

## The Influence of Management Accounting Systems, Decentralization, Budgets and Environmental Uncertainty on Manager Performance In the Pharmaceutical Industry in Surabaya

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**Abstract.** *The research conducted by the author is a replication study of research conducted by Purba in 1998 with the same title, namely the influence of management accounting systems, decentralization, budgets and environmental uncertainty on manager performance, but with different objects. The research carried out by Purba took as an object an insurance company in the Surabaya municipal area, while the research that the author put forward in this thesis took as an object the pharmaceutical industry in Surabaya. The author wants to know how much difference there is when using different research objects. Several managers are needed by a relatively large organization or company to carry out some of the tasks of top managers. This is necessary because top managers cannot possibly carry out management and supervision of all company activities as a whole. Therefore, there will be a delegation of authority from top managers to middle level managers or lower level managers.*

**Keywords:** *Management Accounting System, Decentralization, Budget, Manager Performance*

### INTRODUCTION

Management's ability to see opportunities in the future will support the company's success in achieving its goals. Apart from the participation of managing managers, adequate information is needed. This is in accordance with studies on participatory budgeting and managerial performance related to the influence of information and environmental changes, showing that participation influences manager performance indirectly through work-related information (Kren, 1992, 511-512).

Regarding decentralization, it is intended as a tool for predicting specific changes in technology and organizational variables. In a centralized organization, most of the authority is at the top level of the organization. Organizational centralization is based on two interests, namely division of tasks and coordination of labor. Centralized decision makers often do not have all the important information to make good decisions. Therefore, Lawrence and Lorsch (1980, 137 in Purba 1998, 3) found that there is no single type of organizational structure that is appropriate for all conditions. The appropriate form of organizational structure varies and depends on the environment.

In decentralized companies lower level management has significant authority. Decentralization gives managers greater responsibility for control planning activities as well as greater access to broader information for the company. The importance of decentralization as an element in the context of management accounting system design according to Watson (1965, 65), namely: that the management accounting system is a supporting mechanism that must be consistent with formal structural arrangements. Here managers are decision makers,

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sources of information and users of information. Decentralization has many advantages if it is accompanied by sufficient development as appropriate and monitoring because the delegation of authority must be appropriate and support management control which leads to the strategic planning that has been determined.

## **THEORETICAL FRAMEWORK**

### **Management Accounting System.**

Management accounting systems provide information in the form of various aggregate arrangements from existing basic data or from data that has not been processed into a single unit according to a certain time period, for example a responsibility center or a certain functional area.

### **Decentralization.**

Decentralization is intended as a tool for predicting specific changes in technology and organizational variables. In a centralized organization, most of the authority is at the top level of the organization. Organizational centralization is based on two interests, namely division of tasks and coordination of labor. Centralized decision makers often do not have all the important information to make good decisions. Therefore, Lawrence and Lorsch (1980,137 in Purba 1998,3) found that there is no single type of organizational structure that is appropriate for all conditions. The appropriate form of organizational structure varies and depends on the environment.

### **Budget.**

One tool that is useful for providing information regarding the implementation of managerial functions so that appropriate activity decisions are made is budget preparation. A budget is a plan expressed quantitatively in units of money and covers a period of one year. The budget is prepared by the company based on the company's objectives which function as a planning and control tool.

### **Environmental Uncertainty.**

Environmental uncertainty is said to be the state of an organization's external environment which is influenced by the degree of complexity and change that occurs. Rosenberg (1983,116). Environmental uncertainty represents a state of flux and relative instability and originates from environmental forces surrounding the organization, such as unpredictable competitor tactics, world tensions and changes in resources that cannot be fully identified. The greater the uncertainty, the more unpredictable events Ramsey (1989,645) has. Furthermore, there are those who state that the main source of uncertainty in an organization

arises from its environment. The main elements of uncertainty include competitors, consumers, suppliers, regulatory groups and the technology needed by an industry, Thompson (1993, 161).

### **Manager Performance.**

A manager is expected to be able to control, motivate and evaluate all activities carried out by subordinates in order to achieve the goals of the manager and the company as a whole. Manager performance is the level at which a manager can achieve work coordination through the efforts made by his subordinates. and is the result of work coordination from the appropriate use of relevant techniques and methods of organizing and controlling, Rosenberg (1983, 310).

## **RESEARCH METHODS**

### **Types of research.**

This research is a type of research with a descriptive method (descriptive research) which is research into problems in the form of current facts from a population. The purpose of descriptive research is to test hypotheses or answer questions related to the current status of the subjects studied. This type of research is generally concerned with opinions (individual, group or organizational), events or procedures.

The data collection method that is often used in this research is the survey method, namely the technique of collecting and analyzing data in the form of opinions from the subjects studied (respondents) through questions and answers. There are two ways in the survey method, namely:

1. Questionnaire (written questions).
2. Interview (oral questions).

Questionnaires can be directly communicated to respondents and collected from respondents (individually) or can be communicated and collected via post. Interviews can be carried out face-to-face or by telephone.

## **RESEARCH RESULTS AND DISCUSSION**

### **Data Analysis and Interpretation.**

#### **Descriptive Statistical Analysis.**

In this section, descriptive statistical analysis will be presented to support quantitative analysis and provide an overview of research variables such as management accounting systems, decentralization, budgets, environmental uncertainty and manager performance. For

this reason, a frequency distribution will be created for all the variables studied. In this descriptive statistical analysis the following table will be presented:

**Table 1**  
**Descriptive statistics**

VARIABLES	MINIMUM VALUE	MAXIMUM VALUE	MEANS	DEVIATION STANDARDS
X1 = Management accounting system.	12	48	28.44	6.73
X2 = Decentralization.	5	25	22.05	3.35
X3 = Budget.	19	25	22.92	1.87
X4 = Environmental Uncertainty.	12	48	33.08	8.39
Y = Manager Performance	28	45	36.72	3.49

Source: Processed Primary Data.

### **Management Accounting System.**

The results of the questionnaire assessment that had been distributed to respondents regarding the management accounting system obtained the highest score of 48 and the lowest score of 12. The maximum standard measurement was 60 (or  $5 \times 12$ , namely the highest item multiplied by the number of questions) and the minimum standard score was 12 (or  $1 \times 12$ , i.e. the lowest item multiplied by the number of questions). The average value of the variable X1 (management accounting system) is 28.44 with a standard deviation of 6.73. From the mean it can be seen that respondents consider the management accounting system to be useful for companies, especially for the performance of managers in the pharmaceutical industry in Surabaya. Because with complete management accounting system information, managers can know the internal and external developments of their company.

### **Decentralization.**

The results of the questionnaire research distributed to respondents regarding the decentralization variable (X2) obtained the highest value of 25 and the lowest value of 5. The maximum standard measurement is 25 (or  $5 \times 5$ , namely the highest value multiplied by the number of questions) and the minimum standard value is 5 (or  $1 \times 5$ , namely the lowest item multiplied by the number of questions). The average value of the decentralization variable is 22.05 with a standard deviation of 3.35. By looking at the average value of the decentralization variable, it can be seen that the delegation of authority or authority according to the respondent

is the respondent's responsibility to carry it out (the respondent has great authority in making decisions in the organization he leads).

### **Budget.**

The results of the assessment of the questionnaire distributed to respondents regarding the budget variable (X3) obtained the highest value of 25 and the lowest value of 19. The maximum standard measurement is 30 (or  $5 \times 6$ , namely the highest item multiplied by the number of questions) and the minimum standard value is 6 (or  $1 \times 6$ , namely the lowest item multiplied by the number of questions). The average value of the budget variable is 22.92 with a standard deviation of 1.87. By looking at the average value of the budget variable, respondents' perceptions of the budget variable can be seen. Respondents think that the budget is not determined from above because it is in accordance with decentralization in the organizational unit they lead.

### **Environmental uncertainty.**

The results of the questionnaire research that was distributed to respondents regarding environmental uncertainty variables, which are moderating variables, obtained the highest value of 48 and the lowest value of 12. The maximum standard measurement is 60 (or  $5 \times 12$ , namely the highest item multiplied by the number of questions), and the standard value the lowest is 12 (ie  $1 \times 12$ , namely the lowest item multiplied by the number of questions).

The average value of the environmental uncertainty variable is 33.08 with a standard deviation of 8.39. From the average value of the environmental uncertainty variable, it is known that respondents agree to see the condition of environmental uncertainty in taking actions or making decisions in the company.

### **Manager performance.**

The results of the questionnaire assessment distributed to respondents regarding the manager performance variable which is the dependent variable, obtained the highest value of 45 and the lowest value of 28. The maximum standard value measurement is 81 (or  $9 \times 9$ , namely the highest item multiplied by the number of questions), and The minimum standard score is 9 (or  $1 \times 9$ , namely the lowest item multiplied by the number of questions).

The average value of the manager performance variable is 36.72 with a standard deviation of 3.49. By looking at the average value of the manager performance variable, it can be seen that the manager's performance is average performance. This gives researchers an idea that the performance of pharmaceutical companies in Surabaya is average performance.

**Validity and Reliability Test.**

Next, we will explain the validity test, namely the extent to which a measuring instrument measures what it wants to measure and the reliability test, namely the extent to which the measuring instrument can be trusted and relied upon, on data obtained from the results of questionnaires that have been distributed.

The next table is a recapitulation table of validity and reliability tests for management accounting system variables

**Table 2**  
**Recapitulation of Validity and Reliability Test Results**  
**Management Accounting System Variables**

VARIABLES	ITEMS	VALIDITY		RELIABILITY
		R	P	
XL	X1.1	0.528	0.002	0.789
	X1.2	0.524	0.003	
	X1.3	0.837	0,000	
	X1.4	0.446	0.009	
	X1.5	0.481	0.005	
	X1.6	0.481	0.005	
	X1.7	0.631	0,000	
	X1.8	0.692	0,000	
	X1.9	0.392	0.026	
	X1.10	0.492	0.007	
	X1.11	0.568	0.001	
	X1.12	0.498	0.008	

Source: Processed Primary Data.

From table 2 it can be seen that each answer to the questionnaire question item from variable X1, namely the management accounting system, has sufficient validity, with a reliability level of 0.789.

Next is a summary table of the validity and reliability tests of the decentralized variables.

**Table 3**  
**Recapitulation of Validity and Reliability Test Results**  
**Decentralization Variable**

VARIABLES	ITEMS	VALIDITY		RELIABILITY
		R	P	
X2	X2.1	0.555	0.006	0.657
	X2.2	0.652	0.001	
	X2.3	0.665	0.005	
	X2.4	0.687	0.002	
	X2.5	0.699	0,000	

Source: Processed Primary Data.

From table 3 it can be seen that each answer to the questionnaire question item from variable X2, namely decentralization, has sufficient validity, with a reliability level of 0.657.

The following is a recapitulation table of validity and reliability tests for budget variables.

**Table 4**  
**Recapitulation of Validity and Reliability Test Results**  
**Budget Variables**

VARIABLES	ITEMS	VALIDITY		RELIABILITY
		R	P	
X3	X3.1	0.661	0.005	0.721
	X3.2	0.506	0.022	
	X3.3	0.727	0,000	
	X3.4	0.635	0.001	
	X3.5	0.759	0,000	
	X3.6	0.672	0,000	

Source: Processed Primary Data.

From table 4 it can be seen that each answer to the questionnaire question item from variable X3, namely budget, has sufficient validity, with a reliability level of 0.721.

Next is a recapitulation table of validity and reliability tests for environmental uncertainty variables.

**Table 5**  
**Recapitulation of Validity and Reliability Test Results**  
**Environmental Uncertainty Variables**

VARIABLES	ITEMS	VALIDITY		RELIABILITY
		R	P	
X4	X4.1	0.727	0,000	0.868
	X4.2	0.674	0,000	
	X4.3	0.675	0,000	
	X4.4	0.596	0.001	
	X4.5	0.849	0,000	
	X4.6	0.498	0.002	
	X4.7	0.659	0,000	
	X4.8	0.825	0,000	
	X4.9	0.637	0,000	
	X4.10	0.595	0.001	
	X4.11	0.336	0.026	
	X4.12	0.625	0,000	

Source: Processed Primary Data.

From table 5 it can be seen that each answer to the questionnaire question item from variable X4, namely environmental uncertainty, has sufficient validity, with a reliability level of 0.868.

Next is a recapitulation table of validity and reliability tests of manager performance variables.

**Table 6**  
**Recapitulation of Validity and Reliability Test Results**  
**Manager Performance Variables**

VARIABLES	ITEMS	VALIDITY		RELIABILITY
		R	P	
Y	Y.1	0.585	0.002	0.767
	Y.2	0.523	0.003	
	Y.3	0.597	0.001	
	Y.4	0.499	0.012	
	Y.5	0.528	0.005	
	Y.6	0.535	0.004	
	Y.7	0.653	0,000	
	Y.8	0.680	0,000	
	Y.9	0.826	0,000	



Source: Processed Primary Data.

From table 6 it can be seen that each answer to the questionnaire question item from variable Y, namely manager performance, has sufficient validity, with a reliability level of 0.767.

### **Inferential Statistical Analysis.**

Statistical analysis using inferential statistics is to test the influence between the dependent variable and the independent variable, in this research using SPS software (Statistical Program Series) and SPSS software version 7.5 for Windows. The results of data processing using the two software are as follows:

### **Regression equation analysis.**

**Table 7**  
**First Hypothesis Regression Table**

MODEL	R	R SQUARE	ADJUSTED & SQUARE	STANDARD ERROR OF ESTIMATED
Enter Model	0.441	0.194	0.125	3.27

Source: Processed Primary Data.

The R square figure is 0.194 (which is the square of the correlation coefficient, or  $0.441 \times 0.441 = 0.194$ ). R square can be called the coefficient of determination, which in this case means that 19.40% of manager performance can be explained by the variables management accounting system, decentralization and budget. Meanwhile, the rest can be explained by other causes.

Next, the researcher will perform a variance analysis for the variables management accounting system, decentralization, budget and manager performance together.

**Table 8**  
**Variance Analysis Table**

MODEL	SUM OF SQUARE	DF	MEAN SQUARE	F	SIGNIFICANT
Regression	90.187	3	30,062	2,816	0.053
Residual	373,710	35	10,677		
Total	463,897	38			

Source: Processed Primary Data.

From the Anova test or F test, the calculated F was 2.816 with a significance level of 0.053. Because the probability (0.053) is greater than 0.05, the regression model cannot be used to predict manager performance (variable Y).

Next we will explain the regression equation for the first hypothesis.

**Table 9**  
**Table of Regression Equations for Management Accounting Systems, Decentralization, Budgets, and Manager Performance**

Model	Understandarized Coefficient		Standardized Coefficient	t	Sig.
	B	Std. error	Beta		
(Constant)	50,859	8,756		5,809	0,000
SAM	7,459	0.089	0.144	0.842	0.005
Decentralization	0.341	0.179	0.327	1,911	0.004
budget	0.381	0285	0.204	1,337	0,000

From the factor analysis table above, it can be seen that the regression equation obtained is as follows:

$$Y = 50.859 + 7.459 X1 + 0.341 X2 + 0.381 X3.$$

Where: R square = 0.194.

F ratio = 2.816.

#### **First Hypothesis.**

Ha reads: There is a positive influence from the interaction between the management accounting system, decentralization and budgeting on manager performance.

Ho reads: There is no positive influence from the interaction between management accounting systems, decentralization and budgets on manager performance.

#### **Decision-making :**

##### **Basis for decision making:**

a. *By comparing calculated statistics with table statistics.*

If the calculated t statistic < t table statistic, then Ho is accepted.

If the calculated t statistic > t table statistic, then Ho is rejected.

◆ T count statistics.

From output table 9 it can be seen that t count:

- Management accounting system: 0.842
- Decentralization: 1. 911
- Budget: 1,337.

◆ T table statistics.

Significance level ( $\alpha$ ) = 5%

Df (degrees of freedom) = number of data – 4 = 39 - 3 = 36

The test was carried out with two sides, the t table figure was 2.042.

**Decision:**

- Management accounting system, because  $t \text{ count} < t \text{ table}$  ( $0.842 < 2.042$ ) then  $H_0$  is accepted.
- Decentralization, because  $t \text{ count} < t \text{ table}$  ( $1.911 < 2.042$ ) then  $H_0$  is accepted.
- Budget, because  $t \text{ count} < t \text{ table}$  ( $1.337 < 2.042$ ) then  $H_0$  is accepted.

*b. Based on probability.*

- ◆ If the probability is  $> 0.05$  then  $H_0$  is accepted.
- ◆ If probability  $< 0.05$  then  $H_0$  is rejected

**Decision:**

- ◆ Management accounting system, probability =  $0.005 < 0.05$  then  $H_0$  is rejected.
- ◆ Decentralization, probability =  $0.004 < 0.05$  then  $H_0$  is rejected.
- ◆ Budget, probability =  $0.000 < 0.008$  then  $H_0$  is rejected.

**Conclusion**

Based on the t test above, it can be concluded that the management accounting system, decentralization and budget variables have a positive and significant effect on manager performance variables. And the most dominant variable is the management accounting system variable.

Next, we will explain the regression equation analysis for the second hypothesis.

**Table 10****Second Hypothesis Regression Table**

MODEL	R	R SQUARE	ADJUSTED & SQUARE	STANDARD ERROR OF ESTIMATED
Enter Model	0.641	0.411	0.341	2.84

The R square figure is 0.411 (which is the square of the correlation coefficient, or  $0.641 \times 0.641 = 0.411$ ). R square can be called the coefficient of determination, which in this case means that 41.10% of manager performance can be explained by the variables of the management accounting system, decentralization, budget and environmental uncertainty. Meanwhile, the rest is explained by other causes not examined in this study.

Next, the researcher will present a variance analysis for the variables of management accounting system, decentralization, budget, environmental uncertainty and manager performance together.

**Table 11**  
**Variance Analysis**

MODEL	SUM OF SQUARE	DF	MEAN SQUARE	F	SIGNIFICANT
Regression	190,542	4	47,636	5.92	0.001
Residual	273,355	34	8,040	5	
Total	463,897	38			

From the Anova test or F test, the calculated F is 5.925 with a significance level of 0.001. Because the probability (0.001) is much smaller than 0.05, the regression model can be used to predict manager performance (variable Y). Or it could be said that, management accounting system, decentralization, budget and environmental uncertainty together influence manager performance.

**Table 12**  
**Table of Regression Equations for Management Accounting Systems, Decentralization, Budgets, Environmental Uncertainty and Model Manager Performance**

Model	Understandarized Coefficient		Standardized Coefficient	t	Sig.
	B	Std. error	Beta		
(Constant)	58,455	7,896		7,403	0,000
SAM	4.9	0.084	0.095	0.582	0.005
Decentralization	0.464	0.159	0.445	2,924	0.006
budget	0.123	0.258	0.066	0.477	0.006
Environmental Uncertainty	0.220	0.062	0.528	3,533	0.010

From the factor analysis table above, it can be seen that the regression equation obtained is as follows:

$$Y = 58.455 + 4.9 X_1 + 0.464 X_2 + 0.123 X_3 + 0.220 X_4$$

Where: R square = 0.411.

F ratio = 5.925.

### Second Hypothesis

Ha reads: There is a positive influence from the interaction between the management accounting system, decentralized and budgeting after being influenced by environmental uncertainty on manager performance.

Ho reads: There is no positive influence from the interaction between the management accounting system, decentralized and budgeting after being influenced by environmental uncertainty on manager performance.

**Decision-making :**

**Basis for decision making:**

a. *By comparing calculated statistics with table statistics.*

If the calculated t statistic < t table statistic, then Ho is accepted.

If the calculated t statistic > t table statistic, then Ho is rejected.

◆ T count statistics.

From output table 12 it can be seen that t is calculated

□ Management accounting system: 0.582

□ Decentralization: 2,924

□ Budget: 0.477

Environmental uncertainty: 3,533.

◆ T table statistics.

Significance level ( $\alpha$ ) = 5%

Df (degrees of freedom) = number of data - 4 = 39 - 4 = 35

The test was carried out with two sides, the t label number was 2.042

**Decision:**

□ Management accounting system, because t count < t table (0.582 < 2.042) then Ho is accepted.

□ Decentralization, because t count > t table (2.924 > 2.042) then Ho is rejected.

□ Budget, because t count < t table (0.477 < 2.042) then Ho is accepted.

□ Environmental uncertainty, because t count > t table (3.533), Ho is rejected.

b. *Based on probability.*

◆ If the probability is 0.05 then Ho is accepted.

◆ If the probability is 0.05 then Ho is rejected

**Decision:**

◆ Management accounting system, probability < 0.05 (0.005) then Ho is rejected.

Decentralization, probability < 0.05 (0.006) then Ho is rejected.

◆ Budget, probability < 0.05 (0.006) then Ho is rejected.

◆ Environmental uncertainty, probability < 0.05 (0.010) then Ho is rejected.

**Conclusion :**

Based on the t test above, it can be concluded that the management accounting system, decentralization and budget variables have a positive and significant effect on manager

performance variables, after being influenced by environmental uncertainty variables. And the most dominant variable is the management accounting system variable.

**Correlation Analysis.**

Below we will present the results of the correlation analysis between variables.

**Table 13**

**Intercorrelation Between Variables.**

Variables	Y	X1	X2	X3	X4
Management Performance (Y)	1,000				
SAM (X1)	0.278	1,000			
Decentralization (X2)	0.372*	0.457*	1000		
Budget (X3)	0.161	0.740	0.100	1,000	
Ketdkpst.Link (X4)	0.494	0.330	0.043	0.251	1,000
*Significant at $p < 0.05$					

The results of the correlation analysis in table 13 show that the management accounting system significantly influences manager performance with a correlation coefficient of 0.278 at a significant level of  $p < 0.01$ . This shows that the higher the management accounting system, the higher the manager's performance will be. Meanwhile, decentralization influences manager performance with a correlation coefficient of 0.372 at a significant level of  $p < 0.05$ . This shows that the higher the level of decentralization provided by the company, the greater the performance of its managers will be. The budget variable shows that it significantly influences manager performance by 0.161 at a significant level of  $p < 0.01$ . This shows that the higher the budget, the higher the manager's performance. Likewise, environmental uncertainty has a significant effect on manager performance variables with a correlation coefficient of 0.494 at a significant level of  $p < 0.01$ . This shows that environmental uncertainty affects manager performance.

**Discussion.**

Based on the regression analysis above, it can be concluded:

1. First Hypothesis (There is a positive relationship from the interaction between management accounting systems, decentralization, and budgets on manager performance).

From the results of calculations using multiple regression, an r square value of 0.194 was obtained, which means that 19.40% of manager performance can be explained by the management accounting system, decentralization and budget variables. By testing the significance of the correlation coefficient using t student, the calculated t number was 0.842 for the management information system variable, 1.911 for the decentralization variable and

1.337 for the budget variable, while the t table number was 2.042 at a degree of freedom of 5%. From the calculations obtained, it shows that  $t_{table} > t_{count}$ , so it can be said that the correlation coefficient is significant, this means that there is a positive relationship between management accounting systems (X1), decentralization (X2) and budgets (X3) on manager performance (Y). The closeness of the relationship can be seen from the coefficient of determination value, which is 19.40%. From the value of the coefficient of determination, it can be said that the closeness of the relationship obtained is too small (19.40%), this is possibly caused by the implementation of management accounting system variables, decentralization and budgeting in the pharmaceutical industries in the Surabaya region which are still It has only just been implemented so the results obtained are not yet optimal. Limited time for distributing and distributing questionnaires as well as limited costs during the research also influenced the results obtained.

From the regression equation  $Y = 50.859 + 1.459 X1 + 0.341 X2 + 0.381 X3$  means that the management accounting system, decentralization and budgeting have a positive and significant effect on manager performance (with a significance level of 0.000). The regression equation above means that the quality of manager performance increases by 7.459 if the management accounting system is increased by one unit, 0.341 if decentralization is increased by one unit and by 0.381 if the budget is increased by one unit.

These results are in accordance with research conducted by Purba (1998) where the research produced was that the management accounting system, decentralization and budget variables had a positive and significant effect on the performance of insurance company managers in the Surabaya municipality. One of the differences between the results of this research and the research conducted by Purba lies in the size of the R square. In research conducted by Purba, the R square obtained was 0.7916, while in this study the R square obtained was 0.194.

**2. Second Hypothesis.** (There is a positive influence from the interaction between management accounting systems, decentralized management and budgets on manager performance after being influenced by environmental uncertainty). Based on calculations using multiple regression, an r square value of 0.411 is obtained, which means that 41.10% of manager performance can be explained by the management accounting system variable, decentralization. budget and environmental uncertainty.

By testing the significance of the correlation coefficient using t student, the t count was 0.582 for management information systems, 2.924 for decentralization, 0.477 for budget,

and 3,533 for environmental uncertainty, while the t table obtained was 2,042 at a degree of freedom of 5%. From the calculations obtained, it shows that t table > t count, so the correlation coefficient is declared significant, this means that there is a positive relationship between management accounting systems (X1), decentralization (X2), budgets (X3) and environmental uncertainty (X4) on manager performance (Y). The closeness of the relationship can be seen from the coefficient of determination value, which is 41.10%. From the value of the coefficient of determination, it can be seen that the value of the closeness of the relationship obtained is too small, this is possibly caused by the implementation of the management accounting system, decentralization, budget and environmental uncertainty in the pharmaceutical industries in the Surabaya area which have only just been implemented so that the results obtained are not yet optimal. . Limited time for distributing questionnaires and distributing questionnaires as well as costs during the research also influenced the results obtained.

From the regression equation  $Y = 58.455 + 4.91 X1 + 0.464 X2 + 0.123 X3 + 0.220 X4$ . In addition to the t table, the figure obtained is 2.042 so that t count > t table (7.403 > 2.042), so the correlation coefficient is declared significant, this means that the management accounting system, decentralization, budgeting and environmental uncertainty have a positive and significant effect on manager performance, after being influenced by uncertainty. environment (with a significance level of 0.000). The regression equation above means that the quality of manager performance increases by 4.91 if the management accounting system is increased by one unit, 0.464 if decentralization is increased by one unit, by 0.123 if the budget is increased by one unit and 0.220 if environmental uncertainty is increased by one unit.

These results are in accordance with research conducted by Purba (1998) where the research produced was that the management accounting system, decentralization and budget variables had a positive and significant effect on manager performance after being influenced by environmental uncertainty in insurance companies in the Surabaya municipality. One of the differences between the results of this research and the research conducted by Purba lies in the size of the R square. In research conducted by Purba, the R square obtained was 0.7262, while in this study the R square obtained was 0.411.

### 3. Similarities and differences with previous researchers.

Because the research carried out is a replication study of research conducted by Purba (1998), the following researcher will convey the similarities and differences between the current research and the research conducted by Purba (1998), namely:

Equality :



1. The variables used are the same, namely management accounting system, decentralization and budget variables as independent variables, environmental uncertainty variables as moderating variables and manager performance variables as dependent variables.
2. The sample used is also the same, namely managers who work on the research object.
3. Using regression analysis to test the hypotheses formed.

Difference :

1. The research object used is different, namely the current research uses the research object of the pharmaceutical industry in Surabaya, while the previous research used the research object of life insurance companies in Surabaya.
2. The sample used was 39 respondents, while previous research had 44 respondents.
3. This research uses 2 hypotheses while previous research used 9 hypotheses, so on this occasion the researcher will explain the differences in the results of the analysis of the same 2 hypotheses, namely.
  - a. the first hypothesis obtained the regression equation  $Y = 50.859 + 7.459 X_1 + 0.341 X_2 + 0.381$  means that the management accounting system, decentralization and budgeting have a positive and significant effect on manager performance (with a significance level of 0.000). Obtained a coefficient of determination of 0.194. Meanwhile, in research conducted by Purba, the R square was obtained at 0.7916, with the regression equation  $Y = 11,654 + 1,712 X_1 + 1,474 X_2 + 1,884$ , so the correlation coefficient is declared significant, this means that the management accounting system, decentralization and budgeting have a positive and significant effect on manager performance (with a significance level of 0.000).
  - b. the second hypothesis obtained the regression equation  $Y = 58.455 + 4.91 X_1 + 0.464 X_2 + 0.123 X_3 + 0.220$ , this means that the management accounting system, decentralization, budget and environmental uncertainty have a positive and significant effect on manager performance, after being influenced by environmental uncertainty (with a significance level of 0.000). Obtained a coefficient of determination of 14.10%. Meanwhile, in research conducted by Purba, the R square was obtained at 0.7262, with the regression equation  $Y = 23,530 + 1,331 X_1 + 1,480 X_2 + 1,317 X_3 + 1,384 > t \text{ table } (12,853 > 1,884)$ , so the correlation coefficient is declared significant, this means that the management accounting system, decentralization, budget and environmental uncertainty have a positive and significant effect on manager performance (with a significance level of 0.000).

## **CONCLUSIONS AND RECOMMENDATIONS**

### **Conclusion.**

Based on hypothesis testing, analysis and discussion as described in Chapter IV, to facilitate understanding of the results of this research, the following conclusions will be presented from the results of the research that has been carried out, namely:

1. There is a positive influence from the interaction between management accounting systems, decentralization, and budgets on manager performance in the pharmaceutical industry in Surabaya.
2. There is a positive influence from the interaction between management accounting systems, decentralization and budgeting on manager performance after being influenced by environmental uncertainty in the pharmaceutical industry in Surabaya.

### **Limitations and Suggestions.**

Due to the lack of funds and time in carrying out this research, the researcher is aware of the limitations that influence the results of this research, the following are some suggestions that the researcher can convey to future researchers:

1. The research was carried out only using diffusers, not by conducting interviews directly or being directly involved with company activities, so the results obtained were not optimal. It is recommended for future researchers to conduct interviews directly with respondents, apart from distributing questionnaires.
2. The use of manager performance measurement by using self-ratings where managers measure their own performance, this tends to produce bias. To obtain better results, it is recommended for future researchers<sup>70</sup> self-rating and superior rating methods
3. It is possible that there are other influential variables that are not used in this research. It would be best for future researchers to use the ROI (return on investment) variable in measuring manager performance in measuring performance.

### **Implications.**

Apart from the limitations in this research, researchers hope that this research can:

1. Expanding and confirming the findings of previous researchers relating to management accounting, especially those relating to the influence of management accounting systems, decentralization, budgets and environmental uncertainty on manager performance.
2. As a reference for subsequent research related to management accounting.
3. Providing an ownership contribution for practitioners to know things that can influence manager performance from a management accounting perspective.

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