

# The Effect Of Leadership Style On Managerial Performance With Effectiveness Of Information System As Mediator

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**Abstract:** Higher education has a strategic role in the development of science and technology. This role is manifested in the implementation of "Tri Dharma", consist of education, research, and outreach community. An important factor that guarantees the implementation of "Tri Dharma" is managerial performance. Managerial performance is the result of work achieved in managerial activities, planning, organizing, implementing and controlling. One success determination of managerial performance is manager's leadership style. In order to carry out managerial performance, information system support is needed. This study analyzes the influence of leadership style on managerial performance by mediating the effectiveness of users information systems on "Sistem Informasi Manajemen Perencanaan dan Anggaran (Simangga)". The questionnaire was distributed to 100 Simangga users from the leadership level to the operator. Data that can be processed are 74 respondents. Results showed that leadership styles influence managerial performance, leadership style has a significant effect on the effectiveness of information systems, the effectiveness of information systems has a significant effect on managerial performance, leadership style influences managerial performance through the effectiveness of information systems. It can be concluded that information systems can be a partial mediation on the influence of leadership style on managerial performance. The leadership style and effectiveness of information systems simultaneously influence managerial performance.

**Index Terms:** leadership style, information systems effectiveness, managerial performance.

## 1 INTRODUCTION

Higher education has a strategic role in the development of science and technology. This role is manifested in the implementation of "Tri Dharma" of higher education through education, research, and outreach community. "Tri dharma" implementation is a form of accountability and responsibility for government performance to the community. An important factor that guarantees the implementation of "Tri Dharma" is managerial performance. According to (Basri and Rivai, 2005), performance is the willingness of a person or group of people to carry out activities to achieve certain results. Managerial performance is the measurement how effectively and efficiently managers have worked to achieve organizational goals. According to (Mahoney et al., 1965) managerial performance is the result of work achieved by a person in managerial activities including planning, organizing, actuating and controlling. That various theories explain that one of the factors that influence performance is manager leadership. The relationship of leadership with managerial performance is examined in the opinion of (Greenberg and Baron, 2003), leadership is the process of an individual in influencing other group members to achieve organizational goals. (Keith and Newstrom, 1995) argue that leadership showing style. Leadership style is the manifestation of the ability of manager to lead, thus improving managerial performance can be influenced by managers in applying their leadership style. In the digital era the challenge of leadership can be described by the need of access information whenever and wherever to control the organization. Information systems are very important for managing everyday business in order to achieve business strategic goals, companies invest highly in information technology (Laudon and Laudon, 2014). Information systems involve three basic resources, namely human, technology, and information for decision making (Dimitrios et al., 2013). All the facts above reinforce the influence of information systems as a mediation for a manager to improve organizational performance. Many results of research on managerial performance indicate research gaps. The results of (Schepers et al., 2005) concluded that transformational leadership style influences the effectiveness

of information systems, whereas transactional leadership styles do not affect the effectiveness of information systems. According to (Birasnav, 2014; Braun et al., 2013; Nguyen et al., 2017) leadership style influences managerial performance, whereas according to (Husin et al., 2012; Rosmiyati and Ramdhani, 2014; Suryo, 2010) leadership styles have no influence on performance. The inconsistency of the results of the study was also found in the influence of information systems on managerial performance. Research results of (Christianto et al., 2007; Cui et al., 2016; Darmini and Putra, 2008; Xinli, 2015) showed the influence of information systems on managerial performance, while the results of the research (Gelderman, 1998; Lindawati and Salamah, 2012) state that there is no influence between information systems and managerial performance. The existence of research gaps is an important reason for conducting research to find new solution. The Simangga workflow starts from preparation of work unit budget work plans (15 Faculties, 97 Study Programs, 14 UPT/Institutions and 15 sections). Each work unit sets out the Strategic Plan and indicators to be achieved from each activity prepared in the form of a Term of Reference (TOR) and Budget Details called "Rincian Anggaran Biaya (RAB)". Then consolidation of activities at the Faculty level and a TOR and RAB review were handled by the University. The output of Simangga is Budget work plan called "Rencana Kerja Anggaran (RKA)" work unit that is integrated with University planning and budgeting. The next stage is determination and make performance agreement between Rector and leader of the work unit as guidance for performance evaluation standards. Based on the process above it can be assumed that Simangga is able to mediate the leadership in improving managerial performance. Simangga makes it easy for University leaders to consolidate with the unit work programs that are in line with the strategic plan, provide guidance to the head of the work unit to carry out planning in line with the achievements of University indicators, and provide convenience in compiling RKA work units as guidelines for budget implementation. The phenomena that arise in the implementation of managerial activities are as follows (1) target performance indicators that have not been fully

distributed quantitatively to the person in charge both at the university level and unit work (2) TOR is not in accordance with the standards (3) weak commitment in making and revising TOR (4) planning stops at the compilation process (5) Simangga poor data validity (6) Simangga output is not used as a base for guidelines and evaluation controls in budget execution. From the various description problems above, the research problem was formulated as follows:

1. Is there any effect leadership style on managerial performance at University of Jember?
2. Is there any effect leadership style on effectiveness level of information systems at University of Jember?
3. Does the effectiveness information systems affect managerial performance at University of Jember?
4. What is effectiveness of information system can be use as a mediation in the effect of leadership style on managerial performance at University of Jember?

## 2 LITERATURE REVIEW

### 2.1 Managerial Performance

(Basri and Rivai, 2005) explain that performance is the willingness of a person or group of people to carry out activities and perfect them based on responsibilities in accordance with the expected results. Managerial performance is a measure of how effective and efficient a manager works to achieve organizational goals. According to (Aguinis, 2009) managerial performance is a continuous process for identifying, measuring, and developing individual and team performance and harmonizing performance with the organization's strategic goals. According to (Mahoney et al., 1965) managerial performance can be measured by how far managers able to maintain the functions of management. The function of management according to (Terry, 1958) is Planning, Organizing, Actuating and Controlling. There are three important components in managerial performance according to (Ainsworth et al., 2002) namely planning performance, assessing performance, and evaluating performance.

### 2.2 Leadership Style

Leadership according to (Greenberg and Baron, 2003) is a process where an individual influences other group members to achieve organizational goals. (Robbins and Coulter, 2010, p. 461) suggest that a leader is someone who has managerial authority and can influence others to achieve goals. Leadership shows leadership style, (Keith and Newstrom, 1995) defines leadership style as a pattern of overall leader actions as perceived or referred by subordinates. (Hersey and Blanchard, 1982), states that leadership style is the pattern of consistent leadership behavior applied in work. Path-goal theory in leadership style is proposed to be an alternative problem-solving solution. The main of the path-goal theory according to (Robbins and Coulter, 2010) is the task of leaders to provide the information and support needed of the followers to help them achieve their goals. The term path goal comes from the suggestion that leaders in achieving goals must show the way to help followers get the things that they are needed, make work easier and minimize obstacles. Path Goal Theory best described as a process of leaders choosing a particular leadership style based on the needs of workers and the work environment, so that leaders can bring workers towards their intended goals (Northouse, 2018). (House, 1971) introduced four aspects of leadership style in path-goal theory, namely (1)

directive leadership (2) supportive leadership (3) participatory leadership (4) achievement-oriented leadership.

### 2.3 Information System Effectiveness

Effectiveness according to (Umar, 2008) is describes the extent to which goals are to be achieved. The effectiveness of information systems according to ((Ozkan et al., 2008)) is the extent to which information systems implemented are able to contribute to achieve organizational goals. (Gupta et al., 2007) found empirical evidence that the effectiveness of information systems in public sector organizations is determined by several factors, namely top management, information system management, organizational culture, user satisfaction and use of information systems. The effectiveness of information systems is measured by the Technology Acceptance Model (TAM) model which consists of the ease use and usefulness of information systems. According to (Delone and McLean, 2003) the success of information systems can be measured by system quality, information quality, user satisfaction, usage, individual impact, and organizational impact. In addition, the success of operations in a computer environment also depends on the user's trust (Coutu, 1998).

### 2.4 Conceptual Model

The relationship between leadership style and effectiveness of information systems is shown by the results of the study of (Schepers et al., 2005) which revealed the positive influence of transformational leadership on the use of information systems. In line with the leadership style theory described by (Suyanto, 2008), the techniques influence subordinates to carry out tasks based on authority and power in showing management functions, then the effect generated from leadership styles can influence the effectiveness of Simangga in preparing budget work plans. The influence of leadership style on managerial performance is shown by (Birasnav, 2014; Braun et al., 2013; Nguyen et al., 2017). Based on the path-goal theory, this leadership style encourages subordinates to achieve goals by supporting, directing, assisting, and encouraging the team to reach goal. Since the leadership style become a factor that can influence others, it can be used to encourage subordinates to carry out their duties, so they can improve managerial performance. Thus the leadership style has an influence on managerial performance. The relationship between leadership style and effectiveness of information systems is shown by the results of the study of (Schepers et al., 2005) which revealed the positive influence of transformational leadership on the use of information systems. In line with the leadership style theory described by (Suyanto, 2008), the techniques influence subordinates to carry out tasks based on authority and power in carrying out management functions, then the effect generated from leadership styles can influence the effectiveness of Simangga in preparing budget work plans. The influence of leadership style on managerial performance is shown by (Birasnav, 2014; Braun et al., 2013; Nguyen et al., 2017). Based on the path-goal theory, this leadership style encourages subordinates to achieve goals by supporting, directing, assisting, and encouraging the team to excel. If leadership style is a factor that can influence others, then this influence can be used to encourage subordinates to carry out their duties so that they can improve managerial performance. Thus the leadership style has an influence on managerial performance. Research on the effect of information systems on performance

conducted by (Christianto et al., 2007; Cui et al., 2016; Darmini and Putra, 2008; Xinli, 2015) show the similarity, that information systems have a positive effect on performance. If the effectiveness of information system is become the key of the benefits and usefulness of using information systems, then the information system can facilitate work to improve managerial performance. These facts shows that effectiveness of information systems can be mediated on managerial performance. From the various theories and research results, this is conceptual model of research shown in Figure 1.

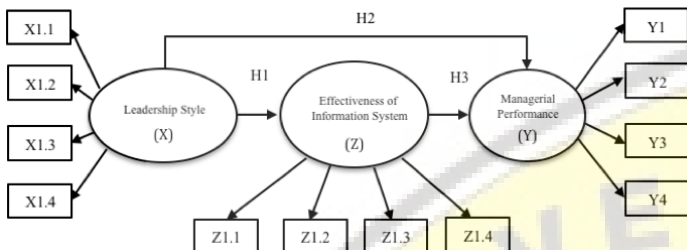


Figure 1: Conceptual model

- From the research concept above the hypothesis is proposed:
- (H1) Leadership style influences the effectiveness of information systems at the University of Jember.
  - (H2) Leadership style influences the managerial performance of the University of Jember.
  - (H3) The effectiveness of the information system influences the managerial performance of the University of Jember.
  - (H4) Effectiveness of information system can be use as a mediation in the effect of leadership style on managerial performance at University of Jember.

### 3 RESEARCH METHODOLOGY

The questionnaire was distributed to 100 Simangga application users at the University of Jember from the leadership level to the operator with the active users criteria and not the highest leaders in the work unit. Questionnaire data that can be processed are 74 respondent. The sample of determining was carried out by the Slovin method in the population of 173 Simangga users. The variables studied were three, namely (independent) leadership style, information system effectiveness (mediation), managerial performance (dependent). The leadership style variables are formed by indicators of directive, supportive, participatory, and oriented leadership towards the achievement of targets. Information effectiveness variables are formed by indicators of user convenience, usefulness of information systems, information quality, and user trust. Managerial performance variables are formed by indicators of planning, organizing, implementing, monitoring. The variable measurement scale uses a Likert scale as follows (1) Strongly Disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly Agree. Data analysis using PLS (Partial Least Square) method with Smart PLS 3. The data analysis as follow : (1) designing a structural model (2) designing a measurement model (3) compiling a path diagram (4) Conversion of a path diagram into the equation model (5) estimation of the model (6) Evaluation of Goodness of Fit (7) Testing the hypothesis.

### 4 RESULT AND DISCUSSION

Based on the steps of the PLS procedure, the results of the PLS Algorithm Smart PLS analysis are as follows:

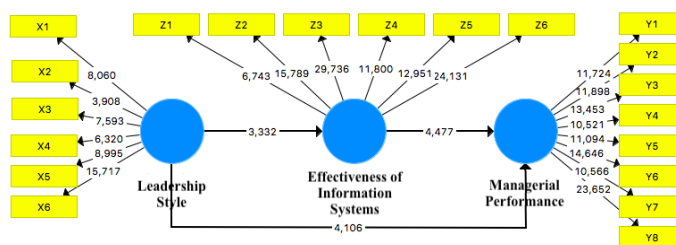


Figure 2 : Result of PLS Algorithm Analysis

Based on figure 3, a summary of the results of testing the hypotheses is produced in the following Table 1:

TABLE 1  
Hypotheses Result

H	Hypothesis	R	TS	Kesimpulan
H1	LS → EoS	0,388	3,332	H1 accepted
H2	LS → MP	0,330	4,106	H2 accepted
H3	EoS → MP	0,439	4,477	H3 accepted
H4	LS → EoS → MP	0,170	3,083	H4 accepted

Note: LS (Leadership Style), MP (Managerial Performance), EoS (Effectiveness of Information System).

The significance of the structural model is assessed by comparing t-statistics with t-tables. T-table is sought at  $\alpha = 10\%$  with degrees of freedom (df) n-k, so that the resulting number is 1.666.

**Hypothesis 1 (H1)** is leadership style (X) has a significant positive effect on effectiveness of information systems (Z). The coefficient value is 0.388 and the t-statistic value 3.409 is greater than the t-table value of 1.666 with  $\alpha = 10\%$ . Based on the results of these tests, the hypothesis Ha is accepted and H0 is rejected. Positive influence means that the better the leadership style, the greater the effectiveness of the information system. This study proves that the leadership style theory of goal path models consisting of directive, supportive, participatory leadership and achievement-oriented leadership is able to influence members of the work unit within the University of Jember to use the budget management information system (Simangga) more effectively.

**Hypothesis 2 (H2)** is leadership style (X) has a significant positive effect on managerial performance (Y). The coefficient value is 0.330 and a t-statistic value of 4.134 greater than the t-table value of 1.666 with  $\alpha = 10\%$ . Based on the results of these tests, the hypothesis Ha is accepted and H0 is rejected. Positive influence means, better leadership style will have an impact on improving managerial performance. Leadership style is defined (Hersey and Blanchard, 1982; Suyanto, 2008; Yukl, 2010) as a process of influencing other people to achieve organizational goals. This study proves that the leadership style theory goal model consisting of directive, supportive, participatory leadership and achievement-oriented leadership is able to influence, encourage and direct members of work units to improve managerial performance.

**Hypothesis 3 (H3)** is effectiveness of information system (Z) has a significant positive effect on managerial performance

(Y). The coefficient value is 0.439 and a t-statistic value of 4.449 greater than the t-table of 1.666 with  $\alpha = 10\%$ . Based on the results of these tests, the hypothesis  $H_a$  is accepted and  $H_0$  is rejected. Positive influence means, better effectiveness of information systems has an impact on improving managerial performance. This research proves that the theory of the effectiveness of information systems built by indicators of easiness, usefulness, information quality and trust, influences managerial performance. The existence of these influences proves that information systems (Simangga) can support users improving managerial performance. This result is similar with research of (Cui et al., 2016) which shows that the implementation of performance measurement information systems has a positive effect on improving the performance of the clinical department. Also research (Christianto et al., 2007; Darmini and Putra, 2008) which shows that the implementation of information systems and information system trust has an impact on performance. Testing the  $H_4$  hypothesis, does the effectiveness of information systems act as mediation in the influence of leadership style on managerial performance? Variables act as mediators (Z) as long as can deliver the influence of an independent variable (X) to a dependent variable (Y). This mediation occurs when (i) X significantly affects Z, (ii) X significantly influences Y without Z, (iii) Z has a significant effect on Y, and (iv) the effect of X on Y depends on the addition of Z in the model (Abdillah and Hartono, 2014). Based on the testing criteria, the results are: (i) X significantly influences Z as evidenced in hypothesis 1 (H1), (ii) X significantly influences Y as evidenced in hypothesis 2 (H2) (iii) Z has a significant effect on Y as evidenced in hypothesis 3 (H3), (iv) there is an indirect effect of X on Y in the presence of Z as evidenced in hypothesis 4 (H4). The results of the analysis of Smart PLS indirect influence in table 1 show that leadership style has a positive effect on managerial performance through effectiveness of information systems with a significance value of 0.003 or  $<0.10$ . This means effectiveness of information systems is able to act as a mediation on the effect of leadership style on managerial performance. The results of Smart PLS processing on the analysis of total influence indicate that the leadership style towards managerial performance is significant with p-value 0,000 or  $<0.10$ . It can be concluded that the mediation that occurs is partial mediation, because full mediation occurs if the total influence is found to be an insignificant relationship between leadership style and managerial performance (Abdillah and Hartono, 2014).

## 5 CONCLUSION

After conducting discussions and testing, the following conclusions that the leadership style has a significant effect on effectiveness of information system at the University of Jember. This proves that implementation of appropriate leadership styles can influence subordinates to use and utilize information systems (Simangga). With the use and utilization of managerial work can increase effectiveness of the information system. The leadership style has a significant effect on managerial performance at the University of Jember. This proves that the leadership style path goal theory model consisting of directive, supportive, participatory leadership and achievement-oriented leadership is able to influence, encourage and direct members of the work unit to improve managerial performance. The effectiveness of information systems has a significant effect on managerial performance at

the University of Jember. This proves that the information system effectiveness theory built by indicators of easiness, usefulness, information quality and trust influences managerial performance. The existence of these influences proves that information systems (Simangga) can support users in improving managerial performance. Information system effectiveness can act as a mediation in the influence of leadership style on managerial performance. This proves that the effectiveness of information systems can deliver the influence of changes in leadership style variables on managerial performance variables. Leaders who are able to use path goal leadership styles well to influence subordinates in utilizing Simangga will improve the effectiveness of information systems in improving managerial performance.

## REFERENCES

- [1] Abdillah, W., Hartono, J., 2014. Partial Least Square (PLS). Andi Publisher, Yogyakarta.
- [2] Aguinis, H., 2009. Performance management. Pearson Prentice Hall Upper Saddle River, NJ.
- [3] Ainsworth, M., Smith, N., Millership, A., 2002. Managing Performance Managing People. PT Bhuana Popular Science, Jakarta.
- [4] Basri, A., Rivai, 2005. Performance Appraisal. PT Raja Grafindo Persada, Jakarta.
- [5] Birasnav, M., 2014. Knowledge management and organizational performance in the service industry: The role of transformational leadership beyond the effects of transactional leadership. *J. Bus. Res.* 67, 1622–1629. <https://doi.org/10.1016/j.jbusres.2013.09.006>
- [6] Braun, S., Peus, C., Weisweiler, S., Frey, D., 2013. Transformational leadership, job satisfaction, and team performance: A multilevel mediation model of trust. *Leadersh. Q.* 24, 270–283. <https://doi.org/10.1016/j.leaqua.2012.11.006>
- [7] Christianto, H., Satri, R., Suchayo, Y.G., 2007. Pengaruh Implementasi sistem Informasi/Teknologi Informasi Terhadap Kinerja Operasional Perusahaan. Study Kasus Pada Perusahaan Jasa Pengiriman. *urnal Sist. Inf. MTI UI* 2.
- [8] Coutu, D.L., 1998. Organization: Trust in Virtual teams. *Harvard Business Review.* *Harv. Bus. Rev.* Vol. 76, N, 20–22.
- [9] Cui, Y., Wu, Z., Lu, 2016. Effects of the performance management information system in improving performance: an empirical study in Shanghai Ninth People's Hospital. *Springerplus* 5, 1–8.
- [10] Darmini, A.A.S.R., Putra, I.N.W.A., 2008. Pemanfaatan Teknologi Informasi dan Pengaruhnya Pada Kinerja Individual Pada Bank Perkreditan Rakyat Di Kabupaten Tabanan. *J. Univ. Udayana.*

- [11] Delone, W.H., McLean, E.R., 2003. The DeLone and McLean model of information systems success: a ten-year update. *J. Manag. Inf. Syst.* 19, 9–30.
- [12] Dimitrios, N.K., Sakas, D.P., Vlachos, D.S., 2013. The Role of Information Systems in Creating Strategic Leadership Model. *Procedia - Soc. Behav. Sci.* 73, 285–293.  
<https://doi.org/https://doi.org/10.1016/j.sbspro.2013.02.054>
- [13] Gelderman, M., 1998. The relation between user satisfaction, usage of information systems and performance. *Inf. Manag.* 34, 11–18.
- [14] Greenberg, J., Baron, R.A., 2003. Behavior in organizations: Understanding and managing the human side of work. Pearson College Division.
- [15] Gupta, M., Kanungo, S., Kumar, R., Sahu, G., 2007. A Study of Information Technology Effectiveness in Select Government Organizations in India. *J. Decis. Makers* 32, 2.
- [16] Hersey, P., Blanchard, K., 1982. *Manajerial Grid*. Sinar Grafika, Jakarta.
- [17] House, R.J., 1971. A path goal theory of leader effectiveness. *Adm. Sci. Q.* 321–339.
- [18] Husin, N., Nimran, U., Setiawan, M., others, 2012. Pengaruh Kepemimpinan terhadap Budaya Organisasi, Komitmen Kerja, Perilaku Kerja dan Kinerja Pegawai (Studi pada Satuan Kerja Perangkat Daerah Propinsi Sulawesi Tenggara). *J. Apl. Manaj.* 10, 1–11.
- [19] Keith, D., Newstrom, J.W., 1995. *Perilaku Dalam Organisasi*, Edisi Ketu. ed. Erlangga, Jakarta.
- [20] Laudon, K.C., Laudon, J.P., 2014. *Management Information Systems: Managing the Digital Firm*. Prentice Hall Press.
- [21] Lindawati, H., Salamah, I., 2012. Pemanfaatan Sistem Informasi dan Teknologi Informasi Pengaruhnya Terhadap Kinerja Individual Karyawan. *J. Akunt. dan Keuang.* 14, 56–68.
- [22] Mahoney, T.A., Jerdee, T.H., Carroll, S.J., 1965. The job (s) of management. *Ind. Relations A J. Econ. Soc.* 4, 97–110.
- [23] Nguyen, T.T., Mia, L., Winata, L., Chong, V.K., 2017. Effect of transformational-leadership style and management control system on managerial performance. *J. Bus. Res.* 70, 202–213.  
<https://doi.org/10.1016/J.JBUSRES.2016.08.018>
- [24] Northouse, P.G., 2018. *Leadership: Theory and practice*. Sage publications.
- [25] Ozkan, S., Cakir, M., Bilgen, S., 2008. A Maturity Based Qualitative Information Systems Effectiveness Evaluation of a Public Organization in Turkey. *J. Cases Inf. Technol.* 10 (3), 58–71.
- [26] Robbins, S.P., Coulter, M., 2010. *Management*. Pearson Education.
- [27] Rosmiyati, R., Ramdhani, N., 2014. Pengaruh Gaya Kepemimpinan, Motivasi dan Budaya Organisasi terhadap Kinerja Karyawan PT Asuransi Umum Bumiputera Muda 1967. Universitas Gadjah Mada.
- [28] Schepers, J., Wetzels, M., de Ruyter, K., 2005. Leadership styles in technology acceptance: do followers practice what leaders preach? *Manag. Serv. Qual. An Int. J.* 15, 496–508.  
<https://doi.org/10.1108/09604520510633998>
- [29] Suryo, B.D., 2010. Pengaruh Gaya Kepemimpinan Transformasional, Budaya Organisasi dan Inovasi terhadap Kinerja (Studi pada Panti Asuhan di Kota Tomohon dan Kabupaten Minahasa). *J. Apl. Manaj.* 8, 391–404.
- [30] Suyanto, 2008. *Mengenal Kepemimpinan dan Manajemen Keperawatan di Rumah Sakit*. Mitra Cendikia, Jogjakarta.
- [31] Terry, G.R., 1958. *Principles of Management*, Irwin series in industrial engineering and management. R.D. Irwin.
- [32] Umar, H., 2008. *Strategic Manajemen in Action*. PT Gramedia Pustaka Utama, Jakarta.
- [33] Xinli, H., 2015. Effectiveness of information technology in reducing corruption in China: a validation of the DeLone and McLean information systems success model. *Electron. Libr.* 33, 52–64.
- [34] Yukl, G., 2010. *Kepemimpinan dalam Organisasi*. PT. Indeks, Jakarta.