Improving Employee Work Motivation

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Abstract

This study aims to examine the influence of work culture and work environment on employee work motivation with leadership as a moderating variable at the Representative Office of Bank Indonesia in North Sumatra Province. A quantitative approach was employed, and data were collected through questionnaires distributed to employees. The data were analyzed using Partial Least Square (PLS). The results reveal that both work culture and work environment have a positive and significant effect on employee work motivation. Furthermore, leadership positively moderates the relationship between work culture and motivation but negatively moderates the relationship between work environment and motivation. These findings indicate that a strong work culture and a supportive work environment can enhance motivation, while the effectiveness of leadership plays a crucial role in strengthening or weakening these relationships. This research is expected to contribute theoretically and practically to the development of human resource management within banking institutions, particularly Bank Indonesia.

Keywords: Work Culture, Work Environment, Work Motivation, Leadership, Moderating Variable.

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Introduction
Background.

In facing the increasingly complex dynamics of the national economy, Bank Indonesia (BI) is required to ensure that all organizational processes run effectively, adaptively, and are oriented towards high performance. One important aspect in maintaining institutional stability and professionalism is employee work motivation, as a high level of motivation will drive productivity, service quality, and the speed of strategic decision-making. However, in recent years, emerging phenomena indicate that employee motivation in government agency environments, including BI, faces challenges due to changes in the work environment, increased workloads, and demands for the digitalization of operational systems.

At the Bank Indonesia Representative Office of North Sumatra Province, phenomena related to work culture are becoming visible from the misalignment of work values among employees, such as differences in discipline levels, initiative, and team involvement. Some employees show a lack of collaboration and a tendency to work individually, thus affecting the effectiveness of task completion. This condition indicates that the implementation of the desired work culture has not yet been fully optimal.

In addition to work culture, physical and non-physical work environment factors are also issues affecting motivation. Internal observation results show complaints regarding workspace comfort, inconsistent inter-division communication, and uneven adaptation to digital-based work systems among employees. An unsupportive work environment can cause burnout, reduce focus, and weaken employee motivation in achieving unit targets.

Amid these changes, leadership is an important factor suspected of being able to strengthen or weaken the relationship between work culture, work environment, and employee motivation. Field phenomena show differences in leadership styles among superiors, where some are able to build open communication, provide clear direction, and create a positive work atmosphere, while others are considered less responsive and less supportive of the team. This inconsistency in leadership style potentially affects employees' perceptions of work culture and work environment comfort.

These conditions indicate that achieving employee work motivation is not only influenced by internal organizational factors, but also by how leadership is able to moderate the influence of work culture and work environment on motivation. Therefore, an in-depth study is needed to understand the extent to which the role of work culture and work environment influences employee motivation at the Bank Indonesia Representative Office of North Sumatra Province, and how leadership functions as a moderating variable in that relationship.

Problem Formulation
1. Does work culture have a positive and significant effect on employee work motivation at the Bank Indonesia Representative Office of North Sumatra Province?
2. Does the non-physical work environment have a positive and significant effect on employee work motivation at the Bank Indonesia Representative Office of North Sumatra Province?
3. Does leadership have a positive and significant effect on employee work motivation at the Bank Indonesia Representative Office of North Sumatra Province?
4. Does work culture, moderated by leadership, have a positive and significant effect on employee work motivation at the Bank Indonesia Representative Office of North Sumatra Province?
5. Does the non-physical work environment, moderated by leadership, have a positive and significant effect on employee work motivation at the Bank Indonesia Representative Office of North Sumatra Province?

Research Objectives
1. To test and analyze the effect of work culture on employee work motivation at the Bank Indonesia Representative Office of North Sumatra Province.

2. To test and analyze the effect of the non-physical work environment on employee work motivation at the Bank Indonesia Representative Office of North Sumatra Province.
3. To test and analyze the effect of leadership on employee work motivation at the Bank Indonesia Representative Office of North Sumatra Province.
4. To test and analyze the effect of work culture, moderated by leadership, on employee work motivation at the Bank Indonesia Representative Office of North Sumatra Province.
5. To test and analyze the effect of the non-physical work environment, moderated by leadership, on employee work motivation at the Bank Indonesia Representative Office of North Sumatra Province.

Theoretical Review
Work Motivation

According to Mangkunegara (2017), work motivation is the condition or energy that drives employees to achieve work performance according to the standards set by the organization. According to Herzberg (1966) in Nurahmah et al., (2019), motivation is an intrinsic drive that arises from factors such as achievement, recognition, responsibility, growth, and the work itself.

Indicators of Work Motivation

Indicators of motivation according to Herzberg (1966) in Nurahmah et al., (2019) are:
1. Achievement
2. Education level
3. Responsibility
4. Interest in the work
5. Effort and perseverance
6. Readiness to accept challenges

Work Culture

According to Sutrisno (2019), work culture is a pattern of behavior and habits formed from organizational values that are internalized by employees, thus influencing how they work and interact.

According to Wibowo (2016), work culture is a set of values, beliefs, and attitudes that serve as guidelines for employees in acting, behaving, and completing work to align with organizational goals.

Indicators of Work Culture

According to Wibowo, (2016)
1. Work discipline
2. Responsibility
3. Cooperation
4. Initiative
5. Work integrity

Non-Physical Work Environment

According to Mangkunegara (2017), the non-physical work environment is the organizational climate created from social relations, organizational structure, and work patterns that affect employee motivation and performance. According to Nitisemito (2015), the non-physical work environment is work conditions related to interpersonal relationships, including relationships between employees and superiors and among co-workers, which can create psychological comfort in working.

Indicators of Non-Physical Work Environment

Indicators of the Non-Physical Work Environment according to Mangkunegara (2017) are as follows:
1. Harmonious work relations
2. Clear organizational structure
3. Supervisor support
4. Safe and comfortable psychological conditions

Leadership (Moderating Variable)
According to Hasibuan (2018), leadership is a person's ability to direct, influence, and encourage employees to be willing to work effectively to achieve organizational goals. According to Yukl (2017), leadership is the process of influencing others to understand and agree on what needs to be done, and how to do it to achieve common goals.

Indicators of Leadership
According to Yukl (2017), they are:
1. Ability to provide direction
2. Ability to motivate
3. Communication with employees
4. Appropriate decisions
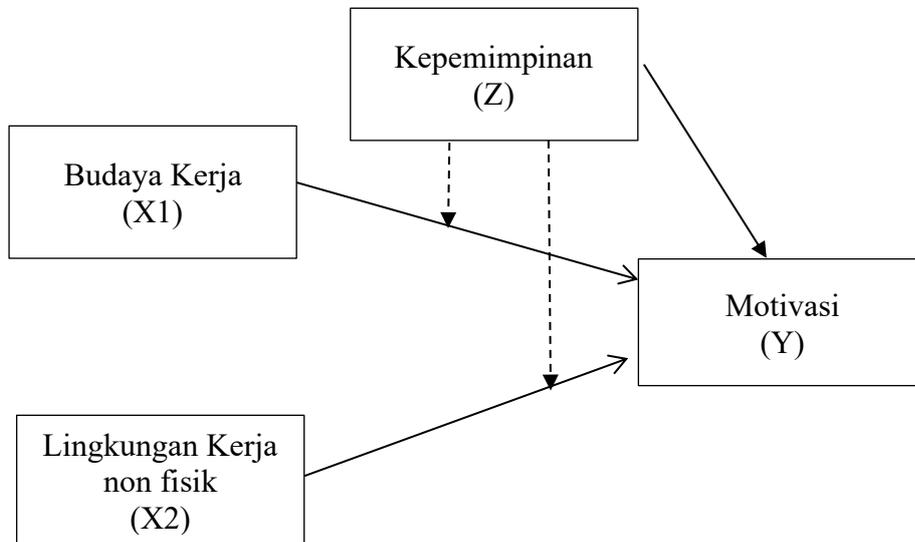5. Leader's exemplary attitude

Conceptual Framework

Figure 1. Conceptual Framework

Hypotheses
1. Work culture has a positive and significant effect on the work motivation of employees at the Bank Indonesia Representative Office of North Sumatra Province.
2. The non-physical work environment has a positive and significant effect on the work motivation of employees at the Bank Indonesia Representative Office of North Sumatra Province.
3. Leadership has a positive and significant effect on the work motivation of employees at the Bank Indonesia Representative Office of North Sumatra Province.
4. Work culture, moderated by leadership, has a positive and significant effect on the work motivation of employees at the Bank Indonesia Representative Office of North Sumatra Province.

5. The non-physical work environment, moderated by leadership, has a positive and significant effect on the work motivation of employees at the Bank Indonesia Representative Office of North Sumatra Province.

Research Methodology
Research Type
According to Sugiyono (2020), the definition of the quantitative method is: The quantitative method is a research method based on positivist philosophy, used to research a specific population or sample, data collection uses research instruments, data analysis is quantitative or statistical, with the aim of testing previously established hypotheses.

Location and Time
The timeframe for this research is from November 2025 to December 2025. The research location is at the Bank Indonesia Representative Office of North Sumatra, Jl. Balai Kota No. 4, Medan, North Sumatra 20111.

Population
The population of this study are all employees of the Bank Indonesia Representative Office of North Sumatra, totaling 80 employees. According to Sugiyono (2020), a population is a generalization area consisting of objects that have certain qualities and characteristics determined by the researcher to be studied and then conclusions are drawn.

Sample
The research sample used is all employees who are the population, totaling 80 employees. According to Sugiyono (2020), a sample is part of the number and characteristics possessed by that population. Meanwhile, sample size is a step to determine the size of the sample taken in conducting a study.

Research Data Sources
The research data source used is primary data sources. According to Sugiyono (2020), primary data are sources that directly provide data to the data collector. Data is collected by the researcher directly from the first source or place where the research object is conducted.

Data Collection Technique
According to Sugiyono (2020), "A questionnaire is a data collection technique carried out by giving a set of written questions or statements to respondents to answer."

Data Analysis Technique
Data analysis in this study uses Partial Least Squares Structural Equation Modeling (PLS-SEM) through the SmartPLS 3 software. PLS-SEM was chosen because it can test complex relationships between latent variables and indicators, and can work with small samples and non-normal data (Hair et al., 2019; Analysis is conducted through several stages, namely evaluation of the outer model, inner model, and testing the significance of paths with bootstrapping.
1. Creation of the Conceptual Model
In the initial stage, the conceptual model is built based on theory and research hypotheses. Latent variables and their indicators are identified, then depicted in a path diagram.
   a. Independent, dependent, and intervening latent variables are determined according to the hypothesis formulation.
   b. The model used can be reflective (indicators reflect the variable) or formative (indicators form the variable).

2. Evaluation of the Outer Model (Measurement Model)

The outer model assesses the validity and reliability of the indicators measuring each latent variable. The evaluation stages include:

a. Convergent Validity: Tested using Average Variance Extracted (AVE). Indicators are considered valid if AVE $\geq$ 0.5 (Hair et al., 2019).
b. Composite Reliability (CR): Measures the internal consistency of indicators, with a criterion of CR $\geq$ 0.7.
c. Cronbach's Alpha: Used to assess reliability, with a minimum value of 0.7.
d. Discriminant Validity: Uses the Fornell-Larcker Criterion or HTMT, to ensure each latent variable is significantly different from other variables.

Hair et al. (2019) state that evaluating the outer model is important to ensure that the indicators truly measure the intended constructs, so that the model has high validity and reliability.

3. Evaluation of the Inner Model (Structural Model)

The inner model assesses the relationships between latent variables, namely the strength and direction of the influence of independent variables on dependent or intervening variables. The stages of inner model analysis include:

a. R² (Coefficient of Determination): Measures the ability of independent variables to explain the dependent variable. An R² value $\geq$ 0.25 is considered weak, $\geq$ 0.50 moderate, $\geq$ 0.75 strong (Hair et al., 2019).
b. Path Coefficients: Indicate the direction and magnitude of influence between variables.
c. t-statistics and p-value: Generated through bootstrapping to test path significance. A path is considered significant if t > 1.96 (α = 0.05) or p < 0.05.
d. Effect Size (f²): Measures the contribution of each independent variable to the dependent variable.
e. Predictive Relevance (Q²): Uses the blindfolding technique to evaluate the predictive ability of the model.

4. Bootstrapping

Bootstrapping is a resampling technique used to generate sampling distributions of paths and test statistical significance.

a. Resampling is usually done 5,000–10,000 times to obtain stable estimates.
b. From bootstrapping, t-values, p-values, and confidence intervals are obtained to assess whether each influence path is significant or not.

According to Hair et al. (2019), bootstrapping is an important part of PLS-SEM because PLS does not rely on normal data distribution.

Results
Research Test

By conducting preliminary testing on the questionnaire instrument, the accuracy and reliability of the variable and indicator data collected for this study have been confirmed. From the test results, it is known that there are four variables in the model that will be used in the research, as listed below:

Evaluation of the measurement model (outer model)
Convergent Validity

In this research, the acceptable loading factor value is 0.7 and the acceptable AVE value is 0.5; if the value is higher, it is considered valid. An indicator is considered valid if it has a value > 0.7 when explaining the construct variable. The following graph displays the structural model of this research.
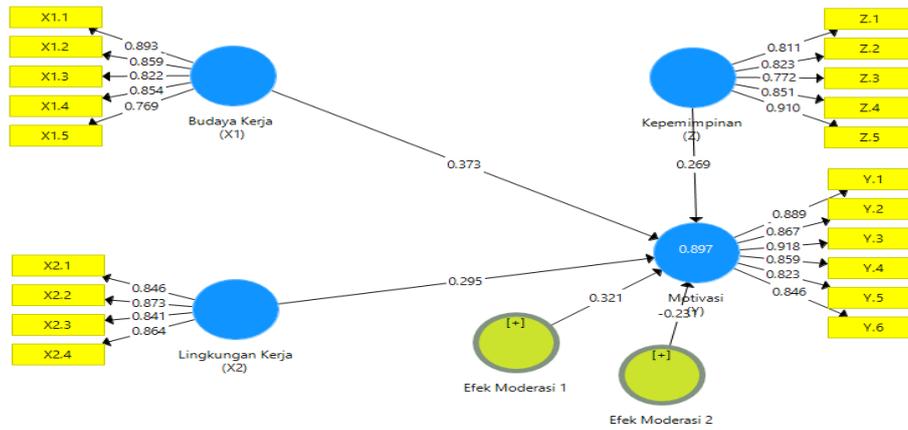
Figure 2. Research Model in SmartPLS

Source : Smart PLS 3.3.3.

The Smart PLS output for loading factor provides results in the following table: Outer Loadings In this
study there are equations and those equations consist of two equations.

$Y = b1X1 + b2Z + b3X1Z\ e1$

$Y = 0,371 + 0,195 - 0,256 + e1$

$Y = b2X2 + b3Z + b4X2Z + e2$

$Y = 0,476 + 0,195 + 0,372 + e2$

Table 1. Outer Loadings/Cross Loading

	Work Culture (X1)	Moderation Effect 1	Moderation Effect 2	Leadership (Z)	Non-Physical Work Environment (X2)	Motivation (Y)
Work Culture_(X1) * Leadership_(Z)		0,891				
Non-Physical Work Env. (X2) * Leadership_(Z)			0,935			
X1.1	0,893					
X1.2	0,859					
X1.3	0,822					
X1.4	0,854					
X1.5	0,769					
X2.1					0,846	
X2.2					0,873	
X2.3					0,841	
X2.4					0,864	
Y.1						0,889
Y.2						0,867
Y.3						0,918
Y.4						0,859
Y.5						0,823

Y.6						**0,846**
Z.1				**0,811**		
Z.2				**0,823**		
Z.3				**0,772**		
Z.4				**0,851**		
Z.5				**0,910**		

Source : Smart PLS 3.3.3

The outer loadings table shows that all indicators for the variables Work Culture, Non-Physical Work Environment, Motivation, and Leadership have loading values above 0.75, thus considered valid and capable of representing their respective constructs. The moderation interactions Work CultureLeadership and Work EnvironmentLeadership also have high loadings (0.891 and 0.935), indicating that the moderation effects in the model work well.

Discriminat Validity

This discussion will focus on the discriminant validity test results in this section. Cross-loading values are used to test discriminant validity. If the cross-loading of an indicator is higher for other variables, it indicates discriminant validity. The cross-loading values for each indicator are as follows:

Table 2. Discriminant Validity

	Work Culture (X1)	Moderation Effect 1	Moderation Effect 2	Leadership (Z)	Non-Physical Work Environment (X2)	Motivation (Y)
Work Culture_(X1) * Leadership_(Z)	0,390	**1,000**	0,873	0,331	0,373	0,442
Non-Physical Work Env. (X2) * Leadership_(Z)	0,355	0,873	**1,000**	0,288	0,326	0,340
X1.1	**0,893**	0,345	0,310	0,852	0,791	0,834
X1.2	**0,859**	0,302	0,323	0,766	0,735	0,815
X1.3	**0,822**	0,341	0,281	0,736	0,683	0,762
X1.4	**0,854**	0,339	0,330	0,765	0,762	0,759
X1.5	**0,769**	0,318	0,242	0,677	0,739	0,644
X2.1	0,713	0,345	0,317	0,693	**0,846**	0,751
X2.2	0,763	0,385	0,325	0,754	**0,873**	0,821
X2.3	0,785	0,278	0,200	0,805	**0,841**	0,779
X2.4	0,757	0,260	0,275	0,695	**0,864**	0,694
Y.1	0,864	0,351	0,238	0,895	0,868	**0,889**
Y.2	0,718	0,321	0,250	0,687	0,738	**0,867**
Y.3	0,790	0,442	0,313	0,776	0,773	**0,918**
Y.4	0,806	0,340	0,315	0,754	0,779	**0,859**
Y.5	0,768	0,425	0,333	0,716	0,674	**0,823**

Y.6	0,786	0,426	0,328	0,802	0,792	**0,846**
Z.1	0,745	0,344	0,321	**0,811**	0,735	0,722
Z.2	0,749	0,314	0,243	**0,823**	0,783	0,708
Z.3	0,668	0,141	0,080	**0,772**	0,671	0,661
Z.4	0,759	0,239	0,246	**0,851**	0,680	0,778
Z.5	0,850	0,330	0,292	**0,910**	0,741	0,846

Source : Smart PLS 3.3.3

The discriminant validity results show that each indicator has the highest correlation with its own construct compared to other constructs. This confirms that each variable—Work Culture, Non-Physical Work Environment, Motivation, and Leadership—can clearly distinguish itself from other variables. The values for the moderation effects also show that the variable interactions have good uniqueness in the model, so all constructs meet the discriminant validity criteria.

Composite reliability

In composite reliability analysis, the reliability coefficient of each variable is correlated. Research is said to be reliable if the variable value is more than 0.60, but unreliable if it is less than 0.60 or as low as 0.07. There are several evaluation blocks that can show the effectiveness and validity of the research, such as Cronbach's alpha, composite reliability, and AVE values, as seen in the table below.

Analysis of Inner Model

To ensure the basic model is accurate and robust, an evaluation of the internal model is conducted. The completed inspection stages are one of the markers considered when evaluating the main model.

Coefficient of Determination (R2)

Using the SmartPLS 3.0 program to process the data, here is how to determine the R Square value:

Table 3. R Square Results

	R Square	Adjusted R Square
Motivation_(Y)	0,897	0,890

Source : Smart PLS 3.3.3

An R Square value of 0.897 indicates that the variables in the model are able to explain 89.7% of the variation in Motivation (Y). An Adjusted R Square of 0.890 confirms that the model has a very strong and stable predictive ability.

Hypothesis Testing

The relationship between the built ideal and the data in this example must be ensured after the model is created. T-Statistics and P-Values are examined to perform statistical analysis in this case study. To determine whether the P-Values < 0.05 and T-Statistics values > 1.96, speculation is used. The path coefficient impact over time is as follows:

Table 4. Hypothesis Results

	Original Sample (O)	T Statistic (| O/STDEV |)	P Values	Results

Work Culture _(X1) -> Motivation_(Y)	0,373	2,944	**0,002**	**Accepted**
Moderation Effect 1 -> Motivation_(Y)	0,321	3,525	**0,000**	**Accepted**
Moderation Effect 2 -> Motivation_(Y)	-0,231	2,915	**0,002**	**Accepted**
Leadership_(Z) -> Motivation_(Y)	0,269	2,660	**0,004**	**Accepted**
Non-Physical Work Environment _(X2) -> Motivation_(Y)	0,295	3,187	**0,001**	**Accepted**

Source : Smart PLS 3.3.3

The explanation of the research results in Table 5 is as follows:
1. The Influence of Work Culture on Motivation

    Work Culture is proven to have a positive and significant effect on Motivation (T = 2.944; p = 0.002). This shows that the better the implementation of work culture in the organization, the higher the motivation felt by employees. Therefore, the hypothesis is stated as accepted.
2. The Influence of Moderation Effect 1 on Motivation

    Moderation Effect 1 shows a positive and significant effect on Motivation (T = 3.525; p = 0.000). This means that the presence of the first moderating factor strengthens the relationship of the main variable in increasing employee motivation. This hypothesis is accepted.
3. The Influence of Moderation Effect 2 on Motivation

    Moderation Effect 2 is also significant (T = 2.915; p = 0.002), but the direction of its influence is negative. This indicates that the second moderation actually weakens the influence of its main variable on motivation. Nevertheless, the hypothesis is still accepted because its influence is significant.
4. The Influence of Leadership on Motivation

    Leadership has a positive and significant effect on Motivation (T = 2.660; p = 0.004). This means that the better the quality of leadership, the more employee motivation increases. This hypothesis is accepted.
5. The Influence of Non-Physical Work Environment on Motivation

    The Non-Physical Work Environment is proven to have a positive and significant effect on Motivation (T = 3.187; p = 0.001). A comfortable and supportive Non-Physical work environment condition is able to increase employee spirit and motivation. Thus, the hypothesis is stated as accepted.

Conclusion
1. Good work culture is proven to significantly increase employee motivation. The formation of a positive work culture becomes an important factor in driving employee work spirit.
2. The first moderating effect successfully strengthens the relationship of the main variable in increasing motivation. This shows that this moderating factor plays an important role in magnifying the influence on employee motivation.
3. The second moderating effect is also significant, but provides a weakening influence on the relationship of the main variable. Nevertheless, this moderation still plays a role in influencing employee motivation.
4. Good leadership contributes significantly to increasing employee motivation. This confirms that the role of a leader is very important in creating drive and work spirit.
5. A conducive Non-Physical work environment is proven to significantly increase employee motivation. A comfortable and supportive environment is a major factor in driving higher work motivation.

Suggestions

1. Organizations need to strengthen work culture values, such as collaboration, discipline, and integrity, which have been proven to increase employee motivation.
2. The first moderating factor that is effective in strengthening motivation needs to be maintained and optimized through supportive internal programs.
3. The second moderation that has a negative influence needs to be evaluated, for example by redesigning procedures, communication, or work mechanisms so they do not hinder motivation improvement.
4. Leaders need to be given managerial training so they can provide direction, support, and better examples in encouraging employee motivation.
5. Creating a safe, comfortable, and conducive work environment is very important, for example by improving facilities, inter-employee relations, and workspace arrangements.

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