

**Moderating the Role of IT Competence and Cooperation on Office Administration Work Performance of Employees in the Work Environment**

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**Abstract**

**Background** - The use of ESM in the workplace enables information sharing and communication within organizations that was not possible in previous years (Kwahk & Park, 2016). Organizations use ESM tools for a variety of purposes, including work-related communication, information sharing, and socializing.

**Objective** - To analyze the effect of ESM use on office administration work performance through task dependency as mediation.

**Design/methodology/approach** - This research uses a quantitative approach. Quantitative methods fulfill scientific principles, namely empirical/concrete, objective, measurable, rational

and systematic (Sugiyono, 2012). A study is called quantitative if the data collected is quantitative data or other types of data that can be quantified and processed using statistical data.

**Findings** -Based on the table above, it can be seen that for testing the IT Competency variable (X1) on office administration work performance (Y) moderated by Task Dependence (Z), the T statistics value is 4.113 with a  $p$ -value of 0.000. Based on the T statistics value of 4.113 above 1.96 and the  $p$ -value is smaller than  $\alpha$  ( $0.000 < 0.05$ ), H6 can be accepted, thus the moderating variable Task Dependency is a moderating variable that can strengthen the influence of the IT Competency variable (X1) on office administration work performance (Y).

**Research implication** - To improve innovation performance, organizations must be more proactive in responding to various issues related to changes in the regional environment both internally and externally. These changes must be responded wisely through research and development activities in order to maintain its existence in the future.

**Limitations of Research** - This research only discusses analyzing the effect of ESM use on office administration work performance through task dependence as mediation.

**Keywords:** IT Competency, Cooperation, Task Dependency, Work Performance.

### **Introduction**

In recent years, companies have invested heavily in new technologies, including enterprise social media (ESM) and information technology (IT). (Kwahk & Park, 2016). The use of ESM in the workplace enables information sharing and communication within organizations that was not possible in previous years (Kwahk & Park, 2016). Organizations use ESM tools for a variety of purposes, including work-related communication, information sharing, and socializing (Ortbach & Recker, 2014; Qi & Chau, 2016), all leading to the development of studies with mixed results on the meaningful use of ESM for employees and organizations (Huang, Singh, & Ghose, 2015; Kuegler, Smolnik, & Kane, 2015). The main goal of employee advancement in the workplace is job performance (Zhang, LePine, Buckman, & Wei, 2014). Effective employees are aided by the use of ESM Like other new technologies, the use of ESM in the workplace has been controversial because many do not understand. For example, some studies show that using ESM in the workplace improves employee performance (Leidner, Koch, & Gonzalez, 2010; Moqbel, Nevo, & Kock, 2013).

On the other hand, other studies that using ESM can reduce employee productivity and increase time spent on personal messages (Holtzblatt, Damianos, & Weiss, 2010; Shepherd, 2011; Turban, Bolloju, & Liang, 2011) from these studies seem to illustrate conflicting results. Therefore, researchers continue to investigate whether and how the use of ESM affects performance (Kwahk & Park, 2016; Luo, Guo, Lu, & Chen, 2018). However, most studies only focus on the impact of ESM use on overall job performance (Kuegler et al., 2015; Leonardi & Meyer, 2015) because with the increase of new technologies employees significantly rely on workplace tasks to improve performance (Fong, Men, Luo, & Jia, 2018). Therefore, this study investigates the impact of ESM usage on employee performance through task dependency.

This research on the processes that explain the effect of ESM use on office administration work performance has not been widely studied. According to some researchers (Mäntymäki & Riemer, 2016; Wang, Cai, Liu and Zheng, 2016) knowing the effects of ESM use in the workplace is critical to advancing ESM theory and consistent ESM management, and argue that task interdependence provides employees with goal-specific information and procedures to use that information effectively (Rietzschel, Slijkhuis & Van Yperen, 2014) and that influences employee creativity and performance (Ruscio & Amabile, 1999).

Task interdependence refers to the extent to which employee interaction and coordination are required to accomplish tasks in the workplace (Guzzo & Shea, 1992). High task interdependence leads to positive work outcomes (Cohen & Bailey, 1997) using ESM to process and interpret information improves communication between employees, benefiting task interdependence (Leonardi, Huysman & Steinfield, 2013; Ravenscroft, Schmidt, Cook & Bradley, 2012; Staples & Webster, 2008; van, Poell, Kroon, & Timmerman, 2014). Therefore, based on previous research, we tested the role of task interdependence in mediating the effect of ESM use on job performance.

Scientific theoretical understanding is lacking due to limited understanding of contextual factors and interdependent associations that influence ESM use (Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000; Moqbel et al., 2013). Employees move in organizations faster than ever before (Kozlowski et al., 2001) Employees are a versatile source of information (Lipman-Blumen & Leavitt, 1999) as they share information, ideas, knowledge, and skills with their co-workers (Paulus, 2000) Since information sharing is encouraged through ESM (Holtzblatt et al., 2010), mass information generated by employees spreads instantly, thus causing certain disruptions To date, most researchers have focused on the moderating role of employee competencies on the effects of ESM use (Hsu, 2017; Kim, Lee, & Cho, 2016). Many companies have begun to develop strategies that focus on employees' computer skills to facilitate the effective collection and use of information about corporate computer applications (Peng, Zhang, & Dubinsky, 2016).

Therefore, the moderating role of IT specialists in task interdependence is necessary to minimize the impact of ESM use on performance. Cooperation among employees is also necessary because when one person performs a task interdependently, it also requires knowledge, resources, expertise and coordination with other employees Mead, 2002; Stark, Bierly and Harper, 2014). Collaboration in the workplace is a highly social behavior. important in the workplace when tasks are interdependent (Friedman, Carmeli & Dutton, 2018). The main mechanism through which employees with the support of coworkers, find solutions to problems related to work (Hsu, 2017) Cooperation is the ability of employees to solve problems and cooperate with their coworkers when tasks are interdependent (Bar-On, 1995) creating friendly relationships with partners, allowing them to achieve goals easily (Hsu, 2017). There are several theories that explain how collaboration can interact with task interdependence and employee performance.

In this study, we design a research model that explains how the use of ESM affects employee performance through task interdependence and how this type of moderation affects performance. We provide theoretical and literature support for our claim that ESM use is positively related to

job performance through task interdependence Figure 1 illustrates our conceptual model, which we will develop in the next section The research is organized as follows First, a brief overview of the research (i.e. ESM use in the workplace, the influence of task interdependence, IT skills, and teamwork) is given.

## **Literature Review**

### **Use of Enterprise SocialMedia in the Workplace**

ESM is a Web 2.0 digital platform application that allows users to publish, update, and share work-related information (Kaplan & Haenlein, 2010; Leonardi & Meyer, 2015) It is widely used by employees to interact and collaborate with each other (Bennett, 2012; He, Wang, Chen & Zha, 2017; Uysal, 2016). For example, large companies have started to develop their ESM systems for internal communication, including IBM's "Honeycomb" and HP's "Watercooler" According to previous literature, the future market for the use of ESM and related services will grow at a rate of 61 percent against a total market rate of approximately \$6.4 billion (Dewing, McCarthy, Mines, Schadler, & Yamnitsky, 2011). Organizations use ESM technology to improve employee social relationships, mutual trust and work-related communication (Kim et al., 2016; Leonardi et al., 2013; Madsen, 2016).

On the other hand, researchers report some benefits of using ESM in the workplace For example, researchers claim that using ESM improves performance through knowledge sharing, collaboration, and communication visibility (Ellison, Gibbs, & Weber, 2015; Fulk & Yuan, 2013) and increases other users' metadata, allowing them to specialize knowledge (Leonardo, 2014).

On the other hand, some scholars argue that employees abuse ESM, using it to harass coworkers and for personal gain; therefore, ESM use turns into misuse of online resources (Turban et al., 2011) and increases absenteeism (Turel & Serenko, 2012) These differences of opinion point to the importance of further research on ESM use in the workplace.

In the context of the workplace, ESM use means the use of ESM technology by employees in work-related socialization, interaction, and communication (Mäntymäki & Riemer, 2016; Razmerita, Kirchner, & Nielsen, 2016). Recent studies report that frequent use of ESM technology enhances social relationships and collaboration (Kwahk & Park, 2016; Ravenscroft et al., 2012), which is also beneficial for task interdependence. Many features of ESM technology have been described by researchers. For example, ESM can store personal interests and hobbies, enabling the development of social platforms among coworkers (Cai, Huang, Liu, & Wang, 2018; Zhang, Chen, Sun, & Wang, 2016).

Using an ESM also provides a social tagging tool to record who has tagged material with specific information, helping colleagues to identify experienced and qualified employees within the organization ESM therefore makes employees' knowledge available to their colleagues.

### **Moderating role of information Technology Competence**

The literature has a long history of examining task interdependence (Drach-Zahavy & Somech, 2013; Paik, Kim & Park, 2017; Van der Vegt & Van de VLT, 2016; Wageman, 1995; Wageman & Baker, 1997) Following Wageman's (1995) study, we take an approach that requires similar tasks with varying degrees of interdependence (Rico & Cohen, 2005) ESM provides an open digital communication and information sharing platform where employees share and communicate a variety of non-work related information.

Therefore, employees require IT skills to effectively process and use useful information IT competence is defined as employees' expertise or knowledge of IT tools and applications (Choi, 2016) Examples are mastery of software and hardware as well as knowledge of various IT applications useful for daily work Additional theoretical literature suggests that task interdependence requires the use of multiple workers to accomplish tasks (Van der Vegt & Van de VLT, 2016; Welbourne & Sariol, 2017) IT-savvy employees quickly exchange information from different locations using IT tools such as ESM, email, fax, and video conferencing (Choi, 2016; Stark et al. , 2014) The current business climate suggests that "companies cannot afford to pay for technologically illiterate workers" (Keen, 1991) IT competence refers to employees' technical and business skills, such as understanding business problems and the ability to design IT solutions to those business problems (Mata, Fuerst & Barney, 1995; Sambamurthy & Zmud, 1997; Wang, Chen & Benitez-Love, 2015).

In an environment with task interdependence, employees need cooperation, information, resources, and assistance from other employees (Stark et al., 2014), and those who have the skills to do so need to be able to work together, 2014), and those with IT skills are directly involved in information sharing (Geneviève Bassellier, Benbasat & Reich, 2003; Choi, 2016) Recently, some researchers have argued that interactive IT tools, especially ESM, are effective in enhancing knowledge sharing in the workplace (Choi, 2016; Ou, Davison, & Leung, 2014), making them useful tools for task interdependence Moreover, task interdependence creates conditions where individuals need each other to complete tasks (Stark et al., 2014), 2014) IT literacy facilitates this situation as multiple employees can handle different IT tools (Choi, 2016) Previous research on task interdependence also claims that employees' IT skills can enable task interdependence by speeding up decision-making and facilitating communication (Lucas Jr. & Olson, 1994) To fulfill the requirements of task interdependence (Wang, Yen & Huang, 2011), one needs sufficiently updated information processing, which can be augmented by various IT applications that can assist tasks through monitoring, information management, or learning ESM system (Kim et al., 2016).

Previous empirical analysis and theoretical literature on information systems support the idea that frequent communication, collaboration, and knowledge sharing among employees significantly influence task interdependence (Geneviève Bassellier et al., 2003; Chang et al., 2012; Welbourne & Sariol, 2017). IT competence can also help in obtaining different types of task information from other employees using different IT tools, such as ESM tools, video conferencing, email, and fax (Geneviève Bassellier et al., 2003; Choi, 2016). In this

environment, IT competence is likely to moderate the relationship between ESM use and task interdependence.

### **Moderating role of work collaboration**

Task division creates task interdependence into subtasks that must be managed together (Wisman, 2000) Collaboration is "the number of employee work groups that perform tasks that need to be done that cannot be done by people doing the same job" (Nunez, Giachetti & Boria, 2009) Several empirical studies have suggested a significant positive relationship between work performance and work collaboration (Van der Vegt & Van de VLIT, 2016; Wageman & Baker, 1997) Previous research has also shown that high levels of task interdependence can increase awareness of the need for collaboration to solve emerging problems (Anderson & Williams, 1996) High task interdependence has been associated with increased work collaboration (Stark et al., 2009) and work performance (Guzzo & Shea, 1992) Teamwork has also been positively associated with ESM use, trust, and knowledge sharing (Staples & Webster, 2008), all of which improve performance.

Previous theoretical literature on task interdependence and ESM use reports that high task interdependence requires more communication, interaction, cooperation, and information sharing than individualistic task execution (Crawford & Haaland, 1972; Johnson & Johnson, 1989; Wageman, 1995). Similarly, previous literature has shown that task interdependence increases employee performance levels when information sharing with coworkers goes well (Simon & Matthijs, 2014; Staples & Webster, 2008) These results are only possible through collaboration and the repeated use of ESM technologies (Zha, Yang, Yan, Liu, & Huang, 2018), 2011) confirmed that collaborating at work in an ESM environment can motivate employees to be decisive and improve work performance When cooperation among employees is high, they are expected to provide each other with necessary information (Bar-On, 1995) Therefore, individuals should believe that cooperation accelerates information exchange and influences high task interdependence and work performance.

### **Research Methods**

This research uses a quantitative approach. Quantitative methods fulfill scientific principles, namely empirical/concrete, objective, measurable, rational and systematic (Sugiyono, 2012). A study is called quantitative if the data collected is quantitative data or other types of data that can be quantified and processed using statistical data (Yusuf, 2016: 43). The information obtained will be analyzed and interpreted in accordance with the research objectives and with control studies to test hypotheses in accordance with the research objectives. With confirmatory studies, we basically want to test the truth of hypotheses carried out in the field through data collection. (Widodo, 2017). The purpose of quantitative methodology will produce generalizations where a statement of truth in a reality is expected to be equally applicable in a population (Sumanto, 2014: 10).

Population is a generalization area in the form of objects to be studied or researched and conclusions, ie. population is the sum of all research subjects. (Wahyudi, 2017: 14). Population also includes all properties or characteristics inherent in subjects or objects (Sugiyono, 2012: 80).

The population used in this study were 50 employees of government agencies located in Kebomas District, Gresik Regency. The sample is part of the object and characteristics possessed by a population. The results of the sample observations, the conclusions can be applied to the population. Therefore the sample taken must be representative of all in the sample it is intended saturated sample (Sugiyono, 2012: 81)

**Results**

Based on the results of PLS analysis in PLS Algorithm for validity and reliability tests, the coefficient of model determination and the path coefficient for the equation model, it has been shown based on the results of PLS Algorithm Smart PLS output, which can be observed in Figure below:

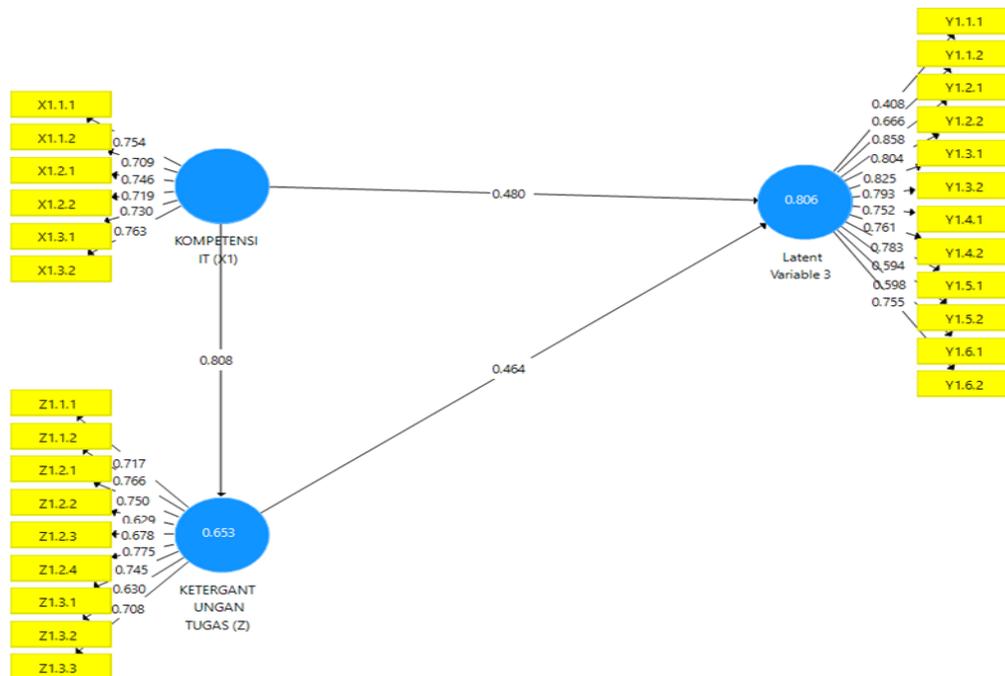


Figure Outer Model Testing Results  
Source: Smart PLS Report Data Processing Results

**Path Coefficient Test / Hypothesis Test**

In the path coefficient test, it can show how much the relationship or influence of latent constructs is generated by using the bootstrapping procedure pattern. In hypothesis testing, it can be seen from the t-statistic value and the probability value For hypothesis testing, namely by using a statistical value, for alpha 5% the t-statistic value used is 1.96. The conditions are as follows:

1. The hypothesis acceptance criteria are Ha is accepted and H0 is rejected when the t-statistic > 1.96.
2. The criteria for rejecting the hypothesis is if Ha is rejected and H0 is accepted when the t-statistic < 1.96.

The following are the results of testing the research hypothesis based on the results of data analysis tested through SmartPLS 3.5:

Table T-Statistics and P-Values

Hpo	Variabel	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
1	IT Competence (X1) -> Task Dependency (Z)	0,302	0,295	0,118	2,571	0,010
2	IT Competence (X1) -> Work Achievement (Y)	0,428	-0,333	0,126	3,224	0,000
3	Task Dependency (Z) -> Work Achievement (Y)	0,627	0,640	0,106	5,905	0,000
4	IT Competence (X1) -> Task Dependency (Z) -> Work Achievement (Y)	0,358	0,371	0,087	4,113	0,000

Source: Smart PLS Report Data Processing Results

Hypothesis Influence T-Statistics and P-Values Results Based on the data presentation in the table above, it can be seen that the hypothesis proposed in this study can be formulated, the following are details of the influence between variables:

**1. Hypothesis 1: The Effect of IT Competence (X1) on Task Dependence (Z)**

Based on the table above, it can be seen that for testing the IT Competency variable (X1) on Task Dependence (Z), the T statistics value is 2.571 with a  $\rho$ -value of 0.010 with a coefficient value of 0.302 indicating a positive direction. Because the T statistics value of 2.571 is above 1.96 and the  $\rho$ -value is smaller than  $\alpha$  ( $0.010 < 0.05$ ), H1 can be accepted, thus there is a positive and significant effect of the IT Competency variable (X1) on Task Dependence (Z).

Based on the regression results, it can be concluded that the first hypothesis is accepted.

**2. Hypothesis 2: The effect of IT Competence (X1) on Work Performance (Y)**

Based on the table above, it can be seen that for testing the IT Competency variable (X1) on Work Performance (Y), the T statistics value is 3.224 with a  $\rho$ -value of 0.000 with a coefficient value of 0.428 indicating a positive direction. Because the T statistics value of 3.224 is below 1.96 and the  $\rho$ -value is greater than  $\alpha$  ( $0.000 < 0.05$ ), H2 can be accepted, thus the positive and significant effect of the IT Competency variable (X1) on Work Performance (Y).

Based on the regression results, it can be concluded that the second hypothesis is accepted.

**3. Hypothesis 3: The Effect of Task Dependence (Z) on Work Performance (Y)**

Based on the table above, it can be seen that for testing the Task Dependency variable (Z) on Work Performance (Y), the T statistics value is 5.905 with a  $\rho$ -value of 0.000 with a coefficient value of 0.627 indicating a positive direction. Because the T statistics value of 5.905 is above 1.96 and the  $\rho$ -value is smaller than  $\alpha$  ( $0.000 < 0.05$ ), H5 can be accepted, thus there is a positive and significant effect of the Task Dependency variable (Z) on Work Performance (Y).

Based on the regression results, it can be concluded that the third hypothesis is accepted.

**4. Hypothesis 4: The effect of IT Competence (X1) on Work Performance (Y) through Organizational Commitment (Z) as Intervening.**

Based on the table above, it can be seen that for testing the IT Competency variable (X1) on Work Performance (Y) moderated by Task Dependence (Z), the T statistics value is 4.113 with a  $\rho$ -value of 0.000. Based on the T statistics value of 4.113 above 1.96 and the  $\rho$ -value is smaller than  $\alpha$  ( $0.000 < 0.05$ ), H6 can be accepted, thus the moderating variable Task Dependency is a moderating variable that can strengthen the influence of the IT Competency variable (X1) on Work Performance (Y). Based on the regression results, it can be concluded that the fourth hypothesis is accepted.

**Conclusion**

Based on the research, it can be seen that the hypotheses proposed in this study can be concluded as follows:

1. Based on the table above, it can be seen that for testing the IT Competency variable (X1) on Task Dependence (Z), the T statistics value is 2.571 with a  $\rho$ -value of 0.010 with a coefficient value of 0.302 indicating a positive direction. Because the T statistics value of 2.571 is above 1.96 and the  $\rho$ -value is smaller than  $\alpha$  ( $0.010 < 0.05$ ), H1 can be accepted, thus there is a positive and significant effect of the IT Competency variable (X1) on Task Dependence (Z).

2. Based on the table above, it can be seen that for testing the IT Competency variable (X1) on Work Performance (Y), the T statistics value is 3.224 with a  $\rho$ -value of 0.000 with a coefficient value of 0.428 indicating a positive direction. Because the T statistics value of 3.224 is below 1.96 and the  $\rho$ -value is greater than  $\alpha$  ( $0.000 < 0.05$ ), H2 can be accepted, thus the positive and significant effect of the IT Competency variable (X1) on Work Performance (Y).

3. Based on the table above, it can be seen that for testing the Task Dependency variable (Z) on Work Performance (Y), the T statistics value is 5.905 with a  $\rho$ -value of 0.000 with a coefficient value of 0.627 indicating a positive direction. Because the T statistics value of 5.905 is above 1.96 and the  $\rho$ -value is smaller than  $\alpha$  ( $0.000 < 0.05$ ), H5 can be accepted, thus there is a positive and significant effect of the Task Dependency variable (Z) on Work Performance (Y).

4. Based on the table above, it can be seen that for testing the IT Competency variable (X1) on Work Performance (Y) moderated by Task Dependence (Z), the T statistics value is 4.113 with a  $\rho$ -value of 0.000. Based on the T statistics value of 4.113 above 1.96 and the  $\rho$ -value is smaller than  $\alpha$  ( $0.000 < 0.05$ ), H6 can be accepted, thus the moderating variable Task Dependency is a moderating variable that can strengthen the influence of the IT Competency variable (X1) on Work Performance (Y).

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