Management Accounting Information Systems, Performance Measurement Methods and Reward Systems in Influencing Managerial Performance

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ABSTRACT
The problem that is the indication of management accounting information system policies, performance measurement methods, and reward systems that are less effective, so that they are felt to affect managerial performance. The number of samples obtained from the total population in as many as 32 people. Data analysis techniques using validity and reliability tests, multiple linear regression tests, t tests and F tests. The results of the research carried out obtained that partially the application of management accounting information systems to managerial performance. The performance measurement method has a positive and significant effect on managerial performance. The reward system has a positive and significant effect on managerial performance. Simultaneously the application of management accounting information systems, performance measurement methods and reward systems have an effect on managerial performance with a significant value of \( F_{0.001} < \text{sig. 0.05} \). Management should always pay attention to the development of the systems implemented, including the application of management accounting information systems, performance measurement methods and reward systems in order to achieve the effectiveness of managerial performance.

1. INTRODUCTION
The existence of global economic changes requires every company to increase the effectiveness of its company operations. Especially the increasing demands for the right to consumer services that are getting faster, more precise, cheap, and fair of good quality pose challenges that are often faced by companies (Jatmiko et al., 2021). Leaders must be able to play a very important and decisive role in achieving organizational goals (Suprantiningrum & Lukas, 2021). In general, the success of a company depends a lot on the manager's factors. Accounting research states that the company's low performance is caused by the company's management accounting system that fails to determine the right advice, performance measurement and reward system (Hasnanto & Gunawan, 2020).
Every company is required to improve managerial performance, every company will improve the management accounting system managed by managers in the implementation of company operations (Fuadah et al., 2020). Managerial performance in the organization is one of the answers to the success or failure of the organizational goals that have been set (Jatmiko, 2020a). The superiors or managers of companies in Indonesia often do not pay attention to organizational goals optimally, unless the company’s condition has worsened (Susiana et al., 2018). Managers often do not know how badly the company is performing, causing the company to face a serious crisis. For this reason, strategic steps are needed to anticipate the decline in performance (Jatmiko, 2020b). Managers need information to predict the future and make decisions, namely by considering the influence of external factors of the company (Mathis, Robert L. et al., 2017). The form of information can be in the form of reports, descriptive models and forms of utilization of this information then analyzed for decision making and described by the manager in every company activity (Raik, 2020).

The problem that deserves the company’s attention, especially companies engaged in services, is the application of an effective management accounting information system (Ngo, 2021). Management accounting information systems run through a continuous process without stopping. The initial stage starts from input data, processing data, and finally generating reports. Managers make decisions based on the information presented in the report (Hasnanto & Gunawan, 2020). Useful management accounting information based on managerial perceptions as decision making is categorized into four characteristics, namely scope, timeliness (on time), aggregation, and integration (Kesumawati et al., 2019). Scope relates to providing information that focuses on internal and external companies, timeliness relates to the speed of reporting, aggregation provides summary information according to functional areas, time periods or through decision models, and integration consists of information about the activities of other departments within the company and how decisions are made (Melanthon & Jaminta, 2018). Performance in one department affects performance in another (Pramesti & Putri, 2021).

Another problem that makes companies have to focus more on managing and organizing managerial performance is the method of measuring the performance of their managers (Irfani et al., 2020). Performance measurement is a management tool used to improve the quality of decision making and accountability, as well as to assess the achievement of goals and objectives (Stojkić & Bošnjak, 2019). To be able to know to what extent a company’s success in running its business requires a performance measurement. Performance measurement shows the relationship between the plans that have been set by the company and the results that have been achieved (Papadopoulou, 2020). To measure the company’s performance, a performance measurement method is needed both in terms of financial and non-financial terms. The more often a company performs performance measurements on managers, the company will further improve the performance of its managers, so that with increasing performance, the quality which is the main goal will be achieved (Elmgasbi, 2019).

The reward system also serves as a motivator for managers in realizing organizational goals. Thus, the award given by the company greatly affects productivity and influences managers to keep working in the company (Baik, 2020). Managers who work in companies will be more motivated if they are given appropriate rewards in the form of physical and non-physical reward or their performance results (Almeida et al., 2021). The reward system can be given by the company based on the work weight, working hours, namely normal working hours and overtime hours as well as the achievements given by the manager to the company (Kohls et al., 2018). For this reason, the greater the company’s attention to the needs of managers, the company will receive appropriate feedback, namely maximizing the work productivity of managers. Reward system in addition to improve managerial performance, can also reduce managerial performance if they feel that the compensation, they receive is not commensurate with their work and the goal to improve managerial performance is not achieved (Taba, 2018).

Hospital is a health service institution that provides complete individual health services that provide inpatient, outpatient and emergency care (Menteri Kesehatan Republik Indonesia, 2018). As a provider of health services, in carrying out its activities the Regional General Hospital (RSUD) Dr. Iskak
Tulungagung has an inherent function, namely the social function and the business function. In carrying out its social functions, the Regional General Hospital (RSUD) Dr. Iskak Tulungagung serves every patient who comes to get health services regardless of their socioeconomic status. Every patient who comes will be served well even though the patient who comes is an incapacitated person. To carry out its business function as a provider of private health services, the Regional General Hospital (RSUD) Dr. Iskak Tulungagung needs to maintain and increase the number of patient visits in order to be able to benefit from patient visits in order to maintain the continuity of its business through the policy of setting hospital rates, service quality as well as aspects of the competence, and quality of doctors in providing their best ability to treat patients.

Regional General Hospital (RSUD) Dr. Iskak Tulungagung as a provider of health services cannot be separated from competition with other health service providers, which is increasing day by day. Factors considered in choosing to win the competition are by implementing a management information system, performance measurement system, and awarding in the internal area of the hospital institution, both from manager management and the quality of doctors and nurses, as well as how to provide tariffs and services that are in accordance with the wishes of the users health services (Kotler et al., 2017).

The problems that need attention from the Regional General Hospital (RSUD) Dr. Iskak Tulungagung related to the quality of the performance of nurses and doctors. Researchers conducted direct interviews with managers regarding management accounting information systems. This problem arises regarding the management information received by managers is less than optimal, such as non-economic information including patient preferences, manager attitudes, labor relations, and technological advances. This makes it difficult for managers to manage information which will later be used as a decision-making process in carrying out their performance at the hospital. The information received is less of a concern to the leadership, such as information on hospital developments that are not immediately upgraded (Istianingsih et al., 2020). This shows that the management information system implemented by the agency is less effective. However, this situation is inversely proportional to the achievement of RSUD Dr. Iskak Tulungagung who in the 2019 period received an award for one of the best hospitals in the world according to the IHF (International Hospital Federation).

Another problem that indicates a decline in managerial performance is the lack of effective performance measurement at the Dr. Iskak Regional General Hospital (RSUD) Tulungagung, this is evidenced by interviews that companies rarely use a system such as a performance measurement system, because the performance measurement system is not determined periodically, even though performance measurement provides an important mechanism for managers to use in explaining goals and performance standards and can motivate performance of each individual in the future. The performance measurement method that has been implemented indicates that it is not yet appropriate in its application, this can be seen from the performance assessment carried out by managers to managers that is not objective (Elmgasbi, 2019). The inaccuracy of performance measurement by these managers makes managers or their subordinates also find it difficult to carry out work instructions that are carried out such as the problem of job training held by hospital managers, that are not in accordance with the fields and abilities of hospital staff in their respective divisions.

Other problems related to the lack of attention to welfare in the form of awards to managers both financially and non-financially, the decisions of managers in implementing a reward performance-based system are still less than optimal, this can be seen from the awarding that is not in line with the expectations of hospital workers. This discrepancy can be seen from the lack of awards given in terms of time, sometimes these awards are given on a monthly basis, but sometimes in the following months there is no longer any form of appreciation (Alonso et al., 2015). The award is intended to encourage the workforce, and has been applied to RSUD Dr. Iskak Tulungagung, however, has not been able to change the tendency of the workforce from the spirit to fulfill their own interests to the spirit of fulfilling the interests of the organization. With the implementation of the reward system within the company, the quality of the performance of the individuals themselves will be even
more motivated if they are rewarded both physically and non-physically for their performance (Melanthon & Jaminta, 2018).

According to Hansen & Mowen (2019), management accounting information can help managers identify a problem, solve problems, and evaluate performance to improve managerial performance. Meanwhile, according to Vásquez & Naranjo-Gil (2020), the suitability of management accounting information with the needs of decision makers can improve the quality of decisions to be taken and will improve the performance of business units. The results of research conducted by Suprantiningrum & Lukas (2021), state that the management accounting information system has a positive effect on managerial performance, the results of this study are supported by research from (Astuty, 2015). Which explains that information systems have an effect on managerial performance. This indicates that management accounting information that has information characteristics in the form of aggregation, broad scope, integration, and timeliness can improve managerial performance. Managers who have information with these characteristics are generally able to make better plans and achieve the targets that have been set (Kesumawati et al., 2019).

Measurement of performance is an important thing to do so that it is known, whether during the implementation of performance there are gaps from the predetermined plan or whether performance can be carried out as expected (Farmer & Tierney, 2017). The performance measurement system carried out by the company will motivate managers to work better because their work performance is needed by the company (Istianingsih et al., 2020). The performance measurement system is a mechanism that affects the likelihood that the organization will implement its strategy successfully (Papadopoulou, 2020). The results of research from Dahlan (2015), state that the work measurement system has a significant positive effect on managerial performance, this finding is different from the opinion of and the results of research from Elmgasbi (2019) which states that the work measurement system has no effect on performance sustainability. managerial.

According to Audina et al., (2018) the reward system (compensation) is a gift to employees with financial fees as remuneration for the work carried out and as a motivator for the implementation of activities in the future. An effective reward (compensation) system should be able to attract employees or workers who have good qualifications, keep them satisfied with their jobs and inspire them to succeed. There are several studies that examine the relationship of the effect of rewards on managerial performance, Almeida et al., (2021) explains that awards given by companies have a positive effect, this is reinforced by the opinion of Maulidiyah et al., (2017) and research by Kohls et al., (2018) who agree with these findings. However, another opinion from Komara & Eva (2017) states that the reward system has an effect but is not significant on managerial performance. The theoretical framework in this research compiled by the researcher can be useful as a description of the flow of the research to be carried out. The following is the theoretical framework:

![Theoretical Framework Of Research](image)

2. RESEARCH METHOD
The scope of this research focuses on the type of quantitative research (Sugiyono, 2018). Quantitative research is a type of approach to identifying social problems using basic variables as a measuring tool by analyzing numbers using statistics as predictive of the truth of a hypothesis (Desss, 2016). The
population of this research is all Directors, Deputy Directors, Head of Section or Head of Sub. Sections and Section Heads who work in hospitals. Dr. Iskak Tulungagung. The sampling technique used by the author is Non Probability Sampling, using the method saturated sampling (Wiratna, 2014). The number of samples obtained from the total population in as many as 32 people. The data analysis techniques used in this research are the validity and reliability test of the instrument, the data validity test, the multiple linear regression test and the research hypothesis test (Ghozali, 2013).

3. RESULTS AND DISCUSSIONS

3.1. Data Analysis Results

Validity test was conducted to determine the instrument’s ability to measure research variables. This test is carried out by asking questionnaire questions which will later be given to respondents (Ferdinand, 2014). The validity provisions can be seen from the significant value of $r$ calculated below the 0.05 significance level, that the Management Accounting Information System variable ($x_1$) which has 8 questionnaire items as a whole has a significant value of $r$ arithmetic which is below the value of sig. 0.05. Variable Performance Measurement Method ($x_2$) as many as 8 items of the questionnaire have a significant value of $r$ arithmetic which is below the value of the provisions of sig. 0.05. The reward system variable ($x_3$) as many as 8 questionnaire items has a significant value of $r$ arithmetic which is below the value of the provisions of sig. 0.05. Managerial Performance Variable (Y) also has a significant value of $r$ which is below the value of sig. 0.05. It was concluded that by testing the validity of all items in the questionnaire statement, it was declared valid and worthy of further observation.

The results of the reliability test of the statement items with a total score of the Management Accounting Information System variable ($x_1$) of 0.720, which is above the provision of 0.60. test the reliability of the statement item with a total score of the performance measurement method variable ($x_2$) of 0.785 is above the provision of 0.60. test the reliability of the statement item with a total score of the reward system variable ($x_3$) of 0.887 is above the provision of 0.60. test the reliability of the statement item with a total score of managerial performance variable (Y) of 0.697, which is above the provision of 0.60. Overall it can be said that all statement items on each independent variable and dependent variable are concluded to be reliable and have reliability in this study.

Value Asymp. Sig. kolmogorov smirnov test variable application of management accounting information systems ($X_1$) of 0.739. Value Asymp. Sig. The variable of Performance Measurement Method ($X_2$) is 0.973. Value Asymp. Sig. The reward system variable is 0.101. Managerial performance variable value (Y) of 0.514. Overall, it can be concluded that each of these research variables is normally distributed because it is above the significant value of 0.05. The Value of tolerance, the independent variable which includes the Management Accounting Information System ($X_1$) is 0.577 and the Performance Measurement Method ($X_2$) is 0.554 and the value tolerance reward system variable ($X_3$) is 0.564. Each variable has a tolerance value greater than 0.10. While the value of VIF Management Accounting Information System ($X_1$) is 1.734. The Performance Measurement Method ($X_2$) is 1.803 and the reward system ($X_3$) is 1.774 for all variables smaller than the provision of 10.00. Overall, the questionnaire distribution data can be said to be free from the assumption of multicollinearity. The results of the calculation of multiple linear regression analysis are obtained as follows:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Regression Value</th>
<th>Value of t count</th>
<th>Significant t value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Accounting Information Systems</td>
<td>0.542</td>
<td>4.125</td>
<td>0.004</td>
<td>Significant</td>
</tr>
<tr>
<td>Performance Measurement Methods</td>
<td>0.229</td>
<td>2.422</td>
<td>0.002</td>
<td>Significant</td>
</tr>
<tr>
<td>Reward Systems</td>
<td>0.698</td>
<td>3.767</td>
<td>0.011</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Source: (Data processed by researchers, 2021)
The results of the calculations presented above can be obtained by the regression equation that: \( Y = 12.036 + 0.542 X_1 + 0.229 X_2 + 0.698 X_3 \), it can be interpreted that if the independent variables which include the application of management accounting information systems, performance measurement methods and reward systems do not experience changes, the magnitude of the managerial performance of employees is 12.036 units. The application of the management accounting information system has experienced an increase of 1 unit towards positive, then managerial performance will also increase with a value of 0.254 units. The performance measurement method has an increase of 1 unit in the direction and is positive, then managerial performance will also increase with a value of 0.229 units. The reward system has increased by 1 unit in one direction and is positive, so managerial performance will also increase with a value of 0.698 units.

The calculation results obtained that the value is significant. \( t \) 0.004 < 0.05 means there is a partial effect between the variables of the application of management accounting information systems on managerial performance (Y) in the Regional General Hospital Dr. Iskak Tulungagung. Significant value \( t \) of 0.002 < 0.05 which means that there is a partial effect between the variables of the performance measurement method \( (X_1) \) on managerial performance (Y) at the Dr. Iskak Regional General Hospital, Tulungagung. The calculation results obtained that the value is significant. \( t \) of 0.000 < 0.05 which means that there is a partial influence between the reward system variables \( (X_3) \) on managerial performance (Y) at the Dr. Iskak Regional General Hospital, Tulungagung. The significant value of \( F \) is 0.001 < sig. 0.05. Based on these calculations, it can be explained that Ha is accepted and Ho is rejected. It can be explained that the application of management accounting information systems, performance measurement methods and reward systems have a simultaneous effect on managerial performance \( (Y) \) at the Regional General Hospital Dr. Iskak Tulungagung. The coefficient of determination \( (R^2) \) which means which variable has the dominant effect. The greater the coefficient of determination, the better the ability of the independent variable in explaining the dependent. Based on the calculation above, the obtained value of the coefficient of determination \( (R^2) \) of 0.448. This can be interpreted that the existence of the variable application of management accounting information systems, performance measurement methods and reward systems is able to contribute to the influence of managerial performance by 44.8%, the remaining 55.2% is influenced by other variables not included in this study.

### 3.2 The Effect of Management Accounting Information System On Managerial Performance

Based on the results of the partial test that has been carried out in this study, a significant value was obtained. \( t \) 0.004 < 0.05 means there is a partial effect between the variables of the application of management accounting information systems on managerial performance at Regional General Hospital Dr. Iskak Tulungagung. (Hasnanto & Gunawan, 2020) explains that the suitability of management accounting information with the needs of decision makers can improve the quality of decisions to be taken and will improve the performance of business units. The results of this study indicate that the implementation of the management accounting information system as a whole contributes to the influence of managerial performance, this can be seen from the weak reporting provided by subordinates to unstructured managers and has not been reported on an ongoing basis regarding the performance of resources in each of these work divisions.

The results of this research that have been carried out are supported by previous research studies from (Vásquez & Naranjo-Gil, 2020) which state that management accounting information systems have a positive effect on managerial performance. Reinforced by research from (Ngo, 2021) explains that information systems have an effect on managerial performance. also has the same opinion as the results of this study. This indicates that management accounting information that has information characteristics in the form of aggregation, broad scope, integration, and timeliness can improve managerial performance (Kesiumawati et al., 2019). Managers who have information with these characteristics are generally able to make better plans and achieve the targets that have been set (Hariyati et al., 2019). The findings of this study indicate that the management accounting information system running in the RSUD. Dr. Iskak Tulungagung has not run optimally, it can be seen from the role of managers who are not optimal in managing work operations at the hospital. This can be seen
from the overall reports given to managers that have not been provided systematically and regularly by subordinates.

3.3 The Effect of Performance Measurement Methods On Managerial Performance

Based on the results of the partial test that has been carried out in this study, a significant value was obtained. \( t \) of 0.002 < 0.05 which means that there is a partial effect between the variables of the performance measurement method on managerial performance at the Dr. Iskak Regional General Hospital, Tulungagung.

Measurement of performance is an important thing to do so that it is known whether during the implementation of performance there are gaps from the predetermined plan or whether performance can be carried out as expected (Dos Santos et al., 2021). The performance measurement system carried out by the company will motivate managers to work better because their work performance is needed by the company. The performance measurement system carried out by the company will motivate managers to work better because their work performance is needed by the company. The performance measurement system is a mechanism that affects the likelihood that the organization will implement its strategy successfully (Susiana et al., 2018).

The results of this research that have been carried out are in line with research from (Irfani et al., 2020) and (Pramesti & Putri, 2021), which states that the work measurement system has a significant positive effect on managerial performance. However, the study findings in this study are not in line with the research conducted by (Stojkić & Bošnjak, 2019) which states that performance measurement has a positive influence on managerial performance. This result is also added by (Papadopoulou, 2020) which states that the work measurement system has no effect on the sustainability of managerial performance. This finding indicates the performance of RSUD. Dr. Iskak Tulungagung has not seen that each perspective can explore the existing problems by giving questionnaires to subordinates, in order to know the manager’s performance in determining performance in accordance with the duties and functions of each subordinate in the hospital.

3.4 Effect of Reward SystemManagerial Performance

Based on the results of the partial test that has been carried out in this study, it was found that the value was significant. \( t \) of 0.000 < 0.05 which means that there is a partial influence between the reward system on managerial performance at the Dr. Regional General Hospital Iskak Tulungagung.

Performance-based reward system is one of the important control tools used by companies to generate motivation from within personnel to achieve company goals (not individual personnel goals) with behavior as expected by the company to improve managerial performance (Audina et al., 2018). According to (Taba, 2018) the reward system (compensation) is a gift to employees with financial fees as remuneration for the work carried out and as a motivator for the implementation of activities in the future. An effective reward (compensation) system should be able to attract employees or workers who have good qualifications, keep them satisfied with their jobs and inspire them to succeed (Komara & Eva, 2017).

There are several studies that examine the relationship of the effect of rewards on managerial performance, (Baik, 2020) describes the awards given by companies that have a positive effect, this is reinforced by the opinion of (Kohls et al., 2018) and the research of (Maulidiyah et al., 2017) who agrees with these findings. However, another opinion from (Alonso et al., 2015) states that the reward system is influential but not significant on managerial performance. The researcher concluded that the discrepancy in the results of the study was caused by the provision of responsibilities that were felt to be not optimal, which was supported by the data that nurses felt more compelled to do new things related to work. Responsibilities that have not been clearly structured and synergized with acknowledgment also lead to less than the maximum increase in performance as expected.

3.5 Management Accounting Information Systems, Performance Measurement Methods and Reward Systems Simultaneously on Managerial Performance.

Based on the results of the study showed that the significant value of \( F \) was 0.001 < sig. 0.05. Based on these calculations, it can be explained that Ha is accepted and Ho is rejected. It can be explained that
4. CONCLUSION

In response to the results of the research and discussion in the previous chapter, it can be concluded that: (a) The application of management accounting information systems has a significant effect on managerial performance at the Regional General Hospital Dr. Iskak, Tulungagung. (b) The performance measurement method has a significant positive effect on managerial performance at the Regional General Hospital Dr. Iskak, Tulungagung. (c) The reward system has a positive and significant effect on managerial performance at the Regional General Hospital Dr. Iskak, Tulungagung. (d) There is a simultaneous influence between the application of management accounting information systems, performance measurement methods and reward systems on managerial performance at the Regional General Hospital Dr. Iskak, Tulungagung.

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Management Accounting Information Systems, Performance Measurement Methods and Reward Systems in Influencing Managerial Performance (Udik Jatmiko)