THE ENVIRONMENTAL UNCERTAINTY, MANAGER COMPETENCY AND ITS IMPACT ON SUCCESSFUL USE OF FINANCIAL APPLICATIONS IN THE COVID-19 PANDEMIC ERA

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ABSTRACT

This study aims to investigate the conceptual model of successful use of financial applications that is influenced by environmental uncertainty and manager competence. Quantitative research is used to examine the conceptual model developed. Data collected was used as primary data by distributing questionnaires to respondents. The target population is 478 management accounting units in 118 state-owned enterprises (SOEs) in Indonesia. The minimum sample criteria use the rule of thumb. The sample size is 100 SOEs manager respondents who were selected by simple random sampling technique using a table of random numbers with the help of Microsoft Excel. The research data were analyzed using the Structural Equation Model (SEM) with the Lisrell 8.5 software tool. The results show that the researcher's conceptual model's suitability can be tested. The environmental uncertainty variable empirically has a negative impact on the successful implementation of financial applications. The manager's competence variable positively affects the successful implementation of financial applications. The negative direction shown as a result of environmental influences uncertainty on the successful use of financial applications can occur. An uncertain business environment can be the cause of failure to use financial applications. The improving business environment will further increase the successful use of financial applications. The results of the study have an important contribution in determining the success of using financial applications in SOEs companies in Indonesia, wherein daily practice, environmental uncertainty factors, and manager competencies have proven to be very influential on the successful use of financial applications, especially during the COVID-19 pandemic which has not

entirely subsided.

INTRODUCTION

Uncertainty in the business environment that is increasing rapidly and continuously causes the company to make various breakthroughs in adjusting relevant business conditions. The breakthroughs including business strategy and a better management control system. This condition is exacerbated by the Covid-19 outbreak that has hit the world. It has spawned new social distancing habits that have the impact of limiting human interaction in daily activities. In addition, it's also hampering various business sectors. The strongest impact is on the transportation, tourism, trade, and industry sectors. Other impacts have creating decreased demand for products and services; rising unemployment and inflation; economic downturn in various countries; balance of payments and increased crime in society. This new habit has triggered various companies to take advantage of the use of Information technology (IT) through optimizing the use of financial applications is one of the right solutions to drive the economy in various industrial sectors. Nowadays, applications have become very important, and humans have become dependent on them. Managers' skills in using financial applications are needed to keep the business running smoothly. Adequate Manager competencies support the successful use of financial applications (Hall, 2015).

Many businesspeople need IT to support business decision-making so that organizations can survive in the face of an uncertain business environment (Loudon & Loudon, 2016). The use of IT in business is generally applied through financial applications, conceptually known as accounting information systems (Shim, 2000). An accounting information system, or what is known as a financial application, is a collection of users/people, data, processes, and information technology that are integrated to produce information needed in the decision-making process (J A Whitten and L D Bentley. 2007). In practice, the Management Accounting Information System (MAIS) is better known as a financial application.

MAIS is designed to adapt to complex, uncertain, and turbulent environmental conditions (Stair & Reynolds, 2010; Coombs et al., 2005). MAIS functions in providing information. Accounting is needed by managers in controlling business activities and reducing environmental uncertainty in achieving organizational goals (Atkinson et al., 1998; Gordon & Miller, 1976). A contingency framework for the design of accounting information systems. In Readings in accounting for management control (pp. 569-585). Springer, Boston, MA.1976). Various factors can determine the effective use of MAIS in an organization. An effective MAIS is characterized by the production of quality accounting information used by managers in carrying out the functions of planning, organizing, actuating, controlling, and decision making. The contingency approach proposed by (Otley, 1980) shows that the characteristics of accounting information may not always be the same for every organization, and other factors affect the level of need for accounting information, namely environmental uncertainty, technological complexity, task uncertainty, strategy uncertainty, and corporate strategy and manager competence.

Environmental uncertainty is a complex, uncertain external environmental condition or environment in times of turbulence that can potentially change the company's operational system (Otley, 1980).

Management accounting information systems are influenced by the environment and adaptable to changing environmental conditions to achieve competitive advantage (Loudon J P and Loudon K C. 2016). The use of applications in a business is closely related to environmental uncertainty. Managers cannot carry out their functions properly in uncertain environmental conditions, resulting in ineffective use of financial applications because managers wait for the right time to execute strategic decisions.

Planning prepared by managers in conditions of high environmental uncertainty will be ineffective because managers do not have adequate ability to predict conditions in the future. Managers will fail to use financial applications provided by the company if managers can't afford not to have adequate competence (O'Brien & Marakas. 2010). Manager competence is the knowledge, skills, and experience possessed by managers to achieve strategic goals and achieve competitive advantage. Managers must have adequate knowledge of Business & Management, computers/IT, and Information Systems in carrying out their functions to use information system applications provided by the company. Furthermore McLeod, R., & Schell, G.P (2007), states that knowledge fades if it is not used, competence is like the glue that binds existing businesses. Competence will increase in quality if used frequently, in contrast to physical assets that decrease in economic value over time. Therefore, the competence of managers needs to be improved to support managers in carrying out their functions (Dubois & Rothwel, 2000). Managers know better how to work financial applications well. Financial applications will be successfully implemented if managers are skilled in using them (Laudon, K., & Laudon, J., 2014).

Several previous research findings focus on providing empirical information on the impact of environmental uncertainty on the effectiveness of financial applications. Research by Gul, et al. (1993) found a moderate negative effect of environmental uncertainty on the use of financial applications and the performance of MSME managers in Hong Kong. Then, Gordon & Narayanan (1984) conducted a study on 34 manufacturing companies in Kansas and Missouri, USA, proving that when environmental uncertainty increases, the quality of financial applications increases ineffectively in 34 manufacturing companies in Kansas and Missouri, USA. Furthermore, Bhimani (2010) found that environmental uncertainty factors affect MAIS/financial applications in Siemens company electronics and electrical components industry in London. According to Said, A. A., HassabElnaby, H. R., & Wier, B (2003), environmental uncertainty is negatively correlated with the effectiveness of Financial Applications in Egypt. In line with this, research conducted by Seaman & Williams (2006) found empirical evidence that environmental uncertainty can hinder the use of financial applications (MAIS) in 116 small and medium-sized manufacturing companies in Singapore. According to Agbejule (2005), environmental uncertainty interacts with management accounting information systems. High environmental uncertainty causes financial application quality (MAIS) to below. Hammad, et. al (2013) proves that integrated environmental uncertainty is to measure the extent to which contribution of important factors in designing an effective and efficient financial application (MAIS) with a unit of analysis in several hospitals in America. The research results of Solabomi (2013) showed evidence of a moderating effect from environmental uncertainty chaos which impacts the effectiveness decreasing of financial applications (MAIS). The research conducted by Andesto R (2016) prove that the dynamically changing environmental uncertainty affects the management accounting information system in advertising companies in Indonesia.

The study results conducted by Taleb et. al (2011) prove that manager competence is the most influential factor on the quality of financial application (MAIS) in companies listed on the Tehran Stock Exchange. Furthermore, Kaasbøll et. al (2010) found that low competence impacts financial application (MAIS) that often fails. Competence of management accounting system users is required to use computerization. At the same time, knowledge of MAIS represents work competencies. In contrast, knowledge and computer literacy are based on explicit

concepts based on science or technology in companies operating in the health sector in Malawi. Research by Muslichah (2004) provides empirical evidence that competence affects the characteristics of Financial application (MAIS) and managerial performance. Expertise in modifying or designing relevant and timely financial applications (MAIS) in an organization to accelerate managers' information needs. The survey was conducted on managers of private companies and manufacturing industries in Malang. Furthermore, Research by Puspitawati (2021) shows that user competence is very helpful for managers in completing work responsibilities. When managers obtain timely information for decision making, company managers feel satisfied with surveys on SOEs in the city of Bandung.

Previous researchers have succeeded in proving the existence of environmental uncertainty and manager competence in increasing the effectiveness of financial applications in various companies in the world, and various previous studies have shown that environmental uncertainty and manager competence are the most important variables in the successful use of financial applications and their effect has been proven empirically. However, there has been no researcher who has tested the conceptual model by collaborating the variables of the influence of environmental uncertainty and manager competence on the effectiveness of using financial applications on SOEs Companies in Indonesia.

Therefore, based on the results of previous studies, this study aimed to examine the effect of the conceptual model on the successful use of financial applications in Indonesian state-owned companies influenced by environmental uncertainty factors and manager competence. Based on these objectives, the novelties of this research are: 1) expanding and elaborating the results of previous research by combining the variables of environmental uncertainty and manager competence into a conceptual model that can be used to predict/test the success of using financial applications in Indonesian state-owned companies; 2) the conceptual model being tested by researchers

that have never been tested by previous researchers on the population and sample that researchers use today; 3) a proven conceptual model that can be used to predict MAIS uncertainty solutions in SOEs companies in Indonesia.

METHODOLOGY
Research Object

The objects studied in this study are Environmental Uncertainty, Manager Competence, and the Successful Management Accounting Information Systems, which are proxied by financial applications. The data were analyzed using descriptive and quantitative methods. This study uses three variables are:

- Environmental uncertainty (X1), Dimensions and indicators:
  1) Environmental Complexity
     a) Customer Complexity.
     b) Supplier Complexity
     c) Competitor Complexity.
     d) Complexity of Financial Institutions
  2) Environmental Change.
     a) Social transformation.
     b) Technology changes.
     c) Economic Change.
     d) Government Changes.
- Competency Manager (X2), indicators:
  1) Knowledge consists of:
     a. Experience in a specific field.
     b. Proficient in a certain field.
  2) Skills, Indicators:
     a. Ability to motivate others.
     b. Ability to understand other people
  3) Work Management, Indicator
     a. Skills that can lead to superior performance.
     b. Skills that can produce good performance.
  4) Leadership, Indicators:
     a. Leadership capable of influencing others.
     b. Leadership capable of achieving one or more goals

- Successful Financial accounting Application (Y), Dimensions and Indicators are:

    1) Integration, Indicators:

        a. Can interact between components

        b. Can interact between sub-systems

    2) Flexibility, Indicators:

        a. Can adapt to user needs

        b. Can adapt to changing conditions

    3) Accessibility, Indicators:

        a. Easily accessible

        b. Can be accessed anywhere

    4) Formalization, Indicators:

        a. Have formal rules (written)

        b. Have good targets.

    5) Media richness, Indicators:

        a. Can communicate perfectly

        b. Can overcome challenges.

Population and Sample

This study uses primary data obtained through the distribution of questionnaires and interviews. Furthermore, data testing is carried out using validity and reliability tests. The unit of data in this research is 117 SOEs companies in Indonesia, and the unit of observation is management accounting managers in 4 (four) departments in SOEs companies (accounting & finance, Marketing/Sales, HR, and IT), so the population size in this study is 468 SOEs managers.

Statistical Test Tool

This study aims to investigate the effect of unobserved variables in the structural equation model proposed in the study; thus, the data analysis used in this study is the Covarian Based-Structural Equation Model

(CB-SEM) via Lisrell 8.5 software. A minimum data requirement must be provided in using the Lisrell software. According to Lomax (Lomax & Schumacer, 2010), it is agreed that 100 to 150 subjects are sufficient minimum sample size for testing the structural equation model using the Covariant Structural Equation Model (CB-SEM). Based on these requirements, the sample size in this study was 246 SOEs managers who were determined through a simple random sampling technique. Randomization of the selected respondents was done through a table of random numbers using MS Excel.

Data analysis

Deductive and inductive reasoning techniques were used to analyze the data that the researcher had successfully collected. Deductive reasoning in this research is carried out by examining various references related to the variables studied. Researchers collect theories and previous research results to develop a conceptual model to be tested. Researchers carry out inductive reasoning through a logical thinking process that begins with observation and data collection to conduct evidence and draw conclusions that can be generalized based on facts (in this case, phenomena) that are specific.

RESULTS

As the Research Result, from the 468 respondents who were given a questionnaire, 286, the study's response rate was 61.2 %. This study used the Maximum likelihood method to test the parameters used in the structural equation model. The results of the parameter estimation test for the structural equation model in this study can be described as follows:
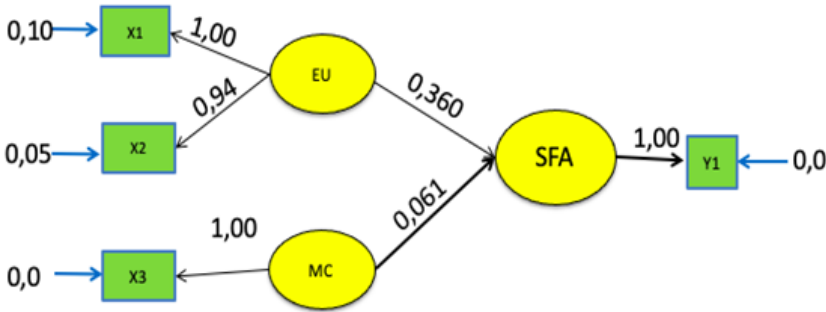
Figure 1: SEM Full Model

Source: Authors work

Based on Fig. 1, The structural equation model for the effect of environmental uncertainty as well as manager competence on the successful use of financial applications, with the following descriptions:

1. The increasing 1 unit of environmental uncertainty will reduce managers' success of using financial applications by 0,360 units.
2. The increasing 1 unit of Manager Competency will increase managers' success of using financial applications by 0,061 units.

The structural equation model of the impact of environmental uncertainty and manager's competence on the successful use of financial applications is formulated as follows:

$$SFA = -0.360\ EU + 0.061\ MC \qquad (1)$$

Subsequently, several stages of testing were carried out on the concept of the model proposed in the study with the following results:

1. The evaluation findings of the overall fit of the model for the conceptual model studied in this study are shown in Table 1 as follows:

Table 1: The Model's Overall Fit

Goodness of Fit Index	N Cut-off	Count	Result
Chi-Square	p-value >0.05	X2=23.8434	Fit
		p-value= 0.2022	
RMSEA	< 0.05	0.05393	Good Fit
GFI	> 0.90	0.9487	Good Fit

Source: Lisrell 8.5 Software

Indicator Relevance Evaluation Results

The indicator relevance test on reflective indicators in the environmental uncertainty and financial application quality variables is carried out. The results of the dimensional validity test can be seen from the factor loading value between their constructs and the dimensions, within the p-value criterion being less than 0.05. The relevance test shows the P-value of all reflective indicators tested in this study is less than 0.05. It can be stated that all reflective indicators in this study have a good relevance value (Source: a result of calculating the score component with the R program

Dimensional Relevance Evaluation Results

Dimensional relevance testing is carried out on variables with formative dimensions in the manager competence variable and the

Successful use of the financial application variable. Same as testing the relevance of indicators, the relevance of dimensions can be seen from the P-value must be smaller than the significance level (0.05). The relevance test that P-value of all formative Dimension tested in this study is less than 0.05, so that it can be stated that all formative dimensions in this study have a good relevance value (the result of calculating the score component with the R. program)

Testing Indicator Validity and dimensional validity

1. Validity testing shows that all reflective indicators have a 0.05 or less as a p-value so that all indicators can be accurately measured by the measuring instrument (questionnaire).
2. The test results of the validity of the dimensions is known that each test for all dimensions produces a p-value smaller than 0.05. Each dimension is declared to have been accurately measured by the measuring instrument.

Indicator Reliability Test Results & Dimensions

The dependability of the test findings shows that entirely of the indicators and dimensions employed to have an R2 value greater than 0.5. All indicators and dimensions otherwise consistent (reliable) measured by the measuring instrument, except job grouping indicator (X10) on the dimensions of knowledge declared inconsistent measured by the measuring instrument.

Composite Reliability Test Results.

Variables with the reflective measurement model and all dimensions having a Construct Reliability (CR) value greater than 0.6 and an Extract variance (VE) value more than 0.5 for all dimensions as well as variables with the reflective measurement model in the measuring instrument is said to be consistent (reliable) in this research.

Structural Model Evaluation Results.

The structural model can be described in Table 2 below:

Table 2: Structural Model Evaluation

Consequence	Reason	Std Estimate	Estimate	Std Error	Z_{value}	P_{Value}	R^2
SFA	EU	0.32	0.360	0.20	1.81	0.035	Sig
	MC	0.06	0.061	0.07	0.86	0.196	Non Sig

Source: Authors work

Based on the information from Table 2, the interpretation of the evaluation results of the structural equation model can be explained as follows:

1. The magnitude of the effect of the environmental uncertainty variable on the quality of Financial application is 0.32, which means that each increase in environmental uncertainty by 1 standard deviation results in a decrease in the quality of Financial application by an average of 0.32 standard deviations with the assumption that other variables are constant.

2. The magnitude of the influence of manager competence on Successful use of Financial application is 0.06, which means that for every 1 standard deviation increase in manager competence, the quality of financial application will increase by an average of 0.06 standard deviations assuming other variables are constant

Hypothesis test.

Hypothesis 1: Environmental uncertainty affects the Successful use of Financial application The statistical hypothesis is described as follows:

$H_0: \gamma_{1.1} \geq 0$ There is no influence of Environmental   (2) Uncertainty on
the Successful use of

Financial application

$H_1: \gamma_{1.1} < 0$ There is an influence of   (3)
Environmental
Uncertainty   on
the Successful use of
Financial application

Based on the calculation of the p-value, 0.32 is greater than 0.05, so Ho is rejected, meaning that environmental uncertainty affects the Successful use of financial applications.

Hypothesis 2: Manager's competency affects the Successful use of Financial Application; the Statistical hypothesis is described as follows:

$H_0: \gamma_{1.}$ There is no influence of manager
$_2 \geq 0$ competency on the Successful use
of Financial Applications   (4)

$H_1: \gamma_{1.}$ There is an influence of manager
$_2 < 0$ competency on the Successful use
of Financial Applications   (5)

The statistical hypothesis is described as follows: Based on the calculation of p-value of 0.06, is more than 0.05, then Ho is rejected, meaning that the manager competency has effects on the Successful use of Financial application.

DISCUSSION AND CONCLUSION

Based on the results of the statistical output based on the Structural Equation Model, it is known that the theoretical model proposed in this study has been tested, in the sense that the dimensions used in this study have accurately measured the variables of environmental uncertainty, manager competence and Successful use of financial applications. Research indicators have correctly measured the dimensions used, and the variations in the independent variables studied. The environmental uncertainty variable and manager's competence can be used to predict the variations in the Successful use of financial application variables.

The Effect of Environmental Uncertainty on the Successful Application of Financial Applications

Environmental uncertainty is a condition where individuals cannot predict events that will occur in a place that can be caused by extraordinary events or shocks that hit a place that impacts changes in the business and economic environment where the extraordinary event takes place. The current Covid-19 outbreak in all parts of the world had a significant impact on the business environment around the world. Various business organizations simultaneously optimize the use of financial applications to support sluggish businesses by empowering online transactions and providing financial accounting information and management accounting information that various users need for various decisions.

Increased environmental uncertainty can also prove the use of financial applications to be increasingly ineffective. The existence of low-quality management accounting information causes managers to be unable to rely on information generated from financial applications to predict future conditions. This concept is evidenced through the responses of respondents who show that the application of an up to date service system in order to provide maximum service to customers, competitors, and suppliers is deficient, and the application of an up to date service system to financial institutions related to changes in foreign exchange conditions is still very low, this shows the company has not been able to deal with the complexity of the environment that has occurred so far.

The respondents' answers also show that companies are currently unable to cope with environmental changes as a result of the company's involvement in the following developments in the economic environment, information technology, social and government policies is still very low. Therefore, companies do not have adequate information to predict future conditions. These two things show that Indonesian SOEs have been unable to deal with environmental changes that occur due to not providing up-to-date services to stakeholders, and manager participation is still low in following environmental changes, meaning that managers choose to be in a comfort zone with current conditions.

The study's findings show that there is a significant negative relationship between the successful use of financial applications in

Indonesian state-owned enterprises and environmental uncertainty, meaning that when environmental conditions are increasingly out of control, users in this case managers will limit the use of financial applications so that the provision of quality accounting information will decrease. Additionally, The this study findings are in line with previous researches conducted by (Gul, et al., 1993; Gordon & Narayanan, 1984; Bhimani, 2010; HassabElnaby, et al., 2003; Seaman & Williams, 2006; Agbejule, 2005; Hammad, et al., 2013; Solabomi, 2013; Andesto, 2016) with empirical evidence of environmental conditions that uncertainty is the cause of failure to use financial applications in various companies in various countries. This study also proved the theory stated by (Otley, 1980; Loudon J P and Loudon K C. 2016), that the successful use of financial applications will greatly depend on the company's environmental conditions. Unstable environmental conditions cause managers as users of financial applications to temporarily stop using the application until the time is right for reuse. Conditions like this can occur because the manager as a user can execute an activity in order to produce the appropriate output.

Analysis of the Influence of Manager Competence on the Successful Implementation of Financial Applications

Manager competence is an inherent ability of managers in managing an organization which is characterized by their knowledge, skills, work management, and leadership. The competencies possessed by managers strongly influence the success of using financial applications. Competent managers will be proficient in using, managing, adjusting, controlling, and providing solutions to obstacles and changes that occur in the use of financial applications in the company.

Based on the test result of the structural equation model for the impact of managerial competence on the successful use of financial applications, it shows that the increasing of manager competence also increases the success of using financial applications by SOE managers in Indonesia.

The results of the description variable support this by research respondents, which show that SOEs managers in Indonesia do not yet have adequate manager knowledge in carrying out their work, and manager participation in training activities is still low. On the other hand, managers also do not have a good ability to motivate and understand the conditions of their subordinates. Then, managers have not been able to build good work management. Furthermore, in terms of leadership, managers have also not been able to apply a good leadership pattern, so they have not been able to fully influence their subordinates to be able to carry out activities as expected by managers.

Respondents also stated that the success of using financial applications in SOEs is still in a low condition, meaning that the use of these applications is available in the company but is still a complementary obligation not to support daily operational activities. This condition shows that financial applications in SOEs have not been fully implemented successfully.

This study proves that managers with adequate competence will increase the success of using financial applications in SOEs in Indonesia. Due to adequate competence, managers have good knowledge and expertise in operating financial applications provided by the company, which will ultimately increase the company's success in using financial applications. The findings are in line with previous research. (Solabomi, 2013; Andesto, 2016; Atkinson et al., 1998; Otley, 1980), This shows that adequate managerial competence has succeeded in the successful use of financial applications in various companies globally.

This study indicates that Environmental uncertainty is triggered by environmental complexity and environmental changes that occur in a place. The increasing uncertainty in the environment impacts the success of using financial applications to decrease. Manager competence can be characterized by the attachment of knowledge, skills, work management, and leadership in a manager. This study proved that managers who do not have adequate competence are the cause of the failure of successful implementation of financial applications in companies.

REFERENCES

Agbejule, A. (2005). The relationship between management accounting systems and perceived environmental uncertainty on managerial performance: a research note. Accounting and business research, 35(4), 295-305.

Andesto, R. (2016). The influence of perceived environmental uncertainty and business strategy on management accounting system (survey on the Indonesia advertising companies). European Journal of Accounting, Auditing and Finance Research, 27-36.

Atkinson, A. A., S, M. R., and Young, S. M. (1998). *Management Accounting: Information for Decision Making and Strategy Execution, Sixth Edition*. New Jersey: Pearson Education Inc.

Bhimani, A. (2010). *Contemporary Issues in Management Accounting.* Published by Elsevier Ltd. All rights reserved.

C Laudon, K., and P Laudon, J. (2014). Management information systems.

Coombs, H., Hobbs, D., and Jenkins, E. (2005). Management accounting: principles and applications. Sage.

Dubois, D. D., and Rothwell, W. J. (2000). The competency toolkit. Human Resource Development.

Gordon, L. A., and Miller, D. (1976). A contingency framework for the design of accounting information systems. In Readings in accounting for management control (pp. 569-585). Springer, Boston, MA.

Gordon, L. A., & Narayanan, V. K. (1984). Management accounting systems perceived environmental uncertainty and organization structure: an empirical investigation. Accounting, organizations and society, 9(1), 33-47.

Gul, F. A., Glen, W., and Huang, A. R. (1993). The Effects of Environmental Uncertainty, Computer Usage, and Management Accounting Systems on Small Business. Journal of Small Business Finance, 2(3), 251-271.

Hall, J. A. (2015). Accounting information systems. Cengage Learning.

Hammad, S. A., Jusoh, R., and Ghozali, I. (2013). Decentralization perceived environmental uncertainty, managerial performance and management accounting system information in Egyptian hospitals. International Journal of Accounting and Information Management.

HassabElnaby, H. R., Epps, R. W., and Said, A. A. (2003). The impact of environmental factors on accounting development: an Egyptian longitudinal study. Critical Perspectives on Accounting, 14(3), 273-292.

Kaasbøll, J., Chawani, M. S., Hamre, G. A., and Sandvand, J. (2010). Competencies and learning for management information systems. Journal of Information, Information Technology, and Organizations, 5(1), 85-98.

Loudon J P and Loudon K, C. (2016). *Management Accounting Systems Managing The Digital Firm.* 12th Edition Person Prentice Hall. USA.

McLeod, R., and Schell, G. P. (2007). Management information systems (Vol. 10). Upper Saddle River New Jersey 07458: Pearson/Prentice Hall.

Muslichah, M. (2004). The effect of contingency variables on management accounting system characteristics and managerial performance. The International Journal of Accounting and Business Society, 12(2), 47-70.

O'Brien, J. A. and G. M. Marakas. (2010). *Introduction To Information System.*McGraw Hill:USA.

Otley, D. T. (1980). The contingency theory of management accounting: achievement and prognosis. In Readings in accounting for management control (pp. 83-106). Springer, Boston, MA.

Puspitawati, L. (2021). Strategic Information Moderated by Effectiveness Management Accounting Information Systems: Business Strategy Approach. Jurnal Akuntansi, 25(1), 101-119.

Stair, R. M., & Reynolds, G. W. (2010). Principles of information systems, course technology. Cengage Learning, Walldorf. .

Seaman, A. E., & Williams, J. J. (2006). Management accounting systems change and sub-unit performance: The moderating effects of perceived environmental uncertainty. Journal of Applied Business Research (JABR), 22(1).

Shim, J. K. (2000). Information systems and technology for the noninformation systems executive: an integrated resource management guide for the 21st century. CRC Press.

Schumacker, R. E., & Lomax, R. G. (2004). A beginner's guide to structural equation modeling. psychology press.

Solabomi, A. O. (2013). The Effectiveness of Management Accounting System. *British Journal of Arts and Social Sciences*. 14(2). pp. 228-224

Taleb, B. A., Hafezi, S., Taleb, B. A., and Vaezi, M. (2011). Study Of Influencing Factors In Successful Implementation Of Accounting Information Systems (AIS) On Listed Companies Of Tehran Stock Exchange (TSE).

Whitten, J. A. and L. D. Bentley. 2007. *System Analysis and Design Methods*. Seventh Edition. Mc.Graw-Hill. USA.

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