

PAPER NAME

**JURNAL. TRANSFORMASIONAL LEADER
SHIP. SUDARMADJI.pdf**

AUTHOR

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WORD COUNT

7813 Words

CHARACTER COUNT

44683 Characters

PAGE COUNT

17 Pages

FILE SIZE

655.9KB

SUBMISSION DATE

Apr 8, 2023 9:45 AM GMT+7

REPORT DATE

Apr 8, 2023 9:46 AM GMT+7

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Transformational Leadership, Knowledge Management, Work Motivation, and Employee Performance among Construction Employees in Jakarta

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<http://dx.doi.org/10.18415/ijmmu.v8i2.2339>

Abstract

¹ This study aims to analyze the influence of transformational leadership (TL) and knowledge management (KM) on employee performance (EP) through work motivation (WM) at construction companies in Jakarta, Indonesia. The data was collected from construction firms that have grade high qualification in Jakarta, Indonesia. ²⁸ A sample of 138 companies representatives was drawn from 138 construction firms in Jakarta. The structural equation modelling – partial least squares was used to test the proposed hypothesizes. TL has a significant effect on EP through WM. KM has a significant effect on EP through WM. The relevance ² of the research stems from the context of a major city in Jakarta, Indonesia. Furthermore, this research ² is one of the initial attempts to investigate EP by considering TL and KM and its applicability to Jakarta construction firms.

Keywords: *Transformational Leadership; Knowledge Management; Employee Performance; Work Motivation*

Introduction

Human resources are assets in organizations and companies. The success of company management is dramatically influenced by the quality of human resources in an organization or company (Hamid et al., 2017). The ability of employees to meet organizational needs can affect the achievement of an organization's goals. Employee performance is directly proportional to the organization's success in its every activity (Siddiqui, 2014; Suharto et al., 2019). Based on job requirements, performance is the result of work performed by the employees. (Anyakoha, 2019). Employee achievement is regarded as a consequence of work that someone has done in conducting work tasks through their work actions. (Pradhan & Jena, 2017). Companies must enhance employee performance in various ways that can be accomplished, such as by improving leadership both in teams and in the organization, providing appropriate compensation for employees' hard work, and managing knowledge among employees (Zaini & Agustian, 2019). Furthermore, as a result of the company's efforts to improve employee performance, job motivation is seen. (Beltrán-Martín & Bou-Llusar, 2018). Motivation is considered as a driving factor for enhanced employee performance due to employee job satisfaction, which can be obtained when employees are satisfied with the organization's leadership, compensation, and knowledge management (Shahzadi et al., 2014).

Leadership is considered an important ability to improve and motivate employees to have a commitment in achieving organizational goals (Tyssen et al., 2014). Leadership can determine employee success; hence, enhancing employee performance is inseparable from the role of the leaders (Cho et al., 2020). Leadership is a person's ability to influence subordinates to work in achieving company goals (Zohar & Polachek, 2017) because fair leaders can provide mental support and being respectful will enhance employee performance. Consequently, the work motivation of employees will increase as they feel comfortable with the presence of leaders who are expected to fair and supportive. This encourages employees to be productive and perform better (Priyanto, 2016; Widodo, 2017).

During the intense competition in the industry, the paradigm should be changed from resource-based competitiveness to knowledge-based competitiveness (Novianti, 2019). Knowledge-based competitiveness emphasizes knowledge and technology, as well as the development of the company's human resources (Lendzion, 2015). To facilitate the development of human resources, the ability to manage and develop the knowledge of the organization is required (Castro et al., 2020). KM is defined as an organization's effort to identify, develop, and distribute knowledge to enhance an organization's competitive advantage by recognizing, learning, and reusing it (Nonaka, 1994; Nonaka, Toyama, & Konno, 2000). This effort provides an opportunity for employees to develop their knowledge about the organization, which is expected to provide work motivation to continuously improve their performance within the organization (Samsiah, 2018).

Strong motivation in doing work can realize organizational success and maximize work. Work motivation itself has an essential role in terms of growing enthusiasm, passion, and pleasure to work optimally. Motivation is a factor that encourages others to perform tasks according to their roles in the organization. Motivation also supports the process of determining the intensity, direction, and perseverance of individuals in achieving goals (Bronkhorst, Steijn, & Vermeeren, 2015). The concept of motivation often emphasizes stimulation that arises both from within oneself (intrinsic motivation) (Auger & Woodman, 2016) and outside factors (extrinsic motivation) (King, Pastel, Ward, & Wallace, 2013). Employees who have strong work motivation will have much energy to perform activities or, in other words, to enhance employee performance (Hidayat & Heryanto, 2019).

The problem that occurs at this time is that the achieved performance in project execution by engineering companies is less than optimal. The work done is still behind customer expectations due to delays in project completion. Company delays in work completion may be subjected to sanctions and fines per Section 1.10 of SKK Migas Circular No. EDR-0167/SKKMH0000/2017/S7, dated July 26, 2017. Besides the technical aspects that affect these delays, it should be noted that project performance indicates that individual employee performance is not optimal.

Construction firms nowadays concentrate highly on activities that harness employees' knowledge to create organizational knowledge. The lack of senior employees in the field of construction requires companies to start the transformation by implementing knowledge management to enhance employee performance and transferring of knowledge to other employees. Management must ensure that each employee has a secure attachment to the company. Each person can always develop themselves and collectively make efforts to manage individual knowledge into organizational knowledge to continuously enhance the ability to provide added value to the company and customers. Apart from transformational leadership, knowledge management practices have potential to improve the level of organization performance.

The above theories of transformational leadership, knowledge management, work motivation, and employee performance have given more attention for empirical investigations due to its powerful influence over firm performance. Interestingly, though the additive effects of these theories on employee performance have sufficiently been explored in the literature, the additive effects of transformational

leadership, knowledge management, and work motivation on employee performance have not been explored in depth. In this direction, this study develops a conceptual model (see Figure 1) and tests this model among construction firms located in Jakarta. In particular, the purposes of this study are to examine the influence of TL and KM on EP through WM as mediator.

Literature Review and Hypothesis Development

Effects of TL on EP

TL is a process of one's activities to move others by leading, guiding, and influencing others to do something to achieve the expected results (Groves, 2014; Kwan, 2020). That is in line with a process to influence others to understand and agree with what needs to be done and how the task is performed effectively, as well as a process to facilitate individual and collective efforts to achieve shared goals (Bronkhorst et al., 2015).

Transformational leadership has a direct positive effect on employee performance. This hypothesis was confirmed by previous research (Caillier, 2014; Chammas & Hernandez, 2019).

H1: TL has positive effects on EP.

Effects of KM on EP

In the literature, there are various perspectives in understanding knowledge management. Knowledge management is a way for organizations to identify and enhance knowledge to improve excellence (Nonaka & Toyama, 2003; Nonaka et al., 2000). Knowledge management is inseparable from its management function or process. Knowledge management could be explained as systematic steps to manage knowledge in organizations to create value and increase competitive advantage (Chawinga & Chipeta, 2017; Sharma & Mishra, 2007).

Knowledge management has a direct positive effect on employee performance. This hypothesis was confirmed by previous research (Muthuveloo, Shanmugam, & Teoh, 2017; Sukarta & Lestari, 2019).

H2: KM has positive effects on EP.

Effects of WM to EP

Motivation is a factor that encourages others to perform tasks based on their roles in the organization. Motivation also supports the process of determining the intensity, direction, and perseverance of individuals to achieve goals (Auger & Woodman, 2016).

The concept of motivation from various literature is often emphasized on stimuli arising from both within oneself (intrinsic motivation) and outside factors (extrinsic motivation) (Auger & Woodman, 2016; King et al., 2013).

Motivation has a direct positive effect on employee performance. This hypothesis was confirmed by previous research (Kwawong, Opoku, & Donyina, 2015; Zainuri & Mundakir, 2018).

H3: WM has positive effects on EP.

Effects of TL and KM on WM

Strategies in increasing employee motivation are part of human resources development, in which employee motivation can be done by analyzing the factors that affect employee motivation. Various previous studies regarding the development of employee work motivation have been conducted.

TL has a positive effect on work motivation. This hypothesis was confirmed by Bronkhorst et al. (2015) and Jensen & Bro (2018). Compensation has a positive effect on work motivation. This hypothesis was confirmed by Priyanto (2016) & Widodo (2017). Knowledge management has a positive effect on work motivation. This hypothesis was confirmed by previous study (Ganjinia, Salimi, & Ghasabsaraei, 2014).

H4: TL has positive effects on WM.

H5: KM has positive effects on WM.

Effects of TL and KM on EP through WM

Strategies in increasing employee performance are part of HR development, in which employee performance can be done by analyzing the factors. Various previous studies regarding the development of employee performance have been conducted.

TL has a positive effect on EP through WM. This hypothesis was confirmed by previous research (Arman, Wardi, & Evanita, 2020; Widodo, 2017).

Research related to the effect of knowledge management on employee performance through work motivation has not been obtained by the author to serve as a reference. That is interesting to examine in this study.

H6: TL is positively related to EP through WM.

H7: KM is positively related to EP through WM.

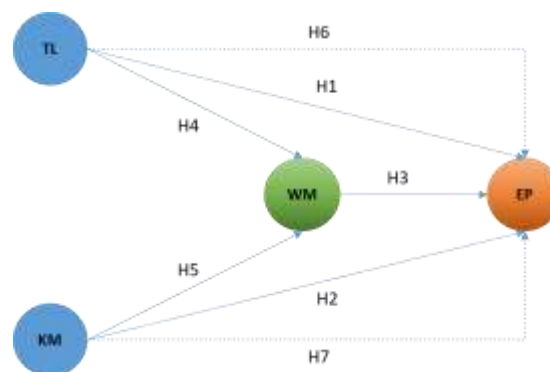


Figure 1. Research Framework

Methodology

Sample

The object of this research were the organizations/fields of construction companies that have been the members of *Gapensi* association (Indonesia Construction Companies Association) with grade high qualification and located in the Jakarta, Indonesia. Data collection was carried out during January-April 2020. The sample target were the organizations of the construction firms represented by the permanent experts or skilled manpower working accordingly with the field of construction services.

In this study, the observation unit (respondent) is the company leaders or the company's representative or those who represent them in the company, who become respondents and fill out the research questionnaire. The total amount of the population is 210 construction companies. Sample taken from this study are based on Slovin formula (Fernandes & Solimun, 2017). From a population of 210 construction companies from grade high construction firms in Jakarta, with the Slovin formula, 138 respondents were obtained. In this research, the method of processing and analyzing the data used is the SEM based on component or variance with partial least squares (PLS) using SmartPLS 3.2.8.

The sample used in this study has met the minimum model of 100 samples as recommended by Hair, Ringle, & Sarstedt (2011) and Hair et al. (2014) for structural equation modeling (SEM) analysis.

Data Collection Measurement

The data used in this study include data on TL, KM, WM, and EP collected through questionnaires designed using Likert scale. Statements for TL, KM, WM, and EP are measured using a Likert scale; the details are SD (Strongly Disagree) = 1, D (Disagree) = 2, N (Neutral) = 3, A (Agree) = 4, and SA (Strongly Agree) = 5.

Seven items of transformational leadership scale were based on Carless, Wearing, & Mann (2000). Twenty-two items of knowledge management scale were based on Darroch (2003), Lee & Wong (2015), and Wang et al. (2008). Nine items of work motivation scale were based on Weinstein & Ryan (2010). Five items of employee performance were based on Williams & Anderson (1991).

Result and Discussion

Measurement Model

Evaluation of the measurement model (outer model) performed to determine the validity and reliability that connects the indicator with its latent variable. There are three criteria in using data analysis techniques with SmartPLS 3.2.8 to evaluate the outer model, namely, convergent validity, discriminant validity, composite reliability, and average variance extracted (AVE) (Cepeda-Carrion et al., 2019; Hair et al., 2019).

Convergent validity of the measurement model with reflective indicators is evaluated based on the correlation between item scores/component scores estimated with PLS software. Individual reflective measures are said to be high if they correlate more than 0.70 with the construct measured (Hair et al., 2014). In this research, a loading factor limit of 0.70 will be used. There is still an outer loading value below 0.70. Because it has a low convergent validity value, statement items that have a loading factor below 0.70 must be removed (deleted). Two indicators on TL must be removed i.e. TL4 and TL5. In the KM construct, 11 indicators must be removed i.e. KM1, KM2, KM3, KM5, KM6, KM9, KM11, KM16,

KM17, KM19, and KM22. In the WM construct, three indicators must be deleted i.e. WM4, WM5, and WM7. In the EP construct, there is one indicator that must be removed i.e. EP5.

The results of data processing for loading values less than 0.70 that have been deleted are shown in Figure 2.

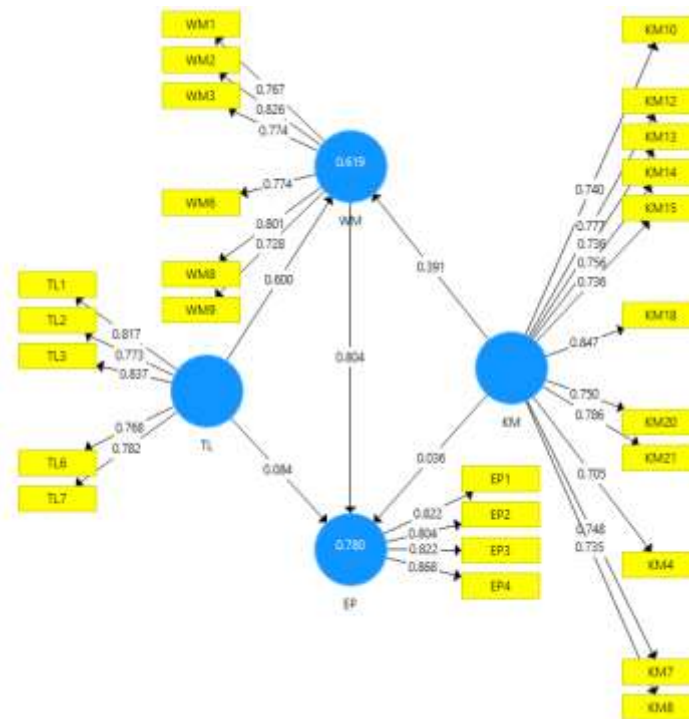


Figure 2. Results of the Structural Equation Modeling

Discriminant Validity Analysis

After ensuring that all indicators of the latent variable are constructs of the latent variable, the next step is to test the discriminant validity. Discriminant validity also needs to be done so that the scale used does not comprise two constructs that measure the same thing. To find out, the correlation between constructs must be less than 0.90. If between constructs, the correlation is 0.90 or more, multicollinearity between constructs will occur (Hair et al., 2014). The results of discriminant validity testing are shown in Table 1.

As shown in Table 1, there is no multicollinearity between variables because each construct measures different things. This is evident from the correlation value between constructs that is less than 0.90.

Reliability Evaluation and AVE

The validity and reliability criteria can also be seen from the reliability value of a construct and the value of the AVE of each construct. The construct is said to have high reliability if the value is 0.70 and AVE is above 0.50 (Hair et al., 2014). The CR indices of each scale were all greater than the level of 0.70 recommended by Fornell & Larcker (1981). Table 1 presents Cronbach's alpha, composite reliability (CR), and AVE values for all variables.

Table 1. Internal Consistency and Reliability

Constructs/Indicators	Factor loading	Cronbach's alpha	CR	AVE
TL1	0.817	0.856	0.896	0.633
TL2	0.773			
TL3	0.837			
TL6	0.768			
TL7	0.782			
KM4	0.705	0.926	0.936	0.573
KM7	0.748			
KM8	0.735			
KM10	0.740			
KM12	0.777			
KM13	0.736			
KM14	0.756			
KM15	0.736			
KM18	0.847			
KM20	0.750			
KM21	0.786			
WM1	0.767	0.87	0.902	0.606
WM2	0.826			
WM3	0.774			
WM6	0.774			
WM8	0.801			
WM9	0.728			
EP1	0.822	0.849	0.898	0.688
EP2	0.804			
EP3	0.822			
EP4	0.868			

As shown in Table 1, TL, KM, WM, and EP have a composite reliability above 0.80 and a Cronbach's alpha value above 0.70; hence, it can be concluded that the indicators used in every variable has good reliability or can measure its construct (Hair et al., 2014). However, the Cronbach's alpha value generated by PLS is slightly underestimated, so it is recommended to use the composite reliability value (Peterson & Kim, 2013). Likewise, with the AVE value, TL, KM, WM, and EP have an AVE value above 0.50; therefore, it can be said that each variable has a high discriminant validity.

Structural Model

Testing the inner model or structural model is done to see the relationship between the construct, the significance value, and the R^2 of the research model (Hair et al., 2019). The structural model is evaluated using R^2 for the dependent construct of the t-test as well as the significance of the coefficient of structural path parameters. Assessing a model with PLS starts by looking at the R^2 for each latent dependent variable. Table 2 shows the results of R^2 estimation using SmartPLS.

Table 2. R-square results

Variable	R^2	R^2 adjusted
EP	0.780	0.773
WM	0.619	0.612

Table 2 shows the R^2 value for the EP obtained at 0.857 and for the WM obtained at 0.690. These results indicate that 85.7% of the EP can be influenced by TL, KM, and WM; the rest are influenced by other variables not included in the study. However, 69% of WM is influenced by the TL and KM; the rest is influenced by other variables not found in the study.

Furthermore, the total value of R^2 (see Table 2) is used to predictive relevance (Q^2). The blindfolding approach measures the predictive relevance (Q^2) and the effect Q^2 or impact of exogenous constructs on endogenous constructs (Henseler, Ringle, & Sinkovics, 2009). As shown in Table 2, the value of Q^2 in this study can be measured by the following calculation:

$$Q^2 = 1 - (1 - R1^2) (1 - R2^2)$$

$$Q^2 = 1 - (1 - 0.780) (1 - 0.619)$$

$$Q^2 = 0.91618$$

The predictive value of relevance (Q^2) for the structural model in this study is 0.91618 or 91.62%, meaning that the model is able to explain the phenomenon of performance associated with several variables, namely, TL, KM, and WM. Therefore, the model can be said to be very good or the model has a very good predictive value. In the end, the model can be used for hypothesis testing.

Hypotheses Testing

Based on the hypothesis testing path diagram in Figure 3, all indicators on each variable have a statistical value greater than 1.66 (t table). To test the relationship between variables (hypothesis testing), the statistical value of the SmartPLS output is compared with the value of the table. Table 3 provides the results of direct relationships between constructs (variables).

Table 3. Direct effect

Relationship	Beta	t-statistic	p-value	Comments
KM -> EP	0.036	0.535	0.296	Not Support
KM -> WM	0.391	5.486	0.000	Support
TL -> EP	0.084	1.056	0.146	Not Support
TL -> WM	0.600	6.711	0.000	Support
WM -> EP	0.804	8.462	0.000	Support

Figure 3 shows the analysis of path coefficients and level of significance shows that all direct paths are significant except the path between TL and KM on EP. Besides, the result revealed that TL and KM has no significant impact on EP ($\beta = 0.084; 0.036, p = 0.146; 0.296$). In the indirect effect, Table 4 showed that all paths were significant. We run a contestant bootstrapping with 5,000 sub-samples to estimate the t -values to assess the level of significance for specific indirect effect as shown in Table 4.

Table 4. Specific Indirect Effect

Relationship	Beta	T-statistic	P-value	Comments
KM -> WM -> EP	0.314	4.209	0.000	Support
TL -> WM -> EP	0.483	5.592	0.000	Support

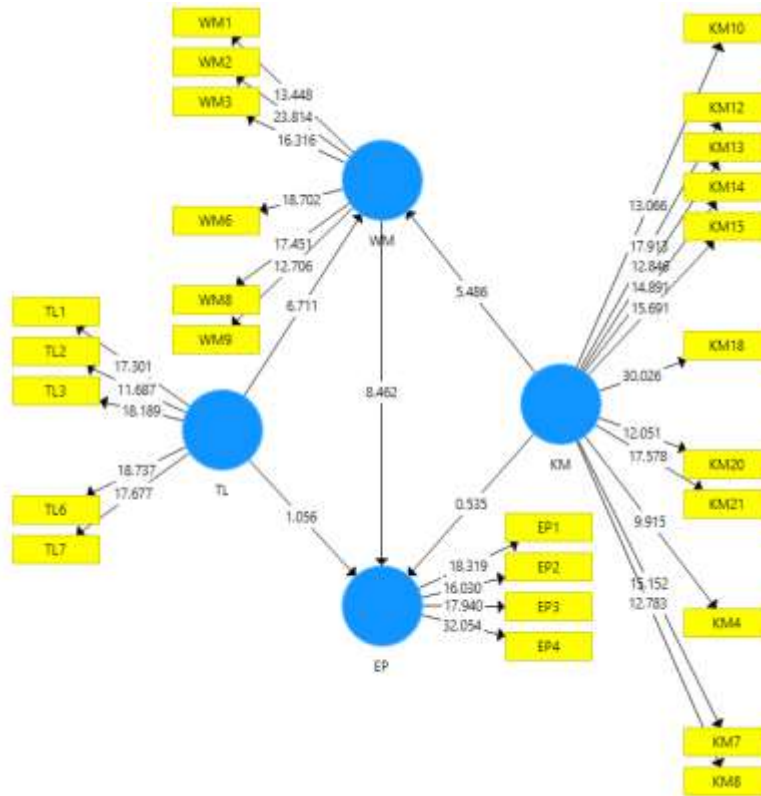


Figure 3. Hypotheses Testing Path

Based on the path parameter coefficients obtained in Table 3 and Table 4, the research equation model formed can be explained in Figure 4.

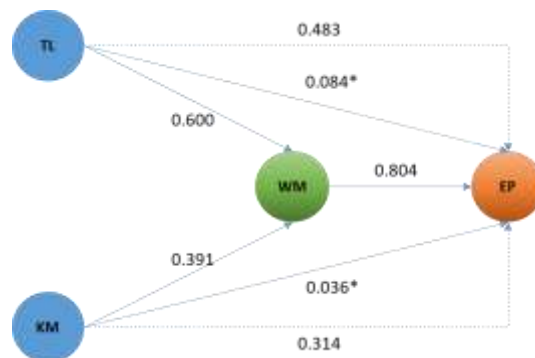


Figure 4. Research Model

Note: * = not significant at $p < 0.05$

Mediation Effect Test

Influence analysis is performed to analyze the strength of influence between variables, both direct and indirect, and total effect. The immediate effect is nothing but the coefficients of all the coefficient lines with one end arrow. This research model illustrated that TL, KM, and WM have a direct effect on EP.

Indirect effects are effects that arise through an intermediate variable. In this research model, WM provides an indirect effect on EP.

Determining the influence of mediation can be done with a procedure developed by Hair et al. (2011). This method is considered to be more appropriate because it does not require any assumptions about the distribution of variables; hence, it can be applied to small sample sizes. Nitzl, Roldan, & Cepeda (2016) added that to calculate how much influence the mediating variable is able to absorb the direct influence that was previously significant from the model without mediation is known as the variance accounted for (VAF). Hair et al. (2011) stated that if the VAF value is above 80%, then it shows the role of mediating variables as full mediation. If the VAF value is between 20% and 80%, then it can be categorized as a partial mediator. If the VAF value is less than 20%, then the researcher can conclude that there is almost no mediating effect. Table 4 shows the indirect effects in this study.

As shown in Table 4, the results of the indirect effect of TL on EP through WM with p-values of $0.000 < 0.05$ are significant. The results of indirect effect of KM on EP through WM with p-values of $0.001 < 0.05$ are significant.

Discussion

The results of hypothesis testing on the direction of the influence of TL on EP are not significant. It is not consistent with previous research (Jensen, Potočnik, & Chaudhry, 2020; Ng, 2017), which showed that TL influences EP. However, this result is consistent with studies conducted by Cahyono et al. (2014), Eliyana et al. (2019), and Makambe & Moeng (2019). So far, the performance of employees is still not optimal due to the knowledge gap between employee levels. For example, employees who work in the office will be different from employees who work on the project site in the knowledge aspect. This leads to the implementation of transformational leadership that is enforced for all employees' levels needing to be reviewed. The implementation of transformational leadership should be enforced in line with the level of knowledge and education of employees in construction companies.

The results of hypothesis testing on the direction of the influence of KM on EP are not significant. It is not consistent with previous studies (Muthuveloo et al., 2017; Sukarta & Lestari, 2019). However, this result is consistent with research conducted by Afqarina & Dihan (2019), which states that knowledge management has a negative influence on employee performance. By conducting this study, the relationship between knowledge management and employee performance hypothesis is clear. In this case, the organization needs to find more ways to increase employee performance.

The results of hypothesis testing on the direction of the influence of WM on EP are not significant. It is consistent with previous studies (Juniari, Riana, & Subudi, 2015; Kwapong et al., 2015; Zainuri & Mundakir, 2018), which stated that work motivation has a significant effect on employee performance. Motivation is the driving factor in performing an activity and has a significant influence on employee performance. Employee performance is a comparison between input and output or the ratio of results obtained to resources (employees) because employees are an essential factor of production. For employees to work more optimally, superiors must motivate employees. Motivating employees can be done in several ways; for example, the existence of positive motivation such as giving gifts, bonuses, awards, and position promotions. By contrast, providing negative motivation can be done by giving warnings or penalties for employees who commit mistakes. Employee performance is also a factor that determines overall company performance.

The results of hypothesis testing on the direction of the influence of TL on WM are significant. It is consistent with the research by Priyanto (2016) and Widodo (2017), which stated that leadership influences work motivation. The leadership factor plays an essential role because it is the leader who will

move and direct the organization in achieving its goals. At the same time, this is not an easy task because they have to understand each subordinate's different behaviors. Subordinates can be influenced in such a way that they can be motivated to work effectively and efficiently. To enable employees to increase the volume and quality of their work, it is the responsibility of the leadership of organization to motivate them.

3 The results of hypothesis testing on the direction of the influence of KM on WM are significant. It is consistent with previous studies (Ganjinia et al., 2014; Usman & Musa, 2012). The application of information technology in managing knowledge management at the company makes it easy for employees to learn independently. The knowledge management portal can be accessed by all employees while in the private office. The company's leadership strives to facilitate employee curiosity about learning from previous projects. Employees during the project execution are required to fill in digital forms in the portal as a lesson learned to be known by other disciplines, in line with Bandera et al. (2017), Nonaka (2009), and Nonaka et al. (2000), where knowledge acquisition and knowledge creation can be performed by individuals working in organizations. It is also related to the company's commitment to the company's intellectual capital and creating an environment for collaborative knowledge sharing.

3 The results of hypothesis testing on the direction of the influence of TL on EP through WM are significant. It is consistent with research by Priyanto (2016) and Widodo (2017), which stated that motivation mediates the influence of leadership on employee performance. The results of testing this hypothesis found evidence that work motivation significantly mediates the influence of leadership on employee performance. 11 Based on the results of hypothesis testing, the coefficient value of the indirect influence of leadership on employee performance is higher than the coefficient value of the direct control of leadership on employee performance. 27 The direct impact of leadership on performance is 0.183, whereas the indirect effect through motivation is 0.285. It illustrates that in TL and EP, achievement is better prioritized increasingly mediated by WM. Hypothesis testing results also indicate that leadership has an indirect effect on employee performance through work motivation. Work motivation becomes a mediating variable between leadership and achievement. It explains that the right direction will be able to influence employees to perform their duties voluntarily and be able to accept their influence by their expectations. Moreover, the high motivation will make employees more focused and attentive to efforts in achieving consistent work results and in line with the company's expectations (Kiuru et al., 2020), to foster better performance of employees (Eide, Saether, & Aspelund, 2020). Another good impact is that project completion performance can meet deadlines.

3 The results of hypothesis testing on the direction of the influence of KM on EP through WM are significant. The results of testing this hypothesis found evidence that work motivation significantly mediates the influence of knowledge management on employee performance. 11 Based on the results of hypothesis testing, the coefficient value of the indirect effect of knowledge management on employee performance is higher than that of the direct effect of knowledge management on employee performance. It illustrates that in knowledge management and employee performance achievement is better prioritized in the increase mediated by work motivation.

Organizations and companies that focus on knowledge management enable their people to become more productive and driven to grow and share their knowledge (knowledge sharing) 26 (Shujahat et al., 2019). Knowledge sharing is the process of disseminating and exchanging information, ideas, experiences, and knowledge through communication and social interaction performed by individuals with other individuals, individuals with groups, and between groups within and outside the company to acquire new knowledge (Bandera et al., 2017; Farnese, Barbieri, Chirumbolo, & Patriotta, 2019). Increased knowledge can produce innovations that can improve the performance of employees (Audretsch & Belitski, 2020).

The applied knowledge management is not yet optimal, but in some pilot projects, it has run quite well. The desire of employees to document all findings and suggestions in the knowledge management portal makes the company well known by customers. It is evidenced by the knowledge management portal to help employees identify similar problems that arise in the next project. It also can increase the speed and performance of project completion that done.

Conclusion and Recommendations

This study analyzes the influence of TL and KM directly or indirectly through WM on EP. Statistics show that TL and KM has only indirect effect on EP through WM. This implies that work motivation has its own role in encouraging the company's efforts to encourage employee performance by enhancing transformational leadership and knowledge management in improving the quality of their resources. Leadership with clear and correct directions and goals can influence employees to perform their duties voluntarily and can accept their influence with their expectations. This is what can increase employee motivation. Knowledge management can foster knowledge and desire to share knowledge to encourage employee work motivation.

In the end, these variables encourage employee work motivation, to increase employee capacity, productivity, and performance. Efforts to improve performance were determined more by the combination of leadership and motivation. Therefore, management at construction firms should further enhance the leadership role by explaining the company's objectives and trusting the ability of its employees.

Knowledge needs to be managed properly, involving employees, information technology, and collaboration. Work motivation should be enhanced by providing different methods to employees to make them strongly driven to perform better.

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