
Characteristics of University Budgeting Systems and Perceived Uncertainty Environmental (Study At Toraja Indonesian Christian University)

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Abstract

This study aims to find empirical evidence of the direct influence of each budgeting characteristic, namely participation, clarity of targets, difficulty of targets, and budget feedback on managerial performance. In addition, this study wants to test the suitability of the perceived environmental uncertainty factor with the characteristics of budgeting targets. The respondents of this study were all structural officials within UKI Toraja totaling 110 people. This study uses two models to test each hypothesis developed in this study, namely regression analysis (stepwise), which is used to test hypotheses 1 to 4 and multiple regression methods with residual forms (residual approach) to test hypotheses 5 to 8. significant. The results showed that there was no significant influence of budget preparation participation and clarity of budget targets on managerial performance. However, this study shows that the lack of fit between characteristics and environmental uncertainty has an insignificant relationship. In other words, there is no expected inconsistency related to poor managerial performance. The ambiguity of these results may be caused by factors that have not been considered and controlled in relation to the use of residual analysis.

Keywords: Characteristics of Budgeting System; Budgeting Participation; Goal Clarity; Goal Difficulty; Feedback, Managerial Performance; Environmental Uncertainty; University Budget

INTRODUCTION

Tight competition, especially in competing for students and resources, occurs in the higher education environment. Funds obtained from tuition fees paid by students are important energy to keep universities alive. If a university gets a lot of students, it also means getting more funds, these funds can be used to improve the quality of education either by increasing the capacity of lecturers or adding learning support facilities. It is not only private universities that are autonomous in financial management. Since 2000, several state universities in Indonesia changed to PTN-BH (PTN with legal status) and have autonomy in

financial management mechanisms. As a result, competition between state and private universities is getting tighter, which has an impact on competition to get income from student fees.

The budgeting system in higher education environments, especially private universities, is the most important thing, considering that the source of funds managed mostly comes from students. Financial resources are allocated to pay lecturers, support staff, overhead, and build infrastructure to support good institutional knowledge governance. To maintain the sustainability of private universities and excel in competition, they must prepare themselves quickly and in a

planned manner to be able to produce innovations that support the continuation of their education business.

A budget is a quantitative representation of management objectives and a tool for determining progress in achieving those objectives. Egevad (2023) explain that a budget is a method of translating organizational goals and objectives into operational matters. A budget is not only a financial plan for the responsibility centers in a company but also a tool for control, coordination, and communication (Nguyen, 2024).

The importance of the role of the budget can also be seen from other functions. For example, the budget functions as a tool to delegate the authority of the leader to subordinates (Kusworo, 2020), and as a tool to motivate the performance of members of the organization (Chow, et al.1988). The budget is the main tool used in every company to state the activity plan, coordination and implementation of the plan, evaluation of efforts, and control of activities in the organization (Cherrington and Cherrington 1973). The role of the budget in evaluating managerial performance and determining rewards for members of the organization has received in-depth attention in the accounting literature.

The function of the budget, as a control tool in a broad sense, includes the activities of regulating people in the organization (Hanson, 1966). The budget preparation process, therefore, is an important and complex activity, because of the possible functional or dysfunctional impacts on the attitudes and behaviors of members of the organization that it causes (Milani 1975). Behavioral aspects in the budget preparation process are related to the level of participation or involvement of managers who are at a lower level in preparing the budget. Behavioral aspects are the most important thing in the budget

preparation process because in fact the approved budget, basically always describes a mutual agreement from many people in an organization. Schiff and Lewin (1974) stated that the budget preparation process always goes through a process of bargaining about operational goals and each agreement produced describes a consensus that is mutually accepted. Once the budget is approved, the organization can be described as being in a state of quasi-conflict resolution (a pseudo-conflict resolution).

Although the budgeting mechanism is not completely ignored, it seems increasingly clear that the budgeting process is now moving towards participatory. Managers at the middle and lower levels who feel that their aspirations are appreciated and have influence on the budgeting process will have more responsibility and moral consequences to improve performance which is ultimately expected to improve organizational effectiveness.

The influence of budget on the behavior, attitude and performance of lower level managers mostly follows the budgeting style of top management (Djalil et al., 2020). The five characteristics of budget targets stated by (Djalil et al., 2020)include; budgetary participation, budget goal clarity, and budget goal difficulty, budget evaluation, and budget feedback. Of course, top management with the help of the controller and accounting department, will determine the amount and form of participation of middle and lower level managers in preparing budget targets, the frequency and amount of feedback, the level of clarity and difficulty of budget targets. The selection of several budget preparation approaches can have a strong and determining influence in planning and controlling the dynamics related to the budget so that in practice it becomes interesting to be studied further.

Research on budget functions has been conducted continuously, researchers widely test the influence of budget system characteristics on the impact of managerial behavior, especially on managerial performance. However, empirical evidence shows that there is an unclear relationship between budget system characteristics (budget preparation participation, budget target clarity, budget target difficulty, and budget feedback) and managerial performance.

This study focuses on managerial performance in higher education. Nowadays, higher education is also continuously demanded to achieve the best accreditation. According to research by Fernandes (2022), accreditation is a key factor in determining the position of a higher education institution or study program in competition with other institutions or study programs in higher education management. Thus, efforts to improve the quality of higher education are expected to improve the quality of graduates produced. This will help higher education institutions to remain quality and sustainable higher education institutions, so that they are able to produce competent graduates who are in accordance with the needs of the job market expected by the community.

This study aims to find empirical evidence of the direct influence of each budgeting characteristic, namely participation, goal clarity, goal difficulty, and budget feedback on managerial performance. In addition, this study wants to test the suitability of the perceived environmental uncertainty factor with the characteristics of budgeting targets, namely participation, goal clarity, goal difficulty, and budget feedback on managerial performance. The results of this study are expected to contribute to the development of theory, especially those related to behavioral and management accounting. The findings of this study are

also expected to provide practical contributions to universities, especially those related to the characteristics of budgeting targets.

THEORETICAL REVIEW

Goal-Setting Theory

Edwin Locke began a series of experiments in 1968 to gather his ideas into a more comprehensive framework for building a theory of goal setting. Some attention was paid to developing the causes of specific goals, why people consciously do things, and that goals are seen as significantly influencing actual performance in a broader sense. Very difficult goals are likely to be unaccepted, and if this is the case, a positive relationship between goal difficulty and performance is not expected to persist for long. Goal setting was introduced not only as an explanation of the effects of monetary incentives but also as an understanding of the outcomes achieved and the differences in time taken to achieve the outcomes.

From the explanation of the goal setting theory, it can be concluded that there is an influence of goal specificity, challenges, and feedback on performance. Panisoara (2020) stated that the intentions to work towards a goal are a major source of work motivation. This means that goals give an employee what needs to be done and how much effort needs to be spent. Specific goals can improve performance. Although the goal is difficult to achieve, if it is well received, it will produce higher performance than easy goals. In addition, feedback is needed to achieve high performance (Latham and Yukl, 1975). Participation may also increase the acceptance of the goal as a desired goal to be achieved.

In relation to the inconsistent research results as stated above, the relationship between budget preparation participation, budget target clarity, budget target difficulty, budget evaluation, and

budget feedback with managerial performance is unclear (*equivocal*). There are other variables that must be considered in the relationship between participation and performance (De Barba et al., 2016). To reconcile these conflicting research findings, it is necessary to use a contingency approach to identify the various conditions that cause participatory budgeting to be more effective (Manduna, 2016).

The contingency approach to management accounting is based on the premise that no management accounting system is universally appropriate to be applied to all organizations in all circumstances, but that the management accounting system also depends on situational factors that exist in the organization. Researchers have applied the contingency approach to analyze and design control systems (Rana et al., 2016), especially in the field of management accounting. Several studies in the field of management accounting have tested the relationship between contextual variables such as environmental uncertainty (Pires et al., 2022; Rikhardsson et al., 2021), *task uncertainty* (Kendall et al., 2018), strategic uncertainty (Kets et al., 2021) with the design of management accounting systems. The contingency approach has attracted the interest of many researchers because they want to know whether the level of reliability of the management accounting system always has the same effect (on performance) in every condition or not. Based on the contingency approach, there is a possibility that there are other determining variables that interact with each other, in line with the specific conditions faced.

A better fit between the control system and the contingency variables is hypothesized in several studies to result in improved organizational performance (Lucianetti et al., 2018). The use of the concept of fit in contingency theory

suggests that the degree of fit between contextual factors (contingency) and the management accounting system (such as accounting design and budgeting system) will enable managers to improve firm performance (Kets et al., 2021)

Uncertainty variables include task and environmental uncertainty. Task uncertainty is a function of the state that states how far the actions taken by managers can produce the expected outcomes. The actions taken by managers are related to how much knowledge managers have about the process of transforming inputs into outputs. The external environment is also an uncertain factor, such as relationships with customers, suppliers, labor markets, and government policies.

Characteristics of Budgeting Systems and Managerial Performance

The budgeting process of an organization as stated above, describes the involvement of managers in preparing the budget at the center of responsibility of the manager concerned. Rokhman (2017) stated that the budget that is prepared has two roles. First, the budget acts as a plan, namely that the budget contains a summary of the organization's financial plan in the future. Second, the budget as a performance criterion, namely the budget is used as a control system to measure managerial performance.

According to Mazikana (2019), budget control includes the arrangement or direction of people in the organization. The control function needs to consider a concept of "direction of people" in the control area that is relevant to the organization's business such as (1) the basic nature of authority and budget, (2) the level of individual identification with budget objectives, and (3) the level of achievement of budget targets. The budget preparation process of an organization is an important and complex activity, because the budget has the potential for

functional or dysfunctional impacts on the attitudes and behavior of members of the organization (Adebowale, 2019). Functional or dysfunctional impacts are indicated by whether or not the budget functions as a good control tool to motivate members of the organization to improve their managerial performance.

The ideal budget system is one that shows complete goal congruence, and together provides encouragement to managers to achieve organizational goals in an ethical manner (Kennedy et al., 2019). Top management also needs to pay attention to the characteristics of budget targets in relation to performance appraisal, because it can encourage or hinder organizational goals. Ramlall (2024) stated that most of the positive and negative effects of the budget on managers' attitudes, behaviors, and performance can be found in the

Hypothesis Development

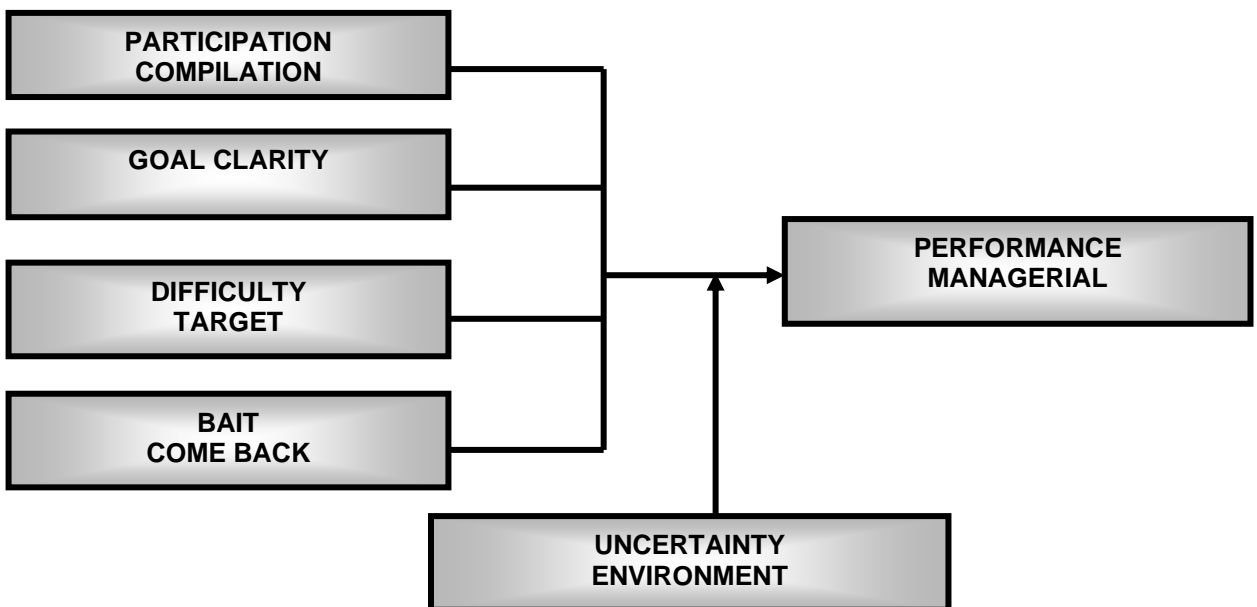


Figure 1. Research Model

Relationship between Budget Preparation Participation and Managerial Performance

Participative budgeting refers to the degree to which managers participate in preparing the budget and influencing budget objectives for each responsibility

characteristics of the budget system. The characteristics of budget targets indicated by Hamid (2020) include budget preparation participation, budget target clarity, budget target difficulty, and budget feedback will affect managerial performance.

The budgeting process has a direct impact on human behavior (Hijal-Moghrabi, 2019), especially for people who are directly involved in budgeting. An effective budget requires the ability to predict the future, which includes various factors, both internal and external. Managers need to prepare a good budget because the budget is a financial plan that describes all of the company's operational activities (Antadin, 2022). Mistakes in predicting will disrupt the plans that have been prepared and have an impact on the assessment of its performance.

center. Participation in setting budget objectives encourages managers to work toward goals, and participate in the work (Bernd et al., 2021). Block (2016) states that there are two advantages associated with participation. Participation always creates (1) an attitude of responsibility

from managers, (2) it increases the likelihood that budget objectives will be accepted by each manager as their own.

Okotchi (2020) stated that management participation in the budgeting process is a process where managers are assessed for their performance based on the achievement of budget targets, their involvement and influence in the preparation of those budget targets. The managerial performance obtained by managers is one of the factors that can be used to improve organizational effectiveness.

Several empirical research results state the positive influence of budgeting participation on managerial performance, meaning that managerial performance will significantly increase if the budgeting participation given by managers is high. Among the researchers who provide such results is Jávora (2016) who conducted field research on 48 middle-level cost center managers working in large-scale manufacturing companies in San Francisco. The same results also occurred in the research of Zhang (2023) on 108 managers from 224 questionnaires sent to middle-level managers from various functions in two electronics industries and one steel industry. The results of Milani's (1975) research reported a positive and significant correlation between budgeting participation and attitudes toward work and the company, but the relationship between participation and managerial performance was very weak. Hofstede (1967) also reported a positive attitude of subordinates when they participated in budgeting. Based on the description, the following hypothesis is formulated:

H1: Budget preparation participation has a positive influence on managerial performance.

The Relationship between Budget Target Clarity and Managerial Performance

Budget target clarity refers to the degree to which budget targets are set specifically and clearly, and which are understood by those responsible for their achievement (Pebrianti et al., 2019). Deci (2017) stated that specific target determination is more productive than no target determination and encourages employees to do their best. In other words, budget target clarity is expected to help managers achieve company goals as stated in budget planning, so that performance can be achieved logically. He emphasized that awareness of targets can regulate behavior. Ambiguous targets can lead to employee tension, confusion, and dissatisfaction.

Research on the relationship between budget goal clarity and managerial performance has not been widely conducted. However, several studies support the positive influence of task-goal clarity and specification on employee commitment, performance, and satisfaction [Latham and Yukl 1975; Steers 1976; Ivancevich 1976 in Kenis (1979)]. The results of Kenis' (1979) study found that managers had a positive and relatively strong reaction to increasing budget goal clarity. The results of Kenis' study support the findings of several studies (Hofstede, 1967; Milani, 1975; Swieringa and Mocer, 1975) on the budget-goal setting environment, and the task-goal setting environment (Locke, 1968), which found a positive influence of participation in goal setting on participant attitudes. Based on the description, the following hypothesis is formulated:

H2: Clarity of budget targets has a positive influence on managerial performance..

The Relationship between Budget Target Difficulty and Managerial Performance

Budget targets range from very loose and easy to achieve to very tight and difficult to achieve. Easy to achieve targets do not provide challenges for managers, thus resulting in low motivation. On the other hand, very tight and difficult to achieve targets will result in feelings of failure, frustration, low aspirations, and rejection of targets by managers (Becker and Green, 1962; Dumber, 1971). Locke (1968) also stated that the difficulty of task targets will result in lower performance compared to easy targets. If managers continuously feel they have failed to achieve budget targets according to Welch et.al (1996), it will cause managers to lose interest in work, reduce performance, and lose self-confidence. Anthony and Govindarajan, (1995) are of the view that the ideal budget is a tight budget but managers are confident that they can achieve it.

The results of Kenis' (1979) research relating to the overall influence of budget difficulties on managers' attitudes and performance were also not convincing (*inconclusive*); all relationships are weak and insignificant. A positive and significant effect on the perception of task-goal difficulty on managers and managers' self-rated performance was reported by Locke (1968). While studies, Blumenfeld and Leidy (1969), and Carroll and Tosi (1970) did not support. The results of studies by Stedry and Kay (1966) and Steers (1975) also failed to support the positive effect of goal difficulty on motivation and performance. Hofstede (1967), Backer and Greeb (1962), and Dunbar (1971) in Kenis (1979) stated that budget targets that are too tight will have a negative effect. Managers who reported having targets that are too tight were also reported to have significantly higher job tension and lower job satisfaction,

budgetary performance, and cost efficiency compared to those who reported having budget targets that are easy to achieve or tight but achievable. These results also indicate that "tight but attainable" is the optimum level for budget target difficulty.

The impact of the budget difficulty level on managerial performance with the implication that if the manager feels that the budget set has a high level of difficulty and is not easy to achieve, this will reduce the manager's performance because the manager feels like a failure and is frustrated before achieving it. Meanwhile, if the budget set is too loose and easy to achieve, then the manager will feel unmotivated in implementing it, because to achieve it does not require hard work so it does not pose a challenge. Based on the description, the following hypothesis is formulated:

H3: Difficulty in achieving budget targets has a negative impact on managerial performance..

Relationship between Feedback and Managerial Performance

Feedback on the degree to which budget targets are achieved is an important motivational variable. Becker and Green (1962) in Kenis (1979) suggest that if members of an organization cannot know the results they are achieving, they will have no basis for feeling success or failure and will not be given incentives for high performance; ultimately, they may experience dissatisfaction. This can reinforce or discourage employee behaviors. Invancevich and McMahon (1982) suggest that people perform better when they receive feedback on how they are progressing toward their goals because feedback helps identify deviations between what they are doing and what they want to do.

One concept that can be used in providing feedback on favorable or

unfavorable results achieved by both middle and lower managers is the concept of positive reinforcement (Skinner, 1969 in Polimeni et al., 1986). If a favorable variance occurs, middle or lower management should receive maximum praise, promotion, and/or reward. If an unfavorable variance occurs, then middle and lower managers should not be punished but should be guided to improve the results that have been achieved. This is based on Skinner's findings that behavior that leads to positive consequences will improve performance and tend to be repeated, while negative traits are not effective in improving performance.

Empirical studies that show the influence of feedback on performance include; Carroll and Tosi (1970), found that positive feedback was correlated with the achievement of self-rated goals. Steers (1975) and Kim and Hammer (1976) also reported a positive and significant correlation between feedback and performance. Studies by Champanis (1964) and Hackman and Lowler (1971) also did not support this opinion, and Kenis (1979) himself found a weak and insignificant relationship between budget feedback and managerial performance. Based on the description, the following hypothesis is formulated:

H4: Budgeting feedback has a positive influence on managerial performance.

Relationship between Budgeting Characteristics and Environmental Uncertainty

Environmental uncertainty is one of the factors that often causes organizations to adjust to organizational conditions with the environment. A person experiences uncertainty because he feels he does not have enough information to predict the future accurately. Individuals who experience high environmental

uncertainty feel that the environment is unpredictable and cannot understand how environmental components will change (Miliken, 1987). While in low environmental uncertainty (relatively stable environment), individuals can predict future conditions so that the steps they will take can be utilized by members of the organization to help the organization make accurate plans and choose corporate strategy options (Wheelen and Hunger, 1995; Daft, 1992).

Several studies that show the moderating effect of environmental uncertainty, especially those related to performance, Govindarajan (1984) who tested the moderating effect of environmental uncertainty on the relationship between accounting performance measurement and performance. Environmental uncertainty is associated with task uncertainty. Brownell (1985) also tested the moderating effect of environmental uncertainty. Like Govindarajan (1984), Brownell (1985) also stated that organizational business units operating in environmental uncertainty will not be able to rely only on formal control tools such as *asreliance on accounting performance measures* (RAPM). Brownell (1985) could not confirm differences in the RAPM-performance relationship within organizational business units, but he found that the appropriateness of RAPM was negatively associated with environmental uncertainty.

The results of Muslimah's research (1998), which tested the relationship between environmental uncertainty and the characteristics of the budget system, showed a relationship between the difficulty of budget targets and perceived environmental uncertainty. These results are consistent with Hofstede's opinion (1968) that managers in facing uncertainty must be given a range of targets that can motivate managers and the possibility of

achieving the budget target. Other characteristics, namely participation, clarity of targets, evaluation, and budget feedback, were not successfully supported.

Budgeting participation describes the involvement of managers in preparing the budget at the manager's responsibility center (Siegel and Marconi, 1989). In an organizational environment, participation can be considered as a tool to reduce power differences, emphasize better human development rather than productivity, and tends to be accepted as a more effective organizational criterion (Hopwood, 1976).

The difficulties caused by environmental uncertainty for managers in running their operations also make it very necessary to participate, to predict future events. The results of Kren's (1992) study showed that in conditions of high levels of change, participation is needed, and this condition is proven to have a positive impact on performance. In other words, participation in budgeting in conditions of environmental uncertainty can instill an attitude of responsibility for the success and failure of planning in the future. Shield and Young (1993) stated that participation in budgeting is associated with increased performance providing positive results. Participation can respond to the needs of organizations to gain an understanding of their environment. Shield and Young (1993) concluded that the participation process can be used to solve problems and share information for the purpose of improving performance. Effective performance may be produced by building and applying expertise that is focused on analyzing and predicting environmental change [Hitt and Ireland, 1984], in Dunk and Lyons (1995)].

Clarity of budget targets describes the extent to which budget targets are stated clearly and specifically, and are understood by those responsible for

achieving them (Kenis, 1979). Several researchers (Latham and Yukl, 1975; Steers, 1976; Ivancevich, 1976) have shown that clarity and specificity *task goal* has a positive impact on commitment to achieving targets, and the emergence of employee satisfaction.

The important thing to consider in preparing budget targets is emphasized by Hopwood (1974) is the character of the relationship between the organization and its environment. Therefore, some specific targets in successive stages depend on the level of uncertainty faced.

Budget target difficulty describes the range of targets from very loose and easy to achieve to very tight and unattainable (Kenis, 1979). The results of Kenis's (1979) study stated that managers who have "very tight" budget targets are reported to have significantly high work pressure and low job satisfaction and performance. Job tension describes the pressure that arises from psychological stress in the work environment (Kenis, 1979). High job tension can also cause frustration and anxiety at work (Hopwood, 1973). Hirst (1981) stated that managers who are faced with high work pressure will behave negatively.

Environmental uncertainty is expected to be one of the selected variables that will affect the usefulness of this characteristic. The heterogeneity and dynamics of the environment referred to by Simon (1987) as the main source of environmental uncertainty, require a range of targets that are possible to achieve. This is due to the complexity, diversity of unexpected activities, instability and turbulence of the environment that is difficult to predict.

The results of Kenis's research (1979) stated that the implications of feedback as a level where the achievement of budget targets is ineffective in improving performance and less effective in improving manager attitudes. Several

findings failed to explain the overall results of various studies related to the relationship between feedback-attitude-performance in the preparation of task targets [Chapanis 1964; Carroll and Tosi, 1970; Hackman and Lawter, 1971; Steers, 1975; Kim and Hamner, 1976 in Kenis (1979)]. Various mediating variables such as timeliness and content of feedback and other environmental factors may be able to resolve the findings of this problem (Kenis, 1979).

However, in uncertain situations, a quick response to unpredictable changes is needed. This is because achieving goals in uncertain conditions is much more challenging than in stable conditions. Timely feedback is highly desirable. Many management accounting literatures explain that timely feedback can trigger subjective feelings of success or failure.

The hypothesis formulation to test the influence of environmental uncertainty on the relationship between budget system characteristics (participative budget, target clarity, target difficulty, and budget feedback) and managerial performance is as follows:

H5: The fit between budget preparation participation and environmental uncertainty contingent factors has a positive effect on managerial performance.

H6: The congruence between the clarity of budget targets and the contingent factors of environmental uncertainty has a positive effect on managerial performance.

H7: The fit between the difficulty of budget targets and the contingent factor of environmental uncertainty has a positive effect on managerial performance.

H8: Compatibility between Budgeting feedback with environmental uncertainty contingent factors has a positive effect on managerial performance.

RESEARCH METHODS

The population in this study were all structural officials within UKI Toraja totaling 110 people. The sample used was a saturated sample which means using the entire population as a research sample. Data were collected using a questionnaire. In this study there were 6 variables, namely budget preparation participation, budget target clarity, budget target difficulty, budget feedback, perceived environmental uncertainty and managerial performance. The measurement instruments used in this study were adopted from several relevant previous studies.

Table 1. Operational Definitions and Indicators

Variables	Operational Definition	Indicator
Budget Preparation Participation (Kenis, 1979)	Participation in the budgeting process relates to the level of involvement and influence of individuals in the budget preparation process at the responsibility centers they lead.	measuring the level of participation, perceived influence and contribution of respondents in the budget preparation process
Clarity of Budget Targets (Kenis, 1979)	Budget target clarity refers to the degree to which budget targets are set specifically and clearly, and are understood by those responsible for achieving them.	level of clarity of goals



Budget Target Difficulties (Kenis, 1979)	The level of difficulty of budget targets includes the degree of difficulty perceived by managers in achieving the budget, ranging from very loose and easy to achieve budget targets to very tight and difficult to achieve.	the level of budget difficulty and the efforts that must be made to achieve the set budget
Budget Feedback (Kenis, 1979)	Feedback on results achieved	Perceptions of budget feedback
Environmental Uncertainty (Duncan, 1972)	Environmental uncertainty is the inability of an individual to assess the probability of how much a decision they have made will fail or succeed, which is caused by the difficulty in predicting the possibilities that will occur.	managers' perceptions of environmental uncertainty
Managerial Performance (Mahoney et al. , 1963)	Managerial performance in this study is the performance of individuals or the level of managerial competence in carrying out managerial activities which include planning, investigation, coordination, staffing, negotiation, representation, supervision and evaluation.	Manager performance is measured using a self-rating instrument.

Analysis Techniques

This study uses two models to test each hypothesis developed in this study:

First, regression analysis (stepwise), which is used to test hypotheses 1 to 4. The consideration for using this analysis model is because it can be used as a prediction model for one dependent variable and several independent variables (Gul et al., 1995 in Bambang and Indriantoro, 1998) in addition to the stepwise method can be used to determine the best model. The multiple regression model (stepwise) used in this study is identical to the model used by Kenis (1979). This method begins by entering the independent variable that has the strongest correlation with the dependent variable. Then each time

another independent variable is entered, a test is carried out to continue to include the independent variable or remove it. The goal is to determine the "fit" model. The t-statistic is used to test the level of significance of each regression coefficient and the F-value is used to test the level of significance of the overall regression R², which shows the percentage of variance of the independent variables (budget preparation participation, budget target clarity, budget target difficulty, budget feedback, and perceived environmental uncertainty). While Adjusted-R² shows the contribution of individual independent variables. This method is used to re-test Kenis' (1979) research on the influence of budgeting system characteristics on



managerial performance. The regression equation can be formulated as follows:

$$Y = b_0 + b_1X_{11} + b_2X_{12} + b_3X_{13} + b_4X_{14} + e \dots\dots(1)$$

Information:

- Y** = managerial performance
- X11** = budget preparation participation
- X12** = clarity of budget targets
- X13** = budget target difficulties
- X14** = budget feedback
- b0** = constant (*intercept*)
- b1,b2,b3,b4** = regression coefficient
- e** = *disturbance error*

Meanwhile, hypotheses 5 to 8 use multiple regression methods with residual approaches. The residual approach was proposed by Dewar and Werbel (1979) in Riyanto (2001). This approach assumes that there are many possible combinations that show the best fit or consistency between budget target characteristics and contextual factors. This combination is presented in a regression line. The best fit of budget target characteristics and

contextual factors is obtained by regressing contingent factors on each budget target characteristic. Parameter estimates derived from the regression are then used to determine the value of contingent factors related to a certain level of value of each budget target characteristic (budgeting participation, target clarity, target difficulty, and budget feedback). If the combination deviates from the best fit, it will worsen managerial performance. A significant negative relationship between the deviation value (absolute value of the residual-standardized) of each budget target characteristic and contingent factors on managerial performance as evidence to support the hypothesis. In other words, to test the hypothesis, the deviation value is then correlated with managerial performance, if the negative correlation is significant as evidence to support the hypothesis.

RESEARCH RESULTS AND DISCUSSION

Respondent Profile

To provide an overview of the research variables (budget preparation participation, budget target clarity, budget target difficulty, budget feedback, environmental uncertainty, and managerial performance), a descriptive statistical table is used which shows the theoretical range and actual range, average, and standard deviation.

Table 2. Descriptive Statistics

Variables	N	Range	Minimum	Maximum	Mean	Std. Deviation
Budget Participation	31	12	9	21	15.16	2,841
Budget Clarity	31	8	4	12	9.61	1,476
Budget Difficulties	31	14	21	35	26.87	2,997
Budget Feedback	31	9	6	15	10.45	2,030
Managerial Performance	31	16	14	30	21.55	3.613
Valid N (listwise)	31					

Source: processed data (2024)

Based on the descriptive statistics table, it shows that the respondents'

answers are spread across seven categories and tend to have an average value that is



close to the maximum value of the actual range.

Hypothesis Testing

1. Relationship between Budget Target Characteristics and Managerial Performance

Table 3. Results of Testing the Relationship between Budget Target Characteristics and Managerial Performance

	Hypothesis	Coefficient	Sig.	Results
H1	Participation in budget preparation	0.021	0.952	Not Significant
H2	Clarity of budget targets	0.286	0.645	Not Significant
H3	Budget target difficulties	0.030	0.913	Not Significant
H4	Budgeting feedback	0.468	0.261	Not Significant
	Simultaneous Budget Target Characteristics		0.760	Not Significant

Source: processed data (2024)

The results of partial testing (t-test) in table 3 show that the characteristics of budget targets, namely participation, target clarity, target difficulty, and budget feedback do not affect managerial performance. This is evidenced by the sig value > 0.05, so that hypotheses 1,2,3, and 4 are rejected. The results of the simultaneous test analysis (F-test) also show that the characteristics of budget targets simultaneously do not affect managerial performance. These results do not support the research conducted by Brownell (1982b), Brownell and McInnes (1986) and Milani (1975). but support the results of Kenis' research (1979).

The inconsistency of the results of this study with the results of previous studies may be due to the existence of

The results of the regression analysis to test the influence of budget target characteristics, namely participation, target clarity, target difficulty, and budget feedback on managerial performance can be seen in Table 3 as follows:

other variables that must be considered in the relationship between budget target characteristics and managerial performance. In accordance with the conclusion put forward by Kenis (1979), the influence of moderating variables needs to be studied in the relationship between budget target characteristics and managerial performance.

2. The Effect of Perceived Environmental Uncertainty

Testing the influence of perceived environmental uncertainty on the relationship between budget preparation participation and managerial performance using the residual approach is carried out in the following stages:

Table 3. Budget Participation Suitability-Environmental Uncertainty

Stage I: Regression Analysis				
	Variables	Coefficient	Sig.	Results
	Environmental Uncertainty on Budget Participation	0.459	0,000	Significant
Stage II: Lack of Fit Correlation Matrix				
	Variables	Pearson Correlation	Sig.	Results



Budgeting Participation-Environmental Uncertainty With Managerial Performance	-0.103	0.581	Not Significant
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source: processed data (2024)

The regression results show that the regression coefficient is 0.459 and **have a significant impact** ($\text{sig} < 0.05$). This result shows that there is a significant relationship between environmental uncertainty and budget participation. The significant result and in the expected direction, is in accordance with the expectation in contingency theory that the difficulties caused by the environmental uncertainty faced make it very necessary to participate, to predict future events.

The second stage of analysis is to compare the variability in lack of fit with the variability in managerial performance, using correlational analysis to show the strength of the relationship between the two variables. The correlation coefficient

value (the absolute value of the residual contingency variable of perceived environmental uncertainty-budgeting participation) on managerial performance is -0.103 with a significance level of $p > 0.001$, the negative and insignificant sign indicates rejection of hypothesis 5.

Results in the regression analysis (in stage I) and correlation analysis (stage II) also showed inconsistent results. This shows that environmental uncertainty has an effect on budget participation but cannot prove the existence of a lack of fit that is expected to be related to poor managerial performance or the existence of a fit between budget preparation participation and environmental uncertainty affecting managerial performance.

Table 4. Conformity of Budget Target Clarity-Environmental Uncertainty on Managerial Performance

Stage I: Regression Analysis			
Variables	Coefficient	Sig.	Results
Environmental Uncertainty Regarding Budget Target Clarity	0.279	0,000	Significant
Stage II: Lack of Fit Correlation Matrix			
Variables	Pearson Correlation	Sig.	Results
Budget Target Clarity-Environmental Uncertainty With Managerial Performance	0.057	0.761	Not Significant

source: processed data (2024)

This study also examines the influence of perceived environmental uncertainty on the relationship between budget target clarity and managerial performance. The regression results show that the regression coefficient is 0.279 and **have a significant impact** ($p < 0.05$). This result shows that there is a significant influence between environmental uncertainty and budget target clarity. The significant

result and not in the expected direction indicates that this study can determine the best match between budget target clarity and perceived environmental uncertainty.

The second stage of analysis is to compare the variability in lack of fit with the variability in managerial performance, using correlational analysis to show the strength of the relationship between



the two variables. Based on the output of the results of testing hypothesis 6, the correlation coefficient value (absolute value of the residual contingency variable of perceived environmental uncertainty-budget target clarity) on managerial performance was obtained as 0.057 with a significance level of $p > 0.05$, a positive sign and not significant in rejecting hypothesis 6. Results in the regression analysis (in stage I) and

correlation analysis (stage II) also showed inconsistent results. This shows that **environmental uncertainty affects the clarity of budget targets but cannot prove the existence of a lack of fit expected to be related to poor managerial performance or the existence of a fit between the clarity of budget targets and environmental uncertainty affecting managerial performance.**

Table 5. Fit of Budget Target Difficulty-Environmental Uncertainty on Managerial Performance

Stage I: Regression Analysis			
Variables	Coefficient	Sig.	Results
Environmental Uncertainty on Budget Target Difficulty	0.417	0.003	Significant
Stage II: Lack of Fit Correlation Matrix			
Variables	Pearson Correlation	Sig.	Results
Budget Target Difficulty -Environmental Uncertainty With Managerial Performance	-0.117	0.531	Not Significant

source: processed data (2024)

The regression results of the influence of perceived environmental uncertainty on the relationship between budget target difficulty and managerial performance show a regression coefficient of 0.417 and **significant** ($p < 0.05$). This result shows that there is a significant influence between environmental uncertainty and budget target difficulty. The significant results and in the expected direction indicate that this study can determine the best match between budget target clarity and perceived environmental uncertainty.

The comparative analysis stage of variability in lack of fit with variability in managerial performance, using correlational

analysis to show the strength of the relationship between the two variables. Testing of hypothesis 7 was done by correlating the managerial performance variable with Dev_KSA. The correlation coefficient of Dev_KSA (the absolute value of the residual contingency variable of perceived environmental uncertainty-budget target difficulty) to managerial performance was -0.181 but was not significant. The negative and insignificant correlation coefficient is evidence that does not support hypothesis 7. This indicates that environmental uncertainty does not have a significant effect on the relationship between budget target difficulty and managerial performance.

Table 5. Fit of Budget Feedback-Environmental Uncertainty on Managerial Performance



Stage I: Regression Analysis

Variables	Coefficient	Sig.	Results
Environmental Uncertainty on Budget Feedback	0.189	0.059	Significant

Stage II: Lack of Fit Correlation Matrix

Variables	Pearson Correlation	Sig.	Results
Feedback-Environmental Uncertainty With Managerial Performance	0.247	0.180	Not Significant

source: processed data (2024)

The results of testing the influence of perceived environmental uncertainty on the relationship between budget feedback and managerial performance. The regression results show that the regression coefficient is 0.189 and significant ($p < 0.1$). These results indicate that there is a significant relationship between environmental uncertainty and budget feedback. This indicates that this study can determine the best match between budget participation and perceived environmental uncertainty.

Comparative analysis of variability in lack of fit with variability in managerial performance, using correlational analysis to show the strength of the relationship between the two variables. Similar to testing hypothesis 7, testing hypothesis 8 was conducted by correlating managerial performance variables with Dev_UBA. The correlation coefficient of Dev_UBA (the absolute value of the residual contingency variable of perceived environmental uncertainty-budget feedback) to managerial performance was 0.247 but was not significant ($p > 0.05$). A positive and insignificant correlation coefficient is evidence that does not support hypothesis 8. This indicates that environmental uncertainty does not affect the relationship between budget feedback and managerial performance.

DISCUSSION

The results of the simultaneous test analysis (F test) and partial test (t test) show that the characteristics of budget

targets, namely participation, target clarity, target difficulty, and budget feedback do not affect managerial performance with a p value > 0.05 . So that hypotheses 1, 2, 3, and 4 are rejected. These results do not support the research conducted by Brownell (1982b), Brownell and McInnes (1986) and Milani (1975), but support the results of Kenis' research (1979).

The inconsistency of the results of this study with the results of previous studies may be due to the existence of other variables that must be considered in the relationship between budget target characteristics and managerial performance. In accordance with the conclusion put forward by Kenis (1979), the influence of moderating variables needs to be studied in the relationship between budget target characteristics and managerial performance.

Overall, the results of testing hypotheses 5 to 8 using the residual approach indicate that the regression analysis conducted in the first stage by determining the line of conformity between the characteristics of budget targets and the level of perceived environmental uncertainty, produces a significant regression coefficient and in the predicted direction. This indicates that there is the best fit between the characteristics of budget targets and environmental uncertainty found in this study.

But correlation analysis is carried out in the second stage by comparing



variability in lack of fit with variability in managerial performance. shows insignificant results. Insignificant results indicate no evidence. **there is a discrepancy** (lack of fit) is expected to be related to poor managerial performance or the existence of a fit between the clarity of budget targets and environmental uncertainty affecting managerial performance.

The ambiguity of the hypothesis testing results may be caused by other factors such as the perceived environmental uncertainty variable score showing a low score. The low level of uncertainty perceived by managers may not have an impact on the characteristics of budget targets and managerial performance. The effect of environmental uncertainty on the relationship between budget target characteristics and performance improvement may be more significant in conditions of high environmental uncertainty.

The results of the study show that there are various environmental uncertainties faced by private universities, namely related to the socialization and implementation of various laws and regulations that have not been implemented optimally and even changes occur too often. These regulatory changes are due to the rapid transformation process in higher education. The transformation of higher education refers to changes in the way universities and higher education institutions adapt to the demands of the times, technology, and the needs of society. This includes innovations in teaching methods, the use of digital technologies such as e-learning, and curriculum adjustments to be more relevant to the global job market. In addition, higher education is increasingly focusing on international collaboration, lifelong learning, and the development of critical and creative skills. These changes are intended to prepare graduates to face

the challenges of a dynamic and complex world (Dikti, 2022).

In principle, there is nothing wrong with frequent changes in regulations. The development and changes in the external world of education that are increasingly massive and dynamic require a response from university authorities towards a better direction and to make it more qualified. However, it must be realized that the changing conditions of these regulations have made universities always in a transition of rules. Every change in regulations from the center brings derivative implications of the need to synchronize various academic provisions that serve as guidance for the implementation of the teaching and learning process, research, and community service (the tridharma of higher education) with the accreditation instruments issued by the National Accreditation Board for Higher Education (BAN-PT) and the Independent Accreditation Institution (LAM) as well as adjustments to the campus administration service pattern.

The certainty of the fulfillment of standards by universities must have a place in the universe of policies and support from government institutions tasked with managing higher education. The busyness in the form of participating in managing succession within universities makes universities a political channel by working on academics as a captive market for political interests and other agendas that can harm efforts to improve quality must be postponed or better yet eliminated.

The Merdeka Belajar Kampus Merdeka (MBKM) program is a new program in Indonesia that aims to provide opportunities for students to develop themselves outside the academic curriculum. However, the implementation of this program in universities faces several challenges, such as limited human and financial resources, lack of

stakeholder understanding of the MBKM program, and difficulty in determining activities that suit students' needs.

Private Universities (PTS) are currently facing increasingly difficult challenges. Because they must improve quality, as has been determined by the government to meet the demands of the times. The dynamics of the speed of change in science and technology in the current era, require PTS to always transform. The support of information technology in supporting integrated data and information management in universities is very important to improve operational efficiency and the quality of academic services McCluskey and Winter (2012). Information technology allows universities to manage various aspects, such as administration, finance, student data, research, and learning, in one integrated system. The demands of universities to keep up with technological advances are one aspect of uncertainty in budgeting. Other demands of universities and also aspects of uncertainty in budgeting are increasing competition between national, regional, global universities, the quality of human resources of educators and education personnel, the ratio of lecturers and students and the number of students.

In addition, other environmental uncertainties faced by private universities are conflicts of interest at every level between organs within the foundation, the foundation and university leaders, university leaders with university senate, and others. As a result, this conflict affects the governance, culture, and systems in place in universities, causing uncertainty in decision-making and policy implementation. When competing interests are not aligned, organizational culture can be disrupted, leading to inefficiency, role ambiguity, and a decline in academic and managerial quality. In addition, this kind of conflict also hinders

the process of reform or innovation needed to advance the institution.

CONCLUSION

This study is a continuation of previous studies, especially those related to testing the behavioral and psychological impacts related to goal setting. The results of Kenis' (1979) study on the influence of budgetary goal characteristics on managerial performance and attitudes showed results that were inconsistent with previous studies. The ambiguity of the relationship allows for a contingency approach (Govindarajan 1986). Through the contingency approach, conditional factors can be identified that play a role in strengthening or weakening (moderating) the relationship between budget system characteristics and managerial performance. However, from a number of existing literatures, evidence on conditional factors that influence the effectiveness of budget preparation, the nature and influence of this conditional (contextual) is still unclear.

The results of this study indicate that variations in budgetary style of management as indicated in the characteristics of the budgeting system can have a significant effect on managerial performance. Direct testing of the characteristics of the budgeting system with managerial performance shows that budgetary participation and clarity of budget targets do not have a significant effect. The results of the study indicate that there is no significant effect of budgetary participation and clarity of budget targets on managerial performance.

Meanwhile, testing the effect of the suitability of budget target characteristics and environmental uncertainty on managerial performance shows unclear results. This study successfully determines the best combination in the suitability between budget target characteristics and environmental uncertainty. However, this

study shows that the lack of fit between characteristics and environmental uncertainty has an insignificant relationship. In other words, there is no expected lack of fit related to poor managerial performance. The unclear results may be caused by factors that have not been considered and controlled in relation to the use of residual analysis.

The use of perceived environmental uncertainty variables as moderating variables in this study can provide practical implications for budget goal setting in private universities. Understanding contextual variables such as environmental uncertainty can be used by goal setting program designers to anticipate the impact on their programs, and anticipate appropriate situations that are expected to have a positive impact on performance.

The residual method as used in this study has the potential to form a fit model in future management accounting contingency theory research. This method can represent a development and testing method that allows conceptual regression beyond the conceptualization contained in accounting-based studies that rely on a selection approach to model fit (Duncan and Mores, 1989). Thus, this method allows the adoption of an interaction approach and facilitates the testing of complex models that are consistent with the concept of system fit.

Recommendations for future research may be directed to a more in-depth study in other industries. The use of outcome variables such as job satisfaction, involvement, work pressure and attitude towards budget from Kenis (1979) in addition to managerial performance may provide a more comprehensive explanation to explain the influence of budget system characteristics. The use of other managerial, organizational, and environmental variables as control variables for budget target characteristics,

as well as the use of moderating variables such as personality, goal acceptance, motivation, organizational variables, and environmental variables (such as task uncertainty) as suggested by Kenis (1979) can be added and are quite relevant for similar research. Follow-up to this research is highly expected to improve the ability and understanding of the usefulness of the budget system, especially in preparing budget targets so that it can improve the usefulness of the budget system in carrying out management functions.

Future research using the residual approach needs to examine more deeply the aspects related to the application of this approach in designing research related to contingency theory. As stated by Duncan and Moores (1989) that research design that applies the residual analysis method needs to pay attention to aspects such as: developing a deep understanding of the theoretical framework in the formation of the model, the level of reliability of the measurements used, paying attention to the basic nature of the relationship between specific variables, and anticipating bias that may occur in the application of the residual approach.

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