



The relationship between job satisfaction and psychological safety and job commitment among employees of PT Perkebunan Nusantara IV Regional I Medan

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Article Info	ABSTRACT
Article history: Received Aug 1, 2026 Revised Aug 6, 2026 Accepted Aug 13, 2026 Keywords: Psychological Safety; Workplace Well-Being; Work Engagement.	This research investigates the extent to which workplace well-being and psychological safety are linked to work engagement among staff at PT Perkebunan Nusantara IV Regional I Medan. Using a quantitative approach, 84 employees were recruited through purposive sampling, and their questionnaire responses were analyzed in IBM SPSS Statistics 25 by descriptive statistics, validity and reliability checks, classical assumption testing, multiple regression, partial and simultaneous significance tests, the coefficient of determination. These results show that although workplace well-being is positively related to work engagement, the relationship does not reach statistical significance ($t = 1.593$; $\text{Sig.} = 0.115 > 0.05$). Psychological safety, by contrast, is positively and significantly related to work engagement ($t = 6.492$; $\text{Sig.} = 0.000 < 0.05$). When examined together, both variables significantly predict work engagement ($F = 120.246$; $\text{Sig.} = 0.000$), explaining 74.8% of its variance ($R^2 = 0.748$), with the remaining 25.2% attributable to factors outside the model. These findings suggest that psychological safety is the more influential factor, whereas workplace well-being on its own is not a statistically significant predictor though combined, the two variables play a meaningful role in shaping work engagement among PTPN IV Regional I Medan employees. <i>This is an open access article under the CC BY-NC license.</i> 

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1. INTRODUCTION

Workplace well-being refers to employees' positive psychological condition while performing their work, encompassing emotional well-being, supportive relationships, and meaningful work experiences. According to Bosle et al. (2021), and Al Kahtani and M.M (2022), and Baquero (2023), workplace well-being contributes to higher employee engagement and improves overall work quality. Employees with better workplace well-being generally demonstrate stronger commitment, enthusiasm, and positive attitudes toward their organization.

Workplace well-being remains relevant to work engagement because, despite differences in job characteristics, employees share the same organizational environment. Positive work experiences, supportive relationships, and meaningfulness of work can encourage engagement. However, the relationship found in this study is positive but relatively weak, indicating that work engagement may also be influenced by other factors.

Psychological safety refers to employees' belief that they can express ideas, ask questions, and communicate openly without fear of negative consequences. Zhao et al. (2022) and Inoue et al. (2023) explain that psychological safety encourages participation, open communication, and employee involvement, ultimately strengthening work engagement.

One definition of work engagement is a favourable psychological state marked by full involvement in one's job. Schaufeli (2021) identifies three dimensions that make up this construct: vigor (the level of energy and enthusiasm directed toward work), dedication (a strong sense of enthusiasm and meaningfulness attached to the job), and absorption (the degree of complete immersion in work activities). This relationship is supported by Sypniewska et al. (2023), who reported that higher work engagement contributes to employee satisfaction and organizational sustainability. Employees who score high on work engagement typically show greater motivation, more active participation, and more positive contributions to their organization.

PT Perkebunan Nusantara IV (PTPN IV) Regional I Medan is part of the Perkebunan Nusantara Holding Company, an agribusiness group, and has operated under the PalmCo regionalization scheme since December 1, 2023. As a state-owned enterprise managing multiple plantation units across North Sumatra, its operational success rests not only on technology and work systems but also, to a significant degree, on the quality of its workforce. Attention to employee well-being and psychological conditions is therefore essential for maintaining engagement and sustaining organizational performance.

Within human resource management, employee engagement is widely recognized as a strategic lever for improving work effectiveness, productivity, and overall organizational performance. In organizations with demanding operational activities, such as PTPN IV Regional I Medan, strong employee engagement becomes a precondition for tasks to run smoothly and for organizational goals to be met. Job well-being and psychological safety are generally regarded as two factors closely tied to engagement; employees who experience adequate levels of both tend to show greater motivation, satisfaction, and involvement in their work. This makes it worthwhile to study how workplace well-being, psychological safety, and work engagement relate to one another, particularly in the plantation sector, a setting that has received comparatively little attention in prior research. This viewpoint is in line with Lee et al. (2023) explanation that sufficient job resources foster higher employee engagement and performance using the Job Demands–Resources paradigm.

Much of the existing literature has examined workplace well-being and psychological safety as separate predictors of organizational commitment, and most of it has been carried out in service, education, or technology settings, leaving state-owned plantation companies underexplored. Yet the plantation sector has its own distinctive organizational features a more hierarchical structure, more complex operations, and a wider range of job demands. To help close this gap, the present study combines workplace well-being and psychological safety within a single model to examine how they relate to job commitment among PTPN IV Regional I Medan employees.

Building on this background, the present study sets out to analyze how job well-being and psychological safety relate to job commitment among workers of PT Perkebunan Nusantara IV Regional I Medan. It is hoped that the findings will add to the human resource management literature and broaden understanding of the psychological factors that shape organizational commitment within the plantation sector.

2. RESEARCH METHOD

A quantitative, associative study design is used. This research's quantitative methodology was selected in order to examine how job well-being and psychological safety relate to employee job commitment through numerical measurement and statistical analysis. As Sugiyono (2022) notes, quantitative research is rooted in positivist philosophy and relies on research instruments together with statistical techniques to study a defined population or sample. An associative design was selected specifically because it is suited to uncovering relationships among two or more variables.

The research took place at the head office of PT Perkebunan Nusantara IV Regional I Medan, on Jalan Sei Batanghari No. 2, Simpang Tanjung, Medan Sunggal, North Sumatra. This site was

chosen because its organizational setting closely matches the variables under investigation job satisfaction, psychological safety, and organizational commitment. The study spans the period from data collection through to the writing of the research report.

All 500 employees made up the study's population at the PT Perkebunan Nusantara IV Regional I Medan head office. A purposive sampling technique was applied, meaning participants were chosen according to criteria relevant to the study's objectives: respondents had to be permanent staff with at least one year of tenure and had to be willing to take part. The Slovin formula with a margin of error was used to determine the sample size set to suit the study's needs:

$$n = \left(\frac{N}{1 + Ne^2} \right)$$

$$n = \left(\frac{500}{1 + 500(0,1)^2} \right)$$

$$n = \left(\frac{500}{1 + 5} \right)$$

$$n = 83,33$$

84 respondents made up the sample size.

The sample of 84 respondents was determined based on the Slovin formula using the selected margin of error. This sample size was considered sufficient to represent the population of 500 employees while maintaining the study's sampling requirements. The respondents were then selected purposively based on the predetermined criteria.

The data utilized are quantitative in nature that is, data in the form of numbers or data that can be quantified, thereby enabling statistical analysis (Creswell & Creswell, 2017). These data consist of two types, namely: a) Primary data, collected directly from participants using a Google Forms-based survey. This questionnaire was designed to gather information on employees' beliefs of workplace well-being, psychological safety, and organizational commitment; b) Secondary data, which is data collected from various written sources namely books, scholarly publications, research papers, corporate records, other materials pertinent to the subject.

Data analysis was performed quantitatively utilizing IBM SPSS Statistics 25, covering descriptive statistics, data-quality checks, classical assumption tests, hypothesis testing. Descriptive statistics were utilized to characterize the respondents also summarize the research variables through frequencies, percentages, means, and standard deviations. Data quality was assessed via validity and reliability testing: validity was determined utilizing Pearson's product-moment correlation, at a significance level of < 0.05 , comparing the computed r -value with the table r -value, while reliability was evaluated utilizing Cronbach's alpha, with values above 0.70 considered adequate. Classical assumption testing comprised a Kolmogorov-Smirnov normality test (accepted at significance > 0.05), a multicollinearity check based on Tolerance values > 0.10 , VIF < 10 , a Glejser heteroscedasticity test (accepted at significance > 0.05). Hypotheses were tested through multiple linear regression to assess how Workplace Well-Being (X_1) and Psychological Safety (X_2) relate to Work Engagement (Y), adhering to the model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

Notes:

Y = Work Engagement

α = Constant

β_1, β_2 = Regression coefficients for each independent variable

X_1 = Workplace Well-Being

X_2 = Psychological Safety

e = Error (residual)

Following this, a t -test was used to evaluate partial relationships, an F -test to assess the simultaneous relationship, the coefficient of determination (R^2) was calculated to gauge how much of the independent factors account for the variance in the dependent variable. Throughout, a significance level of 0.05 was used.

3. RESULTS AND DISCUSSIONS

Descriptive Analysis

Table 1. Descriptive statistical analysis

	Mean	Std. Deviation	N
	26,05	2,858	84
X1	26,01	3,075	84
X2	26,24	3,068	84

Source: SPSS 2026 Analysis Results

Table 2. Respondent criteria

Num	Characteristics	Category	Frequency (N)	Percentage (%)
1	Gender	Male	37	44,0
		Female	47	56,0
2	Respondent Criteria	Have Been Employed for at Least 1 Year	84	100,0
		Willing to Complete a Questionnaire	84	100,0

Source: SPSS 2026 Analysis Results

The descriptive statistics above show that Workplace Well-Being had a mean score of 26.01 (SD = 3.075), Psychological Safety a mean of 26.24 (SD = 3.068), and Work Engagement a mean of 26.05 (SD = 2.858), all based on responses from 84 participants and offering a general picture of each variable. Of the 84 respondents, 37 were men (44.0%) and 47 were women (56.0%), all of whom satisfied the eligibility criteria of having at least one year of tenure and consenting to complete the survey.

Data Quality Test

Validity Test

Table 3. Data validity test

Statement	Workplace Well-being	Psychological Safety	Work Engagement	Result
X1.1	0,656			Valid
X1.2	0,687			Valid
X1.3	0,673			Valid
X1.4	0,664			Valid
X1.5	0,696			Valid
X1.6	0,710			Valid
X2.1		0,610		Valid
X2.2		0,702		Valid
X2.3		0,625		Valid
X2.4		0,732		Valid
X2.5		0,722		Valid
X2.6		0,590		Valid
Y1			0,606	Valid
Y2			0,683	Valid
Y3			0,703	Valid
Y4			0,601	Valid
Y5			0,662	Valid
Y6			0,613	Valid

Source: SPSS 2026 Analysis Results

If an item's computed r-value was greater than the table r-value of 0.2146, it was deemed valid. This validity outcomes show that every statement item (X1.1–X1.6, X2.1–X2.6, Y1–Y6) met this threshold, confirming that every question on the survey was legitimate.

Reliability Test

Table 4. Reliability test

Cronbach's Alpha	N of Items
0,925	18

Source: SPSS 2026 Analysis Results

The reliability analysis produced a Cronbach's Alpha of 0.925 across the 18 items, well above the commonly used cut-off of 0.70, demonstrating the instrument's dependability.

Classical Assumption Tests

Normality Test

Table 5. Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		84
Normal Parameters	Mean	.0000000
	Std. Deviation	1.43440421
Most Extreme Differences	Absolute	.063
	Positive	.063
	Negative	-.044
Test Statistic		.063
Asymp. Sig. (2-tailed)		.200
a. Test distribution is Normal		
b. Calculated from data		
c. Lilliefors Significance Correction		
d. This is a lower bound of the true significance		

Source: SPSS 2026 Analysis Results

The residuals can be considered normally distributed since their Asymp. Sig. (2-tailed) value in the Kolmogorov-Smirnov test is 0.200, significantly > 0.05 cutoff.

Multicollinearity Test

Table 6. Multicollinearity test

Model	Dimension	Eigenvalue	Condition Index	(Constant)	Variance Proportions	
					X1	X2
1	1	2.990	1.000	.00	.00	.00
	2	.008	18.881	1.00	.07	.07
	3	.002	39.864	.00	.93	.93

a. Dependent Variable Y

Source: SPSS 2026 Analysis Results

Heteroscedasticity Test

Table 7. Heteroscedasticity Test								
Coefficientsa								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Tolerance	Statistics VIF
		B	Std. Error	Beta				
1	(Constant)	2.564	.788		3.253	.002		
	X1	.023	.057	.085	.399	.691	.260	3.850
	X2	-.075	.057	-.283	-	.187	.260	3.850
					1.329			
a. Dependent Variable: ABS_RES								
Source: SPSS 2026 Analysis Results								

The Glejser heteroscedasticity test produced significance values of 0.691 for X1 and 0.187 for X2, both above 0.05, suggesting the regression model does not suffer from heteroscedasticity.

Multiple linear regression

Table 8. Multiple linear regression						
Coefficients ^a						
Model	Unstandardized Coefficients	Standardized Coefficients Beta	t	Sig.	Collinearity Tolerance	Statistics VIF

The relationship between job satisfaction and psychological safety and job commitment among employees of PT Perkebunan Nusantara IV Regional I Medan (Erika Rahmadani)

		B	Std. Error				
1	(Constant)	4.474	1.415		3.162	.002	
	X1	.162	.102	.174	1.593	.115	3.850
	X2	.662	.102	.710	6.492	.000	3.850

a. Dependent Variable: Y

Source: SPSS 2026 Analysis Results

The multiple linear regression equation is as follows, according to the given table:

$$Y = 4.474 + 0.162X_1 + 0.662X_2$$

The explanation is: a) A stable of 4.474 refers to when both Workplace Well-Being (X1) and Psychological Safety (X2) are held at zero, Work Engagement (Y) is predicted to be 4.474; b) Workplace Well-Being (X1) has a significance value of 0.115, a regression coefficient of 0.162. While the positive coefficient points to a positive relationship with work engagement, the significance value exceeding 0.05 means this relationship cannot be considered statistically significant; c) Psychological Safety (X2) has a significance value of 0.000, a regression coefficient of 0.662. The positive coefficient again suggests a positive relationship with work engagement, and because the significance value is below 0.05, this relationship is statistically significant.

Hypothesis Test Results

Coefficient of Determination (R²) Test Results

Table 9. Coefficient of Determination (R²) Test Results

Model Summary ^a					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.865 ^a	.748	.742	1.452	2.024
a. Predictors: (Constant), X2, X1					
b. Dependent Variable: Y					

Source: SPSS 2026 Analysis Results

An R-square of 0.748 (74.8%) was obtained, meaning that Workplace Well-Being and Psychological Safety together account for nearly three-quarters of the variance in Work Engagement, the remaining 25.2% attributable to factors not included in the model.

The remaining 25.2% indicates that other factors outside the research model may also influence Work Engagement. Therefore, workplace well-being and psychological safety are important factors, but they do not fully explain variations in employees' work engagement.

t-test

Table 10. t-test (partial)

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Tolerance	Statistics VIF
	B	Std. Error					
1	(Constant)	4.474	1.415		3.162	.002	
	X1	.162	.102	.174	1.593	.115	3.850
	X2	.662	.102	.710	6.492	.000	3.850

a. Dependent Variable: Y

Source: SPSS 2026 Analysis Results

According to this outcomes of the (partial) t-test, the following was found:

- Workplace Well-Being and Work Engagement. The calculated t-value for X1 was 1.593, below the critical t-value of 1.990, a significance value of 0.115, above the 0.05 threshold. Because the calculated t-value did not exceed the critical value and the significance level was not met, this outcomes among Workplace Well-Being and Work Engagement, while positive in direction, does not reach statistical significance.

- b. Psychological Safety and Work Engagement, for X_2 , the calculated t-value was 6.492, exceeding the critical value of 1.990, with a significance value of 0.000, well below 0.05. Since the calculated t-value surpassed the critical threshold and the significance criterion was met, H_2 was supported: Psychological Safety has a positive and statistically significant relationship with Work Engagement.

F-Test (Simultaneous)

Table 11. F-test (simultaneous)

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	507.036	2	253.518	120.246	.000 ^b
	Residual	170.774	81	2.108		
	Total	677.810	83			

a. Dependent Variable: Y

b. Predictors: (Constant), X_2 , X_1

Source: SPSS 2026 Analysis Results

A significance value of 0.000 (below 0.05), a calculated F-value of 120.246, far exceeds the critical F-value of 3.11. Workplace Well-Being and Psychological Safety are shown to jointly and significantly predict Work Engagement.

The Relationship Between Workplace Well-Being and Work Engagement

The partial (t-test) results confirm that Workplace Well-Being is positively linked to Work Engagement among PTPN IV Regional I Medan employees, though this link falls short of statistical significance, with a regression coefficient of 0.162, a p-value of 0.115 (above 0.05). This direction of the relationship is positive, but its strength is not sufficient to be considered statistically conclusive.

This is in line with Che et al. (2022), argue that work engagement is shaped not only by workplace well-being but also by other elements such as recognition, respect, trust, and the sense of meaning employees find in their work. One possible explanation is that most respondents are at a relatively established stage of their careers and therefore tend to stay in their roles to preserve career stability meaning that even when workplace well-being is not yet optimal, engagement can still be sustained. Voordt and Jensen (2023) reported similar results, concluding that productivity, organizational performance, and employee satisfaction are all impacted by healthy workplaces.

A comparable pattern emerges in Ulfa and Sudiarti (2024), who found that job satisfaction among staff at the Aceh Singkil Regent's Office (Economic and Natural Resources Division) was driven primarily by sound HR management, a supportive work atmosphere, an institutionally aligned organizational culture, rather than by well-being alone. Likewise, Nazli et al. (2022), examining predictors of employee performance at Bank Sumut Sharia Branch Office Medan including Islamic values, wages, career development, and motivation found that only wages had a significant effect, while the other factors, including motivation, did not. Taken together, these findings support the idea that a theoretically relevant predictor such as workplace well-being can still produce a positive but non-significant relationship depending on the organizational context.

The Relationship Between Psychological Safety and Work Engagement

The partial t-test for Psychological Safety produced a t-value of 6.492, a significance level of 0.000 (below 0.05), leading to approval of H_2 . This confirms that Psychological Safety is positively and significantly related to Work Engagement among PTPN IV Regional I Medan employees: the more comfortable employees feel voicing opinions, asking questions, or sharing ideas without worrying about unfavourable outcomes, this more engaged they become in their work.

This is consistent with Edmondson's (1999) conceptualisation of psychological safety as a common conviction that interpersonal risk-taking is acceptable in the workplace without fear of rejection, punishment, or other negative outcomes conditions that give employees room to

communicate openly, get involved, and perform at their best. Dong et al. (2024) and Mucci et al. (2023) likewise, contend that psychological safety strengthens engagement by giving employees the confidence to speak up and participate, reinforcing the idea that greater perceived psychological safety corresponds to higher job engagement.

A similar conclusion can be drawn from Qadisyah et al. (2024), who found that psychologically oriented factors knowledge, attitude, and motivation significantly influenced university students' interest in Islamic entrepreneurship, suggesting that psychological-readiness variables tend to consistently shape positive outcomes across both organizational and educational contexts.

The Relationship Between Workplace Well-Being and Psychological Safety and Work Engagement

The simultaneous F-test produced a significance value of 0.000, a computed F-value of 120.246, far above the critical F-value of 3.11, showing that Workplace Well-Being and Psychological Safety together are significantly related to Work Engagement. This supports the hypothesis that the three variables are simultaneously related, confirming that Work Engagement is jointly shaped by both Workplace Well-Being and Psychological Safety.

These results are consistent with the Job Demands-Resources (JD-R) Model (Yuan et al., 2024), holds that engagement develops when individuals have sufficient job resources with job well-being and psychological safety functioning as resources that fuel energy and motivation. The Conservation of Resources (COR) theory (Widyawati, 2025) offers further support, proposing that individuals continually work to protect their psychological resources, so that adequate job well-being and psychological safety help prevent resource depletion while simultaneously strengthening engagement. Social Exchange Theory adds another layer of support, suggesting that employees reciprocate organizational support through positive attitudes such as heightened engagement. Finally, Affective Events Theory (Weigelt et al., 2021) aligns with these results by explaining that positive workplace emotions boost engagement well-being generates positive emotion, while psychological safety helps buffer negative emotion. Collectively, these theoretical perspectives reinforce the finding that job well-being and psychological safety jointly act a critical part in shaping employee work engagement.

Further support comes from Nurafni et al. (2024), who found that a supportive work environment significantly affects employee achievement at the Palm Oil Research Center (PPKS) Medan, illustrating how contextual and psychological resources together matter for workplace outcomes. Similarly, Nasution et al. (2023) found that access to financing meaningfully strengthens micro-enterprise capacity and member welfare at the Al-Ikhlas Women's Sharia Cooperative in Medan illustrating, in a different setting, how adequate resources can produce mutually reinforcing benefits, much as workplace well-being and psychological safety jointly contribute to work engagement in the present study.

4. CONCLUSION

The study concludes that workplace well-being has a positive but statistically insignificant relationship with work engagement, whereas psychological safety has a positive and statistically significant relationship with work engagement among employees of PT Perkebunan Nusantara IV Regional I Medan.

Simultaneously, workplace well-being and psychological safety significantly contribute to work engagement, indicating that employee engagement is strengthened through the combined influence of both factors. Overall, psychological safety emerges as the stronger predictor of work engagement, although enhancing workplace well-being remains important in supporting higher employee engagement.

This study contributes to human resource management in the plantation sector by highlighting the importance of psychological safety in strengthening employee work engagement.

The findings can serve as a consideration for organizations in developing a work environment that encourages employees to communicate, participate, and express their ideas openly.

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