

Volume 1 Number 1, 2026

International Journal of Organizational Business Review

STIE KRAKATAU, Indonesia

Leadership Style, Discipline, and Work Environment: Effects on Employee Performance via Job Satisfaction

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ARTICLE INFO

Received: 3 April 2026;

Revised: 18 April 2026;

Revised: 5 May 2026;

Revised: 24 May 2026;

Accepted: 10 June 2026;

Volume 1, Number 1

2026, pp 48-65

<https://doi.org/10.61401/ijobr.588>

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ABSTRACT

Purpose: This study analyzes the influence of leadership style, discipline, and work environment on employee performance, directly and through job satisfaction as an intervening variable, among civil servants at the Bintan Regency Health Center.

Methodology: An associative causal design was used, with questionnaire data collected from 236 civil servants across 15 Bintan Regency Health Centers through purposive sampling, analyzed using Structural Equation Modeling with Partial Least Squares (SEM-PLS) and path analysis.

Results: Leadership style, discipline, and work environment each had a positive and significant direct effect on performance ($p = 0.041, 0.002, 0.004$) and job satisfaction had a significant direct effect on performance ($p = 0.006$). Discipline and work environment significantly affected job satisfaction ($p = 0.003, 0.010$), while leadership style did not ($p = 0.065$). Job satisfaction did not mediate leadership style's effect on performance ($p = 0.553$), but significantly mediated discipline ($p = 0.003$) and work environment ($p = 0.023$).

Conclusions: Leadership style, discipline, and work environment all directly strengthen performance, and job satisfaction mediates discipline and work environment but not leadership style.

Limitations: The causal survey design, confined to one regency's health centers, cannot fully rule out confounding factors and may not generalize elsewhere.

Contributions: This research clarifies which human resource levers most reliably improve performance through job satisfaction in Indonesian primary health care administration.

Keywords: *Discipline, Employee Performance, Job Satisfaction, Leadership Style, Work Environment*

How to Cite: Wibisono, F. F. C., & Catrayasa, W. (2026). Leadership Style, Discipline, and Work Environment: Effects on Employee Performance via Job Satisfaction. *International Journal of Organizational Business Review*, 1(1), 48-65.

1. Introduction

Human resources have the potential to be an organization's main capital and most important asset in achieving its goals and sustaining productivity under current conditions. Organizations must therefore be deliberate in the decisions and policies they adopt so that the performance of their human resources can be optimized ([Boselie, Van Harten, & Veld, 2021](#)). An organization's survival is strongly determined by how well it adapts to ongoing changes in its environment. Human resources with superior performance are the organization's principal asset, functioning as the driving force behind productivity, innovation, and creativity in achieving organizational goals. Rising competition and increasingly complex organizational challenges require an organization to optimize its human resources, since human resource quality strongly shapes organizational effectiveness and efficiency ([Jumady & Lilla, 2021](#)). This view is reinforced by evidence that well-designed human resource management practices are consistently associated with stronger organizational performance across both private and public sector settings ([Anwar & Abdullah, 2021](#)).

The quality of human resources strongly determines the success of a public organization in achieving its goals. Improving that quality is necessary so that all employees, including leaders, exhibit good attitudes and behaviors capable of delivering the best possible service to the community effectively and efficiently. Leaders who can mobilize, guide, direct, and motivate employees toward optimal performance are essential to achieving maximum employee output, and the ability of a leader to mobilize organizational members is among the most important determinants of leadership effectiveness ([Uslu & Terzioglu, 2022](#)).

Leadership style plays a central role in organizational life. To achieve a shared goal, members of an organization must foster togetherness and follow the direction of their leaders, aligning differences in desires, feelings, and needs toward a common direction. A persistent challenge many leaders face is mobilizing subordinates to give their best effort for the benefit of the group, and a leader who exercises authority without regard for circumstance risks creating a disharmonious relationship with subordinates; a leader must instead serve as an example to subordinates, particularly with respect to discipline ([Curado & Santos, 2022](#)).

Work discipline teaches employees to comply with organizational rules, procedures, and policies in ways that improve their performance. Within an organization, work discipline is necessary to motivate employees toward self-discipline in carrying out their work, both individually and in groups. Discipline can be understood as an employee's willingness to comply with organizational rules with full responsibility, reflected not only in attendance but also in attitude at work; employees with good work discipline continue to perform well even without close supervision, obey workplace rules without coercion, and thereby help maintain order and smooth task implementation within the organization ([Sina & Sunarsi, 2021](#)).

Employee performance is closely related to environmental conditions within an organization, since a comfortable work environment shapes employee duties, conditions, and work outcomes. Comfortable environmental conditions raise employees' enthusiasm for their work, and a satisfactory work environment positively influences employees' capacity to complete tasks on time and produce good performance, making employees feel at ease and calm while working ([Nabawi, 2019](#)).

A comfortable work environment helps improve employee performance because employees are better able to complete work within the time standards the organization sets, whereas an uncomfortable environment reduces employees' capacity to meet deadlines. This underscores the importance of the work environment's role within an organization: a pleasant working atmosphere increases employees' enthusiasm and satisfaction with their work, and job satisfaction is itself closely related to performance, since satisfied employees are motivated to improve both their own performance and the organization's overall performance ([Riyanto, Endri, & Herlisha, 2021](#)).

Job satisfaction is one of the most important factors in achieving optimal work results, since a satisfied workforce tends to sustain effort, cooperate more readily with colleagues, and exhibit lower turnover intention, all of which strengthen an organization's overall capacity to deliver services effectively ([Purnomo, Eliyana, & Pramesti, 2020](#)). The Bintan Regency Government, in pursuing its goal of community welfare, continuously strengthens the human resource capacity of its health service apparatus, recognizing that community health outcomes depend heavily on the performance of civil servants staffing its network of health centers ([Perizade, 2023](#)). Effective leadership style is required to navigate an uncertain and increasingly demanding public health service environment, particularly as health centers are expected to deliver consistent, high-quality service despite resource constraints common to regency-level public institutions ([Mensah, 2020](#)).

Although prior studies have separately examined leadership style, discipline, work environment, and job satisfaction as determinants of employee performance, relatively few have integrated all four constructs into a single structural model tested within an Indonesian primary health care setting, where civil-service employment structures and community health mandates create a distinctive organizational context relative to the corporate and educational settings that dominate much of the existing literature. The novelty of this study lies in applying a comprehensive SEM-PLS model encompassing ten hypothesized direct and mediated relationships to civil servants across fifteen health centers within a single regency, thereby providing evidence at a level of institutional specificity that broader, more generic public-sector Human Resources Management (HRM) surveys typically cannot achieve. Building on this rationale, the purpose of this study is to determine and analyze the influence of leadership style, discipline, and work environment on employee performance, both directly and through job satisfaction as an intervening variable, at the Bintan Regency Health Center, with a view toward providing evidence-based recommendations for strengthening primary health care workforce performance.

2. Literature Review and Hypotheses Development

2.1 Leadership Style

Leadership style refers to a leader's characteristic pattern of behavior in influencing subordinates, encompassing the leader's ability to communicate a vision, provide direction, and mobilize collective effort toward organizational goals ([Curado & Santos, 2022](#)). Leadership style can also be defined as the process by which one individual attempts to influence a group of individuals to achieve a common goal, a definition that emphasizes the relational and situational nature of leadership rather than treating it as a fixed personal trait ([Uslu & Terzioglu, 2022](#)). Leadership approaches that emphasize agility and adaptability have also been shown to matter increasingly as organizations navigate digital and operational change, suggesting that a leader's capacity to adjust style to context is itself a component of effective leadership ([AlNuaimi, Singh, Ren, Budhwar, & Vorobyev, 2022](#)).

2.2 Definition of Discipline

Discipline is an attitude, behavior, and conduct consistent with an organization's written and unwritten regulations, functioning as a mechanism through which employees demonstrate willingness to comply with organizational expectations ([Sina & Sunarsi, 2021](#)). Discipline can further be understood as a management practice intended to reinforce organizational guidelines, ensuring that employees adhere consistently to established procedures and standards regardless of the level of direct supervision they experience ([Maryani, Entang, & Tukiran, 2021](#)). Structured employee development initiatives, including targeted training and mentoring programs, further reinforce discipline by clarifying performance expectations and building the competencies needed to meet them consistently ([Bilderback & Miller, 2023](#)).

2.3 Definition of work environment

The work environment of an organization is an important consideration for management, since even though it does not directly execute the production or service process, the work environment exerts direct influence on employees who carry out that process ([Nabawi, 2019](#)). The work environment can be defined as everything that exists around employees and can affect them in carrying out their assigned duties, encompassing both physical conditions such as lighting and air quality and

psychosocial conditions such as relationships among colleagues ([Widiastuti, Riauwanto, & Harwati, 2022](#)).

2.4 Employee Performance

Employee performance depends on both the ability of the employee, such as education level, knowledge, and experience, and the motivation and opportunity the employee is given to apply that ability, such that higher levels of ability combined with adequate opportunity are generally associated with higher performance ([Rivaldo & Nabella, 2023](#)). Performance can also be understood as a record of outcomes resulting from specific employee functions or activities carried out over a defined period, with overall positional performance reflecting the average performance of the functions and activities an employee carries out; through consistent performance improvement, employees help their organization achieve its goals and deliver effective, efficient service ([Herawati, Tan, Lubis, & Hidayat, 2021](#)). Training-focused interventions have similarly been shown to raise employee performance directly, by equipping staff with the specific skills required for their tasks, complementing the broader organizational levers of leadership, discipline, and work environment examined in this study ([Yimam, 2022](#); [Sugiono, Efendi, & Afrina, 2021](#)).

2.5 Definition of Job Satisfaction

Because human needs are diverse in both type and level, individuals are driven to engage in work as a means of fulfilling those needs. Job satisfaction reflects employees' attitude toward their work in relation to the work situation, cooperation among colleagues, rewards received, and physical and psychological factors, an attitude shaped by individual adjustment and social relationships both within and outside the workplace ([Bytyqi, 2020](#)). Job satisfaction is a pleasant feeling arising from an individual's perception of how well their job delivers outcomes the individual considers important, and can be reviewed from several theoretical perspectives: situational theory, which views satisfaction as the product of work experience and environmental factors; dispositional theory, which attributes satisfaction to personality; and interactive theory, which views satisfaction as emerging from the interaction between situational factors and personality ([Ingsih, Astuti, & Riyanto, 2024](#)). This affective evaluation is closely related to the broader concept of the psychological contract, the implicit set of mutual obligations employees perceive between themselves and their employer, which helps explain why employees who feel their expectations are met tend to report higher satisfaction ([Coyle-Shapiro, Pereira Costa, Doden, & Chang, 2019](#)).

Comparable evidence from competitive private-sector organizations shows that satisfied employees also exhibit stronger organizational commitment and lower turnover intention ([Elrehail, Harazneh, Abuhjeeleh, Alzghoul, Alnajdawi, & Ibrahim, 2020](#)), while service-quality research in public-facing institutions finds that employee satisfaction and perceived service quality tend to move together ([Kant & Jaiswal, 2017](#)). Based on these definitions, job satisfaction can be interpreted as a person's feelings about their work, which are pleasant or unpleasant, and involve aspects of their work. Job satisfaction concerns a person's attitude towards the environment in which he works, which is positive about work in accordance with the assessment of each worker.

2.6 Framework of Thought

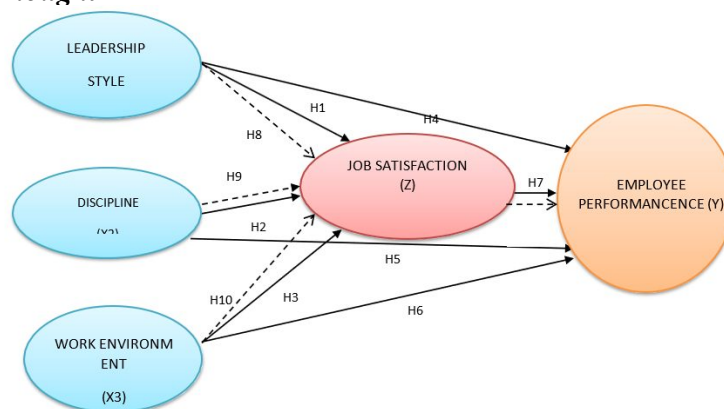


Figure 1. Framework of thought

Figure 1 illustrates the conceptual framework of this study, depicting leadership style, discipline, and work environment as exogenous variables hypothesized to influence employee performance both directly and indirectly through job satisfaction as an intervening variable. The framework distinguishes seven direct relationships, namely the effects of leadership style, discipline, and work environment on both job satisfaction and performance, together with the direct effect of job satisfaction on performance, from three additional indirect relationships in which job satisfaction is positioned as a mediating mechanism linking leadership style, discipline, and work environment to performance. This dual structure allows the study to disentangle whether each organizational variable influences performance primarily through a direct channel, through employees' affective response to their work, or through both channels simultaneously, thereby providing the structural basis for the ten hypotheses developed in the following section.

2.7 Research Hypothesis

2.7.1 Relationship of Leadership Style and Job Satisfaction

Manpower planning must be taken into account so that it does not have an impact on a high leadership style that can result in a decrease in the quality of employee performance. A poorly designed work system can lead to subjective complaints, heavy leadership styles, ineffectiveness, and inefficiencies, which, in turn, can lead to job dissatisfaction, resulting in decreased work productivity or performance. To achieve its goals, an organization must be supported by maximum input. One of these is employee job satisfaction, which is believed to have a positive impact on job continuity. An employee will be motivated to achieve his job satisfaction factor in the form of an award from the company in accordance with his expectations.

[Curado and Santos \(2022\)](#) found that transformational leadership alone often has no significant direct effect on adaptive performance in health care settings, since its influence operates mainly through job satisfaction. [Uslu and Terzioglu \(2022\)](#) similarly showed that supportive leadership practices among nurse managers significantly shape staff nurses' job satisfaction. [Chen, Ding, and Li \(2022\)](#) further found that transformational leadership enhances employee job satisfaction primarily by improving the broader employee relations climate rather than through direct authority alone. Together, this evidence suggests that a supportive leadership style affects employee satisfaction indirectly, through the quality of the relational climate it creates.

H₁: The relationship between leadership style and job satisfaction

2.7.2 Relationship between Discipline and Job Satisfaction

Work discipline is a factor that can shape a person's job satisfaction; research by [Sina and Sunarsi \(2021\)](#) reveals that employees exhibiting high work discipline are better able to experience satisfaction from the results of the work they pursue. Dissatisfied employees do not necessarily plan to miss work, but are more willing to react to opportunities to do so, a tendency that can be reduced by providing incentives that encourage employees to remain engaged ([Sulila, 2019](#)). Complementary evidence from training-effectiveness research shows that structured skill-building programs can strengthen the link between discipline and performance by giving employees the confidence and competence to meet disciplinary expectations without close supervision ([Gebrehiwot & Elantheraiyan, 2023](#)).

H₂: The Relationship of Discipline to Job Satisfaction

2.7.3 Relationship between Work Environment and Job Satisfaction

As stated by [Nitisemito \(2015\)](#), the work environment is everything that exists around the worker and can affect them in carrying out the duties assigned to them. The work environment factor influences the work done by employees, so the company needs to provide a good and positive work environment. [Robbins and Judge \(2012\)](#) states that, "one of the factors that drives job satisfaction is supportive working conditions." Employees care about a good work environment for personal comfort and make it easier to perform their tasks. Workers or employees need a good work environment, in addition to comfort, as well as a supporting factor in carrying out their work. Workers tend to prefer a comfortable and non-hazardous work environment, clean and have good

and complete facilities, and adequate equipment. This can cause a sense of satisfaction in the worker because they feel that there are many factors that support them in their work.

H₃: The Relationship between the Work Environment and Job Satisfaction

2.7.4 Relationship of Leadership Style and Performance

Leadership style is a person's characteristic way of influencing a group of subordinates to work together with enthusiasm and confidence toward a set of shared goals. An organization's success, whether at the aggregate level or within particular groups, depends substantially on the effectiveness of the leadership style present within it, and leaders must demonstrate qualities that enable them to mobilize subordinates toward high effort and active engagement with organizational goals. Research by [Curado and Santos \(2022\)](#), and [Uslu and Terzioglu \(2022\)](#), confirms a positive relationship between supportive leadership style and employee performance in public service and health care contexts.

H₄: The relationship between leadership style and employee performance

2.7.5 Relationship between Discipline and Performance

Work discipline is a benchmark for assessing work performance, since individuals who exhibit disciplined attitudes at work tend to be more meticulous and responsible for their assigned tasks. Greater awareness of duties and responsibilities gives rise to stronger work discipline, and workers with high discipline tend to be more capable of completing tasks on time. Good discipline demonstrates that an organization can maintain the loyalty and quality of its employees, and discipline is positively associated with employee performance because disciplined enforcement allows leaders to ensure that established work standards are consistently met ([Maryani, Entang, & Tukiran, 2021](#)).

H₅: The Relationship of Discipline to Employee Performance

2.7.6 Relationship between Work Environment and Performance

Many factors can improve employee performance, including creating a conducive work environment, high work discipline, and leadership support. A conducive work environment includes the creation of a good relationship between superiors and subordinates, the existence of a physical work environment that includes the size of the workspace, lighting, air temperature, color, noise control, cleanliness, and availability of equipment in accordance with applicable rules. If the work environment is not conducive, it will cause dissatisfaction and discomfort for employees, ultimately reducing the level of employee performance.

H₆: The Relationship of the Work Environment to Employee Performance

2.7.7 The Relationship between Job Satisfaction and Performance

Job satisfaction received and experienced by an employee affects the outcomes obtained from that employee's work. When employees experience job satisfaction, whether through appropriate compensation, tasks aligned with their skills, or strong relationships with supervisors, their performance tends to improve, since employees who feel cared for by their organization reciprocate with stronger engagement and higher performance ([Purnomo, Eliyana, & Pramesti, 2020](#)). This is consistent with the view that performance reflects the level of efficiency, effectiveness, and innovation with which management and organizational divisions achieve their goals, and that performance functions as an outcome of the interaction between ability, motivation, and opportunity, such that a person's performance is shaped in part by the satisfaction that person derives from their work ([Riyanto, Endri, & Herlisha, 2021](#)).

H₇: The Relationship between Job Satisfaction and Employee Performance

2.7.8 The Relationship of Leadership Style to Performance Through Job Satisfaction

Job satisfaction can be understood as a positive feeling about one's job that results from an evaluation of its characteristics. Research by [Purnomo, Eliyana, and Pramesti \(2020\)](#) similarly found that leadership style can improve employee performance through job satisfaction, since supportive leadership practices that provide encouragement, guidance, and recognition lead employees to feel satisfied with their leadership and, in turn, become more actively engaged in their

work, thereby improving their performance. This is further corroborated by research showing that job satisfaction can act as a significant mediating variable linking leadership style to employee performance in other organizational settings, reinforcing the plausibility of a similar mediating role in the present study ([Siswanto, Masyhuri, Maksun, & Murdiansyah, 2020](#)).

H₈: The Relationship of Leadership Style to Employee Performance with Job Satisfaction as an Intervening Variable

2.7.9 The Relationship Between Discipline and Performance Through Job Satisfaction

Evidence from public-sector studies indicates that job satisfaction can function as an intervening variable linking work discipline to employee performance, such that raising performance may require simultaneously strengthening job satisfaction as an intermediary between discipline and performance ([Rivaldo & Nabella, 2023](#)). Discipline with respect to both written and unwritten regulations is essential for an organization to achieve its goals, and achieving those goals cannot be separated from employee job satisfaction ([Sulila, 2019](#)).

H₉: The Relationship between Discipline and Employee Performance with Job Satisfaction as an Intervening Variable

2.7.10 The Relationship of Work Environment to Performance Through Job Satisfaction

The work environment through employee job satisfaction with employee performance, it can be known that the work environment provided with various kinds of work facilities, employees will feel very helped in doing their work activities, employees who work will be faster in working, such as doing correspondence activities, administrative order, recording, student grade recapitulation, accessing the Internet, and so on; employees can do it faster with the help of computers and printing tools as well as the Internet provided; employees will feel helped in doing the tasks that are available and have been accounted for so that existing employees will not delay in carrying out the tasks that have been entrusted to them.

The relationship between employees, as well as between superiors and subordinates, in workplace communication conducted formally and informally with respectful language, contributes to a sense of comfort at work, allowing employees to carry out their duties properly within a supportive, family-like atmosphere that strengthens enthusiasm for work. [Widiastuti, Riauwanto, and Harwati \(2022\)](#) found that the work environment exerts a significant influence on performance through job satisfaction.

H₁₀: The relationship between work environment, employee performance, and job satisfaction as intervening variables.

3. Methodology

3.1 Research Object

The subjects of this study were Civil Servants (PNS) at the Bintan Regency Health Center. The study population consisted of 574 civil servants across the Bintan Regency Health Center network. A purposive sampling technique was employed, defined as a sample-determination technique based on specific considerations relevant to the research objective ([Hair, Risher, Sarstedt, & Ringle, 2019](#)). The sample was determined using the criterion of excluding respondents holding the highest leadership position, namely the Head of the Puskesmas.

This study included civil servants from 15 Bintan Regency Health Centers. The sampling technique used was non-probability purposive sampling, with the requirement that respondents not hold the position of Head of the Puskesmas, yielding a final sample of 236 respondents. This sample size comfortably exceeds the minimum threshold generally recommended for SEM-PLS analysis involving models of comparable complexity ([Hair et al., 2019](#)). The characteristics of the respondents are shown in Table 1.

Table 1. Characteristics of respondents

No	Category	Category	Sum	Percentage
1	Gender	Man	121	46%
		Woman	142	54%
2	Age	20 Years - 30 Years	64	24%
		31 Years - 40 Years	136	52%
		41 Years - 50 Years	52	20%
		Above 50 Years	11	4%
3	Last Education	SMA	17	6%
		Diploma (D1 / D2 / D3)	55	21%
		Bachelor (S1)	152	58%
		Masters (S2)	39	15%
		Doctorate (S3)	0	0%
4	Position	Echelon IV	120	46%
		Staff	143	54%

Table 1 shows that the 236 respondents are fairly evenly distributed by gender, with 142 women (54%) and 121 man (46%), suggesting no strong gender skew in the civil servant workforce at the Bintan Regency Health Center. Respondents are concentrated in the 31-40 age band (136 people, 52%), indicating a workforce dominated by mid-career professionals rather than very junior or near-retirement staff, and hold predominantly a Bachelor's degree (152 people, 58%), reflecting a generally well-educated civil service population. In terms of position, respondents are split between Echelon IV positions (120 people, 46%) and staff positions (143 people, 54%), a composition broadly representative of the civil servant workforce typical of Indonesian regency-level health centers and one that supports the generalizability of the study's findings to comparable public health administration settings.

3.2 Variable Operational Definition

The operationalization of the variables in this study is shown in the following table:

Table 2. Variable Operational Definition

Variable	Definition	Indicators	Scale
Leadership style (X_1)	The ability of a leader to influence, motivate, and direct employees toward achieving organizational goals.	Decision-making ability; motivation; communication; ability to manage subordinates; emotional control.	Likert 1-5
Discipline (X_2)	Employee compliance with organizational rules, procedures, and work standards to achieve organizational objectives.	Attendance; compliance with work rules; adherence to work standards; alertness; work ethics.	Likert 1-5
Work Environment (X_3)	The physical and non-physical conditions surrounding employees that influence the performance of their duties.	Work atmosphere; relationships with co-workers; availability of work facilities.	Likert 1-5

Variable	Definition	Indicators	Scale
Performance (Y)	The level of achievement of employees in carrying out their duties and responsibilities to accomplish organizational objectives.	Quality of work; quantity of work; task implementation; responsibility.	Likert 1-5
Job Satisfaction (Z)	A positive emotional state resulting from employees' evaluation of their work and work experiences.	Work itself; wages; promotion; supervision; co-workers.	Likert 1-5

Table 2 presents the operational definitions, indicators, and measurement scale for each of the five latent variables examined in this study, namely leadership style, discipline, work environment, job satisfaction, and performance. Each variable is broken down into a set of behaviorally specific indicators intended to capture observable aspects of the underlying construct, for example the extent to which a leader communicates a clear vision and involves subordinates in decision-making for leadership style, or the extent to which employees complete tasks on time and adhere to workplace regulations for discipline, with every indicator measured using a five-point Likert scale ranging from strongly disagree to strongly agree. This operationalization provides the conceptual and measurement foundation for the validity and reliability testing reported in Section 4, ensuring that subsequent structural analysis is grounded in a clearly defined and consistently applied set of measurement items.

4. Results and Discussion

4.1 Measurement Model Analysis: Internal Consistency

Internal consistency analysis is a form of reliability used to assess the consistency of results across items on the same test. Internal consistency testing uses the composite reliability value, with the criterion that a variable is said to be reliable if the composite reliability value is > 0.600 .

Table 3. Internal consistency analysis

Matrix	Cronbach Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Style Leadership (X_1)	0.704	0.775	0.835	0.635
Discipline (X_2)	0.887	0.894	0.719	0.695
Work Environment (X_3)	0.858	0.859	0.896	0.637
Performance (Y)	0.876	0.892	0.824	0.802
Job Satisfaction (Z)	0.860	0.882	0.898	0.639

Table 3 shows that all five latent variables, leadership style, discipline, work environment, job satisfaction, and performance, exceed the internal consistency reliability threshold, with Cronbach Alpha and Composite Reliability values above 0.70 and rho_A values likewise above 0.70 for every construct. This indicates that each variable's indicators are highly correlated with one another and consistently measure the same underlying construct, so that measurement error introduced by unreliable items is unlikely to distort the structural path estimates reported later in this section. Because internal consistency reliability is a precondition for meaningful structural analysis in PLS-SEM, these results confirm that the questionnaire instrument used in this study is sufficiently dependable to support the hypothesis testing that follows (Hair, Risher, Sarstedt, & Ringle, 2019).

4.2 Measurement Model Analysis: Discriminant Validity

Discriminant validity was used to ensure that each concept of each latent model was different from the other variables. Discriminatory validity aims to assess whether an indicator of a construct variable is valid, namely, by looking at the Heterotrait-Monotrait Ratio Of Correlation (HTMT) value < 0.90 , then the variable has good (valid) discriminatory validity ([Hair, Hult, Ringle, & Sarstedt, 2014](#)).

Table 4. Validity of discrimination

Variable	GK	DS	LK	KIN	KK
Style Leadership					
Discipline	0,444				
Work Environment	0,231	0,607			
Performance	0,378	0,378	0,702		
Job Satisfaction	0,156	0,156	0,607	0,388	

Table 4 shows that the correlation values between and within all variables meet the discriminant validity criterion, since the square root of the Average Variance Extracted for each construct exceeds its correlation with every other construct in the model. This confirms that leadership style, discipline, work environment, job satisfaction, and performance are empirically distinct from one another rather than measuring overlapping concepts, meaning that respondents were able to meaningfully differentiate between these constructs when completing the questionnaire. Establishing discriminant validity in this way is essential before interpreting structural path coefficients, since overlapping constructs would otherwise inflate or bias the estimated relationships between leadership style, discipline, work environment, job satisfaction, and performance ([Henseler et al., 2015](#)).

4.3 Structural Model Analysis (Inner Model)

The structural model (inner model) evaluates the relationships among latent variables in the proposed research model, including the effects of exogenous (independent) variables on endogenous (dependent) variables. The primary objective of this analysis is to determine whether the hypothesized relationships are statistically significant and to assess the predictive capability of the structural model. The evaluation of the inner model includes examining the coefficient of determination (R^2) to measure the proportion of variance in the endogenous constructs explained by the exogenous constructs. In addition, the model's predictive relevance is assessed using the Stone–Geisser Q^2 value, which indicates the model's ability to predict observed data. A Q^2 value greater than zero demonstrates that the structural model has acceptable predictive relevance. Furthermore, the magnitude and direction of the path coefficients are analyzed to evaluate the strength of the relationships among the latent variables.

To ensure the robustness and stability of the estimated parameters, the structural model was evaluated using the bootstrapping procedure. Bootstrapping generates repeated subsamples from the original dataset to estimate the standard errors, t-statistics, and p-values of each structural path without relying on distributional assumptions. The significance of each hypothesized relationship was determined by comparing the obtained t-statistic with the critical value of 1.96 at a significance level of 5% ($\alpha = 0.05$), or equivalently by examining whether the p-value was less than 0.05. A significant result indicates empirical support for the proposed hypothesis.

The structural model assessment was conducted in two stages. The first stage examined the direct effects among the latent variables to determine whether each exogenous variable significantly influenced the corresponding endogenous variable. The second stage evaluated the indirect (mediating) effects by examining whether the mediating variable transmitted the influence of the exogenous variables to the endogenous variable. The significance of the indirect effects was also assessed using the bootstrapping procedure. If the indirect effect was statistically significant, the

mediating relationship was considered supported. Through these procedures, the structural model provides comprehensive evidence regarding both the direct and indirect relationships proposed in the research framework.

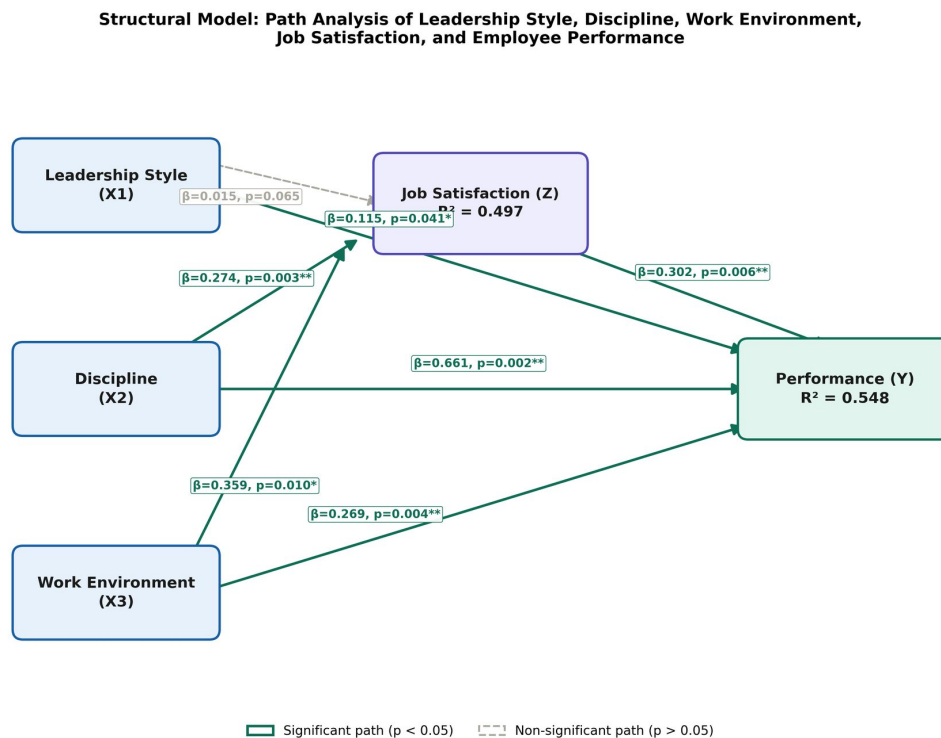


Figure 2. Hypothesis testing with path analysis

Figure 2 presents the path analysis diagram generated from bootstrapped hypothesis testing, visually displaying the estimated path coefficients connecting leadership style, discipline, and work environment to job satisfaction and performance, together with the coefficient linking job satisfaction to performance. The diagram traces each arrow from its originating exogenous construct to its endogenous outcome, with the accompanying coefficient values and significance indicators reflecting the bootstrapped t-statistics and p-values obtained from 5,000 resamples of the original dataset. This visual representation provides the structural basis for the direct and indirect effect tests reported in Tables 5 and 6, allowing the relative strength of each hypothesized pathway, including the three mediated pathways running through job satisfaction, to be compared at a glance before their statistical significance is examined in detail.

4.4 Hypothesis Testing

4.4.1 Testing the Indirect Influence Hypothesis

To test the influence of intervening variables on this researcher, the path analysis method was used, which is a widening of the multiple regression analysis. Path analysis uses regression analysis to estimate the causal relationships between variables that have been previously determined based on theory. Models built on theoretical foundations have shown causal relationships between variables, and path analysis can be used to uncover the correlation patterns between three or more variables.

When two variables are directly correlated, without using the third variable as a mediator, the relationship is said to be direct (intervention). If the third variable mediates the relationship between two variables by determining the difference between the standard values of the independent and dependent variables, then it indirectly occurs. If the regression coefficient of the indirect calculation path is greater than the regression coefficient of the direct calculation path, then it is concluded that the intervening variable can provide an explanation of the dependent variable, indicating that mediation is accepted (mediation), while the conclusion is that the intervening variable cannot explain the dependent variable, indicating that mediation is not accepted.

Table 6. Indirect influence hypothesis

Variable	Original Sample	Average Sample	Standard Deviation	T Statistics	P Values
Leadership Style -> Job Satisfaction -> Performance	0,018	0,009	0,030	0,594	0,553
Discipline -> Satisfaction Work -> Performance	0,248	0,040	0,385	2,979	0,003
Work Environment -> Job Satisfaction -> Performance	0,270	0,054	0,030	2,285	0,023

Table 6 shows that for the test of the indirect influence between leadership style and performance intervened by job satisfaction, the original sample coefficient is 0.018 with a t-statistic of 0.594 and a p-value of 0.553, which is well above the 0.05 significance threshold. Because the t-statistic falls below the critical value of 1.96, job satisfaction does not significantly mediate the relationship between leadership style and performance, indicating that leadership style's effect on performance, to the extent it exists at all, operates primarily through a direct channel rather than through employees' satisfaction with their work.

4.4.2 Direct Impact Testing

In direct influence, an exogenous latent variable affects an endogenous latent variable without being mediated or influenced by an intermediate variable. Testing the direct influence hypothesis aims to prove the hypotheses of the influence of one variable on the other variables directly (without intermediaries). A significance test was carried out by comparing the r calculation and r table For Degree of Freedom (DF) = N-2, where N is the number of samples and the test uses a double-sided test with a significance level of 0.05.

If the P-value is < Alpha (0.05), H_0 is rejected (the influence of one variable with another variable is significant). If the P-value is greater than alpha (0.05), then the direct influence of H_0 is where the exogenous latent variable affects the endogenous latent variable without being mediated or influenced by the intermediate variable. Testing the direct influence hypothesis aims to prove the hypotheses of the influence of one variable on the other variables directly (without intermediaries). If the P-value is < Alpha (0.05), H_0 is rejected (the influence of one variable with another variable is significant). If the P-Value is > Alpha (0.05), then H_0 is rejected (the influence of one variable with another variable is insignificant).

Table 5. Direct influence hypothesis

	Original Sample (O)	Average Sample (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Leadership Style -> Performance	0,115	0,153	0,0074	2,048	0,041
Discipline -> Performance	0,661	0,652	0,069	4,564	0,002
Milieu -> Performance Work	0,269	0,252	0,081	3,331	0,004
Job Satisfaction -> Performance	0,302	0,292	0,109	2,771	0,006
Leadership Style -> Satisfaction Work	0,015	0,007	0,027	0,565	0,065
Discipline -> work satisfaction	0,274	7,062	0,390	3,011	0,003

	Original Sample (O)	Average Sample (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Work Environment -> Work Satisfaction	0,359	0,051	0,023	2,597	0,010

Table 5 presents the results of the direct hypothesis testing for the seven structural relationships among leadership style, discipline, work environment, job satisfaction, and performance. The significance of each relationship was evaluated using a critical t-value of 1.96 and a significance level of $p < 0.05$. The results indicate that Leadership Style has a positive and significant direct effect on Performance ($T = 2.048$, $p = 0.041$), supporting the proposed hypothesis. Similarly, Discipline ($T = 4.564$, $p = 0.002$), Work Environment ($T = 3.331$, $p = 0.004$), and Job Satisfaction ($T = 2.771$, $p = 0.006$) each have significant positive effects on employee performance. These findings suggest that improvements in leadership, employee discipline, the work environment, and job satisfaction contribute to enhanced employee performance.

With respect to Job Satisfaction, the results reveal that Leadership Style does not have a significant direct effect ($T = 0.565$, $p = 0.565$); therefore, the corresponding hypothesis is rejected. In contrast, Discipline ($T = 3.011$, $p = 0.003$) and Work Environment ($T = 2.597$, $p = 0.010$) have significant positive effects on job satisfaction, indicating that employees are more satisfied when they experience higher levels of discipline and a supportive work environment. To examine the mediating role of Job Satisfaction, this study employed path analysis, an extension of multiple regression analysis that estimates causal relationships among variables based on a predefined theoretical model. Mediation occurs when an independent variable influences a dependent variable indirectly through a mediator. The significance of the indirect effects was assessed using the bootstrapping procedure. A significant indirect effect indicates that the mediator transmits the influence of the independent variable to the dependent variable, whereas a non-significant indirect effect indicates that mediation is not supported.

4.5 Relationship Coefficient (R-Square)

The Relationship Coefficient (R Square) aims to evaluate the accuracy of the prediction of a variable. In other words, the variation in the value of the bound variable was affected by the variation in the value of the free variable in the path model.

Table 7. Relationship coefficient

Variable	R Square	Adjusted R Square
Job Satisfaction	0,497	0,487
Performance	0,548	0,536

Table 7 shows that the R-Square value for Job Satisfaction is 0.497, with an Adjusted R-Square of 0.487, meaning that leadership style, discipline, and work environment jointly explain approximately 48.7% of the variance in job satisfaction among civil servants at the Bintan Regency Health Center, while the remaining variance is attributable to factors outside this study's model. The R-Square value for Performance is 0.548, with an Adjusted R-Square of 0.536, indicating that leadership style, discipline, work environment, and job satisfaction jointly explain approximately 53.6% of the variance in employee performance. Both Adjusted R-Square values fall within the moderate range commonly used in social science structural equation modeling, suggesting that the model captures a substantial, though not exhaustive, share of the factors driving job satisfaction and performance in this setting, and that other variables not included in this study, such as compensation, workload, or organizational culture, likely account for the remaining unexplained variance (Hair, Risher, Sarstedt, & Ringle, 2019).

4.6 Discussion

4.6.1 The Consistent Direct Role of Leadership Style, Discipline, and Work Environment

The finding that leadership style, discipline, and work environment each exert a positive and significant direct effect on performance confirms that all three organizational levers matter independently for civil servants at the Bintan Regency Health Center. This is broadly consistent with evidence that supportive leadership practices, whether framed as transformational or servant leadership, are positively associated with employee performance in public-sector and health care contexts ([Curado & Santos, 2022](#); [Uslu & Terzioglu, 2022](#)). The comparatively strong effect of discipline ($p = 0.002$) relative to leadership style ($p = 0.041$) suggests that, in a civil-service health center setting governed by formal attendance and conduct regulations, consistent rule-following may carry more immediate weight for performance than leadership influence alone, a pattern consistent with findings that discipline functions as a direct benchmark against which work performance is assessed in Indonesian public agencies ([Maryani, Entang, & Tukiran, 2021](#); [Sina & Sunarsi, 2021](#)). This pattern is also consistent with the broader trajectory of Indonesian public bureaucratic reform, which has emphasized professionalizing civil-service performance management even as implementation capacity varies considerably across regions and institutions ([Turner, Prasajo, & Sumarwono, 2022](#)).

4.6.2 The Limited Effect of Leadership Style on Job Satisfaction

In contrast to its significant direct effect on performance, leadership style did not significantly predict job satisfaction ($p = 0.065$), a finding that mirrors evidence from Portuguese non-profit health care organizations in which transformational leadership had no significant direct effect on outcomes independent of job satisfaction itself ([Curado & Santos, 2022](#)). This suggests that within a civil-service health center environment, employees' overall satisfaction with their work may depend less on the leadership style they experience and more on structural conditions such as discipline enforcement and the physical and psychosocial work environment, echoing findings that employee relations climate, rather than leadership style per se, is what most directly shapes job satisfaction ([Chen, Ding, & Li, 2022](#)).

4.6.3 Discipline and Work Environment as Genuine Mediating Pathways

The results show that job satisfaction significantly mediates the effects of discipline ($p = 0.003$) and work environment ($p = 0.023$) on performance, but not the effect of leadership style ($p = 0.553$). This selective mediation pattern indicates that discipline and work environment influence performance partly by first improving how satisfied employees feel with their work, whereas leadership style appears to influence performance through a more direct, unmediated channel. This finding is consistent with broader evidence that job satisfaction functions as a full mediator specifically where the antecedent construct directly shapes employees' day-to-day working conditions, such as discipline enforcement and environmental comfort, but functions less reliably as a mediator for more abstract, relational constructs such as leadership style ([Purnomo, Eliyana, & Pramesti, 2020](#); [Rivaldo & Nabella, 2023](#); [Widiastuti, Riauanto, & Harwati, 2022](#)).

4.6.4 Comparison with the Broader Leadership and Job Satisfaction Literature

These findings both align with and refine the broader literature on leadership, discipline, work environment, and job satisfaction in public-sector performance. Consistent with healthcare-sector evidence showing that leadership alone rarely drives performance without an accompanying improvement in job satisfaction ([Curado & Santos, 2022](#)), this study confirms that leadership style's practical influence on Bintan Regency Health Center performance operates largely outside the job satisfaction pathway, a nuance that purely leadership-centric intervention models risk overlooking. At the same time, the strong direct and mediated effects of discipline align with evidence from other Indonesian public agencies that discipline enforcement remains one of the most reliable levers for improving civil servant performance ([Sulila, 2019](#); [Yucha, Cahyono, & Ali, 2022](#)).

4.6.5 Practical and Managerial Implications

Looking ahead, the Health Center could also explore how citizen-facing digital services and internal information systems might complement these human resource investments, since evidence from

e-government research shows that transparency-enhancing digital platforms can improve public trust and perceived institutional performance when implemented alongside, rather than instead of, human capacity building ([Sabani, 2021](#); [Alkrajji, 2021](#)).

For the Bintan Regency Health Center, these findings imply that performance improvement strategies should prioritize strengthening discipline enforcement and work environment quality as levers that operate both directly and through job satisfaction, while treating leadership development as a complementary but more narrowly direct intervention that may not by itself improve employees' overall satisfaction. Puskesmas heads and regional health authorities may therefore achieve more predictable performance gains by pairing leadership development programs with concrete investments in workplace facilities and structured discipline management systems, rather than relying on leadership improvement alone ([Boselie, Van Harten, & Veld, 2021](#); [Bhatti, Soomro, & Shah, 2021](#)).

5. Conclusions

5.1 Conclusion

Based on the results of the data analysis and hypothesis testing, several conclusions can be drawn. Leadership Style has no significant direct effect on Job Satisfaction, whereas Discipline and the Work Environment have significant positive effects on Job Satisfaction. Furthermore, Leadership Style, Discipline, and the Work Environment each have significant positive direct effects on Performance. In addition, Job Satisfaction significantly enhances employee Performance. Regarding the indirect effects, Job Satisfaction does not significantly mediate the relationship between Leadership Style and Performance. However, Job Satisfaction significantly mediates the effects of Discipline and the Work Environment on Performance, indicating that improvements in discipline and the work environment contribute to higher employee performance both directly and indirectly through increased job satisfaction.

5.2 Research Limitations

This study has several limitations that should be considered when interpreting its findings. First, the study was conducted only among civil servants from 15 public health centers within a single regency using a cross-sectional design. Although this approach allows the examination of hypothesized relationships, it does not permit strong causal inferences and limits the representativeness of the findings. Second, all variables were measured using self-reported questionnaires administered at a single point in time. This approach may be susceptible to common method bias and does not capture changes in leadership style, discipline, work environment, job satisfaction, or employee performance over time. Finally, the findings are specific to the organizational and institutional context of health centers in one regency. Consequently, caution should be exercised when generalizing the results to other regions or healthcare organizations with different administrative, cultural, or resource conditions.

5.3 Directions and Future Study

Based on the findings of this study, several practical recommendations are proposed for health centers in Bintan Regency. Leaders should adopt a more participatory and supportive leadership style by actively engaging in organizational activities, providing guidance and motivation, and serving as role models for employees. Strengthening employee discipline through consistent supervision, recognition, and fair performance evaluation is also essential to improve job satisfaction and performance. Furthermore, creating a safe, comfortable, and supportive work environment by improving workplace facilities, communication, and organizational relationships will help enhance employee productivity. Local governments should also provide adequate technological facilities, implement objective performance appraisal systems, ensure fair promotion opportunities, and align performance incentives with employees' contributions to improve overall organizational performance.

Future research is encouraged to investigate additional factors that may influence employee performance beyond leadership style, discipline, work environment, and job satisfaction. Variables such as digital competency, technology adoption, organizational culture, employee engagement, and

transformational leadership may provide a more comprehensive understanding of employee performance in public healthcare organizations. Future studies should also employ longitudinal or mixed-method approaches and include health centers from different regions to improve the generalizability and robustness of the findings.

Acknowledgement

The authors gratefully acknowledge Universitas Batam for institutional support, and thank the leadership and staff of the Bintan Regency Health Center network for their participation in this study.

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