The Effect of Transcational Leadership Style and Work Environment on Computer Self Efficacy, Job Satisfaction, Behavior and Performance of Computer Operator

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Abstract

The purpose of this study is to examine and explain the effect of: transactional leadership style and work environment on computer self efficacy, job satisfaction, behavior and performance of computer operators. The data collection was done using a survey. The sample of this study was computer operators in private owned universities in Makassar, Indonesia with 233 questionnaires were distributed with 80.68% response rate. The data were analyzed using Generalized Structured Component Analysis (GSCA). The result reveals that: transactional leadership style has a significant effect on computer self efficacy and job satisfaction, but has no significant effect on behavior and performance of computer operators; work environment has a significant effect on computer self efficacy, but has no significant effect on job satisfaction, behavior and performance of computer operators; computer self efficacy has significant effect on job satisfaction, behavior and performance of computer operators; job satisfaction has significant effect on behavior and performance of computer operators; and behavior has a significant effect on performance of computer operators.

Keywords: transactional leadership style, work environment, computer self efficacy, job satisfaction, behavior, and performance

1. Introduction

The use of information and communication technologies in organizations has become a vital part of the organization. A survey in Indonesia indicates that in 2013 more than 75% of the business sector in urban and rural areas using computers. In fact, the entire foreign and joint venture company have been using computers to support the business. This condition indicates a high use of computers in the business sector. The larger the scale of the business, the greater the level of computer usage. The survey results also show a growing number of workers of the company, the greater the proportion of companies that use computers. Likewise, if the use of the computer viewed by the turnover of the company, the greater the turnover of the company, the higher the proportion of companies that have been using computers. Based on the facts found in Indonesia, it could be explained that the level of use of information technology are high, but the index is still low and even decline in 2012, it is necessary to study on the factors that influence the use of information technology in Indonesia. Moreover, the empirical studies also shows that there is a positive and a negative correlation for the use of information technology in the company, so it can be concluded that there are other factors that influence the use of information technology, so that in one place and conditions there is a positive impact, but in other place and conditions might give negative impact to the same variable.

Alzahrani and Goodwin (2012) demonstrated empirically that the use of technology in government is influenced by the characteristics of the e-government, consideration of trust, privacy, and the culture and context of the country. Lai et al., (2009) also stated that the factors influencing the use of technology is the expectation of the performance, effort expectancy, social influence, disturbance concern, and facilitating condition, where the disturbance concern has a negative effect on the behavior of technology use.

This study also showed the presence of other conditions that facilitate the use of technology such as computers, so the use of such technology could give a positive or negative impact on the same variables. Wang and Yang (2005) even prove empirically that personality factors also play a role in the use of technology. Other factors that also affect the use of technology is organizational commitment, work environment, work attitude, and management (Peansupap and Walker, 2005). Meanwhile, Ooi et al., (2011) also proves that self-efficacy, facilitating condition, and the primary influences affecting the use of technology. In addition to the positive effect on employee performance, self-efficacy also affect the behavior of the use of technology and job satisfaction. This is supported by research result of Ooi et al., (2011), Lai et al., (2005), and Venkatesh et al., (2000). Their results showed that of subjective norms, self-efficacy, and perceived behavior has positive influence on the behavior of users of information technology. Leadership styles of each individual can vary according to the character possessed. To be able to carry out the vision and mission of an organization, it requires an effective leadership style. Leadership style owned by a leader include several aspects, such as

dwelling, freedom, justice, participation, love, and responsibility (Terry in Martin et al., 2006). Effective leadership style can significantly affect various aspects, such as job satisfaction (Lee, 2008) and behavior of technology operator (Ahmad and Raza, 2011). The above statement of Lee (2008) and Ahmad and Raza (2011) represents that, the style of leadership will give significant influence on the performance of the computer operator. However, in research finding of Sribenjachot (2007), it was found different effects of transformational and transactional leadership styles on performance.

Other factors that affect the performance of computer operators are working environment. The work environment is a condition in which a person works which include equipment and facilities, working conditions (non-physical environment) as well as the physical environment that can affect workers in carrying out their duties and responsibilities. The size of the working environment includes coloring, cleanliness, lighting, ventilation, music, security, and noise. The existence of a supportive environment can affect the level of efforts or spirit to work, so as to increase job satisfaction and behavior of information technology operator, which affects the the employee performance (Al-Anzi, 2009; Leblebici, 2012).

Computer Self-efficacy relates to job satisfaction where if someone has a computer self-efficacy for computational capabilities. High computer self-efficacy tends to succeed in their task thus increasing the satisfaction of doing something. Computer self-efficacy can be assessed from the three sources of information, namely the magnitude, strength, and generalizability. Computer self-efficacy can affect job satisfaction, behavior, and performance significantly. Computer self-efficacy may also be influenced by several factors such as leadership style. However, there is a bias towards the role of computer self-efficacy as variables that mediate the relationship between leadership and performance, the relationship between the leadership and creativity of employees (Prussia et al., 1998; Ghafoor et al., 2011). Research of Sam et al., (2005) and Fagan et al., (2004) found that the use of computers significantly influence of computer self-efficacy. This means that the use of computer has positive and significant effect on developing the computer skills (Computer Self-Efficacy), let al especially skills required by a computer operator, which is complex to master a variety of computer expertise. Fagan et al., (2004) adds another factor that can affect the expertise in the use of computers such as experience, facilitation of adequate support from the organization. While Shu et al., (2011) and Hung et al., (2004) demonstrate empirically that personality traits also play a role in the use of technology such as computers. This is evidenced also by Hong et al., (2012) and Sam et al., (2005). The results showed that subjective norms, computer self-efficacy, and perceived behavior has positive influence on the behavior of computer operator. The use of technology has positive and negative effects. However, these effect cannot always be found in the same condition. This is reflected in the empirical studies that the use of technology has a positive correlation with labor productivity, but other empirical studies show that the use of technology will have a negative impact on labor productivity. Based on research of Franklin et al., (in UNCTAD, 2011), different impact caused by the use of technology in their respective service company located in Europe. The use of these technologies can improve employee productivity, but in some companies in the three countries in Europe showed a negative correlation between the use of ICT on labor productivity. According to research of Dauda and Akingbade (2011), it was found that using the latest technology, employee skills are not good enough to take advantage of these technologies. Technological change also does not significantly improve the performance and working conditions of employees.

Job satisfaction is the degree of positive or negative aspects of one's feelings about the job duties, working order, as well as the relationships among workers (Schermerhorn et al., 2005). The size of job satisfaction is determined by several aspects, such as payment, the work itself, colleagues, promotion, and work supervision. Job satisfaction is influenced by several factors such as self-efficacy and leadership style. In addition, job satisfaction is able to influence the behavior of information technology users (Moynihan et al., 2000). However, according to research by Ang and Poh (1997) that employees working with computers do not have a significant relationship with job satisfaction. Based on the variables mentioned, empirical studies still need to be performed to identify, analyze, and explain the patterns of relationships between variables such as relationship between transactional leadership style and environment working with computer self efficacy, job satisfaction, behavior, and performance of computer operator. The selection of these factors is based on previous research as well as theory on individuals behavior such as the Unified Theory of Acceptance and Use of Technology (UTAUT) supported by the Information System Success Model updated by DeLone and McLean (2003). Selecting the UTAUT model as the main model underlying this research is based on the fact that the UTAUT model is the latest model developed to observe the behavior of individuals and the development of the previous theory model. UTAUT Model itself is a combination of eight models and theories that have been developed previously, namely the theory of reasoned action (TRA), the technology acceptance model (TAM), the motivational models, the theory of planned behavior (TPB), the combination of TAM and TPB, the models of PC utilization, the innovation diffusion theory, and social cognitive theory (Reddick, 2010; Weerakkody et al., 2009).

This research needs to be done because of some previous studies done before still discovered research

gaps and needs further research. Different influences, self-efficacy on performance by Lunenburg (2011) Appelbaum and Hare (1996), Chowdhury and Lanis (1999), and the influence of the work environment on the behavior of information technology users by Ooi et al., (2011), Joling and Kraan (2008). The results of their study showed inconsistency. Through adoption of UTAUT models, in this study it could analyze perceptions on influence of transactional leadership style and working environment on computer self efficacy and behavior of computer operator. Meanwhile, the use of models DeLone and McLean based on the fact that there is an interaction between information technology operator satisfaction on the use of technologies and their impact on performance, both individual performance and organizational performance. DeLone and McLean Model is a model widely used in the successful model of information systems which has concentrated on the successful of information system with multidimensional and interdependent (DeLone and McLean, 2003; Peter et al., 2008; and Contini, 2009). Among the studies that have been done before, either with the model of UTAUT or model of DeLone and McLean, there is a research gap that still need to be explored regarding the linkages among variables, so this study needs to emphasize the relations among variables.

The higher education institution is organization that cover the highest education in Indonesia. As an institution with the highest educational level, universities are required to become a pioneer or drive all areas of development. Development of a variety of research include information technology, health, science, and social. The development of information technology is very intensively conducted in universities considering a very central role. The importance of information technology is to encourage the universities to have quality resources. Higher Education Directorate General (DG) view that ICT can play a very important role in the development of the higher education sector in Indonesia. Realizing this, since the popularization of ICT in Indonesia, Directorate General of Higher Education has carefully utilizing and developing information systems and system management applications for higher education.

Operators are key to successful implementation of the information system. Operators are the starting point for all computerized systems. In other words, the operator has full responsibility for the use of computer activities, including the implementation of activities schedule, data entry, monitor, and control the computer system. However, computer operator as in implementing the use of information technology in the education sector in Makassar still face a gap between private universities with each other. Each college has a computer operator unbalanced. This makes academic activities be slightly delayed. Pikas (2006) explains that the use of information technology does not change the structure of science, but only facilitate new forms of remote collaboration and increase productivity, for example in terms of an increase in the number of publications, time efficiency in information retrieval, easy to communicate with a number of colleagues, and easy obtain and / or deliver feedback.

This research needs to be done because of various studies that have been done before discovered the existence of research gaps and needs further research. Different influences, self-efficacy on performance indicated by Lunenburg (2011), Appelbaum and Hare (1996), Chowdhury and Lanis (1999) and the influence of work environment on behavior of users of information technology indicated by Ooi et al., (2011), Joling and Kraan (2008). These results prove the existence of considerable differences in contrast, where the style of leadership led to two results that positively impact on job satisfaction, but the other results stated that the effect of leadership style is not significant. This gap then cause inconsistencies in the research variables that lead to various contradictions between inventors and researchers in empirical studies. Research result of Lunenburg (2011), Appelbaum and Hare (1996) showed that self-efficacy has positive and significant influence on employee performance, while Lanis Chowdhury (1999) found that self-efficacy had no significant effect on the performance of the individual. Study result of Ooi et al., (2011) shows that faciliting condition has positive effect on the use of information technology, but not so with research resulted by Joling and Kraan (2008) which stated that the working environment have negative and significant effect on the users of technology.

Research gap above shows that there are inconsistencies on the discovery or empirical studies on the effect of the work environment on the use of information technology. Environment is one element that is consciously used as research variable, but the difference in the study results make the existence of the theory was rejected because it was not in line with the actual situation. The difference in the research results of previous studies encourage researchers to analyze these variables in a study and would like to perform empirical studies designed to determine the effect among variables that put transactional leadership style and working environment as exogenous variables that may affect the four endogenous variables namely: computer self efficacy, job satisfaction, behavior, and performance of computer operator to develop and test theories and develop models of UTAUT and DeLone and McLean to reinforce linkages and gaps formed between the variables in the models. In addition, this study combines the variables that have previously been studied separately and will connect all the variables with the object of research in computer operators of private universities in Makassar, Indonesia.

The above description of research problems is very important issues to be investigated for the development of transactional leadership style and work environment, especially relating to computer self

efficacy, job satisfaction, behavior and performance of computer operator. The purpose of this study is to explain relationship between transactional leadership style and work environment with computer self efficacy, job satisfaction, behavior and performance of computer operator at private universities in Makassar, Indonesia.

This research is very important for knowledge development in the field of transactional leadership style and work environment as well as very important role as part of efforts to improve the computer self efficacy, job satisfaction, behavior and performance of computer operator.

2. Literature Review, Hypothesis, and Research Model

2.1 Transactional Leadership Style

Transactional leadership is a leadership style that emphasizes core transaction between leaders and subordinates. Transactional leadership allows leaders to motivate and influence subordinates by means of exchanging rewards with specific performance. This means that in a subordinate transaction promised to be given a reward if subordinates are able to complete their duties in accordance with the agreement that was made jointly, the transaction is also intended to motivate subordinates or employees to express their personal interests related to the desire to make the organization more productive (Lussier and Achua, 2012: 333 Robbins, 2003; Liu, 2007).

2.2 Work Environment

The work environment can be seen as the physical, social, psychological, and technology found in the workplace that has an important role on the performance and productivity of the organization Amusa et al. (2010). Shaping the work environment working conditions, so as to give effect, positive or negative, on the psychology and employee benefits (Jain and Kaur, 2014).

According to Jain and Kaur (2014), the work environment can be divided into three general components, namely the physical, mental and social. The physical environment can be either ventilation and temperature in the working space, noise, interiors and infrastructure, and hospitality. Mental environment include the level of fatigue, boredom and monotony at work. The social environment refers to the values of the culture in the working environment, where every employee recognizes and stick with it.

Based on the above opinion, it is understood that the working environment includes several elements that have an influence on the performance and productivity of the organization. Based on the understanding of the environment, researchers defined as a work environment and dynamic elements that are around someone's work concerning the physical environment where work and psychic elements of a work or non-physical environment.

2.3 Computer Self Efficacy

Computer Self-Efficacy is an assessment of the capabilities and expertise of someone's computer skill to perform tasks related to information technology. Computer Self-Efficacy assessments are not static or stable, but the assessment is based on the specific situation, which can change with the acquisition of existing information, such as changes in working conditions, changes in the task even change the feedback received (Compeau and Higgins, 1995 ; Mason and Orhu, 2008). This theory is a cognitive theory that allows one to measure the ability of their own relevant expertise and confidence in the use of computers in information technology (Balka and Smith, 2000). Adamson and Shine (2003) defines computer self-efficacy as individual beliefs about the ability to perform specific tasks, provide the degree of the work done, and persistence in the face of challenging situations. Individuals with higher level of computer self-efficacy is able to accomplish better computing tasks given without the support and assistance of others, rather than someone with lower level of computer self-efficacy (Adamson and Shine, 2003).

2.4 Job Satisfaction

Job satisfaction is a positive emotional expression that is the result of an evaluation of a person's work experience. Job dissatisfaction occurs when someone's expectations on the job are not met (Mathis and Jackson, 2007). Job satisfaction is the degree of positive or negative feelings about a person duties (Hunt, 2004). Furthermore, job satisfaction is the degree of positive or negative aspects of one's feelings about the job duties, working arrangements and relationships among workers (Schermerhorn et al., 2005). Thus, job satisfaction is the degree to which people liked his work, where job satisfaction is an effective response of employees to work.

2.5 Behavior of Computer Operator

The study of human behavior theory tries to provide knowledge based on understanding and action (Bloom in Greene, 2008: 4). A description of the behavior can be observed from several approaches. Team of Educational Science Development FIP-UPI (2007) describes five main approaches to define the behavior such as behaviorist approach, cognitive approach, humanistic approach, psychoanalytic approach, and neurobiological approaches. Behaviorist approach explains that the behavior occurs because of a series of stimulus to response relationship.

Behaviorist approach is often referred to as the theory of SR (stimulus-response theory). Psychoanalytic approach assumes that individual behavior is controlled by a part of the unconscious, with the theory that personality consists of three elements, namely the Id, Ego, and Super Ego. Cognitive approach explains that the behavior is an internal process (inside). This approach assumes that the behavior of an input-output process of acceptance and processing information, to generate output. Humanistic approach emphasis more on human dignity in individuals which different to animals and other creatures. This approach explains that individual behavior is due to the need of encouraging to manifest itself. Neurobiology approach is an approach relate to individual's behavior with events in the brain and nervous system. This approach assumes that a person's behavior depends on the condition of the brain and nerves system.

2.6 Performance of Computer Operator
In a professional company, the performance is defined based on the viewpoint of the value creation associated with chain of input, process and output (Kaiser and Ringlstetter, 2011). Input factors include matters related to the knowledge and resources provided; process includes solutions provided; and output factors are final concept or implementation. Thus, performance would compare input and output, which in turn will reflect the efficiency of the process that connects the input and output. According to the model of Delone and McLean (1992), the impact of individual performance (Individual Impact) has a meaning as an indication that the information has provided users with better understand the context of the decision, has increased productivity of the decision-making, has resulted a change in user activity, or have changed the perception of the decisions maker regarding the importance or usefulness of information system. This model also assumes that the individual impact is influenced by the use of the system and user satisfaction over information systems. It can be explained that the performance of the individual in information systems is an assessment of individual performance as measured from the characteristics and performance resulted, giving input and output in accordance with a specific purpose, in order to give a good effect for the user as well as the use of the information system.

2.7 Transactional Leadership Style and Computer Self Efficacy
Transactional leadership style is the way a leader to express their influence on subordinates, where there is a transactions process or bargaining process between leaders and subordinates (Javed and Chaudhry, 2012). Leadership is positively related to the systems of self-efficacy (SSE) and as a mediator, SSE also positively support the success of the information system (IS) (Jeewon et al., 2011).

2.8 Transactional Leadership Style and Job Satisfaction
Transactional leadership style identifies specific types of behavior that emphasizes on leadership skills in the transaction process to motivate employee performance (Chaudhry and Javed Chaudhry, 2012). Transactional leadership style consists of three indicators, namely contingent reward, active management by exception, and passive management by exception. The appropriate leadership style of a leader can have a significant influence on employee job satisfaction. According Hasibuan (2006), one of the factors that influence job satisfaction is the attitude of the leader in his leadership. In addition, social factors that connect social interaction both among employees and with leader also has an influence on employee job satisfaction. This is consistent with studies that have been conducted by Lok and Crawford (1999) and Lee (2008). However, some study of transactional leadership style had showed the positif but not significant effect on job satisfaction (Ali et al., 2013; Chaudhry and Javed, 2012).

2.9 Transactional Leadership Style and Behavior of Computer Operator
Leadership style that will be implemented in a system must consider internal and external factors of leaders and employees. Leadership styles depending on the concentration of the leaders in considering their relationships and tasks to be completed (Stremba, 2009). Both dimensions, task orientation and relationship orientation, interact and shift in combination with five levels of favorability conditions, namely environmental hazards, group, individuals, leaders, and the consequences of decisions. Decision-making by leaders with leadership style will have an impact on the behavior of the users of information technology. This is consistent with empirical studies conducted by Shu, et al. (2011), and Ahmad and Raza (2011), which states that the leadership style significantly influence the behavior of the user / computer operator.

2.10 Transactional Leadership Style and Performance of Computer Operator
Leadership styles depends on the concentration of the leaders in considering their relationships and tasks to be completed (Stremba, 2009). Effective leadership style can affect the performance of an employee. When an employee has a leader with the appropriate leadership style, in the context of maintaining good relations to employees, then this will have an impact on performance, and also needs a leader who can provide work motivation in exchange for appropriate compensation (Mathis and Jackson, 2009; and Javed Chaudhry, 2012).

This leadership style has positive influence on the performance, which is reinforced by the research result of Chaudhry and Javed (2012), Timothy, et al. (2011), Dunegan, et al. (1992). Though, one research finding shows that transactional leadership style has positive but not significant effect on performance (Ali, et al., 2013).

2.11 Work Environment and Computer Self Efficacy

The work environment can be seen as the physical, social, psychological, and technology found in the workplace that has an important role on the performance and productivity of the organization (Amusa et al., 2010). Conducive working environment will significantly affect the computer self-efficacy or the competence and ability of a person to achieve the vision, mission, and purpose. Conducive and effective work environment assessed from optimal work performed by employees with healthy, safe, and comfortable. This will give a great influence on the development of employees' personal, both in terms of competence and attitude. Research conducted by Shu, et al. (2011) showed that work environment has a positive effect on computer self-efficacy.

2.12 Work Environment and Job Satisfaction

Working environment with good and effective atmosphere may support the growth of employee motivation and influence the achievement of the vision and mission of the company. Good and effective working atmosphere can be created by having good organization in which specific activities, people, and management purposes can be grouped. Having a good organization and a clear tasks division would create a healthy working environment that can foster employee motivation. This will positively impact job satisfaction, where job satisfaction is the degree to which people love their work, and their affective responses of employees to work. Work environment significantly influence job satisfaction as indicated by research conducted by Dawal et al. (2008) and Parvin and Kabir (2011). While the results of research conducted by Kyzlinková, Dokulilová, and Kroupa (2007) showed that in some countries, work environment has negative but significant effect on job satisfaction.

2.13 Work Environment and Behavior of Computer Operator

Good treatment to employee will have an impact on the behavior of information technology users of. In addition to reward or appreciation, good working environment can support the employees in obtaining an efficient work system design. Provision of facilities and employees' needs will have a positive impact on the behavioral aspects of computer users. This is consistent with research conducted by Peansupap and Walker (2005), Ooi et al. (2011). Meanwhile, according Joling and kraan (2008), in some countries, work environment has negative and significant effect on computer users.

2.14 Work Environment and Performance of Computer Operator

One type of work environment is non-physical work environment. According to Moekijat (1995), non-physical work environment includes non-financial rewards from leaders and co-workers, such as praise, recognition of achievements which will encourage employees to be more active in carrying out the work. In addition, the fair treatment without any pressure or discrimination is necessary for employees. Thus, a pleasant working atmosphere will exist. This will automatically affect the performance of the company, which has been resulted from research conducted by Al-Anzi (2009), Leblebici (2012). While the results of research conducted by Kyzlinková, Dokulilová, and Kroupa (2007) showed that the presence of teamwork in the workplace has negative effect on the performance. This is due to the diversity or discrimination against a person's actions based on the physical, age, gender, and ethnicity.

2.15 Computer Self Efficacy and Job Satisfaction

Computer self-efficacy is a person's beliefs regarding the ability to use computer. When an employee expectations regarding the roles and capabilities in the facing corporate challenges are met, then there is job satisfaction felt by an employee. According to Wexley and Yukl (1977), job satisfaction is one's feelings toward his work, either pleasant or unpleasant in work, and expectations about the upcoming experience. According to research by Ang and Soh (1997) that there is no relationship between the use of computer expertise with satisfaction in performance.

2.16 Computer Self Efficacy and Behavior of Computer Operator

Computer self-efficacy (a sense of competence in the use of computers) is an employee or individual belief that they have the capability or capacity to use the computer properly (Balka and Smith, 2000). The use of computers in computer self-efficacy theory is not only able to operate, but also can run almost all applications in both software and hardware and computer programs required by the organization, it is then played by the computer operator (Blokdijk, 2008: 92). Research conducted by Shu, et al. (2011), Hung, et al. (2004) and Kay (1993) states that computer self-efficacy has positive influence on the behavior of computer users including computer operators.

2.17 Computer Self Efficacy and Performance of Computer Operator

Computer self-efficacy is an assessment of the capabilities and computer expertise of someone's to perform tasks related to information technology and in the value based on certain situations, which can change the acquisition of existing information, such as changes in working conditions, even a change in the duty and change in feedback received (Compeau and Higgins, 1995; Mason and Orhu, 2008: 323). Performance required information input which is relatively stable so that the process of formating computer self-efficacy in individuals can be realized. In other words, computer self-efficacy has a significant effect on employee performance, as expressed by Fagan et al., (2004) and Sam et al., (2005).

2.18 Job Satisfaction and Behavior of Computer Operator

Job satisfaction is an attitude variable, which is associated with employee's feelings on the job. Therefore, it refers to attitude components, job satisfaction is an affective component. Attitude or affection was formed as the result of an evaluation of the experience aspects of his work. The emergence of affection in the context of job satisfaction as a reflection work experience, it may have an impact on the behavior of the computer operator. With the good side of job satisfaction, the behavior of users increase. This has been proven by research conducted by Peijen et al., (2007) and Ghobakhloo, Zulkifli, and Aziz (2010). The results showed that job satisfaction significantly influence user behavior.

2.19 Job Satisfaction and Performance of Computer Operator

Job satisfaction has a considerable influence on the productivity of each individual directly or indirectly. Research on worker satisfaction needs to be done by the company, because satisfied workers are more loyal, have little possibility to play truant, and more productive. In addition, loyal workers also have little chance to leave work, so the company will save the cost of replacing the employee. Job satisfaction will positively affect a person's performance. According to Mathis and Jackson (2009), performance is what is done or not done by the employees. When an employee has a job satisfaction, then this will have an impact on performance. It is linear and consistent with research conducted by Nielsen ND Kristensen (2004), Moynihan et al., (2000).

2.20 Behavior of Computer Operator and Performance of Computer Operator

The existence of computer users behavior by a good employee will have an impact on performance. According to a study conducted by Lazer and Wikstrom (1977), cited by Rivai and Sagala (2009), one of the performance measurement can be viewed from several aspects. One aspect that is important is the attitude. Attitudes or behavior of a good use of an employee will have an impact on the performance. Some research finding by Kay (1993), Hung et al., (2004), and Shu et al., (2011), described that generally there is significant influence of behavior of the computer operator to performance of computer operator.

In this study hypotheses are developed as the following:

H_1 : Transactional leadership style has positive and significant effect on computer self efficacy
H_2 : Transactional leadership style has positive and significant effect on job satisfaction
H_3 : Transactional leadership style has positive and significant effect on behavior of computer operator
H_4 : Transactional leadership style has positive and significant effect on performance of computer operator
H_5 : Work environment has positive and significant effect on computer self efficacy
H_6 : Work environment has positive and significant effect on job satisfaction
H_7 : Work environment has positive and significant effect on behavior of computer operator
H_8 : Work environment has positive and significant effect on performance of computer operator
H_9 : Computer self efficacy has positive and significant effect on job satisfaction
H_{10} : Computer self efficacy has positive and significant effect on behavior of computer operator
H_{11} : Computer self efficacy has positive and significant effect on performance of computer operator
H_{12} : Job satisfaction has positive and significant effect on behavior of computer operator
H_{13} : Job satisfaction has positive and significant effect on performance of computer operator
H_{14} : behavior of computer operator has positive and significant effect on performance of computer operator

2.11 Conceptualization Model

Based on theoretical and empirical studies that have been described previously, the conceptual framework of the relationship between transactional leadership style, work environment, computer self efficacy, job satisfaction, behavior and performance of computer operator can be visualized in Figure 1. Conceptualization model shows the relationships between variables. Transactional leadership style and work environment are considered as independent variables, whereas computer self efficacy, job satisfaction, behavior and performance of computer operator are the dependent variables. The following framework shows a model describing the relationships
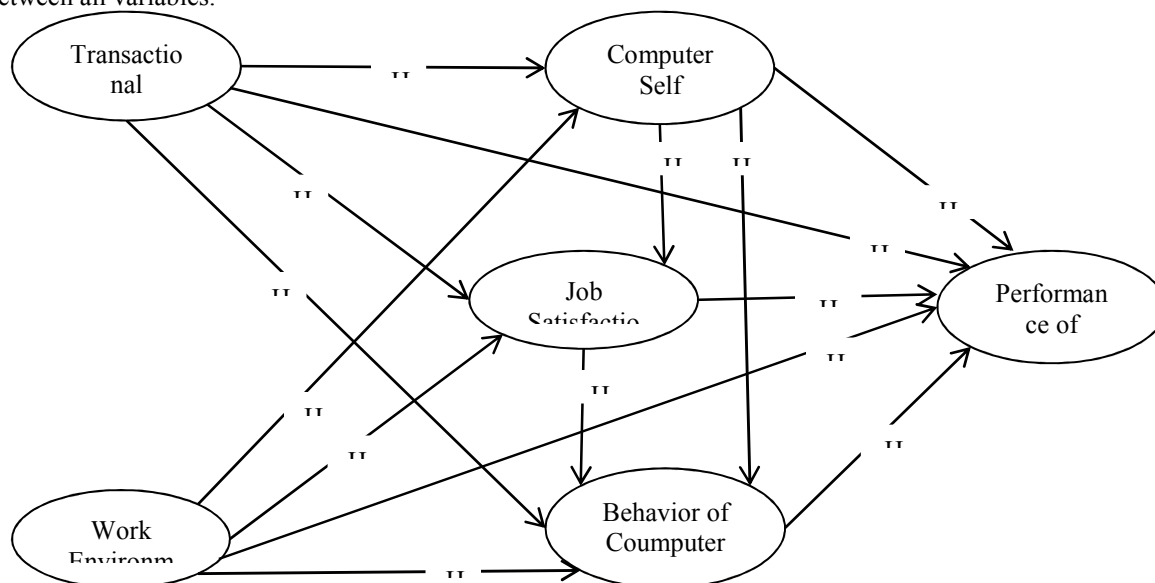
between all variables.

Figure 1. Research Framework

3. 3. Method

3.1 Purpose of the Research Study

The aim of this research is to analyze and explain the influence of transactional leadership style on computer self efficacy, job satisfaction, behavior and performance of computer operator; the influence of work environment on computer self efficacy, job satisfaction, behavior and performance of computer operator; the influence of computer self efficacy on job satisfaction, behavior and performance of computer operator; the influence of job satisfaction on behavior and performance of computer operator; the influence of behavior on performance of computer operator at private universities in Makassar, Indonesia.

3.2 Instrument and Sampling Unit

A structured questionnaire was used for primary data collection. The targeted population is computer operator at private universities in Makassar, Indonesia. The data was collected using a survey which was carried out entirely in on stage. The questionnaires were distributed to 233 computer operators at 86 private universities in Makassar, Indonesia. The instrument of this research is questionnaire with closed-ended statements, where the statements are made in such a way that respondent's answer is limited to several options. For the survey, the questionnaire was designed using 5 points of Likert Scale where respondent is asked to choose where his or her position lies on a scale with a range from 5 for strongly agree to 1 for strongly disagree. The questionnaires were distributed by direct visits to the private universities premises which is also important to explain the purpose of the study.

In this research, transactional leadership style can be defined as the way of leaders in motivating, influencing, directing, and controlling the computer operator and measured by four indicators that are contingent reward, active management by exception, passive management by exception, and leissez faire (Bass, 1990; Wood, 1998; Chaudhry and Javed, 2012; Ali *et al.,* 2013). Work environment is defined as a dynamic aspect and place around the employees in relation to physical environment where employees perform their work and non physical environment, which are measured by six indicators such as room outlet, air circulation, cleanings, facilities provision, work safety, and work atmosphere (Pines, 1982). Computer self efficacy is defined as operators' confidence in using computer to perform their jobs in work environment, and can be measured by nine indicators that are work difficulty, data saving, software saving, file management, computer faulty management, understanding steps in data processing, program knowledge, analysis skill, and finishing duties (Murphy *et al.,* 1989). Job satisfaction is defined as the level of contentment employees feel about their work, responsibilities, which measured by total compensation, the work, interaction and work relationship with coworkers, promotion opportunities, and relationship with supervisor (Luthan, 2006; Mathis and Jackson, 2007). Behavior of computer operator is defined as an action or activity performed by computer operator in providing information to support decision making and controlling in organization, and can be measured by seven indicators such as frequency of computer utilization, habit of computer utilization, compatibility of computer utilization, extension of computer utilization, spread of computer utilization, writing report, and understanding of computer utilization (DeLone and McLean, 2003; Petter *et al.,* 2008). Performance of computer operator is defined as the results achieved by the computer operator in controlling the computer used in carrying out its duties, and can be

measured by seven indicators such as learning, remembering, decision making effectiveness, ability to use computer program, ability to use integrated data, accuracy of the completion of the work, and convey information in large numbers (Petter *et al.,* 2008 adapted from Sedera *et al.*).

3.3 Response Rate

All questionnaires were distributed to compute operator at private universities in Makassar, Indonesia. The computer operators chosen as respondents since they have the knowledge, ability, and accuracy of response to the statements in the questionnaire. The respondents were requested to answer all the questions to the best of their knowledge. Out of 233 questionnaires, there were only 188 returned. Thus, the response rate is 80.69%, in addition, of 188 returned questionnaires, only 167 were useable and 21 were unusable because of uncomplete answer. After collecting data, the data was then coded and analyzed with GSCA software.

3.4 Data Analysis

The data was analyzed using Generalized Structured Component Analysis (GSCA). GSCA is a component-based SEM method which can be used for calculating scores and which is allowed for small samples (Hwang and Takane, 2004; Hwang et al., 2010). This method is chosen for the following considerations: (1) the model in a conceptual framework consists of hierarchical causal relations, that transactional leadership style influence computer self efficacy, job satisfaction, behavior and performance of computer operator; (2) work environment influence computer self efficacy, job satisfaction, behavior and performance of computer operator; (3) computer self efficacy influence job satisfaction, behavior and performance of computer operator; (4) job satisfaction influence behavior and performance of computer operator; (5) behavior influence performance of computer operator; (6) in verifying the undimensionality of various latent variable indicators both reflexive and formative, it is appropriate to use GSCA; (7) using GSCA does not need assumptions and can be performed on a series of latent variables simultaneously, hence a powerful and efficient method of analysis; (8) Based on Monte Carlo simulation that SEM model with GSCA have very good performance to small size sample, especially to $50 \leq N \leq 200$ or all sample size $N \geq 50$.

4. Result and Discussion

4.1 Testing for Linearity

Testing for linearity is very important to be done before analyzing the data. Linearity test is used to know whether there is relationship between exogenous and endogenous variables. When the relationship between exogenous and endogenous variables are linear, then further test will be performed. The result shows that all variables are linear to others and are significant at .00<0.05. This shows that all of items indicate good assumption of linearity.

4.2 Fitness Test of the Model

The fitness of the model test structurally is measured by using FIT and AFIT that equivalent with R-square total on path analysis or on PLS. FIT value shows total variance from all variables that can be explained by structural model. The FIT value ranges from zero to one. The higher the FIT value (closer to one), the higher the total variance can be explained by the model. AFIT value equivalent with R-square adjusted on regression analysis and it can be used for model comparison. If AFIT value in one model is higher than others, it shows that the model is the best to use.

Table 1: Model Fit

Model Fit	
FIT	0,668
AFIT	0,664
GFI	0,939
SRMR	0,208
NPAR	98

Structural model evaluation was performed after the model relationship was built in accordance with the data observation and goodness-of-fit models overall. Table 1 shows evident from the values of FIT, AFIT, GFI (unweighted least squares) and SRMR (standardized root mean square residual). The result of the test for relation among variables is evident from the values of path coefficient and critical point (CR), which is significant at α = .05, as shown in Table 2. The goodness of fit of the structural model and overall model shows that the model specified in this research can explain 66.4% of the variance of the corrected data (adjusted FIT). Also, the value of GFI = .939 and SRMR = .208 shows that the model has sufficient fit since recommended GFI is $\geq$ .90 and SRMR is considered to be better when it is closer to zero (Solimun, 2010; Heungsun Hwang et al., 2010).

4.3 Hypothesis Testing

4.3.1 The Effect of Transactional Leadership Style on Computer Self Efficacy

H_1 claim that transactional leadership style has significant positive effects on computer self efficacy. The regression weight is significant. Table 2 shows that transactional leadership style is positively related to computer self efficacy (b: 0.539; CR: 9.24). Research findings reinforce the theory stating that transactional leadership style may increase the computer self efficacy (Lussier and Achua, 2012; Robbins, 2003; Liu, 2007).

4.3.2 The Effect of Transactional Leadership Style on Job Satisfaction

H_2 claim that transactional leadership style has significant positive effects on job satisfaction. Table 2 shows that transactional leadership style is positively related to job satisfaction (b: 0.269, CR: 0.422). Research finding reinforce the theory stating that transactional leadership style may increase the job satisfaction of computer operator. The more transactional leadership style is on place, the more satisfied the computer operator. This finding support the assumption mentioned that having transactional leadership style may increase the job satisfaction of computer operator Crawford (1999) and Lee (2008).

4.3.3 The Effect of Transactional Leadership Style on Computer Operator Behavior

H_3 claims that transactional leadership style has a non significant effect on computer operator behavior. The regression weight between that transactional leadership style and computer operator behavior is very small and not significant (b: 0.015; CR: 0.38), out of support H_3. It is emphasized that the path coefficient of transactional leadership style on computer operator behavior not only has an unexpected positive sign, but that the coefficient is very small. This finding shows that the implementation of transactional leadership style does not affect the behavior of computer operator. This finding did not supports research result of Shu, *et al.* (2011) and Ahmad and Raza (2011), that transactional leadership style has a positive and significant effect on computer operator behavior.

Tabel 2: Path Coefficient

Hipotesis	Path Coefficients				Interpretation
		Estimate	SE	CR	
H1	TLS → CSE	0,539	0,058	9,24[*]	supported
H2	TLS → JS	0,269	0,064	4,22[*]	supported
H3	TLS → BCO	0,015	0,038	0,38	not supported
H4	TLS → PCO	0,117	0,076	1,54	not supported
H5	WE → CSE	0,458	0,056	8,15[*]	supported
H6	WE → JS	0,066	0,059	1,12	not supported
H7	WE → BCO	0,028	0,050	0,57	not supported
H8	WE → PCO	0,071	0,050	1,4	notsupported
H9	CSE → JS	0,655	0,079	8,3[*]	supported
H10	CSE → BCO	0,488	0,104	4,67[*]	supported
H11	CSE → PCO	0,250	0,092	2,73[*]	supported
H12	JS → BCO	0,461	0,091	5,08[*]	supported
H13	JS → PCO	0,225	0,113	1,98	supported
H14	BCO → PCO	0,321	0,090	3,56[*]	supported

* = significant at .05 level

CR* > 1,96

TLS = Transactional Leadership Style

CSE = Computer Self Efficacy

JS = Job Satisfaction

BCO = Behavior of Computer Operator

PCO = Performance of Computer Operator

WE = Work Environment

4.3.4 The Effect of Transactional Leadership Style on Computer Operator Performance

H_4 claims that a transactional leadership style has a positive but not significant effect on computer operator performance. Table 2 shows that transactional leadership style is related but not significant to computer operator performance (b: 0.117; CR: 1.54), out of support H_4. Research finding did not support research result of Chaudhry and Javed (2012), Timothy, *et al.* (2011), Dunegan, *et al.* (1992). Nevertheless, this finding supports Ali, *et al.,* (2013) that transactional leadership style has a positive but not significant effect on computer operator programmer. This indicates that performance of computer operator may vary depending on level of computer operator ability where top management are unaware of the complexity of computer operator works.

4.3.5 The Effect of Work Environment on Computer Self Efficacy

H_5 claims that work environment in a firm has significant positive effect on computer self efficacy. Table 2 indicates that work environment is positively related to computer self efficacy (b: 0.458; CR: 8.15), in support of

H_5. Research finding reinforces the theory stating that work environment may affect the capability of operator in using computer Shu, *et al.* (2011). The finding shows that good work environment which consist of facilities and good working atmosphere, influence the computer self efficacy which lead to good performance of operators optimally, healthy, and comfortably.

4.3.6 Effect of Work Environment on Job Satisfaction

H_6 claims that work environment has a significant positive effect on job satisfaction. Table 2 shows that work environment is related but not significant to job satisfaction of computer operator (b: 0.066; CR: 1.12), out of support H_6. Research finding did not support the theory stating work environment may increase job satisfaction (Dawal *et al.,* 2008; Parvin and Kabir, 2011). This indicates that having good and effective work environment cannot increase employees' motivation in reaching the vision and mission of the organization. Nevertheless, other research findings in some countries show that work environment has negative and significant effect on job satisfaction (Kyzlinková, Dokulilová, and Kroupa, 2007).

4.3.7 The Effect of Work Environment on Computer Operator Behavior

H_7 claims that work environment has a significant positive effect on computer operator behavior. However, this research result in Table 2 shows that work environment is positively related but not significant to computer operator behavior (b: 0.028; CR: 0.57), out of support H_7. Research finding enfeeble the theory mentioning work environment may increase computer operator behavior (Al-Anzi, 2009 and Leblebici, 2012). This finding did not support the assumption mentioned that work environment has significant positive effect on computer operator behavior but may enrich the research result of Kyzlinková, Dokulilová, and Kroupa (2007) which show that teamwork in work environment has positive but not significant effect on performance. This may be caused by diversity or actions in differentiating operators based on physic, age, gender, and ethnic. The diversity may disrupt the performance of operators. Work environment in private universities in Makassar is related to rules applied in each university. Professional computer operators are very concerned with every possibility disrupting their performance, hence behavior of computer operator may not influenced by work environment.

4.3.8 The Effect of Work Environment on Computer Operator Performance

H_8 claims that work environment has a non significant effect on computer operator performance. Table 2 shows that work environment is positively related but not significant to computer operator performance (b: o,071; CR: 1,4), out of support H_8. Research finding indicates that performance of computer operator is so complex that work environment may not affect the performance. Research finding did not support the theory mentioning that work environment would influence the performance of computer operator (Al-Anzi, 2009; Leblebici, 2012; Kyzlinková, Dokulilová, and Kroupa, 2007).

4.3.9 The Effect of Computer Self Efficacy on Job Satisfaction

H_9 claims that computer self efficacy has a significant positive effect on job satisfaction. Table 2 shows that computer self efficacy is related significantly to job satisfaction of computer operator (b: 0.655; CR: 8,3), in support H_9. Research finding support the theory stating computer self efficacy may increase job satisfaction and affirms the assumption mentioned that the higher computer self efficacy, the more satisfied computer operator (Chen, 2011; Caprara *et al.*, 2006; Klassen and Chiu, 2010). The findings emphasize that computer self efficacy is a capability in using computer. When employee's expectation regarding role and capabilities in facing certain company's challenge can be fulfilled, employee would obtain job satisfaction.

4.3.10   The Effect of Computer Self-Efficacy on Computer Operator Behavior

H_{10} claims that computer self efficacy has a significant positive effect on computer operator behavior. Table 2 shows that computer self efficacy is related significantly to computer operator behavior (b: 0.488; CR: 4,67), in support H_{10}. Research finding support the theory stating computer self efficacy may increase the behavior of computer operator and affirms the assumption mentioned that the more capable computer operator, the better behavior of computer operator (Shu, *et al.*, 2011; Hung, *et al.*, 2004; and Kay, 1993).

4.3.11 The Effect of Computer Self Efficacy on Computer Operator Performance

H_{11} claims that computer self efficacy has a significant positive effect on computer operator performance. Table 2 shows that computer self efficacy is related significantly to computer operator performance (b: 0.250; CR: 2,73), in support H_{11}. Research finding support the theory stating computer self efficacy may increase the performance of computer operator. This finding affirms the assumption mentioned that the assuredness of operator in using computer may affect the performance of computer operator (Fagan, *et al.*, 2004; and Sam, *et al.,* 2005).

4.3.12 The Effect of Job Satisfaction on Computer Operator Behavior

H_{12} claims that job satisfaction has a significant positive effect on computer operator behavior. Table 2 shows that job satisfaction is related significantly to computer operator behavior (b: 0.461; CR: 5,08), in support H_{12}. Research finding support the theory stating job satisfaction may affect the behavior of computer operator. This finding affirms the assumption mentioned that when employee are satisfied and happy with their job, then that will affect their behavior (Peijen *et al.,* 2007; and Ghobakhloo, Zulkifli, and Aziz, 2010).

4.3.13 The Effect of Job Satisfaction on Computer Operator Performance

H_{13} claims that job satisfaction has a significant positive effect on computer operator performance. Table 2 shows that job satisfaction is related significantly to computer operator performance (b: 0.225; CR: 1,98), in support H_{13}. Research finding support the theory stating job satisfaction may affect the performance of computer operator. This finding affirms the assumption mentioned that when employee are satisfied and happy with their job, then that will affect their performance (Kristensen ND Nielsen, 2004; Moynihan *et al.,* 2000).

4.3.14 The Effect of Computer Operator Behavior on Computer Operator Performance

H_{14} claims that computer operator behavior has a significant positive effect on computer operator performance. Table 2 shows that computer operator behavior is related significantly to computer operator performance (b: 0.321; CR: 3,56), in support H_{14}. Research finding support the theory stating computer operator behavior may affect the performance of computer operator. This finding affirms the assumption mentioned that how the computer operator act will influence the performance of computer operator (Kay, 1993; Hung, *et al.,* 2004; and Shu, *et al.*, 2011.

5. Theoretical and Managerial Implications

The theoretical contribution of this research is to develop the knowledge of transactional leadership style and work environment especially in relation to computer self efficacy, job satisfaction, behavior and performance of computer operator. The contribution of this research is also to develop a conceptual and theoretical understanding on transactional leadership style and work environment in the effort to improve computer self efficacy, job satisfaction, behavior and performance of computer operator, especially for private university and or higher education institution. The result of this research brings additional evidence on how transactional leadership style and work environment may influence the computer self efficacy, job satisfaction, behavior and performance of computer operator.

The practical implication of this study is to provide insight and knowledge to private university and or higher education institution in Makassar City – Indonesia and generally in other cities in developing countries, in implementing the concept of transactional leadership style and work environment in relation to increasing job satisfaction, behavior and performance of computer operator.

6. Conclusion, Limitation and Future Research

This research is experimental research on performance of computer operator influenced by transactional leadership style and work environment. We analyzed the role of transactional leadership style and work environment as important variables for the successful of behavior and performance of computer operator in private university and or higher education institution in Makassar City – Indonesia. The regression results indicate that there is positive effect of transactional leadership style on computer self efficacy and job satisfaction of computer operator; a positive but not significant effect of transactional leadership style on behavior and performance of computer operator; a positive effect of work environment on computer self efficacy; positive but not significant effect work environment on job satisfaction, behavior, and performance of computer operator; positive and significant effect of computer self efficacy on job satisfaction, behavior, and performance of computer operator; positive and significant effect of job satisfaction on behavior and performance of computer operator; positive and significant effect of behavior on performance of computer operator.

Given the wide scope of the discussion, this study has limitations in presenting the relationship of a cross sectional analysis. Therefore, further research with longitudinal design is needed to re-examine whether the relationship between the variables analyzed in the study had changed. Furthermore, the accuracy for the model is .668. This means that 66.8% of the variance in the variable of the transactional leadership style, work environment, computer self efficacy, job satisfaction, behavior, and performance of computer operator can be explained by the model, and the remaining 33.2% is explained by other variables. Therefore, further studies in the future can develop a research methodology by taking qualitative approach in which deep interview may take place in order to enrich the relevant answers of respondents. Some more analysis may be taken to explain the insignificant results.

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