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Psychological Mechanisms of Employee Engagement: The Mediating Role of Job Satisfaction in the Relationship between Participative Leadership, Work–Life Balance, and the Work Environment in Cooperatives

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Abstract :
Research on employee engagement in cooperative organizations remains relatively limited, even though cooperatives possess unique characteristics whereby employees act as both workers and members of the organization. Furthermore, the relationship between the influence of participatory leadership, work–life balance, the work environment and job satisfaction on employee engagement still shows empirical inconsistencies across various organizational contexts. Therefore, this study aims to analyze the influence of participatory leadership, work–life balance, and the work environment on employee engagement through the mediation of job satisfaction. This study was conducted at savings and loan cooperatives using a quantitative approach with saturated sampling of 71 permanent employees and was analyzed using SEM-PLS via SmartPLS 4.0. The results indicate that participatory leadership is the strongest predictor of job satisfaction and employee engagement, whilst job satisfaction was found to mediate the effects of participatory leadership, work–life balance, and the work environment on employee engagement. The research model explains 63.7% of the variance in employee engagement. This study contributes by extending the application of the Stimulus-Organism-Response Theory to the context of cooperatives and by confirming the role of job satisfaction as a psychological mechanism linking organizational stimuli to employee engagement.

INTRODUCTION

Employee engagement is defined by William A. Kahn (1990), as cited in Saks (2022), as the integration of organizational members into their work roles through physical, cognitive, and emotional self-expression whilst performing their duties. Globally, the Gallup State of the Global Workplace 2026 report notes that global employee engagement stood at 20% in 2025, the lowest level in the last five years (Gallup, 2026). This decline indicates a level of engagement equivalent to that seen during the COVID-19 lockdown, signaling that the world of work has suffered a significant setback in terms of engagement.

In Indonesia, empirical findings across sectors such as government, banking, logistics and consultancy further reinforce the phenomenon of employee disengagement in the country (Haryanto et al., 2023; Hasan, 2023; Thiorina, 2023; Zhafira et al., 2025). However, previous research has predominantly focused on the direct influence of organizational factors on employee engagement; consequently, there is a need to explain how organizational factors first shape affective evaluations of organizational stimuli, which subsequently drive employee engagement.

Cooperative organizations provide a theoretically interesting context for studying employee engagement. In cooperatives, employees are both members and owners, thereby gaining a share in profits and participating in democratic decision-making (Baltazar & Franco, 2023; Nassani et al., 2024). Theoretically, this situation should enhance engagement. However, according to Peck & Shu (2018), formal ownership does not automatically lead to satisfaction, motivation, and performance without psychological ownership. This sense of ownership is formed through three channels: control, knowledge, and self-investment, which are structurally available within cooperatives through voting rights, access to information, and equity ownership.

However, formal ownership does not automatically have a positive impact (Del & Zattoni, 2025; Hochreiter et al., 2023). This suggests that ownership rights are often not accompanied by genuine participation. In other words, engagement requires enabling factors. Based on (Kahn, 1990) conceptual framework of employee engagement and the cooperative context, this study focuses on participatory leadership, work-life balance, and the work environment defined in terms of psychological safety and availability, as well as job satisfaction as a representation of meaningfulness in shaping employee engagement (Truss et al., 2017; Toufighi et al., 2024).

The literature reviewed indicates a consistent pattern in which organizational factors play a crucial role in shaping employees' attitudes and work-related behaviors. Participative leadership, work–life balance, and work environment are theoretically positioned as organizational stimuli that influence employees' psychological conditions. Empirical evidence demonstrates that employee involvement in decision-making processes, the ability to maintain a healthy balance between work and personal life, and the availability of a supportive work environment significantly contribute to higher levels of job satisfaction (Fatoki, 2023; Made et al., 2025; Aloulou et al., 2023; Prasad & Pasupathi, 2025; Kagan et al., 2021; Milhem et al., 2024). These findings suggest that when organizations provide favorable working conditions, employees tend to develop more positive cognitive and affective evaluations of their jobs, resulting in greater job satisfaction.

Furthermore, the literature reveals that these organizational factors not only influence job satisfaction but also directly contribute to employee engagement. Participative leadership encourages engagement by empowering employees and fostering open communication (Ai et al., 2021; Ishaque et al., 2022). Similarly, work–life balance supports employees' psychological well-being, enabling them to invest greater energy and commitment in their work (Setiadi et al., 2024; Ahmed et al., 2025; Primayani et al., 2025). A supportive work environment also enhances employee engagement by creating a sense of comfort, security, and organizational support (Judeh, 2021; Sentoso & Muchsinati, 2024; Zeer & Fijuljanin, 2024). In addition, job satisfaction has been identified as a significant predictor of employee engagement (Mittal & Kumar, 2025; Kulachai, 2025). Collectively, these findings indicate that job satisfaction serves not only as an

outcome of organizational stimuli but also as an important psychological mechanism through which organizational factors strengthen employee engagement.

The effects of participatory leadership, work–life balance, and the work environment on job satisfaction and employee engagement are inconsistent across different organisational contexts such as the service, healthcare, education, government, and small and medium-sized enterprise sectors with findings showing no significant effect (Idris et al., 2020; Novita et al., 2023; Pramana & Putra, 2022; Wiliyanarti et al., 2025) which contrast with significant findings (Fatoki, 2023; Ishaque et al., 2022; Riyanto et al., 2022; Qustolani & Reviani, 2024) and even when significant, their contribution is relatively small and tends to operate indirectly through diverse yet fragmented mediators. Consequently, the literature has yet to comprehensively explain the underlying psychological mechanisms by which organizational factors produce differing levels of employee engagement across contexts.

The inconsistency of the findings confirms that the influence of variables is contextual; however, previous research has remained confined to the government, logistics, banking, and tourism sectors, meaning that the context of cooperatives, where employees have the dual role of both workers and owners, has been largely overlooked. At the same time, the researchers were interested in the affective mechanisms of employees after receiving organizational stimuli, testing job satisfaction as a mechanism shaping engagement under conditions of formal ownership; previous empirical findings regarding the conflicting relationships between constructs in this study have never been retested under a different incentive structure. The novelty of this research lies in the integrated testing of these mechanisms within the context of cooperatives as a new boundary condition.

This study employs the Stimulus–Organism–Response (S–O–R) Theory framework developed by Russell and Mehrabian (1974). In this study, participatory leadership, work–life balance, and the work environment serve as stimuli; job satisfaction as the organism; and employee engagement as the response among employees at the KSP Kopdit Swasti Sari branch in Kupang City, representing a large-scale cooperative. The model encompasses the direct effects between variables as well as the mediating role of job satisfaction in the indirect relationship.

The contribution of this study lies in testing job satisfaction as a mediator in the relationship between participatory leadership, work–life balance, and the working environment, and employee engagement within the context of cooperatives. Theoretically, this study expands the application of the Stimulus–Organism–Response Theory whilst identifying the boundary conditions of the relationships between variables within the cooperative ownership structure. In practical terms, these findings provide a basis for cooperative management to design more effective strategies for enhancing employee engagement.

Drawing upon the Stimulus–Organism–Response (SOR) framework and the empirical findings discussed above, this study proposes an integrated conceptual model in which participative leadership, work–life balance, and work environment function as organizational stimuli that influence job satisfaction as an internal psychological state (organism), which subsequently affects employee engagement as a behavioral response. Specifically in Figure 1, H1 proposes that participative leadership has a significant positive effect on job satisfaction, H2 proposes that work–life balance has a significant positive effect on job satisfaction, and H3 proposes that the work environment has a significant

positive effect on job satisfaction. Furthermore, H4 proposes that participative leadership has a significant positive effect on employee engagement; H5 proposes that work–life balance has a significant positive effect on employee engagement; and H6 proposes that the work environment has a significant positive effect on employee engagement. As job satisfaction is expected to serve as a key psychological mechanism linking organizational stimuli and employee behavioral outcomes, H7 proposes that job satisfaction has a significant positive effect on employee engagement. In addition, this study examines the mediating role of job satisfaction, whereby H8 proposes that participative leadership has a significant positive effect on employee engagement through job satisfaction; H9 proposes that work–life balance has a significant positive effect on employee engagement through job satisfaction, and H10 proposes that the work environment has a significant positive effect on employee engagement through job satisfaction.

Figure 1. Conceptual Model

RESEARCH METHOD

Research Design and Location

This study employs a quantitative approach of the explanatory research approach to examine the causal relationships between variables through hypothesis testing. Neuber et al. (2022). The research design is cross-sectional, with data collected at a single point in time. The research was conducted at the KSP Kopdit Swasti Sari branch in Kupang City, East Nusa Tenggara, the largest branch, with 55,155 members and overseeing 10 cash offices. The choice of location was based on two considerations: (1) indications of employee disengagement identified through an increase in unexcused absences, which confirms that lower engagement tends to be accompanied by a higher frequency of absenteeism; and (2) the need to test the construct of employee engagement in the context of cooperatives as a new boundary condition, where employees play a dual role as both workers and owners (members) of the organisation.

Population and Sample

The study population comprised all 71 permanent employees of the KSP Kopdit Swasti Sari branch in Kupang City. Given that all members of the population met the study criteria and the total number was fewer than 100, this study employed saturated sampling, a sampling technique in which the entire population is used as the sample. Methodologically, the use of a saturated sample is stronger than probabilistic techniques for a limited population size, as it eliminates sampling error and maximises the

representativeness of the data.

The sample size of n=71 meets the minimum requirement for PLS-SEM analysis based on the 10-times rule. The maximum number of structural paths leading to a single construct in this model is four paths leading to Employee Engagement, so the minimum required sample size is 40 respondents. With n=71, this study's sample exceeds that threshold by 77.5%.

The inclusion criteria for respondents were set as employees who had been working for at least six months. This timeframe was established based on the nature of employee engagement as a psychological state that develops gradually through the experience of continuously performing one's job role (Kahn, 1990; Taris et al., 2002). Employees in the early stages of employment are still in the organizational socialization phase, characterized by role uncertainty, meaning that perceptions of the job have not yet been consistently formed and may lead to measurement bias.

Research Variables and Instruments

This study examines five variables positioned within the framework of the Stimulus-Organism-Response Theory (Russell & Mehrabian, 1974). The exogenous variables (stimuli) consist of: (1) Participative Leadership (X1), measured using three indicators: participation in decision-making, degree of participation, and participation targets, adopted from Arnold et al. (2000) and Somech (2002) in Wang et al. (2025), comprising 9 items. (2) Work–Life Balance (X2), measured using three indicators: time balance, engagement balance, and satisfaction balance from Greenhaus et al. (2003), comprising 9 items. (3) Work Environment (X3), measured using four indicators from the Healthcare Provider Work Index (HPWI) developed by McAuliffe et al. (2009), comprising 13 items.

The work environment instrument used in this study was adapted from the Healthcare Provider Work Index (HPWI) developed by McAuliffe et al. (2009). The HPWI was originally designed to assess the work environment of mid-level healthcare workers in Malawi of modifying the Nursing Work Index-Revised (NWI-R) developed by Aiken & Patrician (2000). Although the original context was healthcare facilities in low-income countries, the four dimensions of the HPWI are universal and relevant across organizational sectors, as they reflect fundamental aspects of the work environment that influence employee motivation and performance in various contexts.

The four dimensions of HPWI (1) resource adequacy, (2) management support, (3) workplace relationships, and (4) control over work practices are context-invariant in the sense that the availability of resources, the quality of leadership, interpersonal relationships, and autonomy at work are fundamental conditions that determine the quality of employees' work experiences in any sector (Greig et al., 2021). Specifically, these dimensions align with the components of psychological safety and availability within Kahn's (1990) framework, as well as with the aspects of management support and workplace relationships that have consistently been found to be relevant in workplace research within non-health contexts (Kagan et al., 2021; Milhem et al., 2024).

The instrument was adapted in two stages: (1) translation into Indonesian (forward translation), and (2) adaptation of items to the cooperative context; for example, the term 'patient' was replaced with 'member', and the term health facility' was replaced with 'cooperative office'. The suitability of this adaptation was confirmed through a pilot test prior to the main data collection (see the following section).

The mediating endogenous variable (organism) is Job Satisfaction (Y1), measured using five indicators from the Spector Job Satisfaction Survey (1985), comprising 20 items. The main endogenous variable (response) is Employee Engagement (Y2), measured using the short version of the Utrecht Work Engagement Scale (UWES-9) by Schaufeli et al. (2006), comprising 9 items. All items are measured using a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

Pilot Test and Instrument Validation

Prior to the main data collection, a pilot test was conducted with 30 employees of KSP Kopdit Swasti Sari from branches outside Kupang City who shared similar work-culture characteristics with the research subjects but were not included in the main sample. The selection of pilot test respondents from other branches that were institutionally homogeneous was intended to ensure the generalisability of the instrument within the same organizational ecosystem before it was applied to the main sample. The instruments were evaluated using the PLS-SEM approach in SmartPLS 4.0, assessing convergent validity (outer loadings and the AVE) and construct reliability. The results of the pilot test are presented in Table 1.

Table 1. Pilot Test Results: Convergent Validity and Construct Reliability (n=30)

Variable	Cronbach's α	CR (rho_c)	AVE (min)	Description
Participative Leadership (KP)	0,870	0,921	0,750	Reliabel & Valid
Work–Life Balance (WLB)	0,870	0,921	0,796	Reliabel & Valid
Work Environment (WE)	0,920	0,950	0,595	Reliabel & Valid
Job Satisfaction (JS)	0,880	0,959	0,563	Reliabel & Valid
Employee Engagement (EE)	0,851	0,900	0,693	Reliabel & Valid

Note: All external loadings > 0.70; AVE > 0.50; Cronbach's α and CR > 0.70. Source: Primary data, processed by the researcher (2026).

All variables had outer loadings above 0.70, AVEs above 0.50, and Cronbach's Alpha and composite reliability above 0.70. Discriminant validity was also established across all paths, with HTMT values < 0.90 (maximum: 0.581). Consequently, the instrument was deemed valid and reliable in the context of KSP Kopdit Swasti Sari and suitable for use in the main data collection.

Control of Common Method Bias (CMB)

Given that a cross-sectional design using a single source of self-reported data has the potential to introduce Common Method Bias (CMB) (Podsakoff et al., 2003). This study implemented two layers of CMB control. First, procedural (ex ante) controls: all respondents were guaranteed anonymity, were instructed that there were no right or wrong answers, items across variables were presented separately in different blocks, and several negative (reverse-coded) items were inserted to detect tendencies towards acquiescence bias.

Secondly, statistical control (ex post) was conducted using the Full Collinearity Assessment approach. This method tests for multicollinearity (MC) by examining the Variance Inflation Factor (VIF) values for all constructs in the model; if all VIF values are < 3.3, then MC is deemed not to pose a significant threat. The test results show that all VIF values in this research model are below 3.3 (the highest is 2.200), indicating that CMB does not statistically threaten the validity of this study's findings.

Data Analysis Techniques

Data analysis was conducted in two stages. First, descriptive statistics were used to summarize the distribution of respondents' answers using percentages, means, and standard deviations. Second, an inferential analysis was performed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) in SmartPLS 4.0. The SEM-PLS method was chosen because it is suitable for relatively small sample sizes, non-normally distributed data, and complex research models with mediating variables. All constructs utilized a reflective measurement model with a hierarchical component model approach.

The measurement model (outer model) was evaluated using three criteria: (1) convergent validity, with outer loadings of ≥ 0.70 and AVE of ≥ 0.50; (2) discriminant validity, using the HTMT approach (< 0.90), the Fornell–Larcker criteria, and cross-loadings; and (3) construct reliability, with Cronbach's Alpha and Composite Reliability values ≥ 0.70. The evaluation of the structural model (inner model) includes: (1) testing for multicollinearity using the Variance Inflation Factor (VIF < 5.00); (2) the coefficient of determination (R^2) with categories 0.75 = strong, 0.50 = moderate, 0.25 = weak; (3) effect size (f^2) with categories 0.02 = small, 0.15 = moderate, 0.35 = large; (4) predictive relevance (Q^2) with a value of $Q^2 > 0$ indicating that the model has predictive relevance, and values of 0.02, 0.15, 0.35 indicating small, moderate, and large levels of relevance respectively (Sholihin, 2020); and (5) path coefficients to indicate the direction and strength of the influence between constructs.

Hypothesis testing was conducted using a bootstrapping procedure with 5,000 subsamples. At a 5% significance level (two-tailed), a relationship was deemed significant if the t-statistic was ≥ 1.96 or the p-value was < 0.05, and the confidence interval did not cross the zero value. Mediation testing was carried out by evaluating the significance of the indirect effect: full mediation occurs when the indirect effect is significant and the direct effect is not significant, whilst partial or complementary mediation occurs when both are significant and in the same direction (Sholihin, 2020). Given the cross-sectional design used, the findings of this study indicate a directional association consistent with the theoretical model, rather than a temporal causal relationship (Hair et al., 2021).

RESULTS AND DISCUSSION

Results

The respondents in this study comprised 71 permanent employees of the KSP Kopdit Swasti Sari branch in Kupang. By gender, the respondents comprised 34 men (48%) and 37 women (52%). In terms of age, the majority of respondents were in the 29–34 age group (69%), with the youngest being 26 and the oldest 46, indicating a predominance of employees of working age. In terms of education, respondents with a Bachelor's degree (S1) constituted the majority at 51%, followed by those with a high school diploma (SMA/SMK/equivalent) (45%) and a Diploma (4%). Based on length of service, the majority of respondents had been working for 5–7 years (37%), followed by 8–10 years (21%) and 2–4 years (15%), indicating a predominance of employees with moderate work experience. In terms of marital status, 59% of respondents were married, and 41% were unmarried.

The results of the descriptive analysis show that all research variables have relatively high mean values, ranging from 3.634 to 3.805. The work environment variable had the highest mean value (3.805), followed by employee engagement (3.771), work–life balance (3.747), job satisfaction (3.732), and participatory leadership (3.634).

Evaluation of the Measurement Model

The measurement model was assessed at the higher-order construct (HOC) level using a reflective–reflective second-order approach. The estimated model, including outer loadings, coefficients of determination (R^2), and path coefficients, is illustrated in Figure 2.

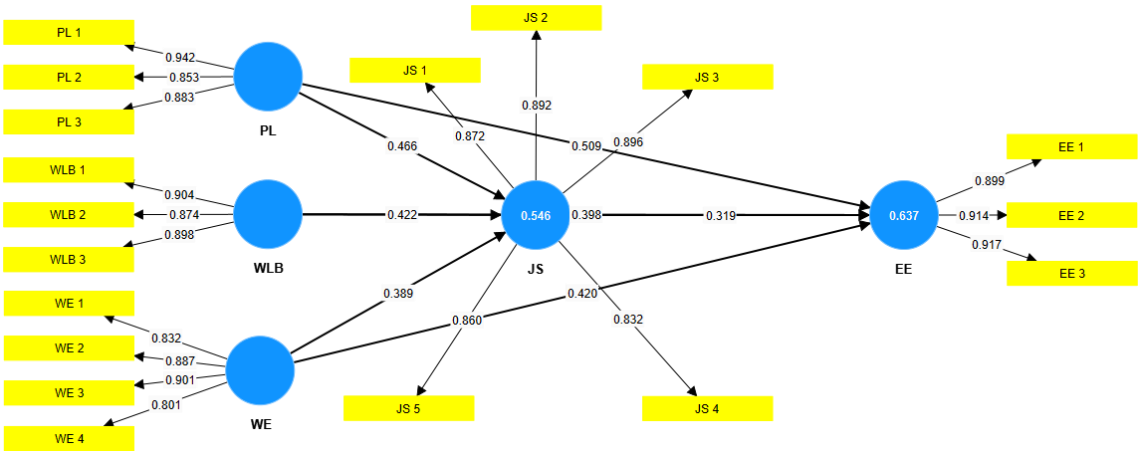

Figure 2. Estimated SEM Model

The evaluation encompassed tests of convergent validity, discriminant validity, and construct reliability to ensure the adequacy of the measurement properties. The results of the convergent validity and reliability assessments are presented in Table 2.

Table 2. Construct Reliability and Convergent Validity

Variable	Indicator	Outer Loading	Cronbach's α	CR (rho_a)	AVE
Participative Leadership (PL)	PL 1	0.942	0.897	0.900	0.798
	PL 2	0.853			
	PL 3	0.883			
Work–Life Balance (WLB)	WLB 1	0.904	0.837	0.909	0.796
	WLB 2	0.874			
	WLB 3	0.898			
Work Environment (WE)	WE 1	0.832	0.920	0.924	0.733
	WE 2	0.887			
	WE 3	0.901			
	WE 4	0.801			
Job Satisfaction (JS)	JS 1	0.872	0.880	0.911	0.758
	JS 2	0.892			
	JS 3	0.896			
	JS 4	0.832			
	JS 5	0.860			
Employee Engagement (EE)	EE 1	0.889	0.872	0.880	0.828
	EE 2	0.914			
	EE 3	0.917			

* For all constructs, the outer loadings were > 0.70; the AVE was > 0.50; and Cronbach's α and CR were > 0.70.

In Table 2, all indicators have outer loadings above 0.70 and AVE values above 0.50, thus fulfilling the criteria for convergent validity. With Cronbach's Alpha and Composite Reliability rho_a values all above the threshold of 0.70. Next, discriminant validity was tested using two approaches: the Fornell–Larcker Criterion and the Heterotrait–Monotrait Ratio (HTMT). The test results are presented in Table 2.

Table 3. Discriminant Validity

Panel A: Fornell–Larcker Criterion

	EE	PL	JS	WE	WLB
Employee Engagement (EE)	0.910				
Participative Leadership (PL)	0.522	0.893			
Job Satisfaction (JS)	0.712	0.482	0.871		
Work Environment (WE)	0.389	-0.023	0.358	0.856	
Work–Life Balance (WLB)	0.407	0.057	0.430	-0.047	0.892

* Diagonal values (bold) represent the √AVE of each construct. Discriminant validity is met when the √AVE exceeds all inter-construct correlations in the same row and column.

Panel B: Heterotrait–Monotrait Ratio (HTMT)

	EE	PL	JS	WE	WLB
Employee Engagement (EE)					
Participative Leadership (PL)	0.577				
Job Satisfaction (JS)	0.777	0.254			
Work Environment (WE)	0.424	0.115	0.375		
Work–Life Balance (WLB)	0.456	0.0097	0.475	0.130	

* All HTMT values between constructs are below 0.90, thus meeting the criteria for discriminant validity.

Panel C: Cross-Loadings

	Participative Leadership	Work–Life Balance	Work Environment	Job Satisfaction	Employee Engagement
X1.1	**0.942**	0.081	0.065	0.513	0.554
X1.2	**0.853**	0.030	-0.078	0.349	0.417
X1.3	**0.883**	0.030	-0.079	0.406	0.406
X2.1	0.068	**0.904**	0.045	0.422	0.404
X2.2	-0.037	**0.874**	-0.085	0.369	0.354
X2.3	0.122	**0.898**	-0.101	0.354	0.324
X3.1	-0.092	-0.148	**0.832**	0.126	0.251
X3.2	0.060	-0.002	**0.887**	0.328	0.377
X3.3	-0.036	-0.042	**0.901**	0.360	0.395
X3.4	-0.047	-0.014	**0.801**	0.338	0.266
Y1.1	0.397	0.298	0.382	**0.872**	0.540
Y1.2	0.455	0.422	0.303	**0.892**	0.721
Y1.3	0.499	0.381	0.296	**0.896**	0.617
Y1.4	0.327	0.424	0.281	**0.832**	0.594
Y1.5	0.408	0.341	0.304	**0.860**	0.611
Y2.1	0.385	0.377	0.379	0.585	**0.899**
Y2.2	0.498	0.407	0.362	0.696	**0.914**
Y2.3	0.534	0.326	0.324	0.655	**0.917**

* Bold values indicate each indicator's loading on its intended construct. Discriminant validity is met when each indicator loads higher on its own construct than on any other construct.

In Table 3, the results of the Fornell – Larcker Criterion (Panel A) show that the √AVE values for each construct (diagonal) are greater than all inter-construct correlations. The HTMT results (Panel B) confirm that all ratios are below 0.90, with the highest value being 0.777. Both approaches indicate that discriminant validity is met. Consequently, all instruments are deemed valid and reliable and are therefore suitable for structural model evaluation.

Evaluation of the Structural Model

Once the measurement model is valid and reliable, the evaluation proceeds to the structural model. The tests include multicollinearity (VIF), the coefficient of determination (R^2), the effect size (f^2), and Stone–Geisser Q^2.

Table 4. Variance Inflation Factor (VIF)

Predictor	EE	JS
Participative Leadership (PL)	1.482	1.004
Work–Life Balance (WLB)	1.397	1.005
Work Environment (WE)	1.335	1.003
Job Satisfaction (JS)	2.200	-

As shown in Table 4, all VIF values are well below the maximum threshold of 5.00, indicating no issues of multicollinearity in the structural model.

Table 5. Coefficient of Determination (R^2), Effect Size (f^2), and Stone-Geisser Q^2

Panel A: R-Square

Exogenous variables	R^2	R^2 Adjusted
Employee Engagement *(EE)*	0.637	0.615
Job Satisfaction (JS)	0.546	0.525

Panel B: f-Square

Relationships between Latent Variables and Predictors	f^2	Description
Participative Leadership → Employee Engagement	0.241	Medium
Participative Leadership → Job Satisfaction	0.477	High
Job Satisfaction → Employee Engagement	0.128	Small
Work Environment → Employee Engagement	0.180	Medium
Work Environment → Job Satisfaction	0.332	Medium
Work–Life Balance → Employee Engagement	0.136	Small
Work–Life Balance → Job Satisfaction	0.390	High

* The f^2 thresholds are 0.02 = low, 0.15 = moderate, and 0.35 = high.

Panel C: *Q*-Square

Endogenous Variable	Q^2
Employee Engagement (EE)	0.529
Job Satisfaction (JS)	0.484

Source: Processed primary data (2026)

In Table 5, Panel A, the R^2 value for employee engagement of 0.637 indicates that participative leadership, work–life balance, the work environment, and job satisfaction account for 63.7% of the variance in employee engagement. The R^2 value for job satisfaction of 0.546 indicates that the three exogenous variables account for 54.6% of the variance in job satisfaction. Both values fall within the moderate-to-near-strong category.

In Panel B, the evaluation of effect sizes (f^2) reveals variations in the contributions of the different pathways. Participative leadership has a large effect on job satisfaction (f^2=0.477) and a moderate effect on employee engagement (f^2=0.241). Work–life balance has a large effect on job satisfaction (f^2=0.390) but a small effect on employee engagement (f^2=0.136). The work environment has a moderate effect on job satisfaction (f^2=0.332) and on employee engagement (f^2=0.180). Job satisfaction itself has a small effect on employee engagement (f^2 = 0.128). These findings indicate that the largest contribution of exogenous variables consistently lies on the path leading to job satisfaction.

The Q^2 values in Panel C show that all endogenous constructs have Q^2 values greater than 0, specifically 0.529 for Employee Engagement and 0.484 for Job Satisfaction. These findings indicate that the model has good predictive validity, meaning it can adequately reconstruct the observed values for both constructs.

Hypothesis Testing

Direct Effect

Hypothesis testing was carried out using a bootstrapping procedure with 5,000 subsamples. The results of the direct effect tests are presented in Table 6.

Table 6. Results of the Direct Effect Test

Hypothesis	β	t-statistic	p-value	Description
H1. PL → JS	0.466	5.401	0.000	Significant
H2. WLB → JS	0.422	4.974	0.000	Significant
H3. WE → JS	0.389	4.753	0.000	Significant
H4. PL → EE	0.360	4.437	0.000	Significant
H5. WLB → EE	0.263	3.099	0.002	Significant
H6. WE → EE	0.296	2.833	0.005	Significant
H7. JS → EE	0.319	3.243	0.001	Significant

Source: Processed primary data, 2026.

All seven hypotheses regarding direct effects were accepted with p-values < 0.05. Participative leadership was the most dominant determinant of both job satisfaction (β=0.466) and employee engagement (β=0.360). In the path to job satisfaction, work–life balance (β=0.422) ranked second, followed by the work environment (β=0.389). In the path to employee engagement, job satisfaction (β=0.319) ranked second, followed by the work environment (β=0.296) and work–life balance (β=0.263).

Indirect Effect

The mediation analysis was conducted by assessing the significance of the indirect effect via job satisfaction. The results of the analysis are presented in Table 7.

Table 7. Specific Indirect Effect

Hypothesis	β	t-statistic	p-value	Type of Mediation
H8. PL → JS → EE	0.149	2.497	0.013	Partial
H9. WLB → JS → EE	0.135	2.695	0.007	Partial
H10. WE → JS → EE	0.124	2.921	0.004	Partial

Source: Processed primary data (2026)

The mediation hypothesis was accepted: job satisfaction significantly mediated the relationships between the three exogenous variables and employee engagement. As the direct and indirect effects on all three pathways were equally significant and had the same (positive) direction, the type of mediation observed is complementary mediation or partial mediation. These findings indicate that participative leadership, work–life balance, and the work environment influence employee engagement both directly and through the psychological mechanism of job satisfaction. The largest total effect (direct + indirect) on employee engagement stems from participative leadership (0.360 + 0.149 = 0.509), followed by work–life balance (0.263 + 0.135 = 0.398) and the work environment (0.296 + 0.124 = 0.420). Overall, all hypotheses in this study were accepted. The model developed in this study explains 63.7% of the variance in employee engagement and 54.6% of the variance in job satisfaction, demonstrating adequate predictive power in the context of credit unions.

Discussion

This study stems from the question of what factors influence employee engagement in a context where employees are formally the owners of the organization, such as KSP Kopdit Swasti Sari. Del and Zattoni (2025) argue that the formal allocation of ownership rights does not automatically result in employee commitment; supportive factors are required to activate this potential for ownership. The findings of this study provide an empirical answer: participatory leadership, work–life balance, and the work environment significantly influence employee engagement both directly and through the mediation of job satisfaction, with the model explaining 63.7% of the variance in engagement.

Participative leadership is the most significant determinant of both job satisfaction (β=0.466) and employee engagement (β=0.360), with a large effect size on job satisfaction (f^2=0.477) and a moderate effect size on engagement (f^2=0.241). The strength of this influence is inseparable from the unique characteristics of the cooperative context, which serve as a boundary condition of this study. Within the cooperative structure, employees are formally both members and owners of the organization, possessing voting rights in members' meetings and access to financial information. However, Adamopoulos (2022) emphasize that formal ownership rights do not automatically result in psychological ownership without the experience of real control in day-to-day activities. It is here that participatory leadership plays a role not merely managerial but structural. This finding is consistent with the psychological ownership perspective, which holds that participatory leadership can enhance employees' perceptions of control over the organization. In other words, in the context of cooperatives, participatory leadership is not merely a standard organizational stimulus, but a mechanism that bridges the gap between ownership on paper and the psychological sense of ownership, a prerequisite for ownership to have a positive effect on work attitudes and behavior.

Within the S–O–R framework, Russell & Mehrabian (1974) argue that employee involvement in decision-making functions as a social stimulus that shapes perceptions of being valued and having control, which in turn enhances job satisfaction as an organism, whilst simultaneously fostering vigor, dedication, and absorption as a response. The strength of the path coefficients on both routes, both direct and mediated, can be explained by the fact that this stimulus operates on two levels simultaneously: affectively through a sense of being valued that enhances satisfaction, and cognitively through the reinforcement of a sense of ownership that drives engagement. This explains why the influence of participatory leadership is not only significant but also consistently strong across all model pathways. As in studies within conventional contexts such as SMEs in South Africa Fatoki, (2023), hotels in Saudi Arabia Nassani et al., (2024), the agricultural sector in Malaysia Ai et al, (2021), and the hospitality sector in Pakistan Ishaque et al., (2022) report similar significant effects, the cooperative context may contribute to the strength of this relationship, where each participatory leadership practice is accepted by employees not merely as a managerial policy, but also as the fulfilment of their rights as owners, thereby making the psychological impact more dominant.

Work–life balance exhibits a distinct pattern of influence: a strong effect on job satisfaction (β=0.422; f^2=0.390) but a weaker effect on engagement (β=0.263; f^2=0.136). This pattern suggests that work–life balance influences engagement more effectively via an indirect pathway, first fostering job satisfaction, which then drives engagement.

Mediation data support this interpretation; the indirect effect (β=0.135) accounts for a significant proportion of the total effect (0.398), consistent with Primayani et al. (2025). Descriptively, the low score for availability of rest time (3.648) is consistent with the low score for vigor (3.662), confirming that an imbalance in recovery time disrupts the availability of physical energy for engagement (Kahn, 1990). In the context of cooperatives, where employees hold dual roles as workers and owners, the need for this balance is even more critical as dual responsibilities increase cognitive and emotional burdens.

The work environment received the highest score (grand mean 3.805) but was not the strongest determinant (β = 0.389 for job satisfaction; β = 0.296 for engagement). Its main strength lies in the relational aspect of colleagues' willingness to help, which received the highest score (3.901), whilst decision-making autonomy received the lowest score (3.676), as understood from the regulations and principles of prudence in the cooperative sector. Although the direct effect is moderate, the total contribution of the work environment (0.420) exceeds that of work–life balance (0.398), consistent with (Judeh, 2021; Simanjuntak et al., 2023). These findings align with the psychological ownership perspective regarding the importance of self-investment in building organizational commitment. Peck and Shu (2018) argue that collaboration among fellow member-owners strengthens psychological bonds with the organization.

Job satisfaction has a significant effect on engagement (β = 0.319) and acts as a partial mediator (complementary mediation) across all pathways. The largest mediation coefficient is for participatory leadership (0.149), followed by work–life balance (0.135) and the work environment (0.124), reinforcing the findings of Primayani et al. (2025) and Simanjuntak et al. (2023). This type of partial mediation confirms the position of job satisfaction as an organism that transforms stimuli into engagement within the S–O–R framework.

These findings address the three research gaps. First, regarding the contextual gap, all three exogenous variables were found to be significant in the cooperative context, indicating that although formal ownership provides structural incentives, conventional organizational factors remain central. Second, regarding the theoretical gap, partial mediation suggests that organizational stimuli can be mediated by job satisfaction to generate engagement, even in contexts where employees are owners, emphasizing the importance of considering contextual factors and participatory organizational structures in explaining employee behavior and outcomes. In the cooperative context, employees' dual role as owners potentially influences the relationship between organizational factors—such as participatory leadership and employee engagement. Third, regarding the empirical gap, the significance of all ten hypotheses indicates that cooperative characteristics, particularly ownership structure and participatory culture, serve as boundary conditions that strengthen the relationships between variables, as any improvement in working conditions is perceived by employees not only as a benefit to workers but also as an investment in the organization they belong to.

Theoretical Implications

This study contributes theoretically in three ways. First, it extends the application of the Stimulus–Organism–Response (S–O–R) Theory to the organizational context of Indonesian cooperatives, where employees simultaneously function as workers and owners. The findings of partial mediation across all pathways suggest that organizational

stimuli continue to play an important role in shaping employee engagement through job satisfaction, an internal psychological mechanism, thereby supporting the core proposition of the S–O–R framework. Second, the study provides evidence that participative leadership is more influential than work–life balance and the work environment in predicting job satisfaction and employee engagement. The significance of all hypothesized relationships indicates that cooperative ownership structures and participatory cultures may strengthen the relationships among leadership, work conditions, job satisfaction, and engagement. Nevertheless, given the cross-sectional design, self-reported data, small sample size, and single-branch setting, these findings should be interpreted cautiously and regarded as preliminary evidence rather than definitive confirmation of contextual effects.

Practical Implications

This study offers practical implications that are particularly relevant to cooperative organizations, in which employees serve as both workers and owners. The findings suggest that management should focus on creating an organizational ecosystem that simultaneously enhances job satisfaction and employee engagement. The highest priority is strengthening participative leadership practices, as it emerged as the strongest predictor of both job satisfaction and employee engagement. Cooperative managers should therefore establish structured and meaningful forums that encourage employees to express their opinions and participate in decision-making processes. In addition, work–life balance requires attention, particularly regarding employees' opportunities for recovery and rest, as this dimension recorded the lowest score and was associated with lower levels of vigor.

Limitations and Recommendations for Future Research

This study has several limitations that should be acknowledged. First, the use of self-reported measures may have introduced subjective bias and common method variance. Second, data were collected from a single cooperative branch, limiting the generalizability of the findings to other cooperative settings and organizational contexts. Third, the cross-sectional design restricts the ability to establish causal relationships among the variables over time.

CONCLUSION

In the context of cooperatives, where employees are also owners, formal ownership alone is not sufficient to generate employee engagement without adequate organizational support. The key lesson learned from this study is that job satisfaction functions as an important psychological mechanism. All three exogenous variables influence engagement both directly and via job satisfaction, indicating that this psychological pathway makes a significant additional contribution even when direct effects are already present. Theoretically, these findings extend the application of the S–O –R Theory into the context of cooperative organizations and provide initial indications that the cooperative ownership structure has the potential to strengthen the influence of participatory leadership through the activation of the control route of psychological ownership—a mechanism that is structurally easier to activate in cooperatives than in conventional organizations. However, cross-contextual empirical comparisons are still required to confirm this claim.

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