

## DECENTRALIZATION AND ENVIRONMENTAL UNCERTAINTY AS MODERATING INFLUENCES MANAGEMENT ACCOUNTING SYSTEM ON MANAGERIAL PERFORMANCE

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**ABSTRACT**

*The research aims to obtain empirical facts related to roles decentralization and uncertainty as moderators relationship between management accounting systems (SAM) and performance managerial. The research location is at the BPD sub-branch office Bali. The sample determination method in research is purposive sampling and obtained 74 business section heads and operations are selected to be sampled according to the criteria minimum one year position. Hypothesis testing uses MRA or moderated regression analysis. Research result suggests that management accounting systems (SAM) do not affect managerial performance, decentralization and Environmental uncertainty acts as a homologizer moderator and does not moderate the effect of SAM on managerial performance*

**ABSTRAK**

Penelitian bertujuan memperoleh fakta empiris terkait peran desentralisasi serta ketidakpastian sebagai pemoderas hubungan sistem akuntansi manajemen (SAM) dengan kinerja manajerial. Lokasi penelitian di kantor cabang pembantu BPD Bali. Metode penentuan sampel pada penelitian dengan purposive sampling serta memperoleh 74 orang kepala seksi bisnis dan operasional terpilih untuk dijadikan sampel dengan kriteria jabatan minimal satu tahun. Pengujian hipotesis menggunakan MRA atau moderated regression analysis. Hasil penelitian menunjukkan bahwa sistem akuntansi manajemen (SAM) tidak memengaruhi kinerja manajerial, desentralisasi dan ketidakpastian lingkungan berperan sebagai homologiser moderator dan tidak memoderasi pengaruh SAM terhadap kinerja manajerial.

## 1. INTRODUCTION

Banks generally have an important position in economic activities as a vehicle in collecting and distributing citizen funds efficiently and effectively (Fatah & Setyadi, 2016). This role must be supported by good bank performance. As for factors that can affect bank performance, one of them is the bank's inadequate managerial performance.

Regional Development Bank (BPD) is a bank established by the government in 1962. Regional Development Banks have taken an important role in the regional development framework (Widjaja, 2016). In line with its development, it turned out that several cases occurred in banking companies. In 2013 there was a fictitious credit case of Rp 200 billion that occurred at BPD Bali. This case is caused by irregularities in the disbursement of credit funds in addition, the collateral submitted is not the same as the credit score. The guarantee is in the form of Hotel H. Sovereign Bali where the hotel is a rental land (JawaPos, 2013). In 2020 there was a deposit money laundering case committed by a former branch head at Bank Mega Gatsu Subroto Tengah branch, Denpasar, Bali (Kontan, 2021). The cases that occur are thought to be caused by several factors such as low managerial performance in the company. Several factors can affect managerial performance, including team, leadership, and situational factors (Drazin & de Ven, 1985). Team factors are related to information system facilities in the organization, namely the management accounting system (SAM).

SAM includes information on controlling, planning and evaluation of managerial activities (Lempas et al., 2014). The leadership factor relates to the delegation of authority or authority from management to managers. Delegation of authority in this research is manifested in the form of The decentralization system is how far top management gives authority to management with lower levels in decision making. Furthermore, situational factors are related to the situation or circumstances faced by the organization, namely in the form of environmental uncertainty (Azhari et al., 2020).

The Management Accounting System (SAM) is an adequate information provider system that can be used in determining policies related to organizational goals (Ngo, 2020). SAM is one of the factors that has the possibility of influencing managerial performance in organizations. The information provided by SAM is designed to assist organizations with planning, directing, managing and making policies through managers. This information will have an impact on managers in decision making

(Fiktoriya & Solovida, 2021). The quality of decisions taken by managers can reflect the managerial performance of the organization. Several previous studies have stated that SAM significantly affects managerial performance (Amran & Muslimah, 2020; Desmiyawati, 2010; Dwinarian et al., 2017; Febrianti & Fitri, 2019; Kesumawati et al., 2019; Melasari & Handayani, 2018; Silitonga, 2019). Several studies state that SAM has no significant effect on managerial performance (Efendi & Kusuma, 2021; Melasari, 2018). The inconsistency of research results is suspected because there are moderation variables, namely decentralization and uncertainty of the environment and research location different.

Decentralization and environmental uncertainty are moderating variables in this study because they are in line with the premise of contingency theory which explains that in general no management accounting system (SAM) can be implemented precisely in all organizations in every situation but depends on other things or factors that exist in the organization. These factors are leadership factors related to delegation of authority, in this case through a decentralized system approach. While situational factors are related to situations of environmental uncertainty within the scope of the organization (Fisher, 1995).

Decentralization is a form of delegation of authority regarding policymaking to managers at lower levels. Decentralization can increase organizational effectiveness and productivity (Darvishmotevali, 2019). When conditions are decentralized, managers have a greater function regarding the implementation of policies taken. Decentralization makes managers need quality and relevant information. Quality information can improve the quality of decisions to achieve maximum performance. The need for information generated by SAM varies according to the level of decentralization in the organization. Thus, there needs to be harmony between the decentralized system and SAM in order to provide improvements in managerial performance. This alignment occurs if the level of decentralization applied by the organization is higher, the need for information generated by SAM is also higher. This suitability will have a good impact on managerial performance (Taqiroh et al., 2020).

Environmental uncertainty is defined when a person has a sense of inability to predict things accurately (Singh, 2020). Conditions of high uncertainty cause managers to require SAMs that provide information. The level of environmental uncertainty can

be reduced by the reliability of the information that SAM generates. A low or relatively stable level of environmental uncertainty will lower the risk of manager failure in decision making. The contingency approach in this study was used to see whether the SAM implemented by the organization can always have the same impact or not in every situation or condition. (Ikhtiyarini & Machmuddah, 2019). A reliable SAM is able to meet different information needs according to the functions and authorities of each manager. With reliable SAM, managers are able to improve their performance. Research conducted by (Amran & Muslimah, 2020; Dwinarian et al., 2017; Kesumawati et al., 2019) stated that SAM significantly affects managerial performance. When the information of each SAM characteristic is high, it can increase the value of decisions made by managers which will subsequently produce a good impact on their performance as managers. Based on the description above, here is the first hypothesis in this study.

H1: Management accounting system affects managerial performance. Decentralization as a form of delegation of authority to management at lower levels is necessary because of increasingly complex tasks and responsibilities and administrative conditions. The existence of a decentralized system can reduce the burden of higher management (Cahyaningrum & Suprapti, 2016).

The results of Suryani's research (2019) stated that decentralization is able to moderate the influence of SAM characteristics on managerial performance. The better the decentralization carried out can strengthen SAM so that it produces a good impact on managerial performance so that the second hypothesis in this study is as follows.

H2: Decentralization moderates the influence of management accounting systems on managerial performance.

The variable of environmental uncertainty is a broad aspect and is likely to have a correlation with several factors present in contingency theory. Environmental uncertainty is known as one of the important aspects because some simulations can complicate the planning and management process in organizations. Planning can be hampered if the operating situation is uncertain due to the inability to predict future events (Sari, 2014). The results of research conducted by Suryani (2019) stated that significantly environmental uncertainty can moderate the relationship between SAM characteristics and managerial performance. Organizations may need optimal

information when environmental uncertainty levels are high to prevent environmental complexity. Information from SAM produces reports that can reduce the level of uncertainty and affect the quality of policies so as to improve managerial performance so that the third hypothesis in this study is as follows.

H3: Uncertainty moderates the effect of management accounting systems on managerial performance.

Research methods include the design of research methods used to solve problems. For qualitative research, this section includes: types of research, objects, data, and data analysis processes. For survey research, this section contains: types of research, population and sampling techniques, types and sources of data, research instruments, and data analysis techniques.

## **2. RESEARCH METHODS**

This research uses a quantitative approach and is carried out in 37 sub-branch offices of Bank Pembangunan Daerah (BPD) Bali. The object of this study is the managerial performance of business and operational partners. Managerial performance (Y) was the dependent variable in this study. The management accounting system (X1) is an independent variable in this study. Furthermore, decentralization (X2) and environmental uncertainty (X3) in this study as moderation variables. Indicators of measurement of managerial performance variables (Y) include design, observation, organization, evaluation, supervision, staff assessment, discussion and representation (Hall, 2008; Irwandi et al., 2020; Rötzel et al., 2019). Indicators for measuring management accounting system variables (X1) include scope, timeliness, aggregation and integration (Efendi & Kusuma, 2021; Gul & Chia, 1994). There are four indicators used to measure decentralization, namely authority regarding the development of new products or services, authority in making financial policies, authority regarding employee placement and authority regarding budget allocation (Gordon & Narayanan, 1984; Prihatningtyas et al., 2018). Furthermore, indicators used to measure the uncertainty of the environment indicators include the uncertainty of the situation or circumstances, the uncertainty of the effect and the uncertainty of the response (Duncan, 1972; Irwandi et al., 2020; Milliken, 1987; Rötzel et al., 2019).

The data in this study is quantitative and sourced from responses to questionnaires or questionnaires distributed to respondents. The respondents in this study were business section heads and operational section heads at BPD Bali sub-branch offices because this study focused on first line management. The instrument in this study is in the form of questionnaires or questionnaires. The scale used to measure the questionnaire is a 6-point Likert scale, then this research instrument is tested with validity and reliability tests.

The population in this study is all business section heads and operational section heads in sub-branch offices of Regional Development Banks (BPD) in the Bali region totaling 74 people. The sample in this study is the head of business section and operational section head at the sub-branch office of the Regional Development Bank (BPD) in the Bali region who have held positions for at least 1 year. The number of samples that met the criteria was 74 people. The sampling method in this study is purposive sampling. Techniques in data analysis in this study include descriptive statistical tests and moderated regression analysis (MRA) tests. The following MRA equation was used in this study.

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_1X_2 + \beta_5X_1X_3 + e \dots\dots\dots(1)$$

Keterangan:

- Y. = Managerial Performance
- $\alpha$  = Constant
- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  = Koefisien regresi
- X1 = SAM
- X2 = Decentralization
- X3 = Environmental Uncertainty
- X1X2 = Interaction between SAM and Decentralization
- X1X3 = Interaction between SAM and Environmental Uncertainty
- e = Error

### 3. RESULTS AND DISCUSSION

Validity and reliability tests are used to test research instruments. The respondents in this research instrument test were 35 students Udayana University class of 2018. The results of validity testing are shown in Table 1.

The results of validity testing on Tabel\_1 showed that there were 24 items The instrument has a Pearson correlation value  $> R$  table, so that 24 items of the instrument It is declared valid. Furthermore, there are 3 items of instruments that have values The value of Pearson Correlation  $< R$  table, then it is declared invalid and must be dropped from list of questionnaires.

Table 1. Validity Test Results

No	Variabel	Kode Instrumen	Nilai <i>Pearson Correlation</i>	N = 35, <i>r</i> Tabel (5%)	Keterangan
1	Kinerja Manajerial (Y)	Y_1	0,738	0,334	Valid
		Y_2	0,650	0,334	Valid
		Y_3	0,593	0,334	Valid
		Y_4	0,779	0,334	Valid
		Y_5	0,719	0,334	Valid
		Y_6	0,715	0,334	Valid
		Y_7	0,449	0,334	Valid
		Y_8	0,779	0,334	Valid
2	Sistem Akuntansi Manajemen (X <sub>1</sub> )	X1_1	0,849	0,334	Valid
		X1_2	0,160	0,334	Tidak Valid
		X1_3	0,772	0,334	Valid
		X1_4	0,839	0,334	Valid
		X1_5	0,809	0,334	Valid
		X1_6	0,345	0,334	Valid
		X1_7	0,676	0,334	Valid
		X1_8	0,624	0,334	Valid
3	Desentralisasi (X <sub>2</sub> )	X2_1	0,275	0,334	Tidak Valid
		X2_2	0,735	0,334	Valid
		X2_3	0,466	0,334	Valid
		X2_4	0,763	0,334	Valid
		X2_5	0,649	0,334	Valid
4	Ketidakpastian Lingkungan (X <sub>3</sub> )	X3_1	0,268	0,334	Tidak Valid
		X3_2	0,715	0,334	Valid
		X3_3	0,561	0,334	Valid
		X3_4	0,769	0,334	Valid
		X3_5	0,741	0,334	Valid
		X3_6	0,799	0,334	Valid

An instrument is said to be a reliabel when cronbach's alpha value  $> 0.60$ . The reliability test results are in the following Tabel\_2.

Table 2. Reliability Test Results

No	Variabel	<i>Cronbach's Alpha</i>	Standar Koefisien	Ket.
1	Kinerja Manajerial	0,822	0,60	Reliabel
2	SAM	0,847	0,60	Reliabel
3	Desentralisasi	0,706	0,60	Reliabel
4	Ketidakpastian Lingkungan	0,798	0,60	Reliabel

The uji\_reliabilitas results in Table 2 prove cronbach's alpha value > value the standard of its coefficient. Thus, the research instruments of the four The variable is declared reliable.

Descriptive statistical analysis in this study aims to provide information on the characteristics of research variables, including: nilai\_minimum, maximum, mean, and standard deviation, while N is the sum Respondents. Descriptive statistical results are presented at the following tabel 3.

Table 3. Results of Descriptive Statistical Analysis

Variabel	N	<i>Min.</i>	<i>Max.</i>	<i>Mean</i>	<i>Std. Deviation</i>
Kinerja Manajerial	74	28,00	45,00	37,51	4,27
Sistem Akuntansi Manajemen (SAM)	74	22,00	42,00	32,53	4,08
Desentralisasi	74	8,00	21,00	12,12	2,51
Ketidakpastian Lingkungan	74	13,00	30,00	24,91	3,52

Table 3 proves the number of questionnaires processed as many as 74 questionnaires on each variable. All statements use a 6-point likert scale. Variable Managerial performance with a total of 8 statements, has a minimum value of 28.00. The maximum value on the managerial performance variable is 45.00. Average rating-The average managerial performance variable was 37.51 with the level of data distribution or a standard deviation of 4.27. SAM variables with a total of 7 statements, with a minimum score of 22.00. Maximum value on system variable Management accounting amounted to 42.00 where all respondents answered very agree. The average value on the managerial performance variable was 32.53 with The data distribution rate or standard deviation is 4.08. Decentralized variables with a total of 4 statements, with a minimum score of 8.00. Maximum value on a decentralized variable of 21.00. Average value on performance variables managerial of 12.12 with a data distribution rate or standard



deviation of 2.51. Environmental uncertainty variable with a total of 5 statements and values Minimum is 13.00. The maximum value on a decentralized variable is 30.00 where all respondents answered very affirmatively. Average rating on Managerial performance variable of 24.91 with data distribution level or standard deviation of 3.52. The hypothesis in this study was tested with MRA. MRA testing can explain the effect of SAM variables on managerial performance variables and The role of decentralization and environmental uncertainty as moderation variables. MRA test results can be shown in table 4 below.

Table 4. MRA Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	53,506	31,559		1,695	0,095
X1	-0,701	0,964	-0,671	-0,727	0,470
X2	-0,288	1,593	-0,170	-0,181	0,857
X3	-1,063	1,033	-0,877	-1,029	0,307
X1X2	0,007	0,047	0,180	0,155	0,878
X1X3	0,041	0,032	1,876	1,312	0,194

Regression equation obtained from the results of variable influence testing SAM (X1), decentralization (X2) and environmental uncertainty (X3) and interaction between SAM variables with decentralization (X1X2) and interactions between variables SAM with environmental uncertainty (X X) to managerial performance.

$Y = 53,506 - 0,701X1 - 0,288X2 - 1,063X3 + 0,007X1X2 + 0,041X1X3 + E$  Tabel\_4 shows a significant SAM value of  $0.470 > 0.05$  which means SAM does not affect managerial performance, therefore, H1 in this study rejected. The significant value of the decentralized variable is  $0.857 > 0.05$  which means Decentralization does not affect managerial performance. Next, significant value The environmental uncertainty variable of  $0.307 < 0.05$  means uncertainty

The environment does not affect managerial performance. According to Utama (2016) regarding the type of moderation role, if the test results states that  $\beta_2$  is insignificant and  $\beta_4$  is insignificant then variable Decentralization is a potential moderation (homologiser moderator). If the results The test states that  $\beta_3$  is insignificant and  $\beta_5$  is not significant then variable Environmental uncertainty is a potential moderation (homologiser moderator).

Based on this, the variable interaction between SAM and decentralization Having a  $\beta_4$  value of 0.007 and a significant value of 0.898 > 0.05 means interaction between SAM and decentralization have an influence on managerial performance.

Thus, H2 in this study was rejected. Interaction variables between SAMs with environmental uncertainty has a  $\beta_5$  value of 0.041 and a value of  $\beta_5$  significant 0.194 > 0.05 means the interaction between SAM and environmental uncertainty does not affect managerial performance. Thus, H3 in The study was rejected.

As for this study, it adds the results of differentiated hypothesis tests based on gender and length of service that allegedly influenced the outcome Previous MRA. MRA results based on sex differences are shown in tabel\_5 dan\_6.

Table 5. MRA results by gender (male)

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	87,310	70,475		1,239	0,224
X1	-1,264	2,111	-1,219	-0,598	0,554
X2	-3,666	3,590	-1,364	-1,021	0,315
X3	-0,916	1,808	-0,613	-0,506	0,616
X1X2	0,091	0,107	1,532	0,847	0,403
X1X3	0,028	0,054	1,158	0,521	0,606

Table 6. MRA Results by Gender (Female)

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	57,928	29,701		1,950	0,061
X1	-0,900	0,928	-0,826	-0,969	0,340
X2	2,100	1,534	1,,757	1,369	0,181
X3	-2,548	1,162	-2,643	-2,193	0,036
X1X2	-0,061	0,045	-2,072	-1,350	0,187
X1X3	0,086	0,036	4,378	2,394	0,023

Tables 5 and 6 show sex differences can affects MRA test results. In the MRA test results for men can be seen in Table 5, the significant value of the SAM variable is 0.554 > 0.05 meaning the SAM variable has no effect on managerial performance. Decentralized variables have values significant of 0.315 > 0.05 which can be interpreted as a decentralized variable not affect managerial performance. Furthermore, environmental uncertainty variables has a significant value of 0.616 > 0.05 meaning that the variable is uncertainty The environment has no effect on managerial performance. Interaction

between SAM and decentralized variables with significant values of  $0.403 > 0.05$  meaning that the interaction between SAM variables and decentralization does not affect managerial performance. Then, nilai\_signifikan for interactions between variables SAM with environmental uncertainty of  $0.606 > 0.05$  means interaction between SAM variables and environmental uncertainty does not affect managerial performance.

MRA test results for women in Table 6, significant value of SAM variable  $0.304 > 0.05$  means that SAM variables do not affect managerial performance. The significant value of the decentralized variable is  $0.181 > 0.05$  which means the variable Decentralization does not affect managerial performance. Further significant value

The variable environmental uncertainty is  $0.036 < 0.05$  which means the variable Environmental uncertainty affects managerial performance. Significant value for the interaction between SAM variables and decentralization of  $0.187 > 0.05$

which means that the interaction between SAM variables and decentralization does not give influence on managerial performance. Then, significant value for the interaction between SAM variables with environmental uncertainty of  $0.023 < 0.05$  which means the interaction between SAM variables with environmental uncertainty gives influence on managerial performance.

Based on the description, there are different results on the variables environmental uncertainty (X3) and interaction variables between SAM and environmental uncertainty (X1X3) between men and women. By Therefore, it can be said that the level of environmental uncertainty that Faced by women kasi affects their managerial performance.

Higher environmental uncertainty will make performance kasi Women are getting inferior. A time of environmental uncertainty and SAM Interacting, the managerial performance of women is getting higher. Increasingly good SAM design when environmental uncertainty is high will affect Managerial performance of female kasi. Next, the MRA results are based on The differences in length of office are shown in Tables 7 and 8 below.

Table 7. MRA Results Based on Length of Office ( $\leq 10$  years)

<i>Model</i>	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>		
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>	<i>t</i>	<i>Sig.</i>
(Constant)	87,310	70,475		1,239	0,224
X1	-1,264	2,111	-1,219	-0,598	0,554
X2	-3,666	3,590	-1,364	-1,021	0,315
X3	-0,916	1,808	-0,613	-0,506	0,616
X1X2	0,091	0,107	1,532	0,847	0,403
X1X3	0,028	0,054	1,158	0,521	0,606

Table 8. MRA Results Based on Length of Service ( $> 10$  years)

<i>Model</i>	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>		
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>	<i>t</i>	<i>Sig.</i>
(Constant)	57,928	29,701		1,950	0,061
X1	-0,900	0,928	-0,826	-0,969	0,340
X2	2,100	1,534	1,,757	1,369	0,181
X3	-2,548	1,162	-2,643	-2,193	0,036
X1X2	-0,061	0,045	-2,072	-1,350	0,187
X1X3	0,086	0,036	4,378	2,394	0,023

Table 7 and Table 8 show that the difference in length of office is not affects MRA test results. MRA results with a tenure of  $\leq 10$  years, value significant SAM variable of 0.754  $> 0.05$  which means the SAM variable is not influence managerial performance. Significant value of decentralized variables of 0.841  $> 0.05$  which means that the SAM decentralized variable does not give influence on managerial performance. Next significant value of the variable Environmental uncertainty of 0.610  $> 0.05$  which means variables Environmental uncertainty does not affect managerial performance. Valuesignificant for the interaction between SAM variables and decentralization of 0.859  $> 0.05$  means that the interaction between SAM variables and decentralization does not significant effect. Then, significant values for interactions between variables SAM with environmental uncertainty of 0.488  $> 0.05$  means interaction between SAM variables and environmental uncertainty has no influence Share managerial performance.

In MRA results based on length of service  $> 10$  years, significant value SAM variables of 0.503  $> 0.05$  mean that SAM variables have no effect Share managerial performance. The significant value of the decentralized variable is 0.545  $> 0.05$  Which means that

decentralized variables do not affect managerial kinerha. Furthermore, the significant value of the environmental uncertainty variable amounted to  $0.523 > 0.05$  which means that the environmental uncertainty variable has no effect Share managerial performance. Significant value of interaction between SAM variables with Decentralization of  $0.612 > 0.05$  means the interaction between SAM variables and Decentralization has no significant effect. Then, significant value for interaction between SAM variables and environmental uncertainty of  $0.429 > 0.05$  means that the interaction between SAM variables and environmental uncertainty does not influence managerial performance.

#### **4. CONCLUSION**

Judging from the discussion above, it is stated that SAM has no influence Share managerial performance. This means the SAM implemented by the company does not have an influence on the managerial performance of the kasi. Decentralization acting as a moderator homologiser and not moderating SAM influence to managerial performance. It shows the level of decentralization that applied by the company does not affect the relationship between SAM and performance Managerial. Environmental uncertainty acts as a homologiser moderator and does not moderate the influence of SAM on managerial performance. That thing. shows the degree of environmental uncertainty the company does not give influence on the relationship between SAM and managerial performance. However is able to make good use of information from SAM to overcoming the uncertainty faced so that it affects their performance as kasi. The limitation of this study is that it is only located in branch offices BPD Bali helper and focuses on first line management management. Therefore, in the next research is expected to do research on other scopes, for example by using types of other BPD offices, such as main branch offices, cash offices and offices navel. In addition, to see the influence of the management accounting system on a regular basis. intact, researchers can then choose different levels of management, such as middle level management and top management in order to be able to compare managerial performance at different levels.

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