



The effect of transformational leadership on innovative work behavior: mediating role of knowledge sharing

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Abstract: PLN, as Indonesia's electricity utilities company, upholds AKHLAK values, where every employees must innovate in doing their work. The purpose of this research is to analyze the extent of the role of transformational leadership on innovative work behavior with knowledge sharing as the mediation variable. This research uses a quantitative approach with PLS-SEM modeling assisted with Smart-PLS application with 70 employees as respondents by distributed questionnaires. The outcome implies that transformational leadership and knowledge sharing have a significant influence on innovative work behavior, as well as knowledge sharing partially mediates between transformational leadership and innovative work behavior. Future research is expected to discuss other leadership variables that are in accordance with the prevailing trends and wider research objects.

Abstrak: Tujuan penelitian untuk menganalisis sejauh mana peran kepemimpinan transformasional terhadap perilaku kerja inovatif dengan berbagi pengetahuan sebagai variabel mediasi. Penelitian ini menggunakan pendekatan kuantitatif dengan pemodelan PLS-SEM berbantuan aplikasi Smart-PLS dengan menyebarkan kuesioner kepada sampel sebanyak 70 orang karyawan. Hasil penelitian menunjukkan bahwa kepemimpinan transformasional dan berbagi pengetahuan memiliki pengaruh yang signifikan terhadap perilaku kerja inovatif, serta berbagi pengetahuan secara parsial memediasi antara kepemimpinan transformasional dan perilaku kerja inovatif. Penelitian selanjutnya diharapkan dapat membahas variabel kepemimpinan lainnya yang sesuai dengan tren yang berlaku dan objek penelitian yang lebih luas.

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Introduction

In the current era of competitive competition, companies must be able to develop rapidly in order to achieve the company's goals. With this fierce competition, innovative resources are needed to help the company achieve its goals and compete in this competitive world. Knowledge and employees' capabilities could direct the company to achieve competitive advantages (Afriyie et al., 2020). Every organization depends on capabilities and knowledge to keep going in a competitive environment.

IP UPRK PLN Keramasan is national electric utilities company that operates in Palembang city. The vision of the company is show to advantage the leading electricity company in Southeast Asia and #1 customer choice for energy solutions. To reach the vision, the company has made one effort by holding a knowledge sharing activity. This knowledge sharing activity is expected to be a means for employees to share knowledge, information, and experience about work. However, there is no evaluation of this knowledge sharing activity. Whether this knowledge sharing can give impact on innovative work behavior of employees is unknown. This is because every company needs innovative work behavior of employees to compete in competitive world. To achieve organization goals requires the capability, knowledge, and responsibility of every employee.

Apart from knowledge sharing activity, innovation competitions are held routinely on a national scale. The goal of this competition is to generate innovative solutions to the problems around the work environment. With this competition, employees are expected to be able to find innovative solutions using the latest technologies to solve problems in the work environment. Yet, as of now, it is not known what are the exact factors that can generate innovative work behavior in the UPRK PLN Keramasan.

One of the variables emphasized in this research is the knowledge sharing variable which acts as an intervening as known as mediation variable. An intervening variable is a variable that attach an independent variable with a dependent variable which is an indirect relationship and cannot be measured (Wahyuni, 2019). Based on interviews conducted with PLN employees, it is stated that knowledge sharing has become a routine activity in the PLN work environment. Every employee is required to participate in knowledge sharing activities carried out online and offline. One of the reasons for holding this knowledge sharing activity is to increase employee innovation through ideas, ideas, solutions and innovative work. However, it is not yet known for certain whether knowledge sharing entertain a role in generating employee innovation. Referring to previous research which found that innovative work behavior is strongly affected by knowledge sharing (Wang & Hu, 2020). Knowledge sharing is believed to be the initial foundation for creating innovation (Arsawan et al., 2022; Montani & Staglianò, 2022). Previous researchers have conducted research related to the role of knowledge sharing on innovative work

behavior and the outcome stated that it was influential and significant (Abou-Shouk et al., 2022; Akram et al., 2020; Al-Husseini et al., 2019; Asurakkody & Kim, 2020; Rafique et al., 2022; Sudibjo & Prameswari, 2021). There is a research inconsistency where previous researchers found that innovative work behavior not impacted by knowledge sharing (Usmanova et al., 2020). Apart from that, it is known that knowledge sharing can be a mediating variable and have a significant influence (Rafique et al., 2022). This research gap makes the author want to research and analyze further regarding role of of knowledge sharing on innovative work behavior.

UPDK PLN Keramasan has a leadership structure that always changes in a period of less than five years. Apart from that, current leaders regularly participate in knowledge sharing activities and participate in these events as presenters to share knowledge and experience with employees so that the interaction between leaders and employees is relatively close. It is believed that transformational leadership can support revolution, change, and encourage employees to think critically and find solutions by optimizing innovation. Previous research provides recommendations for future researchers to discuss the role of transformational leadership (Haider et al., 2022). This is reinforced by previous research which implies that innovative work behavior impacted by transformational leadership (Al-Husseini et al., 2019; Rafique et al., 2022). However, there are inconsistencies in research which states that innovative work behavior not impacted by transformational leadership (Sudibjo & Prameswari, 2021). The existence of research gaps and previous researchers' recommendations made the author interested in adding transformational leadership variables to the research.

Transformational Leadership and Knowledge Sharing

Transformational leadership is a type of leadership where a leader provides encouragement and motivation to employees. Transformational leadership can support revolution, change, and encourage employees to think critically in finding innovative solutions in the work environment. Transformational leadership is an approach where leaders motivate employees to comply with organizational goals and tend to do work beyond expectations (Grošelj et al., 2020). Transformational leadership is needed to encourage employees to solve problems innovatively (Afsar et al., 2018). The presence of transformational leadership is very appropriate and suitable for the millennial generation because they tend to respect leaders who have an attitude of integrity and honesty obtained from transformational leadership (Holt, 2018). Afsar et al. (2019); Al-Husseini et al. (2021); Elrehail et al. (2018); Sudibjo & Prameswari (2021) conducted research related to the influence of leadership on knowledge sharing. It is known that knowledge sharing impacted by transformational leadership.

H1. Transformational Leadership has an influence on knowledge sharing

Transformational Leadership and Innovative Work Behavior

According to Holt (2018) the right leadership is one of the elements believed to be able to encourage innovative work behavior. Transformational leadership is still rarely discussed and limited to the Asian continent Afsar et al. (2019). Transformational leadership is believed to influence innovative work behavior where transformational leadership is an important element to stimulate corporate innovation (Afsar et al., 2019). There are four components of transformational leadership: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Al-Husseini et al., 2019).

H₂: Transformational Leadership has an influence on innovative work behavior

Knowledge Sharing and Innovative Work Behavior

Knowledge sharing is a core component of the knowledge management process which is defined as the process of exchanging information, data, skills, experience, and knowledge (Lei et al., 2021; Martins et al., 2019; Sudibjo & Prameswari, 2021). Knowledge sharing is able to give employees a high awareness of the responsibilities they have at work (Al-Husseini et al., 2019; Montani & Staglianò, 2022). Hence, knowledge sharing is believed to be able to lead employees to create creative solutions in the workplace (Al-Husseini et al., 2019). If employees have relevant knowledge, information, and ideas that can be applied in the workplace, employees tend to act more innovatively. So that many studies state that innovative work behavior impacted by knowledge sharing (Al-Husseini et al., 2019; Al-Kurdi et al., 2018; Elrehail et al., 2018).

H₃: Knowledge sharing has an influence on innovative work behavior

Knowledge Sharing as Mediation between Transformational Leadership and Innovative Work Behavior

Transformational leadership can have an indirect effect on innovative work behavior through knowledge sharing. Leaders can provide encouragement and motivation for employees to create innovative work behavior through knowledge sharing. With the interaction in the form of knowledge sharing, there is an increase in innovative work behavior in employees. This is reinforced by what states that knowledge sharing is able to mediate between transformational leadership and innovative work behavior (Al-Husseini et al., 2019).

H₄: Knowledge sharing role as mediation between transformational leadership and innovative work behavior

Based on the description that has been explained, it can be concluded that the research hypothesis framework entitled "The Effect of Transformational Leadership on Innovative Work Behavior: Mediating Role of Knowledge Sharing" as follows:

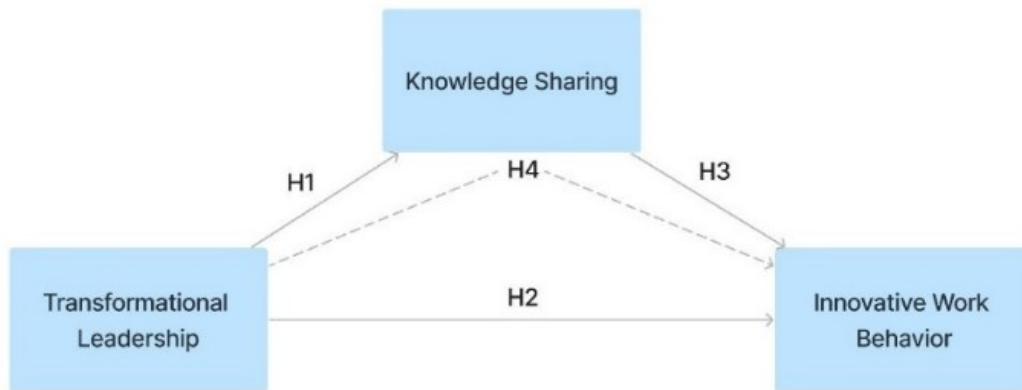


Figure 1. Hypotesis Research

Method

This research uses quantitative methods where the results of data collection can be processed statistically. The variables proposed in this study are transformational leadership variables as independent variables, innovative work behavior as the dependent variable, and knowledge sharing as an intervening variable. Data collection was carried out by distributing questionnaires to respondents. The population in this study were employees who worked in the PLN Unit Pelaksana Pengendalian Pembangkitan Keramasan with a research population of 85 employees. In determining the sample, researchers use probability sampling techniques where each member of the population has the same opportunity to become a sample with the calculation of the number of samples referring to the Slovin formula. Respondents in this study took the population of the research site as many as 70 employees. The questionnaire used a five-point Likert scale.

In this research, there is transformational leadership variable as independent variable using measurement of seven dimensions, namely, communicate a vision, develops staff, provides support, empowers staff, is innovative, leads by example, and is charismatic. Knowledge sharing variable as an intervening variable using measurement of two dimensions, namely, knowledge donating and knowledge collecting. Innovative work behavior variable as dependent variable using measurement of three dimensions, namely, idea generation, idea promotion, and idea realization. The results of data collection will be processed with the help of the SMARTPLS application. Using modeling from the third edition of PLS-SEM. PLS-SEM is an approach that can be used to estimate structural models in research that are fit for purpose such as analyzing complex theoretical models to data processing with smaller sample sizes. So that this model becomes very interesting and useful as an alternative to other methods (J. Hair & Alamer, 2022). Data processing was tested by evaluating the measurement model by conducting indicator reliability, internal

consistency reliability, convergent validity, and discriminant validity and evaluating the structural model in the form of a model of fit and hypothesis testing.

Result

There are two steps taken in the PLS-SEM evaluation, namely measurement model analysis and structural model analysis. This is done to show that the proposed measuring scale is valid, reliable, and the research model fits.

Measurement Model

According to Hair et al. (2017) there are four stages that must be carried out, namely indicator reliability on the outer loadings value, internal consistency reliability on the composite reliability value and Cronbach's alpha, convergent validity with the average variance extracted value, and discriminant validity with Fornell-Larcker testing, cross-loadings, and heterotrait-monotrait ratio (HTMT).

Table_1. Outer Loadings

Variable Item	TL	KS	IWB
TL1	0.949		
TL2	0.872		
TL3	0.767		
TL4	0.740		
TL5	0.837		
TL6	0.915		
TL7	0.868		
KS1		0.746	
KS2		0.824	
KS3		0.700	
KS4		0.774	
KS5		0.832	
KS6		0.838	
KS7		0.752	
KS8		0.701	
IWB1			0.717
IWB2			0.824
IWB3			0.717
IWB4			0.785
IWB5			0.798
IWB6			0.820
IWB7			0.907

Source: Research analysis, 2023

Indicator Reliability

Indicator reliability is done with the aim of knowing the suitability of indicators on a construct whether it is reliable or not (Hair Jr et al., 2010). Through Table 1 It can be seen that the outer loading value on transformational leadership (TL) ranges between 0.740 - 0.949; knowledge sharing (KS) ranges between 0.700 - 0.838; innovative work behavior (IWB) ranges between 0.717 - 0.907. This is in accordance with the recommendations of Hair et al. (2017) which states that the standard value of outer loadings should be around 0.70 or greater.

Internal Consistency Reliability

Internal consistency reliability reflects the extent to which items in an instrument measure different aspects of the same construct (Revicki, 2014). Table 2 shows that the composite reliability value for each construct ranges between 0.949 and the Cronbach's alpha value ranges from 0.903 - 0.937. Referring to the guidelines from Hair et al. (2017) that the value of composite reliability and Cronbach's alpha can be said to be fulfilled if the value ranges between 0.70 or higher. So it can be concluded that the value is accepted and meets reliability standards.

Table 2. Reliability & Validity

Variable	Composite Reliability	Cronbach's Alpha	AVE
TL	0.949	0.937	0.727
KS	0.922	0.903	0.597
IWB	0.924	0.904	0.637

Source: Research analysis, 2023

Convergent Validity

Convergent validity refers to the extent to which measurements on a variable correlate with other variable positively (P. F. M. Krabbe, 2017) . Table 2 shows the average variance extracted (AVE) value of each variable ranges between 0.597 - 0.727. This is in accordance with the recommendations of Hair et al. (2017) which states that the scale on the AVE value must be greater than 0.50, Table 3 shows that the AVE value has met the convergent validity threshold.

Discriminant Validity

In the discriminant validity test, three tests were carried out referring to the guidelines from Hair et al. (2017). The first test carried out is testing based on the Fornell-Larcker criterion which requires the square root of the AVE of each construct to be greater than other constructs. At Table 3 implies that the AVE square root value of each construct is always greater than that of other constructs so that testing based on the Fornell-larcker criterion is fulfilled.

Table 3. Fornell-Larcker Criteria

Variable	IWB	KS	TL
IWB	0.798		
KS	0.690	0.773	
TL	0.058	0.385	0.853

Source: Research analysis, 2023

The second test is testing based on the cross-loading value with the standard value on a construct must be greater than other constructs. Table 4 shows that the value of items in each construct is greater than other constructs so that testing based on cross-loading criteria is fulfilled.

Table 4. Cross-loadings

Variable Item	TL	KS	IWB
TL1	0.717	0.623	0.020
TL2	0.824	0.477	-0.016
TL3	0.717	0.451	0.145
TL4	0.785	0.545	0.186
TL5	0.798	0.517	0.005
TL6	0.820	0.581	-0.038
TL7	0.907	0.606	0.060
KS1	0.614	0.746	0.307
KS2	0.612	0.824	0.232
KS3	0.407	0.700	0.148
KS4	0.451	0.774	0.310
KS5	0.466	0.832	0.331
KS6	0.524	0.838	0.330
KS7	0.571	0.752	0.436
KS8	0.550	0.701	0.223
IWB1	-0.012	0.368	0.949
IWB2	-0.045	0.297	0.872
IWB3	0.144	0.320	0.767
IWB4	0.030	0.223	0.740
IWB5	-0.039	0.241	0.837
IWB6	-0.036	0.313	0.915
IWB7	0.197	0.436	0.868

Source: Research analysis, 2023

The third test is testing based on the heterotrait-monotrait ratio (HTMT) value with a standard value on each construct below 0.90. Can be seen from Table 5 it is known that the value of each construct is below 0.90, so it can be concluded that testing based on the HTMT criteria is fulfilled.

Table 5. HTMT Values

Variable	IWB	KS	TL
IWB			
KS	0.742		
TL	0.143	0.391	

Source: Research analysis, 2023

Structural Model

Model of Fit

A model can be said to be suitable if the SRMR value is below 0.10. shows that SRMR value is below 0.10 it can be concluded that the model fits and meets the criteria for evaluating the Model of Fit according to the SRMR value. Table 6 shows that SRMR value is below 0.10 it can be concluded that the model fits and meets the criteria for evaluating the Model of Fit according to the SRMR value.

Table 6. SRMR Values

	Saturated Model	Estimated Model
SRMR	0,099	0,099

Source: Research data, 2023

Hypotesis Testing

The hypothesis can be said to be influential and significant if the T value > 1.96 and the P value < 0.05 (Hair et al., 2017). According to Table 7 It is known that all hypotheses proposed have a significant effect. Thus, all hypotheses that have been proposed in this study are accepted and known to have a significant effect.

Table 7. Hypotesis Testing

	T Statistics	P Values
KS→IWB	12.275	0.000
TL→IWB	2.269	0.024
TL→KS	2.836	0.005
TL→KS→IWB	2.574	0.010

Source: Research data, 2023

Mediation Evaluation

A variable can be said to be a mediating variable if it becomes a link between the independent variable and the dependent variable (Wahyuni, 2019). There are three types of mediation: complementary mediation, competitive mediation, and indirect only mediation (Hair et al., 2017). According to Table 7 it is known that knowledge sharing mediates transformational leadership with innovative work behavior. Referring to the guidelines from Hair et al. (2017) if the direct effect and indirect effect are significant, it is known that mediation belongs to the type of partial mediation with complementary mediation type. Can be seen in Table 7 it is known that the direct effect and indirect effect are both significant, so it can be concluded that knowledge sharing mediates in complementary mediation with a partial mediation effect.

Discussion

The Effect of Transformational Leadership on Knowledge Sharing

Transformational leadership is a variable that can significantly influence knowledge sharing. Therefore, leaders must be able to share knowledge and experience with employees in the work environment. In addition, leaders can also encourage employees to implement a culture of knowledge sharing starting from daily interactions at work. The results of this study are consistent with previous research which found that transformational leadership influences knowledge sharing (Al-Husseini et al., 2019; Rafique et al., 2022; Sudibjo & Prameswari, 2021). Therefore, it requires the presence of leadership who is willing to share knowledge and experience with employees to maintain a culture of knowledge sharing. Through table 1, it is known that the largest outer loadings value on the transformational leadership variable is in the first indicator with an outer loadings value of 0.949 with the measurement dimension of communicate a vision. It can be inferred that communicate a vision with employees contributes greatly to forming transformational leadership. Then, the lowest outer loadings value is in the fourth indicator with a value of 0.740. Referring to table 1 the fourth indication using the empowers staff measurement dimension, leaders must further increase trust, involvement, and cooperation between employees, it is known from the result in that this value is the lowest value, so it is important for leaders to make improvements in terms of empowers staff.

The Effect of Transformational Leadership on Innovative Work Behavior

This study proves that transformational leadership has a significant impact on innovative work behavior. The results of this study are consistent with previous research which states that transformational leadership has an influence on innovative work behavior (Afsar et al., 2019; Al-Husseini et al., 2019; Sudibjo & Prameswari,

2021). However, this study has different results from previous research which states that transformational leadership has no effect on innovative work behavior (Sudibjo & Prameswari, 2021). Transformational leadership is able to create employees to create innovative work behavior. With the right and appropriate leadership and being able to make employees responsible for their duties so that organizational goals can be achieved. Therefore, transformational leadership is needed that can increase innovative work behavior. It is known in table 1 that in the innovative work behavior variable, the seventh indicator with a value of 0.907 using the idea realization dimension is the largest value and contributes the most to forming innovative work behavior compared to other value indicators in the same construct. Then the first and third indicators are the smallest indicators with a value of 0.717 using the idea generation measurement dimension, it can be concluded that in terms of idea generation further improvement is still needed for employees to create an idea through problems that occur or modifications of previous ideas.

The Effect of Knowledge Sharing on Innovative Work Behavior

According to table 7 it is known that knowledge sharing has a very big impact on innovative work behavior. With knowledge sharing, employees gain knowledge from other coworkers so that they can develop an innovative mindset. This is in line with research which states that knowledge sharing has an influence on innovative work behavior (Abou-Shouk et al., 2022; Akram et al., 2020; Aldabbas et al., 2020; Asurakkody & Kim, 2020; Palumian et al., 2021). However, this study contradicts the results of research from which states that knowledge sharing doesn't affect on innovative work behavior (Usmanova et al., 2020). In the knowledge sharing variable, it is known that the sixth indicator has a value of 0.838, the greatest value compared to other indicators with the measurement dimension in the form of knowledge collecting. Through these results, it can be concluded that the sixth indicator contributes greatly to forming knowledge sharing. It is also known that the third indicator with a value of 0.700 using the measurement dimension of knowledge donating gets the lowest value compared to other indicators on the same construct. This indicates that improvements are still needed in the knowledge sharing process between employees.

Knowledge Sharing as Mediation between Transformational Leadership and Innovative Work Behavior

Knowledge sharing is known to complementary mediate between transformational leadership and innovative work behavior (Al-Husseini et al., 2019). So it is critical for companies to maintain and raise up the culture of knowledge sharing in the company. Through table 7, it is known that the knowledge sharing provides mediation between transformational leadership and innovative work behavior. The more transformational leadership increases and the more knowledge sharing culture increases, the more it will affect innovative work behavior.

Conclusion

The more leaders provide motivation to employees and the more routine knowledge sharing activities are carried out, the more significant the effect on innovative work behavior. Therefore, company leaders need to provide encouragement and motivation to employees and improve the culture of knowledge sharing in the work environment. Forms of encouragement such as motivation, direction, and interactivity between employees and leaders are able to make employees work innovatively. The existence of a knowledge sharing culture in the daily work environment such as interactions between fellow employees or official knowledge sharing activities can shape employees' innovative work behavior. With the application of this knowledge sharing culture, interactions between employees or between employees and leaders increase which can have positive effect on innovative work behavior so that it is concluded that knowledge sharing acts as a partial mediation on transformational leadership and knowledge sharing. The limitations of this research are in the scope of the sample which is relatively small by taking samples in one industry. In future studies, researcher hope that future authors can analyze in terms of other leadership in accordance with current trends. In addition, the object of research can be carried out in educational institutions or other industries with a wider scope of objects. The practical implication of this research is to maintain a culture of knowledge sharing through knowledge donating and knowledge collecting in order to improve innovative work behavior. Leaders must be able to increase cooperation between team members and continue to communicate a vision to each employee to increase innovative work behavior. In addition, this research can also be used as input for companies to manage the innovative work behavior of each employee through transformational leadership and knowledge sharing.

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