The Link Model of ERP-Usage, Absorptive-Capacity, and Task-Technology-Fit, to Task-Innovation in ERP User

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Abstract. An ERP system contains millions of information that is useful for its users. The use of an ERP system in an organization is usually mandatory, and users are required to use and understand the workings of an ERP system in completing their routine tasks. As soon as employees complete training classes and ERP systems are used routinely and intensely in their daily work (Go-Live), employees are required to obtain new knowledge or skills from the ERP system that has just been installed and complete their work differently by innovate their way in doing tasks. However, there have been many cases of the ERP system that led to the failure of users to improve their work habits. The purpose of this research is to develop a model that can explain the influence of absorptive knowledge capacity, the 'fit' of the technology with the work, and the decision-making process to the task innovation of ERP users. The model was built by adapting the model Task-Technology Fit and Absorptive Capacity of previous studies related to MIS. The collection of the data by a survey conducted on ten organizations ERP system users in Java and Sulawesi. Four hundred questionnaires distributed to 10 organizations ERP users engaged in mining, food processing, banking, public services, telecommunications, and government offices. Three hundred forty-five questionnaires were returned, with 342 questionnaires able to be processed. Data were analyzed using multivariate statistical techniques Structural Equation Modelling (SEM)-PLS. This research has developed a potential model in the role of studying the effects of ERP Usage, Absorptive Capacity, and Task-Technology Fit to Task Innovation in the context of enterprise applications at the level of individual analysis. Reasons and contributing factors were described in the final section of this study.

1. Introduction
Enterprise Resource Planning (ERP) is an integrated business solution that integrates all business functions of an organization into one functional system. An ERP system contains millions of information that is potentially useful to a user. The use of ERP systems in an organization is usually mandatory, where workers are required to use and understand the workings of ERP systems in completing their routine tasks. As soon as employees complete the training class and the ERP system starts to be used routinely and intensely in their daily work (Go-Live), employees are required to be able to take new knowledge or skills from the ERP system that has just been installed and do their work in a way different and better than before.

Research-research on MIS has used the use of technology and individual performance as a measure of the success of the impact of information system technology. The right measure in measuring it is to find out how much technology affects individual users [1].
Task-Technology Fit (TTF) is used to measure how far an information system technology fits into work and work processes so that it can help the work of its users. TTF was first used in the Task-to-Productivity Chain model by Goodhue and Thompson (1995) [2]. Goodhue and Thompson (1995) examined individual users of various types of technology to measure technology use and individual performance [2]. The influence of 'Fit' itself has been investigated before as in DeLone and McLean (1992), Benbasat et al. (1986) and Cooper and Zmud (1990), but new research by Goodhue and Thompson (1995) underlines the importance of compatibility between technology and work [3-5]. Jain and Kanungo (2006) adapted TTF to predict IS Use and its effect on individual performance, they examined the impact of office applications at the individual level [6].

The use of IT in supporting decision-making systems has been widely studied before, as in the research of Torkzadeh and Doll (1998), who examined how far technology is used in an organization for Decision Support, Work Integration, and Customer Service. Furthermore, in the research of Torkzadeh and Doll (1999), they then suggested four factors in measuring how far the impact of information system technology is Task Productivity, Task Innovation, Customer Satisfaction, and Management Control [7].

ERP system is seen as one of the company's knowledge providers, and to realize the existence of knowledge contained in the ERP system is influenced by the ability of the absorption of knowledge / Absorptive Capacity of the ERP users themselves. Absorptive Capacity in information systems research and management has been trusted as one of the important factors that influence the performance of individuals in understanding information system technology. Researches that use Absorptive Capacity in the context of information systems technology adapt from studies on Absorptive Capacity in the context of organizational management. The earliest research on Absorptive Capacity was research by Cohen and Levinthal (1990) [8]. Zahra and George (2002) then conceptualized the Absorptive Capacity into four dimensions, namely, the ability to recognize, understand, change, and use knowledge and information to achieve organizational goals [9]. Kositanurit et al. (2006), Park et al. (2007), Xu and Ma (2008), in their research, involved Absorptive Capacity in predicting the work productivity of an information system technology user [10-12]. Deng et al. (2008) used Absorptive Capacity in measuring IT Usage, Task Innovation, and Task Productivity of individuals using Computer-Aided Manufacturing technology [13].

This research seeks to combine Task-Technology Fit and Absorptive Capacity in measuring the use of ERP (ERP Usage) systems for decision making and their effect on innovation in working users (Task Innovation).

2. Methods

2.1. Questionnaire Design

The measuring instrument for the research model used in this study was a closed questionnaire. The target respondents of this study were employees of ERP system users who use ERP systems in their routine work. The questionnaire in this study used a seven-point Likert scale and adopted the questionnaire instrument in the research of Torkzadeh and Doll (1998), Jain and Kanungo (2006), Deng et al. (2008), Goodhue and Thompson (1995), and Zahra and George (2002) [6, 7, 9,13].

The questionnaire was distributed in two ways, namely by visiting the company directly and through an online survey using the Google Docs application and via email. The respondents of this study came from five ERP user companies. The ERP user company consists of five companies engaged in mining, food processing, banking, telecommunications, public services, and five government offices. The selection of the company where the research is based on the period of use of the ERP system in the company. The company determined as the object of this research is a company that studies are workers who use ERP systems in their daily routine and have used ERP systems for at least one year. Employees, as respondents in this study, are not limited to certain occupational levels or departments/divisions.
2.2. Sampling
This study uses a purposive sampling technique because it is adjusted to the research objectives of ERP system users like respondents. Sekaran (2003) states that the determination of sample sizes according to the rules of thumb is more than 30 and less than 500 [14]. Hair et al. (1998) recommend a sample size between 100 to 400 [15]. According to Wijanto (2008), to use the Weighted Least Square (WLS) estimate, it is determined that the rule of thumb of the sample is at least ten times the number of variables observed [16]. In this study, the number of variables observed was 29 items, so if using the WLS estimation method, the number of samples needed was 290 data. Demographic data of the respondents showed 69.3% were male, 32% of respondents in this study were 21-30 years old, and 30.7% were 31-40 years old. As many as 35.7% of respondents have used ERP systems for 2-5 years, and 42.7% of respondents have used ERP for more than five years.

3. Results
Data is processed using path modeling with partial least square (PLS) approach with the help of SmartPLS software. The measurement model was tested by testing the AVE, Cronbach’s Alpha, and Discriminant Validity values. Table 1 shows the reliability test values of this research model.

|                | AVE  | Cronbach's Alpha | Composite Reliability | ACAP | ERP Use | TI  | TTF  |
|----------------|------|------------------|-----------------------|------|---------|-----|------|
| ACAP           | 0.50 | 0.87             | 0.90                  | 0.71 | -       | -   | -    |
| ERP Use        | 0.68 | 0.81             | 0.90                  | 0.50 | 0.83    | -   | -    |
| TI             | 0.82 | 0.79             | 0.90                  | 0.52 | 0.44    | 0.91| -    |
| TTF            | 0.52 | 0.82             | 0.88                  | 0.63 | 0.46    | 0.39| 0.72 |

The AVE value of all variables shows a value > 0.50, which means the variable can explain some of the average variances of the indicator. Cronbach's alpha values for all variables show more than the minimum value of 0.70. In addition, the value of composite reliability obtained from data processing shows that all latent variables have composite reliability values > 0.6. This shows that the indicators in this study are reliable in measuring each construct.

![Figure 1](image-url)  
**Figure 1.** Structural model of this research.
The structural model evaluation is done by evaluating the goodness of fit model. The goodness of Fit value is obtained by calculating the square root value from the multiplication of the R2 value with the AVE value [17]. The structural goodness of fit value of this model is 0.40, which is greater than 0.36. This value is considered to meet the requirements for social and behavioral sciences studies [18]. It is performed by the bootstrap procedure to get the path coefficient value from the structural model. The results of the estimated parameters are in Figure 1.

Of the two variables that affect ERP use, the Absorptive capacity variable is more influential than task technology fit. While the influence of ERP use on task innovation amounted to 0.437, which means ERP use contributed 43.7% of the variance of task innovation.

4. Discussion
By evaluating the structural model, it can be interpreted that: 1) by increasing the value of task technology fit by one unit, it will increase ERP use by 0.247. This means, the more appropriate a job is to the technology used by a worker, it will also increase the level of use of the employee’s ERP system in completing his work. 2) by increasing the value of absorptive capacity by one unit, it will increase ERP use by 0.3397. This means, the higher the ability of an employee to obtain knowledge from the ERP system he uses, the higher the level of ERP system usage in doing his daily work. 3) by increasing the value of ERP used by one unit, it will increase task innovation by 0.437. This means, the more often a worker uses an ERP system to complete their work, the more they will use their ability to innovate to complete their tasks.

5. Conclusion
This research has been able to prove the effect of task technology fit and absorptive capacity together influencing ERP use and its effect on the task innovation of an ERP system user. However, this study still has some shortcomings, including the lack of latent variables included in the model that can predict ERP use. In some studies, other variables have been investigated that might affect ERP use and task innovation, even in different technological contexts. Due to the limited time and cost in this study, these variables were not examined. Future studies are expected to be able to design a more comprehensive model in learning the task of innovation.

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