system security.					
2	So far, the leadership at your workplace has been supportive in communicating with the information system team.					
3	So far, the leadership at your workplace has been supportive in being involved in information system projects.					
4	So far, the leadership at your workplace has been supportive in sharing knowledge to improve the experience of team members.					
5	So far, the leadership at your workplace has invited participation in information system projects.					
6	So far, you have been asked to contribute to the steps of designing information systems.					
7	So far, the information system used by you has been relevant to your needs.					
8	So far, the information system used by you has not encountered any obstacles in carrying out activities.					

9	So far, the operational information system has had a positive impact on the company's finances.					
10	So far, the operational information system has had a positive non-financial impact on the company.					
11	So far, the information system used by you has felt easy to operate because it has clear guidelines for performing the required tasks.					
12	The information system that has been running so far has been in line with your skills.					
13	So far, the operated information system has been in accordance with your preferences based on the experience you have gained.					
14	So far, the information system has been running well due to the trainings that have been provided.					
15	So far, the information system has been running well due to the technical implementation support.					
16	So far, you have found it easy to operate the information system to support your work.					
17	So far, the information system that you use has provided good benefits.					

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