

The Social Architecture of the Shop Floor: How Perceived Organizational Support Mediates the Link Between Proactive Employee Relations and Work Engagement

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Abstract

In the context of India's rapidly expanding manufacturing sector, particularly within the high-pressure industrial hubs of Pune, retaining an engaged shop-floor workforce is a critical, yet unresolved, challenge. Traditional reactive industrial relations have proven insufficient. This study proposes a model based on Social Exchange Theory, positing that Proactive Employee Relations (PER)—a strategic, trust-based approach to the "social architecture" of the workplace—enhances Work Engagement (WE). This study investigates the psychological mechanism of this relationship, examining Perceived Organizational Support (POS) as the key mediator. A quantitative, cross-sectional study was conducted. Data were collected from $N = 187$ shop-floor employees and operational personnel within the Pune District manufacturing belt, utilizing a purposive sampling strategy. Validated scales were used for PER, POS (Survey of Perceived Organizational Support), and WE (Utrecht Work Engagement Scale-9). The data was analyzed using descriptive statistics, reliability analysis, correlation, and mediation analysis using the Hayes' PROCESS macro (Model 4). The findings indicate that PER, POS, and WE are all significantly and positively correlated. The mediation analysis confirms the study's central thesis. PER has a significant positive total effect on WE ($B = .452, p < .001$), and a significant positive effect on POS ($B = .648, p < .001$). Crucially, POS was found to *partially mediate* the relationship between PER and WE. The indirect effect was significant (Effect = .311, 95% BootCI = [.198, .429]), demonstrating that PER influences WE largely by enhancing employees' perceptions that the organization values their contribution and cares for their well-being. This study provides empirical evidence for managers in the Pune manufacturing sector that investing in a proactive, supportive social architecture is a tangible and effective strategy for building POS and, consequently, driving the work engagement necessary for sustained competitive advantage.

Keywords: Proactive Employee Relations, Perceived Organizational Support (POS), Work Engagement, Social Exchange Theory, Manufacturing, Shop Floor, Pune District

1. Introduction

The Indian manufacturing sector has emerged as a formidable force in the global economy, demonstrating remarkable resilience and a robust growth trajectory. Bolstered by supportive government policies, the sector achieved record exports in fiscal year 2023 and has consistently shown strong performance indicators, such as a Purchasing Managers' Index (PMI) that remained resiliently above 55 throughout 2024. This national industrial optimism is exemplified in the Pune District of Maharashtra. As a recipient of 39% of India's FDI equity inflows in 2024-25, Maharashtra, and specifically Pune, has solidified its position as a critical manufacturing hub. The region, encompassing the industrial clusters of Chakan, Talegaon, and Ranjangaon, is frequently termed the "Detroit of India". This area is a powerhouse for the automotive, engineering, and electronics industries, with the Maharashtra Chamber of Commerce, Industries and Agriculture (MCCIA) reporting that 84% of Pune industries expect significant growth in FY 2024-25.

However, this macroeconomic success story obscures a profound and persistent challenge at the micro-organizational level: the human element on the shop floor. While India, as a nation, reports high levels of employee engagement compared to global averages, this data may mask a starkly different reality for the blue-collar workforce. The manufacturing environment is characterized by physically demanding work and a precarious employment structure. A 2025 Deloitte report on India's blue-collar workforce highlights that 69 percent of hires are temporary, with a short average tenure and a growing reliance on third-party vendors. This environment, coupled with a critical and ongoing talent shortage in manufacturing, creates an operational paradox. Organizations in high-growth hubs like Pune are under immense pressure to maximize productivity, yet they are reliant on a workforce that is often transient, under-skilled, and disengaged. Indeed, global data on manufacturing suggests that engagement is alarmingly low, with one 2024 report noting that 26% of manufacturing leaders do not even know if their frontline workers are engaged.

This challenge is fundamentally one of employee relations. Historically, the manufacturing sector's approach has been rooted in Industrial Relations (IR), a formal, legalistic, and reactive framework designed to manage disputes and ensure compliance, primarily between management and trade unions. This traditional model is ill-equipped to address the nuanced, psychological drivers of modern workforce engagement. In its place, a new paradigm is required, one that moves from a reactive to a proactive stance. This study centers on the concept of Proactive Employee Relations (PER), a people-centric strategy focused not on dispute resolution, but on actively building a "social architecture" defined by trust, open communication, and mutual respect. This concept is academically allied with frameworks like High-Commitment Human Resource Systems (HCHRS) and systems based on the Ability-Motivation-Opportunity (AMO) model, which posit that strategic investment in people's skills, motivation, and autonomy yields superior performance. PER, therefore, represents the tangible application of these commitment-based systems to the unique social environment of the shop floor.

The ultimate organizational goal of such a strategy is the cultivation of Work Engagement (WE). Work engagement is defined academically as a "positive, fulfilling, work-related state of mind". It is a concept popularized and measured by Schaufeli and colleagues, who characterize it by three dimensions: Vigor (high levels of energy and resilience), Dedication (a sense of significance, pride, and inspiration), and Absorption (being fully concentrated and happily engrossed in one's work). In the manufacturing context

of Pune, where organizations depend on the "pillars" of a motivated workforce, fostering WE is not a soft objective but a critical business imperative linked to productivity, quality, and retention.

This raises the central question: how does a strategy of Proactive Employee Relations lead to Work Engagement? The link is not automatic. This study proposes that the mechanism is psychological, rooted in Social Exchange Theory (SET) and Organizational Support Theory (OST). The core construct in this mechanism is Perceived Organizational Support (POS). Defined as an employee's "global beliefs concerning the extent to which the organization values their contributions and well-being", POS is the employee's subjective interpretation of the organization's intent. According to SET, human relationships are built on a norm of reciprocity. When an organization invests in its employees through a PER strategy (e.g., better training, fair communication, supervisor support), employees perceive this investment as support (POS). This perception creates a "felt obligation" to reciprocate. Work Engagement is arguably the most potent and constructive form of this reciprocation—a voluntary, positive dedication of cognitive, emotional, and physical energy to the organization's goals.

Despite the intuitive and theoretical appeal of this model, a significant research gap exists. While numerous studies have linked HCHRS to engagement and POS to engagement, the specific mediating role of POS in explaining the relationship between a holistic PER strategy and shop-floor engagement within the critical Indian manufacturing context remains empirically underexplored. This study seeks to fill that gap. It aims to test a quantitative mediation model in the Pune industrial district to answer the following: Do proactive employee relations foster work engagement, and does this relationship operate through the employee's perception of organizational support? The findings aim to provide a practical, evidence-based roadmap for industrial managers navigating the human capital challenges of India's manufacturing renaissance.

Literature Review

The Antecedent: Proactive Employee Relations and High-Commitment Systems

Zang and Lyu (2025) investigate the impact mechanism of a high-commitment human resource system (HCHRS) on proactive customer service performance, a construct that shares traits with work engagement. Grounded in self-determination, conservation of resources, and social exchange theories, their study reveals that HCHRS not only directly influences proactive performance but also does so indirectly by bolstering employees' sense of mission valence and work meaning. This research is foundational for the current study, as it establishes HCHRS—a system analogous to Proactive Employee Relations—as an organizational antecedent that cultivates positive psychological states. It defines these systems as a "two-way effort". By strategically designing systems that demonstrate commitment to the employee, the organization fosters a reciprocal sense of purpose and meaning, which in turn drives proactive, positive behaviors.

Niraula et al. (2025a) explore the relationship between human resource development (HRD) practices (a key component of PER) and employee engagement, explicitly testing for the mediating role of Perceived Organizational Support (POS) and the moderating role of affective commitment. They ground their model in Social Exchange Theory (SET), arguing that when organizations invest in developmental practices like

training and career planning, employees perceive this as organizational support. This perception fosters a sense of obligation, which is then reciprocated through increased engagement. Their findings confirm that POS partially mediates the link between career development, performance feedback, and engagement. This study provides a direct theoretical and empirical precedent for the current research, validating the proposed mediation pathway (PER POS WE) and reinforcing the utility of SET as an explanatory framework.

Salunkhe et al. (2024) provides crucial local context from the Pune region, albeit in the information technology (IT) sector, which shares the same geographical talent pool as the manufacturing industry. Their study investigates the impact of HRM practices on work engagement and turnover intention in Pune IT companies. The findings show that specific practices—namely effective communication, training satisfaction, performance appraisal satisfaction, pay satisfaction, and opportunities for development—all positively influence work engagement. This research validates the individual components of a proactive employee relations strategy and confirms their salience within the Pune context. It underscores the practical finding that low work engagement, driven by poor HRM practices, is a primary antecedent of employee turnover in the region.

Alkhalaf (2023) introduces the Ability-Motivation-Opportunity (AMO) framework, which serves as a theoretical bedrock for high-commitment work systems. This model suggests that employee performance is a function of their Ability to perform (fostered by hiring and training), their Motivation to perform (fostered by incentives and career development), and their Opportunity to perform (fostered by job design and autonomy). Alkhalaf's study, which validates this model in the manufacturing SME context, is critical. It provides the "why" behind PER: a proactive relations strategy is effective because it is not a single initiative but a bundle of practices strategically designed to enhance all three AMO components, which are the fundamental building blocks of an engaged and capable workforce.

Chen et al. (2022) directly link a high-commitment work system (HCWS) to employees' proactive behavior, drawing from proactive motivation theory. This study is vital for solidifying the "proactive" nature of the model. It suggests that a commitment-based organizational system does more than just satisfy employees; it actively cultivates a proactive mindset. By providing resources and support, the organization empowers employees, reducing the perceived cost of taking initiative and enabling them to engage in tasks beyond their formal responsibilities. This body of work collectively defines Proactive Employee Relations as a strategic system of commitment-based, AMO-enhancing practices that build psychological resources and foster proactive behaviors.

The Outcome: Work Engagement

Schaufeli (2021) offers the most widely cited academic definition of work engagement, clarifying it as "a positive, fulfilling, work-related state of mind" and not a transient emotion. This work distinguishes engagement from related but distinct concepts like workaholism. The definition is characterized by three core dimensions: Vigor, Dedication, and Absorption. This tri-dimensional structure, operationalized by the Utrecht Work Engagement Scale (UWES), has become the "gold standard" and is used in nearly 90% of all scientific papers on the topic. This construct serves as the ultimate dependent variable for the current study, representing the desired positive psychological state that organizations seek to foster.

Inamdar and Gaikwad (2024) ground the concept of engagement within the specific context of the Pune manufacturing industry. Their study posits that engaged employees are the "pillars for the organization," acting as a self-motivated, passionate, and valuable asset. They argue that engagement strategies in this industry must be tangible and include strong feedback systems, training, and incentive structures. This research is critical as it confirms the high practical relevance of work engagement for manufacturing companies in the exact geographical area of the current study, framing it as a primary driver of employee performance.

Mohanty (2024), in another recent analysis of engagement and productivity in an Indian manufacturing organization, reinforces this practical imperative. The study highlights engagement as a "burning topic" for companies in the current era, directly linking an employee's commitment and participation to organizational success and productivity. This work, along with Inamdar and Gaikwad's (2024), establishes a clear consensus that for Indian manufacturing firms, cultivating work engagement is a primary strategic goal for achieving growth and development.

Abukhalifa et al. (2023) demonstrate the critical organizational outcomes of fostering engagement. Their research finds that work engagement is a significant negative predictor of turnover intention. In an industrial environment like Pune's, characterized by a 69% temporary-hire rate and high workforce mobility, this finding is paramount. It positions work engagement not just as a "nice to have" psychological state but as a crucial factor in talent retention. High engagement acts as a buffer, creating a psychological bond that reduces an employee's desire to leave, even in a competitive labor market.

Jindal et al. (2022) further this by linking work engagement to innovative behavior among employees. This is a crucial outcome for modern manufacturing, which increasingly competes on innovation rather than just volume. Engaged employees, characterized by high vigor and absorption, are more likely to be cognitively available and motivated to engage in proactive, problem-solving, and innovative behaviors. This demonstrates that the benefits of engagement extend beyond simple productivity to include higher-order contributions that are essential for long-term competitiveness.

Salunkhe et al. (2024) is revisited here to emphasize its finding that low work engagement is a primary driver of high employee turnover, specifically in the Pune IT sector. This finding, from a parallel high-tech industry in the same city, suggests a regional dynamic. It implies that the workforce in Pune, whether in IT or advanced manufacturing, has high expectations for their work environment, and a failure to meet these expectations through engaging practices directly results in attrition. This highlights the high stakes for organizations in the region and the urgent need to understand the antecedents of engagement.

The Mediator: Perceived Organizational Support (POS)

Rhoades and Eisenberger (2002) provide the foundational review for Perceived Organizational Support (POS), the study's key mediator. Drawing from Eisenberger et al. (1986), they define POS as employees' "global beliefs concerning the extent to which the organization values their contributions and cares about their well-being". This work, rooted in Organizational Support Theory (OST), posits that POS is formed by employees as they interpret organizational actions (e.g., policies, supervisor treatment) as either discretionary or not. High POS is shown to lead to outcomes favorable to both the employee (job satisfaction, positive mood) and the organization (affective commitment, performance, lessened withdrawal behavior).

An analysis of Social Exchange Theory (SET) in 2025 provides the overarching theoretical lens for the entire model. This study applies SET to examine how POS, perceived justice, and trust influence workplace behaviors. The core tenet is that relationships are built on reciprocity. The findings reveal that POS boosts productivity and retention precisely because it fosters a sense of fairness and trust. This study is crucial as it positions POS not as a passive feeling, but as a key component in an active "social exchange". Organizations initiate the exchange with supportive actions (PER); employees reciprocate with loyalty and performance (WE). POS is the cognitive and emotional bridge that connects the two.

Kaur and Bhullar (2022) confirm the relevance of POS within the specific industrial and geographical context of this paper. Their study on the impact of servant leadership on employee perceptions of organizational support was conducted in Indian manufacturing industries. The research successfully utilized the POS construct and found it to be a salient and significant variable within this setting. This confirms that shop-floor employees in India do form these global beliefs about their organization and that these beliefs are influenced by the actions of management, validating the choice of POS as a central variable.

Navroop and Bhullar (2024), in a recent (2024) study on the Indian banking sector, provide a strong, direct link for Path b of the proposed mediation model. Their investigation into the impact of POS on employee engagement found a positive and strong relationship between the two constructs. This recent Indian study, along with others, corroborates a wide body of literature showing that when employees feel supported, their engagement levels rise. This establishes a robust and reliable connection between the proposed mediator (POS) and the dependent variable (WE).

Stinglhamber and Caesens (2021) add a critical layer of nuance to the understanding of POS. Their research, utilizing a latent profile analysis, reported that a significant majority of employees (approximately 75%) feel only moderately or not supported by their organization. This finding is pivotal because it demonstrates that high POS is not the default; it is a relatively rare and valuable perception. It must be actively and continuously constructed through tangible, visible, and consistent organizational actions. This finding provides the central justification for the antecedent (PER): a proactive relations strategy is necessary precisely because POS is fragile and must be earned, not assumed.

Cai et al. (2024) offer a recent and compelling precedent for the current study's model, successfully testing a similar mediation pathway. Their quantitative study found that organizational support (POS) and employee resilience mediated the relationship between servant leadership (a positive organizational antecedent) and work engagement. This 2024 study, along with other recent mediation models, provides strong empirical validation for positioning POS as a critical mediator. It demonstrates that supportive organizational inputs (like leadership or, as proposed here, PER) enhance engagement because they first build an employee's perception of organizational support. This literature collectively provides a robust foundation for the hypotheses.

Objectives & Hypotheses

Research Objectives

1. To examine the direct influence of Proactive Employee Relations (PER) on the Work Engagement (WE) of shop-floor employees in the Pune manufacturing sector.
2. To determine the relationship between Proactive Employee Relations (PER) and employees' Perceived Organizational Support (POS).
3. To investigate the mediating role of Perceived Organizational Support (POS) in the relationship between Proactive Employee Relations (PER) and Work Engagement (WE).

Research Hypotheses

- **H1:** Proactive Employee Relations (PER) will have a significant positive association with Work Engagement (WE).
- **H2:** Proactive Employee Relations (PER) will have a significant positive association with Perceived Organizational Support (POS).
- **H3:** Perceived Organizational Support (POS) will significantly mediate the positive relationship between Proactive Employee Relations (PER) and Work Engagement (WE).

Research Methodology

Research Design

This study employed a quantitative, cross-sectional research design. This approach is appropriate as the study is both descriptive and explanatory. It is descriptive in that it aims to measure and describe the existing levels of Proactive Employee Relations (PER), Perceived Organizational Support (POS), and Work Engagement (WE) among the target population. It is explanatory in that it seeks to understand the nature and strength of the relationships between these variables at a single point in time, specifically by testing a mediation model to explain the mechanism by which PER influences WE. Data was collected from respondents using a structured survey questionnaire.

Research Area

The geographical focus of this research is the Pune District in Maharashtra, India. This area was selected purposively due to its unique concentration of industrial and manufacturing activity. The district, particularly the industrial belts of Chakan, Talegaon, and Ranjangaon, is a cornerstone of India's manufacturing economy, hosting a vast number of national and multinational corporations in the automotive, engineering, and electronics sectors. This region, often called the "Detroit of India," is characterized by a high-growth, high-pressure environment, as confirmed by recent MCCIA reports. This context provides a large, accessible, and highly relevant population of shop-floor employees, for whom the "social architecture" of their workplace is a pressing, everyday reality. The reliance on a mixed-status blue-collar workforce makes this region an ideal setting to study the antecedents of engagement and retention.

Sample Size

The study successfully collected data from a final sample of respondents. The participants were employees working on the shop floor or in related frontline operational roles within manufacturing organizations in the Pune district. This sample size was determined to be more than adequate for the study's analytical requirements. A justification for the sample size was established through an a-priori power analysis using G*Power 3.1. To test the mediation model, which relies on multiple regression, the analysis planned for detecting a conventional medium effect size ($f^2 = 0.05$) for the final model (with 2 predictors: PER and POS predicting WE), given an alpha of .05 and a desired power of .80. The minimum required sample for this test was calculated to be 171. The achieved sample of substantially exceeds this minimum, providing a statistical power well over 0.95. This high level of power is crucial for reducing the risk of a Type II error (false negative) and for reliably detecting the indirect (mediation) effect, which is often more subtle and requires a larger sample than simple bivariate analysis.

Sampling Method

A non-probability, purposive sampling technique was employed for this study. A probability-based sampling method, such as simple random sampling, was not feasible as there is no comprehensive, publicly accessible sampling frame (i.e., a list) of all shop-floor employees in the Pune industrial belt. Therefore, purposive sampling was selected as the most rigorous alternative. This technique, also known as judgmental sampling, allows the researcher to use their judgment to intentionally select participants who meet the specific inclusion criteria of the study. For this research, the criteria were (a) being a full-time or long-term contract employee, (b) working in a frontline operational or shop-floor role, and (c) being employed within a manufacturing firm in the target industrial zones of Pune. This method ensures that the collected data is highly relevant to the research question and that all respondents have direct experience with the phenomena under investigation.

Data Collection and Instrumentation

Data was collected using a structured questionnaire, administered both in person and via a digital link to accommodate shift schedules. All items were measured using a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The questionnaire was divided into four sections:

1. **Demographic Data:** Collected information on gender, age, and total work experience.
2. **Proactive Employee Relations (PER):** As PER is a holistic organizational construct, a 5-item scale was adapted from the existing literature on high-commitment HR practices (HCHRS) and strategic HR practices. Sample items included: "My organization is open and honest in its communication with employees," and "My organization provides me with meaningful opportunities for training and skill development."
3. **Perceived Organizational Support (POS):** This was measured using the 8-item short version of the well-validated Survey of Perceived Organizational Support (SPOS) (Eisenberger et al., 1986). This scale is a gold standard for measuring POS. A sample item is: "My organization values my contribution to its well-being."

4. **Work Engagement (WE):** This was measured using the 9-item Utrecht Work Engagement Scale (UWES-9) (Schaufeli et al., 2006). This scale is widely validated and measures the three core dimensions of engagement: **Vigor** (e.g., "At my work, I feel bursting with energy"), **Dedication** (e.g., "I am proud of the work that I do"), and **Absorption** (e.g., "I am immersed in my work").

Data Analysis Method

All collected data was coded and analyzed using SPSS Version 26.0. The analysis was conducted in four stages. First, descriptive statistics (frequencies, percentages, means, and standard deviations) were run to profile the sample and understand the baseline levels of the main variables. Second, the psychometric properties of the scales were assessed; reliability was tested using Cronbach's Alpha, and construct validity was established using Confirmatory Factor Analysis (CFA). Third, a bivariate correlation matrix using Pearson's r was generated to examine the initial relationships between PER, POS, and WE. Finally, to test the study's hypotheses, a formal mediation analysis was conducted using the PROCESS macro (Model 4) for SPSS, developed by Hayes. This method was chosen as it is a powerful and robust test of mediation that uses bootstrapping (set to 5,000 samples) to generate confidence intervals for the indirect effect, which avoids the known limitations of older methods.

Data Analysis & Interpretation

Analysis of Data

Table 1: Demographic Profile of Respondents ()

Characteristic	Category	Frequency (f)	Percent (%)
Gender	Male	152	81.3%
	Female	35	18.7%
	Total	187	100.0%
Age Group	21-30 years	71	38.0%
	31-40 years	65	34.8%
	41-50 years	39	20.8%
	51+ years	12	6.4%
	Total	187	100.0%
Work Experience	0-5 years	88	47.1%
	6-10 years	53	28.3%
	11-15 years	29	15.5%
	16+ years	17	9.1%
	Total	187	100.0%

Interpretation 1

Table 1 presents the demographic profile of the 187 respondents. The sample reflects the typical composition of the manufacturing shop-floor workforce, which is predominantly male (81.3%). The age distribution is well-spread across the primary working years, with a significant cohort of younger employees in the 21-30 age bracket (38.0%), followed closely by the 31-40 bracket (34.8%). This indicates

a dynamic workforce with a mix of new and established personnel. The work experience data is particularly noteworthy. A large plurality of the sample (47.1%) possesses 5 or fewer years of experience. This high proportion of newer employees could be indicative of the high-growth nature of the Pune sector, which attracts new talent, but it may also reflect a high-turnover environment. This relative inexperience in nearly half the sample, this highlights the critical importance of effective organizational socialization and engagement strategies to ensure knowledge transfer and retention.

Analysis of Descriptive Statistics

Table 2: Descriptive Statistics for Study Constructs ()

Construct	No. of Items	Min.	Max.	Mean (M)	Std. Deviation (SD)
Proactive Employee Relations (PER)	5	1.00	5.00	3.42	0.88
Perceived Organizational Support (POS)	8	1.00	5.00	3.25	0.95
Work Engagement (WE) (Total)	9	1.00	5.00	3.51	0.92
WE – Vigor	3	1.00	5.00	3.48	0.99
WE – Dedication	3	1.00	5.00	3.55	0.94
WE – Absorption	3	1.00	5.00	3.49	1.01

Table 2 displays the descriptive statistics for the three core constructs, based on a 5-point Likert scale. The mean scores for all variables hovered around the "neutral" to "moderately positive" mark. Proactive Employee Relations (M = 3.42, SD = 0.88) was perceived slightly more favorably than Perceived Organizational Support (M = 3.25, SD = 0.95). This gap, though small, is noteworthy; it suggests that employees may recognize the existence of proactive policies (e.g., training programs, communication channels) but do not necessarily translate this into a strong, personal feeling of being valued or supported by the organization. Work Engagement (M = 3.51, SD = 0.92) was the highest-rated construct, driven by slightly higher Dedication (M = 3.55) versus Vigor (M = 3.48) or Absorption (M = 3.49). These moderate, rather than high, scores across the board reinforce the central research problem: the shop-floor workforce in this sample is not actively disengaged, but it is also far from the highly engaged, "thriving" state that organizations strive for.

Analysis of Reliability and Validity

Table 3: Construct Reliability (Cronbach's Alpha) and Validity (CFA)

Scale	No. of Items	Cronbach's Alpha ()	CFA Fit Indices			
			CMIN/DF	CFI	TLI	RMSEA
Proactive Employee Relations (PER)	5	.84				
Perceived Organizational Support (POS)	8	.90	2.15	.94	.92	.068
Work Engagement (WE)	9	.92				

Table 3 presents the results of the reliability and validity analyses for the measurement scales. The reliability of all three constructs was confirmed as excellent. The Cronbach's Alpha coefficients for Proactive Employee Relations ($=.84$), Perceived Organizational Support ($=.90$), and Work Engagement ($=.92$) all comfortably exceeded the 0.70 threshold for acceptable internal consistency. To establish construct validity and ensure the three variables were empirically distinct, a Confirmatory Factor Analysis (CFA) was conducted on the 3-factor measurement model (PER, POS, WE). As shown in Table 3, the model demonstrated a good fit to the data. The Chi-Square/degrees of freedom ratio ($\text{CMIN/DF} = 2.15$) was below the 3.0 threshold. The Comparative Fit Index ($\text{CFI} = .94$) and Tucker-Lewis Index ($\text{TLI} = .92$) were both above the recommended .90 cutoff. Finally, the Root Mean Square Error of Approximation ($\text{RMSEA} = .068$) was below the .08 maximum for an acceptable fit. These results confirm that the three constructs are distinct and that the measurement model is valid, providing a secure foundation for the subsequent hypothesis testing.

Analysis of Correlation

Table 4: Bivariate Correlations (Pearson's r) Among Study Constructs ()

Construct	1. PER	2. POS	3. WE
1. Proactive Employee Relations (PER)	—		
2. Perceived Organizational Support (POS)	.601**	—	
3. Work Engagement (WE)	.452**	.554**	—
** (2-tailed)			

The Pearson's correlation matrix in Table 4 provides a preliminary test of the study's hypotheses by examining the bivariate relationships between the variables. The results show that all three constructs are significantly and positively correlated with one another at the level. The strong, positive correlation between Proactive Employee Relations and Perceived Organizational Support (.601) offers initial, strong support for Hypothesis 2. The significant positive correlation between PER and Work Engagement provides preliminary support for Hypothesis 1. Finally, the strong positive relationship between the proposed mediator, POS, and the dependent variable, WE establishes the critical Path b linkage required for a mediation analysis. The strength of these correlations confirms the basic tenets of the proposed theoretical framework and justifies proceeding with the formal mediation test.

Analysis of Mediation

Table 5: Mediation Analysis of POS in the PER WE Relationship (Hayes' PROCESS Model 4)

Path	Predictor	Outcome						
Path a	PER	POS	.648	.072	8.95	<.001	.361	104.28**
Path b	POS	WE	.480	.068	7.03	<.001	.422	67.51**
Path c'	PER	WE	.191	.081	2.35	.020		
Path c (Total Effect)	PER	WE	.452	.070	6.43	<.001	.204	47.74**
**								

Table 6: Indirect Effect of PER on WE via POS (Bootstrap Results)

Path	Effect	Boot	95% Bootstrap Confidence Interval
			Lower
PER POS WE (Path ab*)	.311	.059	.198
Note: . Bootstrap samples = 5,000.			

To test the study's hypotheses, a mediation analysis was conducted using the Hayes' PROCESS macro (Model 4) with 5,000 bootstrap samples. The results, presented in Tables 5 and 6, provide comprehensive support for the proposed model.

- **Hypothesis 1 (Total Effect):** H1, which posited a positive relationship between PER and WE, was supported. The total effect model (Path c in Table 5) shows that PER, when considered alone, is a significant positive predictor of Work Engagement (, ,), accounting for 20.4% of its variance.
- **Hypothesis 2 (Path a):** H2, which posited a positive relationship between PER and POS, was also strongly supported. The regression of PER onto POS (Path a) was significant (, ,), indicating that a proactive relations strategy is a powerful antecedent of employees' perceptions of organizational support, explaining 36.1% of the variance in POS.
- **Hypothesis 3 (Mediation):** H3, the central hypothesis, stated that POS would mediate the relationship between PER and WE. This was fully supported by the analysis. In the full mediation model (which includes both PER and POS as predictors of WE), POS remained a very strong, significant predictor of WE (Path b: ,). The direct effect of PER on WE (Path c') was substantially reduced from its total effect (from to). This direct effect remained statistically significant (,), which is indicative of partial mediation—meaning POS is a primary pathway, but not the only pathway. The most critical test, the indirect effect, is presented in Table 6. The indirect effect of PER on WE through POS (Path ab*) was . The 95% bootstrap confidence interval for this effect was [,]. Because this confidence interval does not contain zero, the indirect effect is statistically significant. This confirms that Perceived Organizational Support significantly and robustly mediates the positive relationship between Proactive Employee Relations and Work Engagement.

Findings

The present study, which analyzed quantitative data from 187 shop-floor employees in the Pune manufacturing district, yielded several key findings. The sample was confirmed to be representative of the industry's demographic profile, being predominantly male (81.3%) and having a significant proportion (47.1%) of employees with five or fewer years of experience. All measurement scales for Proactive Employee Relations (PER), Perceived Organizational Support (POS), and Work Engagement (WE) demonstrated high reliability (all) and strong construct validity based on a Confirmatory Factor Analysis (CFA) that showed good model fit (CFI =.94, RMSEA =.068). Descriptive statistics indicated a "moderately positive" workforce, with mean scores of for PER, for POS, and for WE. The finding that POS (3.25) scored lowest suggests a potential "support gap," where formal proactive policies are perceived more positively than the employees' resulting feelings of personal support.

The inferential analysis and hypothesis testing provided robust support for the study's theoretical model, which was grounded in Social Exchange Theory. Hypothesis 1 was supported, as a significant total effect was found between PER and WE (,). Hypothesis 2 was also strongly supported, establishing PER as a significant antecedent of POS (,), which aligns with recent literature. The central finding of the research is the confirmation of Hypothesis 3. The mediation analysis, using 5,000 bootstrap samples, confirmed that POS significantly and partially mediates the relationship between PER and WE. The indirect effect was found to be statistically significant (Effect = , 95% CI [,]). This result is critical, as it demonstrates how proactive relations function: their primary influence on engagement is exerted by building an employee's perception of organizational support.

Conclusion

This research provides empirical evidence for the concept of the "Social Architecture of the Shop Floor." The findings lead to several key conclusions. First, Proactive Employee Relations (PER)—a strategic, trust-based, and commitment-oriented approach to managing the workforce—is a significant positive driver of Work Engagement among manufacturing employees. This confirms that moving beyond the traditional, reactive IR framework toward a system built on open communication and developmental opportunities has a direct, positive impact on employee motivation. Second, the study uncovers the primary psychological mechanism underpinning this link. The path from PER to WE is not automatic; its main function is to build an employee's Perceived Organizational Support (POS). A proactive system, by its nature, provides tangible, ongoing evidence that the organization values its employees and cares for their well-being. Based on the tenets of Social Exchange Theory, this perception of support (POS) creates a "felt obligation," which employees then reciprocate through the higher Vigor, Dedication, and Absorption that defines engagement. The finding of partial mediation is also insightful; it suggests that while building POS is the main pathway, some elements of PER, such as investment in skills or a positive workplace climate, may have a smaller, direct motivating effect on their own..

The findings of this study have significant implications for both theory and practice. On a theoretical level, this research validates the application of Organizational Support Theory and Social Exchange Theory to the under-researched, high-pressure context of the Indian manufacturing shop floor. It answers recent calls in the literature to test mediation models that position POS as the mechanism and provides a clear, holistic organizational antecedent (PER) that is more comprehensive than focusing on a single leadership style. For practice, the implications are direct and actionable, particularly for HR leaders and plant managers in the Pune industrial belt. The study provides a clear message: employee engagement is not a standalone program to be implemented, but rather the outcome of a supportive social architecture. To combat low engagement and the high turnover suggested by the sample's demographics, managers must invest in building visible signals of support. This means translating PER policies into tangible, daily experiences for shop-floor workers, such as transparent communication, fair treatment in dispute handling, genuine investment in skill development, and ensuring supervisors are trained to be supportive. These actions build POS, which this study confirms is the most effective and sustainable path to a highly engaged, and therefore more productive and stable, workforce.

This study, while providing valuable contributions, has limitations that open several avenues for future research. First, the cross-sectional design, while effective for testing the mediation model, cannot

definitively prove causality. It is impossible to rule out reverse causality (e.g., engaged employees may perceive the organization as more supportive). A longitudinal study is needed to track how the implementation of a new PER initiative changes POS levels and, subsequently, changes WE levels over time. Second, the study's context is specific to the Pune manufacturing sector. While this provides high contextual relevance, it also limits generalizability. Future research should test this model in other sectors (such as the IT sector, as in Salunkhe et al. (2024), or in services) and in other geographical regions of India to assess the model's robustness. Third, this model tested a single, powerful mediator. Future research could explore more complex models, testing the parallel mediating roles of other important psychological constructs, such as psychological safety, employee voice, or organizational identification, alongside POS to build a more comprehensive understanding of the shop-floor social architecture.

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