Moderating Environmental Uncertainty: Management Accounting Systems and Decentralization on Managerial Performance

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Abstract
Competition in the world of business and industry requires company managers to organize organizational systems to make them more effective and efficient. The management and decentralized accounting system implemented by the company as well as uncertain environmental conditions also have an impact on the company. This research aims to analyze the influence of management accounting systems, decentralization, and environmental uncertainty on managerial performance. The population in this research are managers at telecommunications companies in the Papua region. The sampling in this research was a non-probability sampling design with a quota sampling technique obtained using an instrument in the form of 34 questionnaires which were distributed directly. The data analysis method in this research uses Structural Equation Model (SEM)-PLS analysis. The research results show that decentralization can influence managerial performance, but the management accounting system implemented is not able to provide a significant influence on managerial performance. Meanwhile, conditions of environmental uncertainty as a moderating variable are also unable to influence the relationship between decentralization and management accounting systems on managerial performance.

Keywords: Decentralization, Management Accounting System, Environmental Uncertainty, Managerial Performance

I. INTRODUCTION
Current conditions of global competition and increasingly competitive economic changes have an impact on business competition which is also increasingly competitive. Situations like this require companies to be oriented towards effective and efficient service functions. Therefore, companies must improve their capabilities in the operational and managerial fields. In an organization, managerial performance is important for management as a whole. This is because good managerial performance can be a measure of management's success in achieving its goals. Thus, companies are required to have productive and innovative managers so they
can see and use opportunities well, identify problems, and select and implement appropriate adaptation processes (Deliani et al., 2021).

Suyanda et al., (2023) explain performance as the achievements that a company can achieve in a certain period in implementing programs based on policies to realize the company’s targets, goals, vision, and mission. The achievements achieved are manifested in the company’s operational effectiveness, both from a managerial and economic perspective. Soleha et al., (2021) also added that managers are people who are responsible for directing efforts to help the company achieve its goals. Managers have the function of planning, organizing, leading, and controlling all activities within the company to achieve company goals. Each manager takes a broader role, in reality, to move the organization towards the goals that have been set. Thus, managerial performance is management’s ability to carry out management functions that consist of business activities and are always related to decision-making (Ardiany, 2021). Quality managerial performance can be formed in companies that have trustworthy and reliable information. Reliable information will increase managers’ ability to understand the actual state of the environment and identify significant activities. Meanwhile, reliable information will be able to support a management control system that can improve business strategies in achieving company goals (Alpi & Donggoran, 2022).

PT. Telekomunikasi Indonesia Tbk (Telkom) as a State-Owned Enterprise (BUMN) which operates in the largest telecommunications and network services sector in Indonesia offers various network and telecommunications services. PT. Telkom Witel Papua, which is one of the business units of PT Telkom Tbk, is the object of this research because the tendency to increase consumer demand for internet services at a high level is not accompanied by the managerial performance provided by the company. The basic problem is customer complaints regarding the decline in the quality of telecommunications network services that has occurred. This is not the first time this has happened to the company and harmed customers. In connection with this incident PT. Telkom Witel Papua apologizes for the inconvenience related to the decline in the quality of telecommunications services that occurred and will make improvements and efforts to improve the quality of services so that they are even better in the future (Evarukdijati, 2023). Therefore, efforts to improve managerial performance in companies need important attention to improve the company’s image.

Several factors related to managerial performance are the management accounting system. Hamzah et al., (2021) stated that the management accounting system has an impact on managerial performance. Management accounting system is a process of identifying, collecting, measuring, classifying, and reporting information that is useful for internal users in planning, controlling, and making decisions. The existence of a management accounting system makes it easier for managers to make decisions so they can achieve company goals. The above statement is in line with research by Suyanda et al., (2023) which also states that the management accounting system has an impact on managerial performance. However, the results of this research are different from research by Gheofani (2021) which states that the management accounting system does not have a significant effect on managerial performance.

The second factor that is thought to be related to managerial performance is decentralization. Fitriasuri & Arsyad (2022) explain that decentralization is the delegation of authority from leaders to their subordinates. Decentralization in decision-making is aimed at improving manager performance by encouraging leaders to develop their competencies. The existence of decentralization or delegation of authority causes an increase in the quality of decisions taken by the leadership because the manager in charge of the unit understands more accurately what is happening in his unit compared to the general manager. The above statement is in line with research conducted by Epi & Ikrima (2023) which states that decentralization has a significant effect on managerial performance. However, the results of this research contradict research by Ardiany (2021) which states that decentralization does not affect managerial performance.

The third factor which is also thought to influence managerial performance is
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environmental uncertainty. Environmental uncertainty is a person's inability to predict something accurately (Ida et al., 2022). A person is in a state of uncertainty if he feels that he does not have enough information to make accurate predictions, or if he feels that he is unable to differentiate between relevant and irrelevant data. Widia et al., (2021) explain environmental uncertainty as a situation where managers do not have sufficient information about environmental factors to understand and predict environmental needs and changes. The consequences of environmental uncertainty are that the results of decisions that have been made may be different from what was previously estimated when the decision was made. Environmental uncertainty affects managerial performance because environmental uncertainty is an external condition that can affect company operations and can disrupt management functions in planning and control. If the state of uncertainty is high, then the plans that have been prepared will be problematic due to the manager's inability to predict conditions that will occur in the future. Likewise, the control function will be affected by conditions of high environmental uncertainty, resulting in hampered manager decision-making.

Uncertain external conditions must be able to be responded to by company management so that they can make effective decisions in dealing with environmental uncertainty. The higher the manager's ability to predict, the lower the level of environmental uncertainty faced. This encourages company management to make adjustments to existing conditions by making various changes and better management controls. Achieving better management control will encourage increased company performance (Ida et al., 2022). The above statement is in line with research conducted by Wahyuningsih et al., (2023) which states that environmental uncertainty has a significant effect on managerial performance. However, the results of this research contradict research by Semekto (2021) which states that environmental uncertainty does not affect managerial performance. Starting from several previous research results which still have many differences, it will enrich the knowledge base for studying managerial performance with different objects. This research uses a case study at PT Telkom Witel Papua and the moderating variable Environmental Uncertainty as a differentiator compared to previous research

II. LITERATURE REVIEW

Agency Theory
According to Jensen, M., C., (1976), agency theory is a design that explains the conceptual relationship between principal and agent, namely between two or more people, a group, or an organization. The principal is the party who has the right to make decisions about the future of the company and gives responsibility to other parties (agents). Agency theory is a correlation between an agency and an agreement where the owner employs other people or managers to manage activities within the company. The principal is a shareholder or called an investor, while the agent is a manager who carries out management functions in the company. The essence of agency correlation is the differentiation of functions between investors and management. Therefore, as an agent, the manager is responsible for optimizing the owner's (principal's) profits. However, managers also want to always receive compensation according to the contract. Thus, there are two different interests within the company where each party tries to achieve and maintain the desired level of prosperity.

Contingency Theory
Contingency theory was first presented by Lawrence, R. P. & Lorsch, (1967) who stated that different environments place different needs on organizations. Contingency Theory states that all components of an organization must be compatible with each other. The contingency theory approach to management accounting is based on the statement that no management accounting system can be implemented appropriately in all organizations in every situation but depends on other things or factors that exist in the organization. These factors are leadership factors related to the delegation of authority, in this case through a decentralized system approach, while situational factors relate to situations of environmental uncertainty within the organization (Ida et al., 2022).

Management Accounting System
A management accounting system is a process of identifying, collecting, measuring, classifying, and reporting information that is useful for internal users in planning, controlling, and making decisions. Information is data that is processed to be used as a basis for making decisions (Hamzah et al., 2021). According to Soleha et al., (2021), the objectives of management accounting are grouped into two, namely; primary objectives, namely assisting management in making management decisions, and secondary objectives, namely assisting management in carrying out planning functions, answering problems in the organizational field, carrying out management control functions and carrying out management activity functions. According to Hariyati & Susi, (2014), there are four characteristics of management accounting system information, namely Broad Scope, Aggregation, Integration, and Timeliness.

**Decentralization**

Fitriasuri & Arsyad (2022) explain that decentralization is the delegation of authority from leaders to their subordinates. Decentralization in decision-making is aimed at improving manager performance by encouraging leaders to develop their competencies. The existence of decentralization or delegation of authority causes an increase in the quality of decisions taken by the leadership because the manager in charge of the unit understands more accurately what is happening in his unit compared to the general manager. According to Ardiany (2021), it can be concluded that the indicators of decentralization are; developing innovative ideas, making decisions for managers, considering large-scale investments, planning budget allocations, and improving the quality of work.

**Environmental Uncertainty**

Environmental uncertainty is a person's inability to predict something accurately (Ida et al., 2022). A person is in a state of uncertainty if he feels that he does not have enough information to make accurate predictions, or if he feels that he is unable to differentiate between relevant data and irrelevant data.

Widia et al., (2021) explain that environmental uncertainty is a situation where managers do not have sufficient information about environmental factors to understand and predict environmental needs and changes. The consequence of environmental uncertainty is that the results of decisions that have been made may be different from what was previously estimated when the decision was made. Indicators for measuring environmental uncertainty variables (Widia et al., 2021) are state uncertainty, influence uncertainty, and response uncertainty.

**Managerial Performance**

Performance is the achievement that a company can achieve in a certain period in carrying out activities based on policies to realize company goals (Suyanda et al., 2023). Soleha et al., (2021) stated that managers are people who are responsible for directing efforts aimed at helping the company achieve its goals. Managerial performance is management's ability to carry out management functions consisting of business activities, which of course are always related to decision making. Managerial performance is important in overall management. This is because good managerial performance can be a measure of management's success in achieving its goals (Deliani et al., 2021). According to Jumaidi et al., (2021), there are eight indicators of managerial performance, namely; Planning, Investigation, Coordination, Evaluation, Supervision, Staff Selection, Negotiation, and Representation.

**Hypothesis**

Hamzah et al., (2021) explained that the management accounting system influences managerial performance. A management accounting system is a process of identifying, collecting, measuring, classifying, and reporting information that is useful for internal users in planning, controlling, and making decisions. The existence of a management accounting system makes it easier for managers to make decisions so that they can achieve company goals. The above statement is in line with research conducted by Suyanda et al., (2023) which states that the management accounting system has a significant effect on managerial performance.

Fitriasuri & Arsyad, (2022) explain that decentralization is the delegation of authority
from leaders to their subordinates. Decentralization in decision-making is aimed at improving manager performance by encouraging leaders to develop their competencies. With decentralization or delegation of authority, the quality of decisions taken by the leadership increases, because the manager in charge of the unit understands more accurately what is happening in his unit compared to the general manager. The above statement is in line with research conducted by Epi & Ikrima (2023) which states that decentralization has a significant effect on managerial performance.

Environmental uncertainty is a person's inability to predict something accurately (Ida et al., 2022). The consequence of environmental uncertainty is that the results of decisions that have been made may be different from what was previously estimated when the decision was made. Environmental uncertainty affects managerial performance because environmental uncertainty is an external condition that can affect company operations and can disrupt management functions in planning and control. If the state of uncertainty is high, then the plans that have been prepared will be problematic due to the manager's inability to predict conditions that will occur in the future. Likewise, the control function will be affected by conditions of high environmental uncertainty, resulting in hampered manager decision-making. Uncertain external conditions must be able to be responded to by company management so that they can make effective decisions in dealing with environmental uncertainty. The higher the manager's ability to predict, the lower the level of environmental uncertainty faced. This encourages company management to make adjustments to existing conditions by making various changes and better management controls. Achieving better management control will encourage increased company performance (Ida et al., 2022). The above statement is in line with research conducted by Wahyuningsih et al., (2023) which states that environmental uncertainty has a significant effect on managerial performance.

The hypothesis in this research is:

H1: Management Accounting Systems Influence Managerial Performance.
H2: Decentralization Affects Managerial Performance

H3: Environmental Uncertainty moderates the relationship between Management Accounting Systems and Managerial Performance.
H4: Environmental Uncertainty moderates the relationship between Decentralization and Managerial Performance.

III. METHOD

The research is quantitative research with a survey method. The population in this study were managers of telecommunications companies in the Papua region, while the sample was obtained by 34 respondents using quota sampling techniques (Sekaran & Bougie, 2017). This research uses the PLS structural equation modeling (SEM) analysis method with stages including; measurement model testing (validity and reliability), model suitability, and hypothesis testing. The first test is data validity by looking at the outer model value of each construct or variable. The condition for the factor loading value (outer loading) is > 0.7. Data validity testing can also look at the Convergent validity value (AVE value) and the measurement value must be greater than 0.5 (Solimun et al., 2017). Second, reliability testing using Composite reliability or Cronbach's alpha value which is an indicator for measuring constructs and is based on latent variable coefficients. The measurement instruments for assessing composite reliability are internal consistency and Cronbach's alpha. If the value is > 0.70, the construct has high reliability (Solimun et al., 2017). Third, the inner goodness of fit model uses R-square dependent latent variables with an interpretation as regression. An R-Square value > 0 indicates the model has a predictive relationship; conversely, if the R-Square value = 0, it indicates that the model lacks predictive relationship value. Fourth, assess the inner model of the path coefficient (inner weight). Finally, hypothesis testing uses the t-test on the outer model and inner model. The statistical hypothesis for the inner model of the influence of exogenous latent variables on endogenous variables is H0: β = 0 and H1: β ≠ 0.

IV. RESULTS AND DISCUSSION

Respondent Profile

The respondents used as samples for this research were 34 managers at the Telkom company in the Papua Region. A total of 34
questionnaires were distributed with the questionnaire return rate as shown in Table 1.

<table>
<thead>
<tr>
<th>Description</th>
<th>Total</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributed</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>Unresponded</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 1 shows the results of the reliability test using Cronbach's Alpha and Composite Reliability values. The test results meet the test criteria where the value of each Cronbach's Alpha variable is > 0.60, and the Composite Reliability value also has a value above > 0.70. This result means that each variable, namely decentralization, management accounting system, environmental uncertainty, and managerial performance has a reliable construct.
Table 3
Discriminant Validity Test Results (Fornell Lacker)

<table>
<thead>
<tr>
<th></th>
<th>Decentralization</th>
<th>Environmental Uncertainty</th>
<th>Managerial Performance</th>
<th>Moderating Environmental Uncertainty over Decentralization</th>
<th>Moderating Environmental Uncertainty over Management Accounting Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decentralization</td>
<td>0.846</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Uncertainty</td>
<td>0.535</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managerial Performance</td>
<td>0.783</td>
<td>0.580</td>
<td>0.782</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderating Environmental Uncertainty over Decentralization</td>
<td>-0.452</td>
<td>-0.183</td>
<td>-0.514</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Moderating Environmental Uncertainty over Management Accounting Systems</td>
<td>-0.369</td>
<td>-0.146</td>
<td>-0.382</td>
<td>0.249</td>
<td>1.000</td>
</tr>
<tr>
<td>Management Accounting Systems</td>
<td>0.522</td>
<td>0.201</td>
<td>0.508</td>
<td>-0.518</td>
<td>0.906</td>
</tr>
</tbody>
</table>

Source: SEM-PLS Processing results

Table 4
Coefficient of Determination Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>R-Square</th>
<th>Adjusted R-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managerial Performance</td>
<td>0.686</td>
<td>0.630</td>
</tr>
</tbody>
</table>

Source: SEM-PLS Processing results

The results of the coefficient of determination test of the influence of the management accounting system, decentralization moderated by environmental uncertainty on managerial performance, obtained an R-Square value of 0.686 and an Adjusted R-Square of 0.630, meaning that the managerial performance variable can only be explained by the management accounting system, decentralization and environmental uncertainty of 63%. These results illustrate that the quality of the research model which explains the relationship between managerial performance variables management accounting system variables decentralization and environmental uncertainty is relatively not strong enough.

Hypothesis testing using a table value of 1.96 with an alpha value of 5%. The criteria for accepting or rejecting a hypothesis are; if the t-statistic value is greater than 1.96 or the probability value is smaller than alpha 5%. The results of the hypothesis test are shown in Table 5 and Figure 2.

Table 5
Hypothesis Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Original Sample</th>
<th>t-statistic</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decentralization → Managerial Performance</td>
<td>0.529</td>
<td>2.338</td>
<td>0.013</td>
</tr>
<tr>
<td>Environmental Uncertainty → Managerial Performance</td>
<td>0.212</td>
<td>1.548</td>
<td>0.140</td>
</tr>
<tr>
<td>Moderating Environmental Uncertainty over Decentralization → Managerial Performance</td>
<td>-0.124</td>
<td>0.669</td>
<td>0.510</td>
</tr>
<tr>
<td>Moderating Environmental Uncertainty over Management Accounting Systems → Managerial Performance</td>
<td>0.054</td>
<td>0.327</td>
<td>0.741</td>
</tr>
<tr>
<td>Management Accounting Systems → Managerial Performance</td>
<td>0.104</td>
<td>0.488</td>
<td>0.606</td>
</tr>
</tbody>
</table>

Source: SEM-PLS Processing results
Table 5, Hypothesis test results show that the probability value (0.013 < 0.025) is significant only in the relationship between decentralization and managerial performance. The same results are also shown in Figure 2 that the t-statistic value of the relationship between decentralization and managerial performance is 2.486, which is greater than the t table value of 1.96. Therefore, testing the hypothesis that the effect of decentralization on managerial performance is significant, while the effect of the management accounting system on managerial performance is not significant. Meanwhile, the role of the moderating variable environmental uncertainty in both the relationship between decentralization and managerial performance and the relationship between management accounting systems and managerial performance is not significant. The results indicate that environmental uncertainty is not a moderating variable.

V. CONCLUSION

This study examines and analyzes the influence of management accounting systems and decentralization on managerial performance as well as the role of environmental uncertainty moderating variables. This study used a sample of 34 managers as respondents. The results state that managerial performance is only influenced by decentralization and not so by the management accounting system. Meanwhile, the environmental uncertainty variable is not a moderator variable that can moderate the relationship between decentralization and management accounting systems on managerial performance. Uncertain environmental conditions cannot influence the increasing relationship between management accounting systems and decentralization on managerial performance. This is because environmental uncertainty is not considered a factor inhibiting performance.

This study adds to the variety of previous research by taking a different object, namely PT managers. Telkom Witel Papua and testing environmental uncertainty moderating variables. However, this study has the unique result that environmental uncertainty variables cannot act as moderating variables. Therefore, future researchers can re-examine the moderating variable by taking different objects with larger samples so that they are truly represented.

REFERENCE:


