THE INFLUENCE OF INFORMATION TECHNOLOGY AND SYSTEMS ON MANAGERIAL PERFORMANCE: AN EMPIRICAL STUDY AT A REGIONAL BANK IN NORTH SULAWESI PROVINCE

Johnly Riane Pio, Universitas Sam Ratulangi

ABSTRACT

This study aims to determine the influence of information technology and systems on managerial performance in a regional bank in Indonesia. The novelty of this study lies in the relationship between information technology and managerial performance, and the research object of this study which was a regional bank which generally operating in the districts resulting from the expansion after the era of regional autonomy in Indonesia. The data of this study were collected using a questionnaire to 242 Bank Sulutgo employees as the respondents, operating in 10 cities and districts in North Sulawesi province. Structural equation model (SEM) was used to analyse the data.

Keywords: Information Technology, Information Systems, Regional Bank, SEM.

INTRODUCTION

Information Technology (IT) has dramatically changed various aspects of human life including the aspects of business. Since the O'Reilly Team proclaimed the birth of Web 2.0 in 2004, we have been living in such a different world (Kertajaya, 2009). IT is able to increase the speed of delivering information to consumers and facilitate the information collection about the consumer and market data (Boynton et al., 1994). Specific information systems such as managerial accounting systems explains that information technology can influence the information presented by the management accounting systems, by using information technology applications to provide information in accordance with the management needs (Davis & Albright, 2000).

Management information systems have an influence on better services characterized by a well-functioned, more efficient, more accurate, easier to use and portable service (Moturi & Mbiwa, 2015). There are four main functions of enterprise systems such as manufacturing and production, financial and accounting, human resource and sales and marketing (Laudon & Laudon, 2013). The implementation of information systems on financial and accounting functions can be realized in the form of accounting management systems. Management of the accounting system has a direct relationship with managerial performance. However, with the existence of competition, the management accounting systems become such a mediaton to the managerial performance (Ghasemi et al., 2016). In a different context, managerial competencies have an influence on the managerial performance evaluation process (Abraham et al., 2001). On the other hand, the management of accounting information systems has an influence on the relevant information from work for decision making so as to improve the managerial performance (Chong, 2004).

LITERATURE REVIEW

Theoretical Background

Information technology

IT can be used for work integration, both vertical and horizontal integration (Martin et al., 1998) and help companies in obtaining competitive information (McLeod & Schell, 2007). IT can present information in a useful form, be used to send information to other people or to other locations, integrate data from various parts, reduce clerical work, and accelerate the presentation of data needed for decision making (Cummings & Dawkins, 2002).

Information system

The understanding of system users in system development has a positive relationship with the success of a system. A success of a system has three benchmarking components, namely system quality, system benefits and user satisfaction (Guimaraes et al., 2003). This statement shows that a success in developing information systems is related to the users determined by the extent to which their understanding can lead to satisfaction in the success of the system. One factor that needs to be observed in the development of information systems is human resources (HR). If the developer ignores the inherent success factors, namely the needs and other requirements proposed by the user, it can cause a low priority of the system, resulting it to have a high chance of failure (Ambler, 2002b).

Managerial performance

In a system approach, the various functions that exist within the organization will be interconnected and interdependent. In this area, the information will flow, causing higher interdependence, and the more complex information needed. Organizational units not only need information relating to their own units, but also information relating to other units. In such situations and conditions, the role of the leader represented by functional managers is highly needed to coordinate and regulate the flow of information needed by each unit and individual within the organization. Management information systems can be used to reduce the influence of interdependence.

CONCEPTUAL RESEARCH AND HYPOTHESES DEVELOPMENT

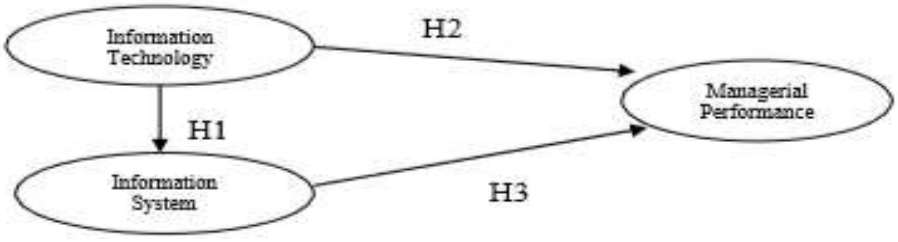

FIGURE 1
CONCEPTUAL RESEARCH MODEL

The hypothesis that can be proposed (Figure 1) are as follows:

H_1: Information technology has a positive influence on information systems.

H_2: Information technology has a positive influence on managerial performance.

H_3: Information systems have a positive influence on managerial performance.

RESEARCH METHODOLOGY

This research aims to understand the influence of information technology on information systems, the influence of information technology on managerial performance and the influence of information system on managerial performance.

This research was conducted at PT Bank Sulutgo which was based in Manado as the head office. Bank Sulutgo has branch and sub-branch offices in all cities and districts of North Sulawesi and Gorontalo provinces as well as several cities in Indonesia. However, in this study, the location of the research object was only in the province of North Sulawesi. The population of this study was all employees of Bank Sulutgo which reached 1.865 people. The Slovin formula in Sekaran & Bougie (2016) was used to determine the sample size and it was obtained a total sample of 242 respondents. Likert scale was used to measure the category and rank and distance of constucts. The data was analyzed using SEM based on these following reasons: (1) the study used a structural model with tiered causality relationships; (2) the variables in this study were unobservable where as they were measured based on several indicators; (3) it was a method that was directly related to multiple relationships simultaneously while also provided efficiency in statistical analysis.

RESULTS

Testing the Linearity Assumption

Testing the linearity assumption was done by the Curve Fit method, and calculated by using SPSS software. The reference used was the parsimony principle where (1) shows that the linear model is significant and (2) shows that the linear model is non-significant.

Table 1
TESTING THE LINEARITY ASSUMPTION

Relationship	Test Result	Conclusion
X1 → Y1	Significant Linear Model (Linear Sig 0.000<0.005)	Linier
X1 → Y2	Significant Linear Model (Linear Sig 0.000<0.005)	Linier
Y1 → Y2	Significant Linear Model (Linear Sig 0.000<0.005)	Linier

Source: Processed Primary Data, 2018.

From the Table 1, show that all models are linear significant, because the sig (p-value) of the linear model is smaller than 0.05, therefore, the linearity assumption is fulfilled. Thus, the three relationships between variables in this study are in linear form, then SEM could be used.

Goodness of Fit Indices in SEM

The feasibility of the research model can be indicated by looking at the analysis of the coefficient of determination of multivariate expressed by Q-Square (Q^2). Based on R^2 value, the Q^2 or Stone Geiser Q-Square test can be calculated as follows:

$$Q^2 = 1-\left(1-R_1^2\right)\left(1-R_2^2\right)\left(1-R_3^2\right)$$
$$Q^2 = 1-\left(1-0.780\right)\left(1-0.685\right)\left(1-0.077\right)$$
$$Q^2 = 0.9360 = 93.6\%$$

The calculation results show a predictive-relevance value of 0.8664 or 93.6%. It means, only 93.6% of information in the data can be explained by the model and the rest 6.4% is explained by other variables (which have not been contained in the model) and errors.

Inner Model

The second part of SEM analysis was the interpretation of structural models. The structural model presents the relationship between the research variables. The structural model coefficient shows how big the relationship between variables one to the other variables is. There are direct and indirect effect in SEM analiysis. The results of the direct effect of the analysis are summarized in Table 2 below.

Table 2
STRUCTURAL MODEL OF SEM: DIRECT EFFECT

No.	Relationship	Coefficient	P-value	Conclusion
1.	Information Technology on Information System	0.883	<0.001	Significant
2.	Information Technology on Managerial Performance	0.479	<0.001	Significant
3.	Information System on Managerial Performance	0.364	<0.001	Significant

The results showed that there is an influence of information technology on information systems. Thus, the hypothesis stating that information technology has a significant influence on information systems is accepted. This means that the success of the information system at Bank Sulutgo would be influenced by information technology. The fast and massive development of information technology, including computers, which were an important part of office equipment in the digital era, had a very positive impact on the information system of an organization. The latest information system was not separated from the support of good information technology for information would be presented and accessed quickly and easily if it was supported by information technology infrastructure with a high capacity and speed. This is in line with PT Bank Sulutgo's service needs which was the research object, where their work characteristics were fast and accurate as they involved financial services.

DISCUSSION

The results showed that there is an influence of information technology on information systems. This means that the success of the information system at Bank Sulutgo would be influenced by information technology. The latest information system was not separated from the support of good information technology for information would be presented and accessed

quickly and easily if it was supported by information technology infrastructure with a high capacity and speed. This is in line with PT Bank Sulutgo's service needs which were the research object, where their work characteristics were fast and accurate as they involved financial services. The results of this study showing that there is an influence of information technology on information systems are in accordance with what had been stated by Hansen & Mowen (2005).

This study found that information technology has a significant and positive influence on managerial performance. This revealed that the success of managerial performance could be influenced by the use of information technology devices. Managers basically did various tasks required by the organization to achieve the predetermined goals. The activities carried out and handled by managers were a problem-solving type in business. This process facilitated various factors within the organization including the management decision making. The decision-making process must be supported by appropriate and accurate information. According to Sekaran & Bougie (2016), it was very important for the managers to understand the information technology and the development of the latest innovations in order to provide benefits to the organization.

This study also found that information systems have a significant and positive influence on the managerial performance. Thus, the hypothesis stating that the information system has a positive effect on managerial performance is accepted. Therefore, this study supports what had been stated by Laudon & Laudon (2013) that information systems had an impact on the organization. The results of the study by Cui et al. (2016) found that management information systems were able to improve organizational performance, especially in several hospitals in China.

CONCLUSION AND IMPLICATIONS

Based on earlier analysis, it could be concluded that: first, there is a significant and positive influence of information technology on the information system. Thus, the level of information system would be greatly influenced by the use of information technology. Second, there is a significant and positive influence of information technology on managerial performance. Third, there is a significant and positive influence of information systems on managerial performance. There are several recommendations that can be proposed. First, the use of information technology in the work process is to provide benefits to information systems services and also have a positive impact on managerial performance. Second, intensive and massive socialization is needed for internal and external consumers, so that the use of information technology can be utilized as optimally as possible. Third, as the development of information technology is getting faster and more massive, it is necessary to maintain the policy of prioritizing the improvement of information technology infrastructure, so that the internal information system services become more efficient and effective for external parties. more effective.

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