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## **The Effect of Human Capital, Structural Capital, Relational Capital and Innovative Behavior in Organizational Performance of PT. PLN (Persero) Company, Bekasi**

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**Abstract**--This study aimed to assess the effect of Human Capital, Structural Capital, Relational Capital, and Innovative Behavior in the organizational performance of PT. PLN (Persero) Company Bekasi. This study used a quantitative approach with a causal type of research. Variables used included Human Capital (X1), Structural Capital (X2), Relational Capital (X3), Innovative Behavior (Y1), and Organizational Performance (Y2). This study used a random sampling technique with stratification. The number of samples used was determined with the Slovin formula and a minimum sample of 123 populations at a margin of error of 5% obtained was 94. The data analysis methods in this study were Structural Equation Modeling (SEM) analysis with the Partial Least Square (PLS) alternative method. The research steps included designing a Measurement Model (Outer Model), designing a Structural Model (Inner Model), and designing Hypotheses. There are 7 accepted hypotheses, namely the direct effect of Human Capital on Innovative Behavior, the direct effect of Structural Capital on Innovative Behavior, the direct effect of Human Capital on Organizational Performance, the direct effect of Structural Capital on Organizational Performance, the direct effect of Innovative Behavior on Organizational Performance, the indirect effect of Human Capital on Organizational Performance through Innovative Behavior variable.

**Keywords**--human capital, innovative behavior, organizational performance, relational capital, structural capital.

## Introduction

Changes caused by industrial globalization, advances in information, technological developments, and intense competition, have caused various companies to change strategies in running their business (Kasmawati, 2017). To improve performance, organizations need to establish and implement effective business strategies that enable them to seize opportunities that exist in the market and take advantage of accessible resources and competencies (Obeidat, 2016). In fact, not all companies implement organizational performance as the fulfillment of organizational goals and work performance optimally. Companies do not really pay attention to the importance of performance for organizational sustainability. This can be seen at PT. PLN (Persero) Bekasi, as a state-owned company that is engaged in the service of providing electricity in the Bekasi area.

The results of interviews conducted with the Management regarding organizational performance, based on the results of the performance evaluation conducted, the level of achievement of organizational performance of PT. PLN (Persero) Bekasi in the last four years, namely in 2017, 2018, 2019, and 2020 experienced a fluctuating trend. Organizational performance that is run as a form of corporate responsibility to the government and society has not been optimal. The following table shows the Organizational Performance Value (NKO) of PT. PLN (Persero) Bekasi for the last 4 (four) years. Human Capital, Structural Capital and Relational Capital are still not optimally implemented by PLN Bekasi employees, where the average percentage of the pre-survey results for each variable X is 60%; 57.8% and 55.6% respectively.

Intellectual Capital is a very important aspect for employees and companies because it can maximally create value-added and competitive advantage, which in turn will affect organizational sustainability (Arshad et al., 2016; Omar et al., 2017; Yusoff et al., 2019). The innovative behavior of employees is also an important determinant of organizational success and the company's ability to maintain a competitive advantage (Najib & Nawangsari, 2021). Intellectual Capital as investment value in the form of abilities, knowledge, ideas, ideas, creativity, innovation, effort, and commitment in the work and social environment to carry out their duties so as to create value to improve organizational performance. Organizations can strengthen their ability to create innovations to produce superior performance (Alrowwad & Abualoush, 2020). Different results are shown by Puryantini et al. (2017), where innovation has been found to have no effect on organizational performance. This study aimed to assess the effect of Human Capital, Structural Capital, Relational Capital, and Innovative Behavior in the Organizational Performance of PT. PLN (Persero) company, Bekasi.

## Method

This study used a quantitative approach with a causal type of research. Causal research is a type of research that examines whether one variable causes another variable to change or not. Researchers want to conduct a causal study in order to be able to state that variable X causes variable Y, where if variable X is implemented properly then the problem of variable Y will be solved. The population in this study was all employees of PT. PLN (Persero) Bekasi. The total

population of all employees was 123 people. This study used a random sampling technique with stratification. The number of samples used was determined with the Slovin formula and a minimum sample of 123 populations at a margin of error of 5% obtained was 94. Random samples can be made by drawing each unit (subject) of prospective samples by lottery which gives each element or subject the opportunity to be selected without exception. The number of samples taken from the population of PLN Bekasi was 94 people from 123 populations, consisting of 50% structural (47 samples) and 50% functional (47 samples) (Örnek & Ayas, 2015; Amrullah et al., 2019; Dost et al., 2016).

Variables used included Human Capital (X1), Structural Capital (X2), Relational Capital (X3), Innovative Behavior (Y1) and Organizational Performance (Y2). The types of data in this study were primary data and secondary data. Primary data in this study were data obtained from the first source, either individual or personal such as the results of interviews or the results of filling out questionnaires (Ermayanti & Ro'ifah, 2016; Odia, 2021; Zainal et al., 2021; Wilson, 2019). In this study, primary data were taken using a questionnaire directly to the primary data source, namely employees at PT. PLN (Persero) Bekasi. The data analysis methods included Descriptive Analysis, Instrument Test, Validity Test, Reliability Test and Hypotheses Testing. The data analysis methods used in this study were Structural Equation Modeling (SEM) analysis with the Partial Least Square (PLS) alternative method. The research steps included designing a Measurement Model (Outer Model), designing a Structural Model (Inner Model), and designing Hypotheses.

## Results

### Characteristics of respondents based on gender

Based on the results of the study, it can be seen that there are 25 female employees with a percentage of 26.60% and 69 male employees with a percentage of 73.40%. For the working period of respondents at PT PLN (Persero) Bekasi, the majority of the respondents have a service period of 5 to 10 years, with 32 employees or 34.04%. The majority of the respondents' position at work is functional with 56 employees or 59.57% while the remaining 38 employees or 40.43% have the structural position.

Table 1  
Description of respondents

No	Gender	Total (people)	Percentage
1	Male	69	73.40%
2	Female	25	26.60%
No	Years of service	Total (people)	Percentage
1	< 5 Years	23	24.47%
2	5 - 10 Years	32	34.04%
3	11 - 15 Years	20	21.28%
4	> 15 Years	19	20.21%
No	Position	Total (people)	Percentage
1	Structural	38	40.43%

2	Functional	56	59.57%
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**Partial least square analysis results**

- Measurement Model (Outer Model) Test Results

**Validity test**

**Human capital**

The results of the Validity Test are shown in the following figure:

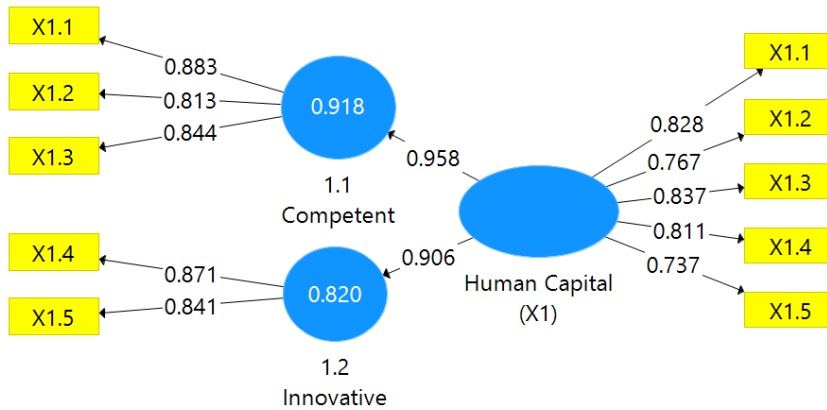


Figure 1. Calculation results of the human capital variable measurement model  
 Source: Result of analysis using SmartPLS 3.2.9

Based on Figure 1, it can be seen that the entire loading factor value of each indicator in the variables and dimensions is above 0.7. This proves that all indicators of the Human Capital variable (X1) used in this study are valid or have met convergent validity. The following is a table of the loading factor values of the Human Capital variable:

Table 2  
 Loading factor values of the human capital variable (X1)

Variable	Indicator	Loading Factor	Condition	Status
<i>Human Capital (X1)</i>	X1.1	0.828	> 0.7	Valid
	X1.2	0.767	> 0.7	Valid
	X1.3	0.837	> 0.7	Valid
	X1.4	0.811	> 0.7	Valid
	X1.5	0.737	> 0.7	Valid

Source: Result of analysis using SmartPLS 3.2.9

## Structural capital

The results of the Validity Test are shown in the following figure:

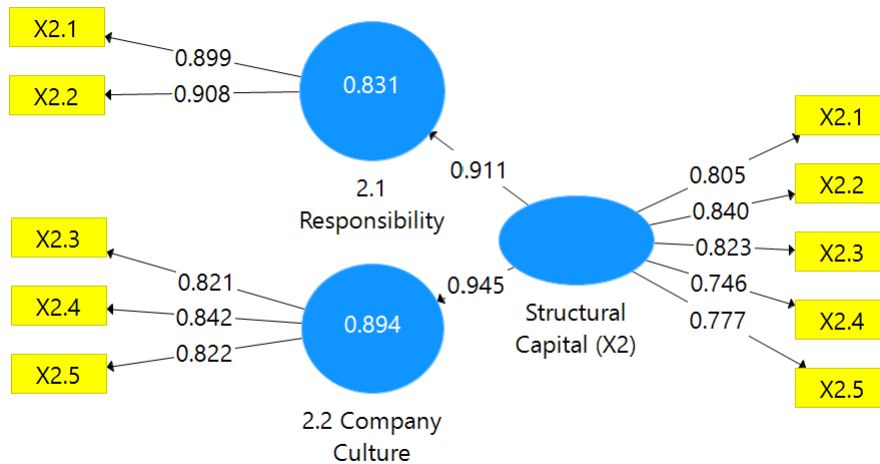


Figure 2. Calculation results of the structural capital variable measurement model

Source: Result of analysis using SmartPLS 3.2.9

Based on Figure 2, it can be seen that the entire loading factor value of each indicator in the variables and dimensions is above 0.7. This proves that all indicators of the Structural Capital (X2) variable used in this study are valid or have met convergent validity. The following is a table of the loading factor values of the Structural Capital variable:

Table 3  
Loading factor values of the structural capital variable (X2)

Variable	Indicator	Loading Factor	Condition	Status
Structural Capital (X2)	X2.1	0.805	> 0.7	Valid
	X2.2	0.840	> 0.7	Valid
	X2.3	0.823	> 0.7	Valid
	X2.4	0.746	> 0.7	Valid
	X2.5	0.777	> 0.7	Valid

Source: Result of analysis using SmartPLS 3.2.9

## Relational capital

The results of the Validity Test are shown in the following figure:

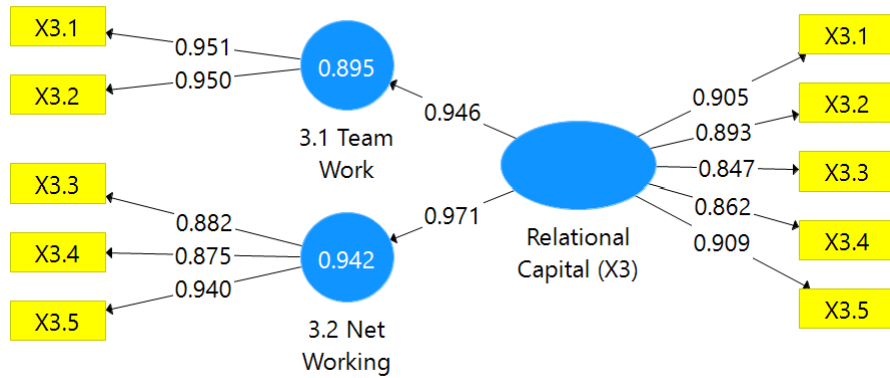


Figure 3. Calculation results of the relational capital variable measurement model  
 Source: Result of analysis using SmartPLS 3.2.9

Based on Figure 3, it can be seen that the entire loading factor value of each indicator in the variables and dimensions is above 0.7. This proves that all indicators of the Relational Capital (X3) variable used in this study are valid or have met convergent validity. The following is a table of the loading factor values of the Relational Capital variable:

Table 4  
 Loading factor values of the relational capital variable (X3)

Variable	Indicator	Loading Factor	Condition	Status
Relational Capital (X3)	X3.1	0.905	> 0.7	Valid
	X3.2	0.893	> 0.7	Valid
	X3.3	0.847	> 0.7	Valid
	X3.4	0.862	> 0.7	Valid
	X3.5	0.909	> 0.7	Valid

Source: Result of analysis using SmartPLS 3.2.9

The results in Table 4 above are the results of the outer loading for each indicator owned by the Relational Capital variable obtained from data processing using smartPLS. The indicators of the Relational Capital variable each have a loading factor value of > 0.7. This shows that the five indicators of the Relational Capital variable are valid and are still used in the model—or are not excluded from the model.

**Innovative behavior**

The results of the Validity Test are shown in the following figure:

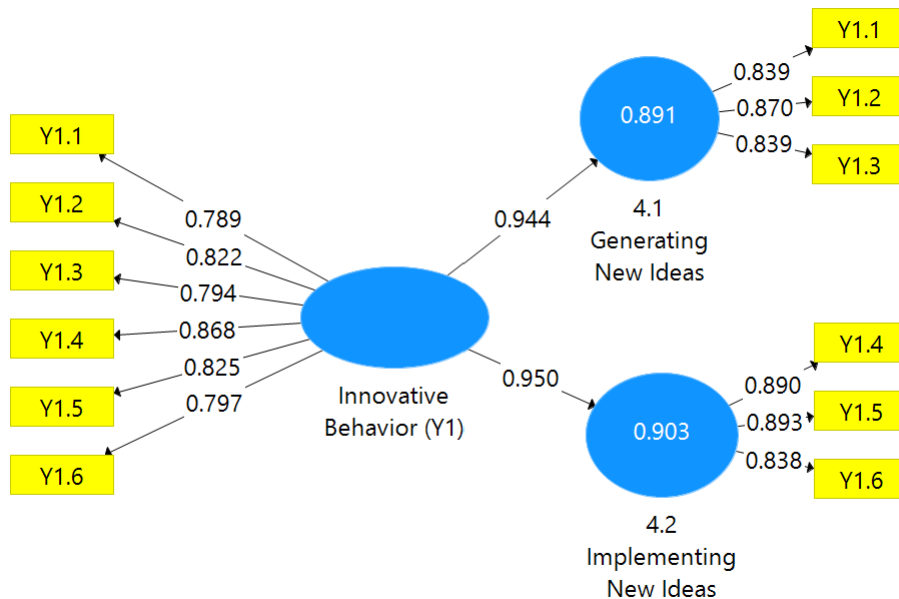


Figure 4. Calculation results of the innovative behavior variable measurement model

Source: Result of analysis using SmartPLS 3.2.9

Based on Figure 4, it can be seen that the entire loading factor value of each indicator in the variables and dimensions is above 0.7. This proves that all indicators of the Innovative Behavior variable (Y1) used in this study are valid or have met convergent validity. The following is a table of loading factor values for innovative behavior variables:

Table 5  
Loading factor values of the innovative behavior variable (Y1)

Variable	Indicator	Loading Factor	Condition	Status
Innovative Behavior (Y1)	Y1.1	0.789	> 0.7	Valid
	Y1.2	0.822	> 0.7	Valid
	Y1.3	0.794	> 0.7	Valid
	Y1.4	0.868	> 0.7	Valid
	Y1.5	0.825	> 0.7	Valid
	Y1.6	0.797	> 0.7	Valid

Source: Result of analysis using SmartPLS 3.2.9

The results in Table 5 above are the results of the outer loading for each indicator owned by the Innovative Behavior variable obtained from data processing using smartPLS. The indicators of the Innovative Behavior variable each have a loading factor value of > 0.7. This shows that the six indicators of the Innovative Behavior variable are valid and are still used in the model—or are not excluded from the model.

**Organizational performance**

The results of the Validity Test are shown in the following figure:

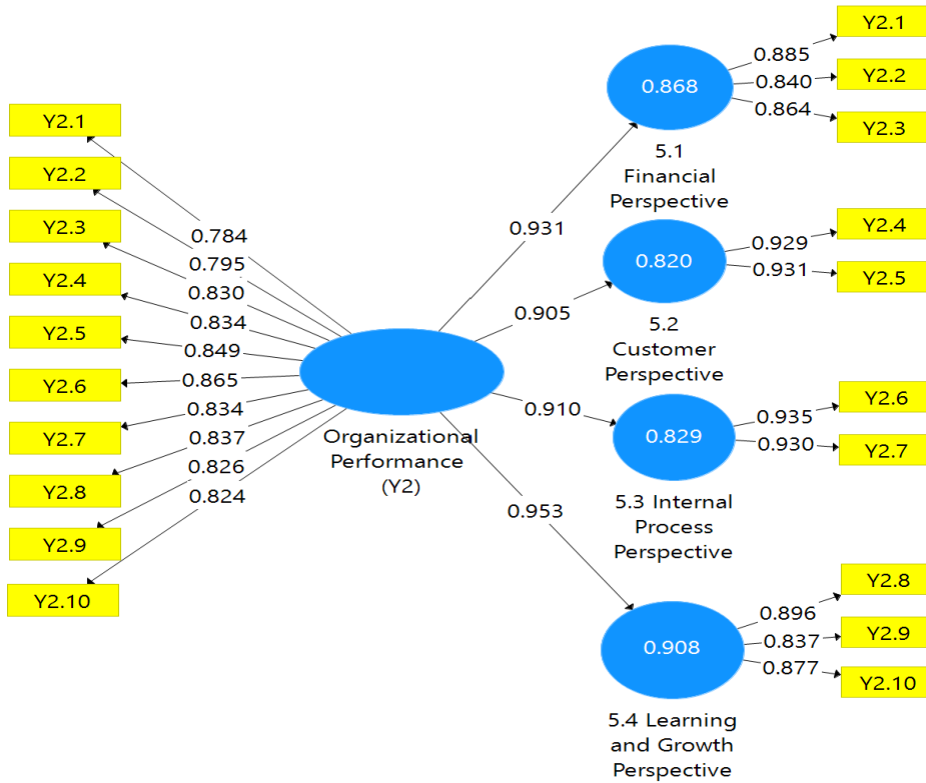


Figure 5. Calculation results of the organizational performance variable measurement model  
 Source: Result of analysis using SmartPLS 3.2.9

Based on Figure 5, it can be seen that the entire loading factor value of each indicator in the variables and dimensions is above 0.7. This proves that all indicators of the Organizational Performance variable (Y2) used in this study are valid or have met convergent validity. The following is a table of loading factor values of the organizational performance variable:

Table 6  
 Loading factor values of the organizational performance variable (Y2)

Variable	Indicator	Loading Factor	Condition	Status
Organizational Performance (Y2)	Y2.1	0.784	> 0.7	Valid
	Y2.2	0.795	> 0.7	Valid
	Y2.3	0.830	> 0.7	Valid
	Y2.4	0.834	> 0.7	Valid
	Y2.5	0.849	> 0.7	Valid
	Y2.6	0.865	> 0.7	Valid
	Y2.7	0.834	> 0.7	Valid
	Y2.8	0.837	> 0.7	Valid
	Y2.9	0.826	> 0.7	Valid
	Y2.10	0.824	> 0.7	Valid



Y2.7	0.834	> 0.7	<i>Valid</i>
Y2.8	0.837	> 0.7	<i>Valid</i>
Y2.9	0.826	> 0.7	<i>Valid</i>
Y2.10	0.824	> 0.7	<i>Valid</i>

Source: Result of analysis using SmartPLS 3.2.9

The results in Table 6 above are the results of the outer loading for each indicator owned by the Organizational Performance dimensions obtained from data processing using smartPLS. The indicators of the Organizational Performance dimensions each have a loading factor value of > 0.7. This shows that the ten indicators of Organizational Performance dimensions are valid and are still used in the model—or are not excluded from the model.

### Evaluating discriminant validity value

The Human Capital, Structural Capital, Relational Capital, Innovative Behavior, and Organizational Performance variables have a construct correlation value with the indicators being greater than the correlation values with other constructs. Thus it can be concluded that all latent constructs show good discriminant validity because they can predict indicators in their block better than indicators in other blocks. The second evaluation for discriminant validity seen from the examination of average variance extracted (AVE) describes the amount of variance or diversity of manifest variables that can be contained by latent constructs.

Table 7  
Value of AVE (Average Variance Extracted) research model

Variable	Dimension	AVE Value	AVE Value
<i>Human Capital (X1)</i>	1.1 Competent	0.718	0.635
	1.2 Innovative	0.733	
<i>Structural Capital (X2)</i>	2.1 Responsibility	0.816	0.638
	2.2 Corporate Culture	0.687	
<i>Relational Capital (X3)</i>	2.1 Teamwork	0.903	0.781
	2.2 Net Working	0.809	
Innovative Behavior (Y1)	4.1 Generating New Ideas	0.721	0.666
	4.2 Implementing New Ideas	0.764	
Organizational Performance (Y2)	5.1 Financial Perspective	0.745	0.686
	5.2 Customer Perspective	0.865	
	5.3 Internal Process Perspective	0.870	
	5.4 Learning and Growth Perspective	0.757	

Source: Result of analysis using SmartPLS 3.2.9

Table 7 above shows the AVE value of the research model. It can be seen from the table that the AVE Value for all research variables and dimensions has a value above 0.5 so the AVE value for the Discriminant Validity test has met the requirement for further testing. Thus, the Discriminant Validity test, as well as the Convergent Validity test, have been met so that it can be concluded that the research model is valid.

### Reliability test

Evaluation of Composite Reliability from the examination can be seen based on the Cronbach's alpha coefficient and Composite Reliability (CR) values which are shown in the following Table 8. Table 8 presented is the result of the calculation of SmartPLS version 3.2.9. The greater Cronbach's alpha coefficient and composite reliability values indicate that the construct is becoming more reliable.

Table 8  
Composite reliability and Cronbach's alpha values

Variable	Composite Reliability	Condition	Cronbach's Alpha	Condition	Description
Human Capital (X1)	0.896	> 0.7	0.855	> 0.6	Reliable
Structural Capital (X2)	0.898	> 0.7	0.858	> 0.6	Reliable
Relational Capital (X3)	0.947	> 0.7	0.929	> 0.6	Reliable
Innovative Behavior (Y1)	0.923	> 0.7	0.900	> 0.6	Reliable
Organizational Performance (Y2)	0.956	> 0.7	0.949	> 0.6	Reliable

Source: Result of analysis using SmartPLS 3.2.9

The table shows that each variable has a composite reliability value above 0.7. From the model above, it can be concluded that the reserach model has met the criteria for Composite Reliability and Cronbach's Alpha so that it has met the criteria for reliability and is a reliable and dependable measuring instrument.

### Structural model (Inner Model) test results

#### Coefficient of determination/ R square (R<sup>2</sup>) test

Table 9  
R square (R<sup>2</sup>) values from the research model

Construct	R Square	R Square Adjusted
Innovative Behavior (Y1)	0.799	0.793
Organizational Performance (Y2)	0.790	0.780

Source: Result of analysis using SmartPLS 3.2.9

From Table 9, the relationship between constructs based on the R-square adjusted value can be explained that the Innovative Behavior variable (Y1) is 0.793, this shows that 79.3% of the Innovative Behavior variable (Y1) can be affected by the Human Capital (X1), Structural Capital (X2) and Relational Capital (X3) variables, while the remaining 20.7% can be affected by other variables outside the study. Whereas the relationship between constructs based on the Adjusted R-square value on the Organizational Performance variable (Y2) is 0.780,

this shows that 78.0% of the Organizational Performance variable (Y2) can be affected by the Human Capital (X1), Structural Capital (X2) , Relational Capital (X3) and Innovative Behavior (Y1) variables, while the remaining 22.0% can be affected by other variables outside the study.

### **R<sup>2</sup> value evaluation**

To evaluate the R<sup>2</sup> value based on the results of calculations using the SmartPLS calculator version 3.29 algorithm, the results of R<sup>2</sup> value are 0.799 for the Innovative Behavior variable and 0.790 for the Organizational Performance variable. This R<sup>2</sup> value indicates that the level of determination of exogenous variables (Human Capital, Structural Capital and Relational Capital) to endogenous is high. The simultaneous effect of the Human Capital, Structural Capital and Relational Capital variables on the Innovative Behavior and Organizational Performance variables can be done by calculating F count/ F statistics using the following formula.

Simultaneous significant test results show that the F count in this study is 88.621. The F table value at alpha 0.05 is 2.474. This means that F count > F table, then simultaneously the Human Capital, Structural Capital and Relational Capital variables have an effect the Innovative Behavior variable. Simultaneous significant test results show that the F count in this study is 83,465. The F table value at alpha 0.05 is 2.474. This means that F count > F table, then simultaneously the Human Capital, Structural Capital, Relational Capital and Innovative Behavior variables affect the Organizational Performance variable.

### **Overall structural model validation with goodness of fit index (GoF)**

This Goodness of Fit Index (GoF) test aimed to validate the combined performance of the measurement model (outer model) and structural model (inner model) obtained through the following calculations: The results of the calculation of the Goodness of Fit Index (GoF) show a value of 0.736. According to Ghazali (2016), GoF small = 0.1, GoF medium = 0.25 and GoF large = 0.36. Based on these results, it can be concluded that the overall performance of the measurement model (outer model) and structural model (inner model) is good because the Goodness of Fit Index (GoF) value is more than 0.36 (large scale GoF).

### **Hypotheses testing**

Hypotheses test between constructs was carried out using the bootstrap resampling method. Calculation of hypotheses testing using SmartPLS 3.2.9 can be seen from the Path Coefficient value, namely the t-statistical value of the relationship between variables in the study. T-test statistics by using the formula or SmartPLS 3.2.9 can be seen from the comparison between the t-test value with the t-table value that is obtained from the following formula:

$$DF = n - k$$

$$DF = n - k$$

$$DF = 94 - 5$$

$$DF = 89$$

In the statistical table, the value of the t table with a value of 89 is 1.662 with a significance level ( $\alpha$ ) of 0.05. The decision-making methods are:

- If P-Values > 0.05 or t count < t table, Ho is accepted and Ha is rejected.
- If P-Values < 0.05 or t count > t table, Ho is rejected and Ha is accepted.

The results of hypotheses testing using SmartPLS 3.2.9 software can be seen in the following Table 10:

Table 10  
Values of path coefficient, t-statistics, and p-value

Relationships Between Constructs	Original Sample (O)	T Statistics ( O/STDEV )	P Values	Description
<b>Direct Effect</b>				
Human Capital (X1) -> Innovative Behavior (Y1)	0.207	2.990	0.003	Positive and Significant Effect
Structural Capital (X2) -> Innovative Behavior (Y1)	0.720	11.208	0.000	Positive and Significant Effect
Relational Capital (X3) -> Innovative Behavior (Y1)	0.043	0.593	0.554	Positive and Insignificant Effect
Innovative Behavior (Y1) -> Organizational Performance (Y2)	0.389	3.591	0.000	Positive and Significant Effect
Human Capital (X1) -> Organizational Performance (Y2)	0.316	3.722	0.000	Positive and Significant Effect
Structural Capital (X2) -> Organizational Performance (Y2)	0.242	2.082	0.038	Positive and Significant Effect
Relational Capital (X3) -> Organizational Performance (Y2)	0.041	0.579	0.563	Positive and Insignificant Effect
<b>Indirect Effect</b>				
Human Capital (X1) -> Innovative Behavior (Y1) -> Organizational Performance (Y2)	0.081	2.096	0.037	Positive and Significant Effect
Structural Capital (X2) -> Innovative Behavior (Y1) -> Organizational Performance (Y2)	0.280	3.476	0.001	Positive and Significant Effect
Relational Capital (X3) -> Innovative Behavior (Y1) -> Organizational Performance (Y2)	0.017	0.588	0.557	Positive and Insignificant Effect

Innovative Behavior (Y1) ->  
Organizational Performance  
(Y2)

Insignificant  
Effect

Source: Result of analysis using SmartPLS 3.2.9

Based on Table 10, the values of path coefficient, t-statistics, and p-values can be seen from the analysis of 10 hypotheses—based on the results of smart PLS analysis, there are 7 accepted hypotheses, namely the direct effect of Human Capital on Innovative Behavior, the direct effect of Structural Capital on Innovative Behavior, the direct effect of Human Capital on Organizational Performance, the direct effect of Structural Capital on Organizational Performance, the direct effect of Innovative Behavior on Organizational Performance, the indirect effect of Human Capital on Organizational Performance through Innovative Behavior variable, and the indirect effect of Structural Capital on Organizational Performance through Innovative Behavior variable. Meanwhile, there are 3 rejected hypotheses based on the smart PLS analysis, namely the direct effect of Relational Capital on Innovative Behavior, the direct effect of Relational Capital on Organizational Performance and the indirect effect of Relational Capital on Organizational Performance through Innovative Behavior variable. Meanwhile, the other 2 hypotheses, namely the simultaneous effect of Human Capital, Structural Capital and Relational Capital on Innovative Behavior and the simultaneous effect of Human Capital, Structural Capital, Relational Capital and Innovative Behavior on Organizational Performance are also accepted.

The results of the indirect effect test can be seen in the following figure:

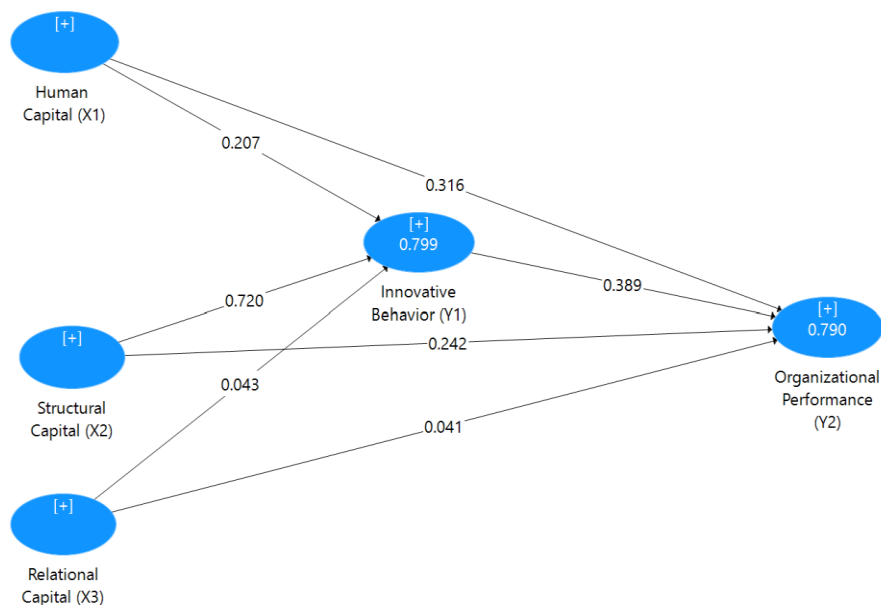


Figure 6. The indirect effect testing with smart PLS 3.2.9  
Source: Result of analysis using SmartPLS 3.2.9

## Discussion

### The effect of human capital on innovative behavior

The research hypothesis (H1) states that Human Capital has a positive and significant effect on Employee's Innovative Behavior. The better the company's Human Capital, the higher the Employee's Innovative Behavior is, and vice versa, the worse the company's Human Capital, the lower the Employee's Innovative Behavior is. Human Capital is a combination of employees' knowledge, skills, innovation, attitudes, behavior, and ability to develop. According to [Liu \(2017\)](#), employees who continue to update existing knowledge can develop new ideas to meet the need for innovation. According to [Sidharta \(2019\)](#), the industry needs creative human resources and innovative behavior. This condition shows that company needs employees who are knowledgeable and able to innovate to improve competitiveness.

Based on the correlation between dimensions, the highest correlation value is between the Innovative dimension and the Implementing New Ideas dimension. This means that the better the implementation of Human Capital, especially in terms of innovation provided by the company, it will affect the Employee's Innovative Behavior, especially in terms of implementing new ideas. Based on observations at PT PLN (Persero) Bekasi, employees who get Human Capital with a high Innovative orientation will have an effect on the Innovative Behavior of employees who can freely and optimally Implement New Ideas because they feel at work there are always breakthroughs that can be applied to give the best contribution for the company. Giving the employees freedom to fulfill their jobs—will provide the opportunities to make their brains develop, facilitate information change, speed up the problem-solving process so they can express and implement many innovative ideas. This is in line with the study conducted by [Gomezelj Omerzelj & Smolčić Jurdana \(2016\)](#), that Human Capital is an important factor to improve Employee's Innovative Behavior.

### The effect of structural capital on innovative behavior

The research hypothesis (H2) states that Structural Capital has a positive and significant effect on Innovative Behavior. The better the company's Structural Capital, the more innovative the Employee's Innovative Behavior is, and vice versa, the worse the company's Structural Capital, the lower the Employee's Innovative Behavior is. Structural Capital can help inspire employees to understand the prevailing organizational cultural norms and think in new ways, as well as express new ideas. According to [Liu \(2017\)](#), Structural Capital is the sum of all assets that enable an organization's creative abilities, such as employee attitudes towards authority and responsibility and their awareness of the organization's core culture.

Based on the results of the correlation between dimensions, the highest correlation value is between the Responsibility dimension and the Generating New Ideas dimension. This means that the better the Structural Capital formed by the company, especially in terms of providing full responsibility for the company culture to employees, it will affect the employee's innovative behavior, especially

in terms of generating new ideas. Based on observations at PT PLN (Persero) Bekasi, employees who understand Structural Capital as a form of full responsibility given by the company will have an effect on the Innovative Behavior of employees who can freely and optimally generate new ideas because with adequate facilities or infrastructure provided by the company, they can develop knowledge and skills in a job. The role of employee Structural Capital cannot be separated from its function in accelerating the dissemination of knowledge, growing experience, shortening the time gap, and making employees more productive so that Structural Capital can improve employee innovative behavior. Organizational culture and climate that supports employee ideas, make it easier for employees to develop innovative behavior. This is in line with the study conducted by [Agostini & Nosella \(2017\)](#), that the right Structural Capital mechanism enables the transformation of individual knowledge to be more innovative.

### **The effect of relational capital on innovative behavior**

The research hypothesis (H3) states that Relational Capital has a positive and insignificant effect on Innovative Behavior. The better the company's relational capital does not guarantee to affect employee's innovative behavior. The insignificant effect of Relational Capital on Employee's Innovative Behavior found in this study may be due to several reasons. Firstly, the effect of the metropolitan city environment still prioritizes the nature of egocentrism. Secondly, the relationships between employees and the company are not based on norms of trust and cooperation. Employees are not equipped with adequate activities to improve skills and competencies. These activities are needed to instill a sense of togetherness into the organization's human resources to develop new ideas. This is in line with the study conducted by [SADDAM & MAHFUDZ \(2017\)](#), that Relational Capital has no effect on innovation capability.

### **The effect of innovative behavior on organizational performance**

The research hypothesis (H7) states that Innovative Behavior has a positive and significant effect on Organizational Performance. The better the Innovative Behavior of the company's employees, the more it will improve the Organizational Performance, and vice versa, the worse the Innovative Behavior of the company's employees, the lower the Organizational Performance will. Innovative behavior makes a big contribution to the company's competition because innovative behavior is designed to help individuals improve their work abilities. According to [Liu \(2017\)](#), companies whose employees have innovative behavior can help organizational performance. This condition shows that the company needs employees who have high creative power and are able to innovate in every job to increase competitiveness.

Based on the results of the correlation between dimensions, the highest correlation value is between the Implementing New Ideas dimension and the learning and growth perspective dimension. This means that the better the innovative behavior of employees, especially in terms of implementing new ideas in a company, it will affect organizational performance, especially in the learning and growth perspective. Based on observations at PT PLN (Persero) Bekasi,

employees who have innovative behavior by always implementing their new ideas will have an effect on the achievement of organizational performance, especially in the learning and growth perspective because they always prioritize high creativity in their work so that every job target given by the company can be completed properly and even exceeds the target which has been set. Giving the employees freedom to fulfill their jobs—will provide the opportunities to make their brains develop, facilitate information change, speed up the problem-solving process through the application of their creative power which can ultimately help to achieve sustainable company performance. This is in line with the study conducted by Saddam & Mahfudz that an innovation capability is a form of an ability of a company's employees to be able to generate new ideas in the business operational process of a company that provides value-added to organizational performance (Sukoco & Prameswari, 2017; ZD et al., 2020; Primananda Putra, 2014).

### **The effect of human capital on organizational performance**

The research hypothesis (H4) states that Human Capital has an effect on Organizational Performance. The better the company's Human Capital, the more it will increase the Organizational Performance, and vice versa, the worse the company's Human Capital, the lower the Organizational Performance will. The Human Capital of competent and innovative employees in an organization can be managed in a process, which in turn can generate more value for the organization. According to Monica (2018), Human Capital refers to knowledge, skills, and abilities that are valuable for organizational sustainability. This condition shows that companies are starting to realize that organizational performance is not only determined by finance, machinery, technology, and fixed capitals, but also intangible capital.

Based on the correlation between dimensions, the highest correlation value is between the Innovative dimension and the Learning and Growth Perspective dimension. This means that the better the implementation of Human Capital, especially in terms of innovation provided by the company, it will affect Organizational Performance, especially in terms of Learning and Growth Perspective. Based on observations at PT PLN (Persero) Bekasi, employees who get Human Capital with a high Innovative orientation will have an effect on increasing Organizational Performance through learning in all respects to produce maximum quality work so that the company can grow well. Employees who are given the ability to develop will continue to update their competencies and skills to contribute to the company to increase the company's growth. This is in line with the study conducted by Katili et al. (2016), that Human Capital is a combination of knowledge, skills, innovation, and a person's ability to carry out their duties and responsibilities, so as to produce value-added for achieving organizational performance.

### **The effect of structural capital on organizational performance**

The research hypothesis (H5) states that Structural Capital has an effect on Organizational Performance. The better the company's Structural Capital, the more it will improve the Organizational Performance, and vice versa, the worse the



company's Structural Capital, the lower the Organizational Performance will. Structural Capital includes knowledge and organizational culture that employees implement in various knowledge and integrate informal structures and systems to improve organizational performance. According to [Omar et al. \(2017\)](#), Structural Capital includes explicit knowledge embedded in organizational databases, programs, and systems that support employee productivity and performance in organizations.

Based on the results of the correlation between dimensions, the highest correlation value is between the responsibility dimension and the learning and growth perspective dimension. This means that the better the implementation of Structural Capital, especially in terms of employee responsibility to the company, the more active participation of employees in learning to run business processes in a company—so, the company can grow more and more to achieve the expected organizational performance. Based on observations at PT PLN (Persero) Bekasi, employees who are given authority and responsibility by the company can create a synergistic work environment to achieve organizational goals. This is in line with the study conducted by [Suryanto \(2017\)](#), that Structural Capital Value Added (STVA) has an effect on Company Growth.

#### **The effect of relational capital on organizational performance**

The research hypothesis (H6) states that Relational Capital has a positive and insignificant effect on Organizational Performance. The better the company's relational capital does not guarantee to affect the increase in organizational performance. The insignificant effect of Relational Capital on increasing Organizational Performance found in this study may be due to several reasons. First, there has not been a synergy between members and employees of the company so it can cause employees to care less about the Company's performance. Second, the company is still under the auspices of the government so the company's program is limited to government regulations.

Companies in carrying out their business processes are less able to explore in establishing cooperative relationships with other companies. It is limited to the rules and policies set by the government. The cooperative relationship that exists with external parties is not able to produce maximum company performance. This is in line with research conducted by [Suryanto \(2017\)](#), that Value Added Capital Employed (VACA) or Relational Capital has no effect on Company Growth.

#### **The effect of human capital on organizational performance through the innovative behavior variable**

The research hypothesis (H8) states that Human Capital has an effect on Organizational Performance through Innovative Behavior. Based on observations at PT PLN (Persero) Bekasi, the existing Human Capital in this case is innovative—employees continue to update existing knowledge to apply new ideas in meeting the need for innovation through provision of adequate training to make a major contribution in increasing the company's growth so that the expected organizational performance can be achieved properly. This is evidenced by employees who are increasingly skilled in specific jobs, able to apply creative

ideas and able to convince others that their ideas are innovative and creative. Innovative employees are always learning to get new things to improve their skills and competencies in taking advantage of opportunities in the business market so that the company can grow well (Kohtamäki et al., 2012; Gogan et al., 2016; Subramony et al., 2018).

Based on the direct and indirect effect hypotheses testing, it can be seen that the value of the Effect of Human Capital on organizational performance directly is higher than indirectly through the mediation of innovative behavior variables. Thus Human Capital which includes the knowledge and competence of employees becomes the most important part in meeting company goals. The descriptive results of the respondents show that most of the employees have a bachelor's degree. This is because the company needs employees with a high level [of education] who are oriented to the needs of high thinking. The higher the company's Human Capital, the more it will improve Organizational Performance. This is in line with the study conducted by Sugiono et al. (2021), on the effect of innovation as a mediating relationship between Human Capital and the company's competitive advantage.

#### **The effect of structural capital on organizational performance through the innovative behavior variable**

The research hypothesis (H9) states that Structural Capital affects Organizational Performance through Innovative Behavior. Based on observations at PT PLN (Persero) Bekasi, Structural Capital is in terms of employee responsibility towards the company, thus the organization can design infrastructure that encourages employee involvement in the innovation process. Organizations can design organizational structures, systems of procedures and ways to encourage employees to be physically involved in an innovation process. This is evidenced by employees—who have an awareness of the form of their responsibility to the company—are able to generate new ideas in accelerating the dissemination of knowledge, growing experience, and making people more productive. This increase in Structural Capital can expand the company's ability to increase the value-added generated. Therefore, to achieve organizational goals, facilities are needed to support the ability of innovative employees with a system of procedures that are not too bureaucratic—besides, the company also needs to design an open office space that is not divided into boxes so that there are many available corners for discussion (Debbianita, 2019; Sekaran & Bougie, 2016; Lopes-Costa & Munoz-Canavate, 2015).

Based on the direct and indirect effect hypotheses testing, it can be seen that the value of the effect of Structural Capital on Organizational Performance indirectly through the mediation of employee innovative behavior variable is higher than directly. So, Structural Capital which includes employee responsibility to the company through innovative behavior of employees in terms of generating new ideas becomes the most important part in fulfilling organizational performance, especially from the learning and growth perspective. This is in line with the study conducted by Najib & Nawangsari (2021), that the company's Structural Capital is an important factor in organizational success and the company's ability to maintain competitive advantage through employee innovative behavior.

### **The effect of relational capital on organizational performance through the innovative behavior variable**

The research hypothesis (H10) states that Relational Capital has a positive and insignificant effect on organizational performance through Employees' Innovative Behavior. The better the company's relational capital does not guarantee to affect organizational performance through innovative behavior of employees. The insignificant effect of Relational Capital on organizational performance through employee innovative behavior found in this study may be due to the Relational Capital variable and innovative behavior mediating variable simultaneously not being able to significantly affect the organizational performance variable. The results of the direct effect of Relational Capital on Organizational Performance have a positive and insignificant effect. Likewise, the results of the direct effect of Relational Capital on Innovative Behavior have a positive and insignificant effect. This is in line with the study conducted by [SADDAM & MAHFUDZ \(2017\)](#), that Relational Capital has no effect on innovation capability. Likewise, the study conducted by [Suryanto \(2017\)](#), that Value Added Capital Employed (VACA) or Relational Capital has no effect on Company Growth.

### **The simultaneous effect of human capital, structural capital and relational capital on innovative behavior**

The research hypothesis (H11) states that simultaneously Human Capital, Structural Capital and Relational Capital have a positive and significant effect on Innovative Behavior. The better the company's Human Capital, Structural Capital and Relational Capital simultaneously, the more innovative the employee's innovative behavior is, and vice versa, the worse the simultaneous Human Capital, Structural Capital and Relational Capital, the lower the employee's innovative behavior ability is ([Zlate & Enache, 2015](#); [Gogan et al., 2015](#); [Nneka et al., 2016](#)). This means that the more employees have the knowledge and competence to innovate, are responsible for the mandate given by the company and are able to establish solid relationships within the company's internal and external environment, the employees will be able and accustomed to generating and implementing new ideas/ideas they have. Based on observations at PT PLN (Persero) Bekasi, employees who receive Human Capital, Structural Capital and Relational Capital simultaneously will have an effect on the employee's innovative behavior. This is in line with the study conducted by [Sidharta \(2019\)](#), that innovative organizational behavior is influenced by various factors including Intellectual Capital which consists of Human Capital, Structural Capital and Relational Capital.

### **The simultaneous effect of human capital, structural capital, relational capital and innovative behavior on organizational performance**

The research hypothesis (H12) states that simultaneously Human Capital, Structural Capital, Relational Capital and Innovative Behavior have a positive and significant effect on Organizational Performance. The simultaneously better Human Capital, Structural Capital, Relational Capital and Employees' Innovative Behavior of a company will improve organizational performance, and vice versa, the simultaneously worse Human Capital, Structural Capital, Relational Capital

and Employees' Innovative Behavior of a company will reduce organizational performance (Allameh, 2018; Yuzliza et al., 2020; Ramirez et al., 2020; Nyandra et al., 2018). This means that the more employees have the knowledge and competence to innovate, being responsible for the mandate given by the company and being able to establish solid relationships within the company's internal and external environment, they will be able and accustomed to generating and implementing new ideas they have so that employees are able to actively participate in learning to run business processes in the company and can continue to meet customer needs properly so that the company continues to grow to achieve the expected organizational performance. Based on observations at PT PLN (Persero) Bekasi, employees who receive Human Capital, Structural Capital and Relational Capital simultaneously are able to behave innovatively and have an effect on organizational performance. This is in line with the study conducted by Alrowwad & Abualoush (2020), that organizational performance is influenced by various factors including Intellectual Capital which includes Human Capital, Structural Capital, and Relational Capital as well as employee innovative behavior

## Conclusion

- Human Capital has a positive and significant effect on the innovative behavior of employees at PT. PLN (Persero) Bekasi.
- Structural Capital has a positive and significant effect on the innovative behavior of employees at PT. PLN (Persero) Bekasi. 4
- Relational Capital has a positive and insignificant effect on the innovative behavior at PT. PLN (Persero) Bekasi.
- Innovative behavior of employees has a positive and significant effect on organizational performance at PT. PLN (Persero) Bekasi.
- Human Capital has a positive and significant effect on organizational performance at PT. PLN (Persero) Bekasi.
- Structural Capital has a positive and significant effect on organizational performance at PT. PLN (Persero) Bekasi..
- Relational Capital has a positive and insignificant effect on organizational performance at PT. PLN (Persero) Bekasi.
- Human Capital has a positive and significant effect on organizational performance through innovative behavior variable at PT. PLN (Persero) Bekasi.
- Structural Capital has a positive and significant effect on organizational performance through innovative behavior variable at PT. PLN (Persero) Bekasi.
- Relational Capital has a positive and insignificant effect on organizational performance through innovative behavior variable at PT. PLN (Persero) Bekasi.
- Human Capital, Structural Capital, and Relational Capital simultaneously have a positive and significant effect on Innovative Behavior at PT. PLN (Persero) Bekasi
- Human Capital, Structural Capital, Relational Capital and Innovative Behavior simultaneously have a significant effect on Organizational Performance at PT. PLN (Persero) Bekasi.

## Suggestion

The company is expected to continue to improve human capital, structural capital, relational capital—and encourage innovative behavior of employees, so that organizational performance can be better. This research is limited to three exogenous variables, namely human capital, structural capital, relational capital and two endogenous variables, namely innovative behavior and organizational performance. In addition, the object of this research is only at PT. PLN (Persero) Bekasi, so that there are opportunities to research objects with different industrial or business fields so that they can provide even greater insight for all of us.

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