

VOLUME 26 NUMBER 01, JANUARY 2022

NATIONALLY ACCREDITED SK NO. 30/E/KPT/2018

P-ISSN: 1410-8089

E-ISSN: 2443-2687



JURNAL KEUANGAN & PERBANKAN




| University of Merdeka Malang

VOL 26, NO 1 (2022)

January 2022

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An Empirical Analysis on the Antecedents and Consequences of Quality of Management Accounting System

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Abstract

This study aims to examine the effect of top management support and organizational culture on the management accounting system's quality, the impact of the management accounting system, and the impact of the quality of the management accounting system on user satisfaction and managerial performance. The population in this study were 119 banks consisting of Conventional Commercial Banks, Regional Development Banks, and Islamic Commercial Banks in Indonesia registered with the OJK. One hundred respondents filled in the questionnaire. The minimum sample of this research is 33 samples. The sampling technique used in this research is simple random sampling. The data collection technique used in this study was a questionnaire, with data analysis techniques using Partial Least Squares Equation Modeling (PLS-SEM). This study indicates that top management support and organizational culture positively affect the quality of the management accounting system, and the quality of the management accounting system has a positive effect on user satisfaction and managerial performance.

Keywords : top management support; organizational culture; management accounting system quality; user satisfaction; managerial performance.

JEL Classification : G21; G32

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1. INTRODUCTION

Problems regarding management accounting systems (MAS) occur in many business sectors. Hafas (2019), as the Corporate Secretary of Bank Mandiri, highlighted the errors in the banking system during the daily data backup process. This causes 10% of Bank Mandiri customers to experience balance errors. Moreover, Surya (2018), as a Member of Commission I Indonesian Parliament, stated that according to cellular operator data, there are about 304 million prepaid numbers that have been registered, while according to the Department of Population and Civil Registration, there are around 351 million validated prepaid SIM numbers. Data inaccuracies should not occur if the information system is of high quality.

Information systems can cause many conflicts stemming from the rejection of employee changes in mindset (Baghci, 2010: 145). As stated by Macintosh & Quattrone (2010), Heidmann (2008), and Drury (2004), the management accounting information system is a formal system that assists managers in monitoring organizational performance by preparing and providing information from both the internal and external environment used mainly for control purposes. According to Shien (2015), success in information systems is influenced by top management support. Top management support (TMS) involves top management's involvement to guide with a commitment in terms of time, cost, and resources to support all activities within an organization through information systems in decision making to achieve organizational goals (Anggadini, 2014). According to Nurhayati & Ladewi (2015) and Anggadini (2014), TMS is how top management understands the importance of security functions information systems and the extent to which top management supports the success of management goals. The research findings conducted by Shien (2015) found that TMS significantly influences the quality of accounting information systems. In addition to TMS, organizational culture is also needed for a quality MAS. Systems analysts need to understand the organizational culture before analyzing and designing the right information system (Kendall & Kendall, 2011). According to Schemerhon et al. (2012) and DeNisi et al. (2018), organizational culture is a set of values and principles that can help people understand acceptable and unacceptable actions. Research findings Hammad et al. (2013) also suggested examining organizational culture affecting the MAS.

This study elaborates several suggestions from previous researchers by building a conceptual research model in the form of several organizational concepts to see their influence on the MAS. This research was conducted in another service industry, namely banking, because there was no research with the same conceptual model as this research in the banking sector until this research was conducted.

In banking, managerial performance is essential because good managerial performance comes from managers who can use information from the MAS to achieve company goals (Chung et al., 2012). According to Wong-On-Wing et al. (2010), Kung et al. (2013), and Bangs (2010), managerial performance is the result of the work of individual members of the organization in organizational activities such as planning, investigation, coordination, supervision, staffing, negotiation and representation to see how quickly managers can identify and take advantage of new opportunities and quickly managers can solve the problem. Managerial performance can ultimately impact banking performance (Fatah & Setyadi, 2016).

In addition, user satisfaction in banking is essential because user satisfaction is a measurement of the success of information systems (Swandewi et al., 2017). If the quality of the information system in a bank is good, it can help complete work faster and can generate new information with an easy-to-operate system so that users of accounting information systems are satisfied with the system (Swandewi et al. 2017). According to Schmitt & Minker (2013) and Stacie et al. (2013), user satisfaction is the response given by the user after using an information system that is timely, accurate, and easy to understand to support decision making. User satisfaction is also essential to increase productivity, efficiency, and accuracy in making reports in banking (Dwitrayani et al., 2017).

Based on the research background described above, the formulation of the problem in this study is as follows: (1) How much influence does TMS have on the quality of the management accounting system?; (2) How significant is the influence of organizational

culture on the quality of the management accounting system?; (3) How big is the influence of the quality of the management accounting system on user satisfaction?; (4) Testing empirically the effect of the quality of the management accounting system on managerial performance?

2. HYPOTHESIS DEVELOPMENT

Top Management Support affects the Quality of Management Accounting System

Information systems cause conflict, arising from resistance to changing mindsets among employees. This behavior can be controlled if TMS is provided throughout the organization. This means that management support is widely recognized as essential in implementing information systems (Gottschalk, 2005: 258). TMS can be defined as the willingness of top management to provide support so that the objectives of the information system can be achieved (Carolina & Susanto, 2011). The research results by Carolina & Susanto (2011) show that TMS does not affect the successful implementation of accounting information systems. In comparison, the research conducted by Shien (2015), Thong et al. (1996), Ragu-Nathan, et al. (2004), Chen et al. (2012), Carolina et al. (2019) show the results that TMS affects the MAS. The description above provides strong support for the model studied, namely, TMS affects the MAS.

H1: Top management support positively affects the quality of the management accounting system.

Organizational Culture affects the Quality of Management Accounting System

Organizational culture includes a set of assumptions about what products should be produced, how they should be produced, where, and for whom. To analyze and design the right information system, systems analysts need to understand the organization they work for as a system formed through the interaction of three primary forces, namely the level of management, organizational design, and organizational culture (Kendall & Kendall, 2011: 24). Research conducted by Wahdiat et al. (2018), Heryanto & Augustine (2017), Astuty (2015), Napitupulu (2018), and Syaifullah (2017) shows that organizational culture affects the MAS. The description above supports the model studied: corporate culture affects the MAS.

H2: Organizational culture positively affects the quality of the management accounting system.

The quality of the Management Accounting system affects User Satisfaction

One of the most critical measures of the success of an accounting information system is user satisfaction (Curtis & Hungi, 2005: 272). User satisfaction has been identified as a significant research focus in accounting information systems (Epstein & Lee, 2011: 3). The relationship attributes of the intensity of information systems and user satisfaction are 2 (two) influences. This means that if the user feels satisfied with the implementation of the information system, then indirectly the user will often use the design; on the contrary, if the user always uses the system, it will result in and increase the satisfaction of the information system users (Hertati & Zarkasyi, 2015).

Research conducted by Napitupulu (2015), Anjawati & Apollo (2018), Napitupulu & Dalimunthe (2015), Hertati & Zarkasyi (2015), Carolina, et al. (2019) states the results that the MAS affects user satisfaction. The description above provides strong support for the model studied, namely, the MAS affects user satisfaction.

H3: The quality of the management accounting system has a positive effect on user satisfaction.

The Quality of Management Accounting System Affects Managerial Performance

The MAS can support managers to access and use the necessary information to achieve company goals and improve their managerial performance (Chung et al., 2012).

Accounting systems can efficiently handle competitive factors (Ghasemi et al., 2016). Therefore, relevant MAS information can assist organizational managers in evaluating product attributes, prices, and costs of substitute products in the market (Ghasemi et al., 2016). The MAS in a company supplies information to managers to learn about problems, outcomes, and opportunities, leading to accurate and appropriate decision-making in response (Ghasemi et al., 2016). A well-designed and sophisticated MAS will likely supply managers with relevant information for setting performance goals, performance appraisal standards, and feedback on performance, leading to improved managerial performance.

Research conducted by Tsui (2001) states that the relationship between MAS information and managerial performance of Chinese managers is unfavorable for high participation rates but favorable for Caucasian managers. The findings conducted by Chung et al. (2012) stated that the broad scope of the MAS does not directly affect managerial performance. However, other studies conducted by Agbejule (2014), Hammad et al. (2013), Ghasemi et al. (2016), Rante & Warokka (2016), and Cheng (2012) stated that the MAS affects managerial performance. The description above supports the model studied, namely, the MAS affects organizational performance.

H4: The quality of the management accounting system has a positive effect on managerial performance.

3. RESEARCH METHODOLOGY

Types of Research

This type of research is causal research (causal relationship). Causal research is research conducted to find the root cause (Srivastava & Rego, 2011: 1.20).

Population and Sample

The population of this research is the Bank because there is a system problem in one of the banks in Indonesia, namely Bank Mandiri. Bank Mandiri is one of the banks registered with the OJK, the population in this study is 119 banks consisting of conventional commercial banks, regional development banks, and Islamic commercial banks in Indonesia registered with the OJK. The minimum number of samples for this study was 33 samples. The sampling technique used in this research is simple random sampling. Each Bank that is a sample will be sent 5 (five) questionnaires that must be filled out by employees or up to the supervisor or head of a department at the Bank. Responses from respondents at various levels of position are considered the same because the researcher ensures that respondents understand management accounting information systems.

Data Collection Technique

The data collection technique in this research is using a questionnaire technique. The questionnaire is a set of questions posed to individuals to obtain helpful information about the interest of a given topic (Srivastava & Rego, 2011: 7.3).

Variable Measurement

The quality of the management accounting system was measured using an instrument adapted from Chenhall & Morris (1986). This measurement consists of 10 question items. Top management support was measured using an instrument adapted from Ragu-Nathan et al. (2004). This measurement consists of 7 question items. Then organizational culture was measured using an instrument adapted from Robbins & Coulter (2012). This measurement consists of 12 question items. Meanwhile, the User Satisfaction variable is measured using an agent adapted from Ong et al. (2009). This measurement consists of 8 question items, and the managerial performance variable it is measured using a device adapted from Mahoney et al. (1965). This measurement consists of 9 question items.

Data Analysis Technique

This research's technical analysis uses Partial Least Squares Structural Equation Modeling (PLS-SEM) data. Researchers use structural Equation Modeling (SEM) to include unobservable variables that are indirectly measured by indicator variables.

4. RESEARCH RESULTS AND DISCUSSION

Descriptive Analysis of Management Accounting System Quality Variables

The quality variable of MAS is formed and measured through 4 (four) dimensions, namely scope, timeliness, aggregated, and integration.

Table 1. Descriptive Statistics for Quality Dimensions of Management Accounting Systems

	Statistics		Relative Frequency				
	Average	SD	1	2	3	4	5
Scope	4.42	0.70	0.00	0.00	12.67	33.00	54.33
Timeliness	4.10	0.73	0.00	0.00	22.33	45.00	32.67
Aggregated	4.12	0.72	0.00	0.00	21.00	46.00	33.00
Integration	4.32	0.72	0.00	0.00	15.00	38.00	47.00

Source: Processed data, 2020

Based on Table 1, it can be seen that the average value of the unit of analysis answers on the dimensions of scope, timeliness, aggregated, and integration has an average of above 4.00. It means that the MAS in banking has a good focus. Managers can also respond quickly and provide on-demand. The MAS can also provide information in various forms of aggregation. It can be interpreted that a decision affects communication between units/sections and information between units/parts in the interaction process.

Descriptive Analysis of Top Management Support Variables

TMS variables are formed and measured through 7 (seven) indicators; namely, the involvement of top management with the information system function is robust. Top management is interested in the information system function; top management understands the importance of information systems, TMSs the information system function, top management considers the information system as a strategic resource, top management understands information system opportunities, top management maintains pressure on operating units to work with information systems. The following is a descriptive analysis for 7 (seven) reflective indicators and their interpretations.

Table 2. The result of Average Respondents for Each Question Item in Top Management Support Indicator

No	Question	Average	Standard Deviation
1	How do you feel about top management's involvement with the information systems function?	4.33	0.82
2	Do you think top management is interested in the information system function?	4.22	0.80
3	Do you think top management understands the importance of implementing an information system?	4.17	0.73
4	Do you think that TMSs the information system function?	4.14	0.71
5	Do you think top management considers information systems as one of the strategic resources that must be developed?	4.24	0.81
6	Do you think that top management understands the opportunities for information systems?	4.23	0.74
7	Do you think top management requires operating units to work using information systems?	4.17	0.71

Source: Processed data, 2020

Based on the recapitulation of the distribution of respondents' answers to the research sample in Table 2, it can be seen that the average value of respondents' responses regarding indicators of TMS is more than 4.00. It means TMS for the information system is strong.

Descriptive Analysis of Organizational Culture Variables

Organizational culture variables are formed and measured through seven dimensions.

Table 3. Descriptive Statistics for Dimensions of Organizational Culture

		Statistics		Relative Frequency				
		Average	SD	1	2	3	4	5
Dimensions	Attention to Detail	4.40	0.68	0.00	0.00	11.50	37.50	51.00
	Outcome Orientation	4.28	0.72	0.00	0.00	16.00	40.50	43.50
	People Orientation	4.49	0.67	0.00	0.00	10.00	31.00	59.00
	Team Orientation	4.38	0.68	0.00	0.00	11.50	39.50	49.00
	Aggressiveness	4.23	0.76	0.00	0.00	20.00	37.50	42.50
	Stability	4.51	0.63	0.00	0.00	7.00	35.00	58.00
	Innovation and Risk Taking	4.26	0.73	0.00	0.00	17.00	40.50	42.50

Source: Processed data, 2020

Based on Table 3, it can be seen that the average value of the analysis unit answers on the answer is more than 4.0. It means that seven dimensions for measuring organizational culture variables carry out their work with good results.

Descriptive Analysis of User Satisfaction Variables

The user satisfaction variable is measured through 3 (three) dimensions: information satisfaction, systems satisfaction, and service satisfaction.

Table 4. Descriptive Statistics for User Satisfaction

		Statistics		Relative Frequency				
		Average	SD	1	2	3	4	5
Dimension	Information Satisfaction	4.29	0.70	0.00	0.00	14.00	43.17	42.83
	Systems Satisfaction	4.43	0.64	0.00	0.00	8.00	41.00	51.00
	Service Satisfaction	4.42	0.61	0.00	0.00	6.00	46.00	48.00

Source: Processed data, 2020

Based on Table 4, it can be seen that the average value of the answers of the unit of analysis on the dimensions of information satisfaction, systems satisfaction, and service satisfaction is more than 4.0. It shows that the MAS provides good information, has a good system, and provides banking services.

Descriptive Analysis of Managerial Performance Variables

Managerial performance variables are formed and measured through 8 (eight) dimensions: planning, investigating, coordinating, evaluating, supervising, staffing, negotiating, and representing.

Table 5. Descriptive Statistics for Managerial Performance Dimensions

		Statistics		Relative Frequency				
		Average	SD	1	2	3	4	5
Dimension	Planning	4.33	0.74	0.00	0.00	11.50	37.50	51.00
	Investing	4.25	0.73	0.00	0.00	16.00	40.50	43.50
	Coordinating	4.24	0.67	0.00	0.00	10.00	31.00	59.00
	Evaluating	4.19	0.60	0.00	0.00	11.50	39.50	49.00
	Supervising	4.29	0.66	0.00	0.00	20.00	37.50	42.50
	Staffing	4.22	0.58	0.00	0.00	7.00	35.00	58.00
	Negotiating	4.29	0.57	0.00	0.00	17.00	40.50	42.50
	Representing	4.35	0.73	0.00	0.00	15.00	35.00	50.00

Source: Processed data, 2020

Based on Table 5, it can be seen that the average value of all units of analysis on the planning dimension is 4.33, the investing dimension is 4.25, the coordinating dimension is 4.24, the evaluating dimension is 4.19, the supervising measurement is 4.29, the staffing dimension is 4.22, the negotiating dimension is 4.29, and the dimension of the representation is 4.35. It means that managerial performance in banking carries out the whole process of unit analysis well.

Verification Analysis

This study uses unobserved variables, therefore using structural equation modeling (SEM) analysis to see how much influence the independent variables have on the dependent variable and test the hypotheses proposed in the study.

Measurement Model Evaluation

Two things will be analyzed in this stage: the reflective measurement model and the formative measurement model (Hair et al., 2017). Reflective measurement models in this study are TMS (X1), organizational culture (X2), and managerial performance (Z2). Convergent validity (indicator reliability, average variance extracted).

A validity test can be done to determine the accuracy of the function of the measuring instrument to determine whether it has carried out its function properly and correctly. SmartPLS is software used to measure the level of validity by looking at the loading factor value for each indicator. Furthermore, each variable can be seen from the results of the convergent validity test, by looking the indicators, the variable is said to be valid if it has a correlation value greater than 0.7 (Hari et al., 2017). the next stage of research development, the measurement scale or loading value is 0.5 to 0.6, which is still acceptable (Ghozali and Latan, 2015). Finally, the loading factor test results and convergent validity can be seen in table 6.

Table 6. The Results of Outer Loading Test Convergent Validity)

Latent Variable	Indicator	Loading Factor	Standard	Description
X1 (TMS)	TMS1	0.885	> 0.5	Valid
	TMS2	0.902	> 0.5	Valid
	TMS3	0.837	> 0.5	Valid
	TMS4	0.839	> 0.5	Valid
	TMS5	0.879	> 0.5	Valid
	TMS6	0.825	> 0.5	Valid
	TMS7	0.835	> 0.5	Valid
X2 (Organizational Culture)	OC1	0.753	> 0.5	Valid
	OC2	0.869	> 0.5	Valid
	OC3	0.878	> 0.5	Valid
	OC4	0.803	> 0.5	Valid
	OC5	0.829	> 0.5	Valid
	OC6	0.838	> 0.5	Valid
	OC7	0.798	> 0.5	Valid
	OC8	0.789	> 0.5	Valid
	OC9	0.859	> 0.5	Valid
	OC10	0.832	> 0.5	Valid
	OC11	0.810	> 0.5	Valid
	OC12	0.806	> 0.5	Valid
Z2 (Managerial Performance)	MP1	0.654	> 0.5	Valid
	MP2	0.646	> 0.5	Valid
	MP3	0.637	> 0.5	Valid
	MP4	0.728	> 0.5	Valid

Latent Variable	Indicator	Loading Factor	Standard	Description
	MP5	0.754	> 0.5	Valid
	MP6	0.772	> 0.5	Valid
	MP7	0.790	> 0.5	Valid
	MP8	0.682	> 0.5	Valid
	MP9	0.737	> 0.5	Valid

Source: Data that has been processed using SmartPLS 3, 2020

Based on Table 6, the results of the convergent validity test are stated that all indicators are valid; this is because all indicators have a loading factor greater than 0.5.

Table 7. The Results of Average Variance Extracted Test (*Convergent Validity*)

Variabel Laten	AVE
X1 (TMS)	0.736
X2 (Organizational Culture)	0.677
Z2 (Managerial Performance)	0.509

Source: Data that has been processed using SmartPLS 3, 2020

Average Variance Extract (AVE) value is used to measure convergent validity. A variable is declared valid if the AVE value exceeds 0.5 (Hair et al., 2017). In table 7, all latent variables have AVE values above 0.5, and this means that all Latin variable constructs have good validity.

Internal consistency (Cronbach's alpha, composite reliability)

Cronbach's alpha and composite reliability are two reliability test criteria obtained from the output description of the SmartPLS 3 algorithm to meet the standard of reliability of the measurement structure, and the recommended value is above 0.7 (Hair et al., 2017). Furthermore, the results of Cronbach's alpha and composite reliability can be seen in table 8.

Table 8. The Results of Cronbach's Alpha dan Composite Reliability Test

Latent Variable	Cronbach's Alpha	Composite Reliability	Recommended Value	Description
X1 (TMS)	0.942	0.951	> 0.7	Reliable
X2 (Organizational Culture)	0.956	0.962	> 0.7	Reliable
Z2 (Managerial Performance)	0.878	0.903	> 0.7	Reliable

Source: Data that has been processed using SmartPLS 3, 2020

The table above shows that all reliable variables have good reliability because Cronbach's alpha test results and composite reliability are above 0.7.

Discriminant validity

Discriminant validity is used to see the correlation value. This test uses two methods, namely Fornell-Larcker and cross-loading. Fornell-Larcker aims to assess the correlation between variables. Cross-loading aims to prove whether the indicator in a construct will have a more excellent value in the constructed construct than the value with other construct values. The results of the Fornell-Larcker can be seen in table 9:

Table 9. The Results of Fornell-Larcker (Discriminant Validity) Test

Latent Variable	X1 (TMS)	X2 (OC)	Z2 (MP)
X1 (TMS)	0.858		
X2 (Organizational Culture)	0.325	0.823	
Z2 (Managerial Performance)	0.188	0.459	0.713

Source: Data that has been processed using SmartPLS 3, 2020

And the results of the cross-loading can be seen in table 10:

Table 10. The Results of Cross Loading (Discriminant Validity) Test

Indicator	X1 (TMS)	X2 (OC)	Z2 (MP)
TMS1	0.885	0.328	0.210
TMS2	0.902	0.349	0.186
TMS3	0.837	0.180	0.087
TMS4	0.839	0.263	0.144
TMS5	0.879	0.314	0.211
TMS6	0.825	0.191	0.045
TMS7	0.835	0.231	0.139
OC1	0.368	0.753	0.598
OC2	0.208	0.869	0.785
OC3	0.362	0.878	0.704
OC4	0.296	0.803	0.686
OC5	0.204	0.829	0.696
OC6	0.164	0.838	0.627
OC7	0.200	0.798	0.696
OC8	0.289	0.789	0.617
OC9	0.294	0.859	0.743
OC10	0.187	0.832	0.683
OC11	0.302	0.810	0.586
OC12	0.351	0.806	0.622
MP1	0.190	0.459	0.654
MP2	0.236	0.588	0.646
MP3	0.239	0.558	0.637
MP4	0.065	0.615	0.728
MP5	0.132	0.549	0.754

Indicator	X1 (TMS)	X2 (OC)	Z2 (MP)
MP6	0.175	0.662	0.772
MP7	-0.005	0.598	0.790
MP8	0.036	0.516	0.682
MP9	0.157	0.682	0.737

Source: Data that has been processed using SmartPLS 3, 2020

In table 10, the relationship results between the variables themselves (in yellow and in bold) are shown to be greater than the relationships between the variables themselves and other variables. While in table 4.36, the results of the relationship between each indicator and the variable itself are proven to be greater than the relationship between the indicator itself and the variable. So it can be concluded that the discriminant validity between the formel lacker and the cross landing is fulfilled.

Formative Measurement Model

The reflective measurement model in this study is the quality of the MAS (Y) and user satisfaction (Z2). There are two tests of formative measurement models, namely collinearity between indicators and significance and relevance of outer weight (Hair et al., 2017).

Collinearity between indicators

The VIF value of each indicator measures collinearity between indicators. The VIF value of each indicator must be less than 5 (Hair et al., 2017). The results of the VIF values can be seen in the table below:

Table 11. The Results of Collinearity Test

Latent Variable	Indicator	VIF Value
Y (MAS Quality)	MAS1	2.060
	MAS2	2.152
	MAS3	2.425
	MAS4	2.350
	MAS5	2.322
	MAS6	2.075
	MAS7	1.857
	MAS8	1.857
	MAS9	1.885
	MAS10	1.885
Z1 (User Satisfaction)	US1	2.532
	US2	2.592
	US3	2.905
	US4	2.441
	US5	2.598
	US6	2.294

Latent Variable	Indicator	VIF Value
	US7	1.000
	US8	1.000

Source: Data that has been processed using SmartPLS 3, 2020

Table 11 shows that all variables are independent of multicollinearity; the collinearity test results for all variables have a VIF value below 5.

Significance and relevance of outer weights

The significance and relevance of outer weights are assessed by bootstrap testing by selecting the level of significance. The results of the significance and relevance of outer weights can be seen in the table below:

Table 12. The Results of Bootstrap Test

Latent Variable	Dimensions	P-Value	Significance (P<0,05)
Y (MAS Quality)	MAS_A	0.000	Yes
	MAS_I	0.000	Yes
	MAS_S	0.000	Yes
	MAS_T	0.000	Yes
Z ₁ (User Satisfaction)	KP_INS.F	0.000	Yes
	KP_SER.F	0.000	Yes
	KP_SYS.F	0.000	Yes

Source: Data that has been processed using SmartPLS 3, 2020

Table 12 shows that all independent variables have significant values below 0.05, indicating that all variables are significant.

Structural Model Evaluation

R Square (R²) Analysis

R Square (R²) analysis was performed on each endogenous latent variable which showed how much influence the endogenous latent variable received from each exogenous variable that contributed to it. The greater the value of R² indicates, the more significant the influence received by the endogenous variables (Hair et al., 2017).

Table 13. Analysis of R Square (R²) on Endogenous Variables

Endogenous Variable	R Square (R ²)
Y (MAS Quality)	0.995
Z ₁ (User Satisfaction)	0.999
Z ₂ (Managerial Performance)	1.000

Source: Data that has been processed using SmartPLS 3, 2020

Q Square (Q²) analysis

The value of Q Square is used to see the goodness in the structural model where if Q² > 0 shows the model predictive relevance and if the model Q² < 0 shows the model is not predictive relevance.

Table 14. Analysis of Q Square (Q²)

Endogenous Variable	Q Square (Q ²)
Y (MAS Quality)	0.687
Z ₁ (User Satisfaction)	0.677
Z ₂ (Managerial Performance)	0.4888

Source: Data that has been processed using SmartPLS 3, 2020

In table 14, it can see that all models have predictive relevance.

Hypothesis Test

To test the significance of the path coefficient using bootstrap with a significance level of 5% on SmartPLS 3. Following are the results of the calculations to test the hypothesis.

Table 15. Hypothesis Test

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T-Statistics (IO/STERRI)	p-value	Conclusion
X1 (DMP) -> Y (KSAM)	0.021	0.021	0.010	0.010	2.018	0.046	Significant H1 be accepted
X2 (BO) -> Y (KSAM)	0.054	0.065	0.019	0.019	2.806	0.006	Significant, H2 be accepted
Y (KSAM) ->Z1 (KP)	0.094	0.115	0.035	0.035	2.649	0.009	Significant, H3 be accepted
Y (KSAM) ->Z2 (KM)	0.004	0.003	0.001	0.001	2.498	0.014	Significant, H4 be accepted

Source: Data that has been processed using SmartPLS 3, 2020

In table 15, the analysis results using SmartPLS 3, which are presented, show that H1, H2, H3, and H4 in the study are accepted. In H1, TMS has a positive and significant effect on the quality of the accounting system. For H2, organizational culture also has a positive and considerable influence on the quality of the MAS. The results of H3 also show that the quality of the MAS has a positive and significant effect on user satisfaction. The results of H4 also show that the quality of the MAS has a positive and significant effect on managerial performance.

Discussion of Research Results

Top Management Support with Quality Management Accounting System

The results show that TMS has a positive and significant effect on the quality of the MAS, meaning that the higher the TMS provided in banking, the higher the quality of the MAS used in banking. These findings support research conducted by Shien (2015), Ragu-Nathan, et al. (2004), Chen et al. (2012), and Carolina et al. (2019), which shows that TMS affects the MAS. One form of TMS that can affect the quality of the MAS in banking is that top management is always quick in approving proposals related to the MAS, such as system upgrades, hardware purchases, and others.

Based on the results of descriptive analysis, the highest TMS in banking is in the indicator regarding the involvement of top management with the information system function, with an average value of 4.33. This shows that the involvement of top management in banking with the information system function is vital. This dramatically affects the quality of the MAS in banking so that the quality of the MAS in banking has the

highest average value on the scope dimension of 4.42, meaning that retrieving information originating from within and outside the organization requires focus, the information generated by MAS in banking is related to financial and non-financial, the information generated by MAS in banking relates to possible future events. TMS, which has the second-largest average value based on the results of descriptive analysis of 4.24, is on the indicator that top management considers information systems as a strategic resource, this affects the quality of the MAS on the integration dimension with an average value of 4, 32 which means because top management considers information systems as a strategic resource so that the influence of information between units or sections influences a decision. TMS, which has the lowest average result based on descriptive analysis, is in the top management indicator regarding supporting the information system function with an average value of 4.14. This can be interpreted that top management in banking has supported the information system function. However, there is still 0.86 top management in banking who have not supported the information system function. This affects the results of the descriptive analysis of the quality analysis of the lowest MAS with an average value of 4.10 on the timeliness dimension, which means that 0.90 banking managers have not been able to respond to problems quickly, the provision of request information cannot be given precisely. Timing and frequency of reporting information are not collected systematically.

Organizational Culture with Quality Management Accounting System

The results show that organizational culture has a positive and significant effect on the quality of the MAS, meaning that the better the organizational culture in banking, the higher the quality of the MAS used in banking. This finding supports research conducted by Wahdiat et al. (2018), Heryanto & Augustine (2017), Astuty (2015), Napitupulu (2018), and Syaifullah (2017), showing the results that organizational culture affects the MAS. Organizational culture in banking is very detailed for inputting to the design and re-checking before doing input. If an error occurs, it will affect the quality of the MAS in banking.

Based on the results of descriptive analysis, the highest average value for organizational culture in banking is on the stability dimension, with an average value of 4.51. This can be interpreted that this organizational activity in banking can maintain its organizational status. This culture dramatically affects the quality of the MAS in banking. The quality of the MAS in banking has an average value of 4.42 for the scope dimension, 4.10 for the timeliness dimension, 4.12 for the aggregated measurement, and 4.32 for the integration dimension. The dimension that has the second-highest average value based on the results of descriptive analysis is people orientation, meaning that decisions taken by management can have an impact on people in the organization; this will affect the quality of the MAS used.

Furthermore, the dimension of attention to detail also affects the information generated by the MAS. Based on the results of descriptive analysis, attention to detail has an average value of 4.40. The lowest average value is on the aggressiveness dimension, with an average value of 4.23. This means that 0.77 organizational culture in banking has not yet implemented the initiative to do the work first and compare the results of the work that has been done, resulting in banks where the frequency of reporting information is not collected systematically, resulting in poor quality of the accounting system produced well.

Quality Management Accounting System with User Satisfaction

The results show that the quality of the MAS has a positive and significant effect on user satisfaction, meaning that the better the quality of the MAS used in banking, the higher the user satisfaction. These findings support research conducted by Napitupulu (2015), Anjawati & Apollo (2018), Napitupulu & Dalimunthe (2015), Hertati & Zakasyi (2015), Carolina et al. (2019) states the results that the MAS affects user satisfaction. The quality of a sound accounting system will provide user satisfaction in banking.

Based on the results of descriptive analysis, the highest average value for user satisfaction in banking is in the system satisfaction dimension, with an average value of 4.43. This can be interpreted that the MAS in banking has a good system, it can be seen from the results of the descriptive analysis of the quality of the MAS, which is already good because the scope dimension owns the average value of 4.42, the timeliness dimension owns 4.10, 4.12 belongs to the aggregated dimension, and 4.32 belongs to the integration dimension. The service satisfaction dimension has an average value of 4.42, meaning that the services provided by the MAS in banking are good. The lowest average value is on the information satisfaction dimension, with an average value of 4.29. This means that 0.71 the quality of the MAS in banking has not provided good quality information.

Quality Management Accounting System with Managerial Performance

The results show that the quality of the MAS has a positive and significant effect on managerial performance, meaning that the better the quality of the MAS used in banking, the higher the managerial performance in banking. This finding supports the research results of Agbejule (2014), Hammad et al. (2013), Ghasemi et al. (2016), Rante & Warokka (2016), and Cheng (2012) state the results that the MAS affects managerial performance, the interaction of three primary forces, namely the level of management, organizational design, and organizational culture. The quality of a good MAS will affect the managerial performance of banks in strategic planning for the future and anticipating problems that often occur.

Based on the results of descriptive analysis, the highest average value for managerial performance is in the representing dimension with an average value of 4.35. This can be interpreted that managers in banking advance the organization's interests in general through speeches, consultations, and contacts with individuals or groups outside the organization. This is influenced by the quality of the MAS in banking which is already good. It can be seen from the average value of the scope dimension of 4.42, the timeliness dimension of 4.10, the aggregated dimension of 4.12, and the integration dimension of 4.32 so that managers in banking can advance the general interest well. The quality of a good MAS in banking also impacts managerial performance, namely planning. Based on the results of descriptive analysis, the average value of the planning dimension is 4.33, meaning that managers can determine work schedules, budgeting, arrangements, procedures, set goals or standards, prepare agendas and programs properly because the quality of the MAS in banking is good, the information needed by managers to carry out planning is available, to have a good impact on managerial planning performance. The smallest average value is in the evaluating dimension, with an average value of 4.19. This can be interpreted that there are still 0.81 managers who have not carried out assessments such as employee assessments, financial reports, and others, perhaps because the quality of the MAS used in banking has not provided the information needed to evaluate performance.

5. CONCLUSIONS AND SUGGESTIONS

Conclusion

Based on the results of the analysis that has been carried out, the following conclusions can be drawn: (1) TMS has a positive and significant effect on the quality of the MAS; (2) Organizational culture has a positive and significant effect on the quality of the MAS; (3) The quality of the MAS has a positive and significant effect on user satisfaction; (4) The quality of the MAS has a positive and significant effect on managerial performance.

Suggestion

Based on the research conducted, there are several suggestions given by researchers from the operational side to related parties, including (1) TMS will improve the quality of the MAS by strengthening the involvement of top management with the information system function, socializing the information system function, providing understanding to top management about the importance of information systems as a strategic resource, providing socialization to top management to maintain pressure on the operating unit for working with information systems; (2) Improving the quality of the MAS by implementing an organizational culture that pays attention to detail, outcome orientation, people orientation, team orientation, aggressiveness, stability, innovation, and risk-taking; (3) The quality of a good MAS will have an impact on user satisfaction because the user is a measurement of the success of the information system. With the quality of a good MAS, it can help complete work faster and can produce information with an easy-to-operate system; (4) The quality of a good MAS can contribute to managerial performance because managerial performance is the result of the work of individual members of the organization in organizational activities that can influence decision making and affect banking performance.

Researchers also provide suggestions from the side of Science Development, among others: (1) Researchers encourage other researchers to research with different variables; (2) Future research is expected to be able to research other service companies to gain a better understanding of the concept and application of quality MAS; (3) This research uses a survey method, so further research is expected to add other research with qualitative methods ; (4) Other researchers can explore other factors that affect the quality of management accounting information systems in top management such as leadership, especially transformational leadership. Transformational leadership style can motivate organizational members to prioritize the interests of the organization rather than personal interests; (5) The size of the Bank, and the characteristics of the Bank (general or sharia) should be considered by further researchers. This is due to differences in business management which can affect the quality of management accounting information systems.

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