Employee Engagement in Manufacturing: A Stimulus–Organism–Response Framework of Psychological Empowerment

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Abstract

Employee engagement remains a critical yet persistently challenging issue for organizations, particularly in structured, operational environments. Despite extensive research, prevailing approaches often emphasize direct associations between workplace conditions and engagement, offering limited insight into the psychological processes underlying engagement. Addressing this limitation, this conceptual paper advances a process-based framework of employee engagement grounded in the Stimulus–Organism–Response (SOR) model. The proposed framework conceptualizes ethical leadership, psychological safety, and role clarity as organizational stimuli that shape employees' internal psychological state of empowerment, which, in turn, gives rise to employee engagement as a behavioral response. By positioning psychological empowerment as the central organismic mechanism, the paper provides a coherent explanation of how organizational conditions are cognitively and affectively internalized by employees. While the framework is theoretically generalizable, it is particularly relevant to multinational manufacturing organizations operating in Malaysia, where hierarchical structures and operational demands strongly influence employee experience. The paper develops a set of theoretically grounded propositions and outlines implications for future empirical research and organizational practice.

Introduction

Employee engagement has become one of the most influential constructs in contemporary organizational research, reflecting growing concern over declining motivation, productivity, and workforce commitment in increasingly complex work environments. Recent global evidence underscores the urgency of addressing this issue. According to the State of the Global Workplace report, only 21% of employees worldwide are actively engaged, while 62% are not engaged and 17% are actively disengaged (Fonseca, 2025; Gallup Inc., 2025). This widespread disengagement is estimated to cost the global economy approximately USD 8.8 trillion annually, equivalent to nearly 9% of global GDP (Gallup Inc, 2023). Such figures highlight the substantial economic and organizational consequences of disengagement, including reduced productivity, diminished innovation, and increased employee turnover. These trends have intensified scholarly and managerial interest not only in whether engagement matters, but in how it emerges and is sustained across organizational contexts.

Despite extensive scholarly attention, engagement levels remain persistently moderate. Empirical studies consistently associate employee engagement with positive outcomes such as task performance, organizational citizenship behaviors, employee well-being, and organizational effectiveness (Christian et al., 2011; Harter et al., 2002; Saks, 2019). However, the persistence of disengagement at a global scale suggests that prevailing theoretical explanations and managerial interventions may be insufficient.

Manufacturing MNCs face additional pressures arising from rapid technological disruption, automation, and Industry 4.0 transformation, which demand employees who are not only technically competent but also cognitively and emotionally invested in their roles (Gasparovich et al., 2021; Ghobakhloo et al., 2024; Upadhyay et al., 2023). These organizations also operate within volatile geopolitical and economic environments that require agility, resilience, and sustained workforce commitment (Moura et al., 2025). Such pressures are compounded by ongoing human resource challenges, including talent retention, generational transitions, and increasing expectations related to diversity, equity, inclusion, and sustainability(Stahl et al., 2020; Tan et al., 2024; Uzozie et al., 2023).

Despite sustained organizational efforts, disengagement remains pervasive. Excessive workloads, prolonged working hours, and intensified performance pressures have undermined work–life balance and job satisfaction, further constraining employee engagement (Chan et al., 2021; Megat & Krishnan, 2023; Othman & Mahmood, 2020). In multinational settings, a strong emphasis on efficiency and financial performance has often complicated engagement initiatives, even as engagement is increasingly recognized as critical to organizational success and competitiveness (Afsar et al., 2020). These challenges are amplified in developing and emerging economies, where work intensification, hierarchical control systems, and rapid industrial transformation shape how employees experience autonomy, meaning, and psychological safety at work (Chung et al., 2024; Moura et al., 2025).

Although employee engagement has been examined through multiple theoretical lenses, including psychological conditions theory (Kahn, 1990), the Job Demands–Resources (JD-R)

model (Bakker & Demerouti, 2007), and Social Exchange Theory (Saks, 2006), the literature remains fragmented. A key limitation of existing research lies in its reliance on predominantly static models that emphasize direct relationships between organizational conditions and engagement outcomes. Recent reviews and conceptual critiques highlight that engagement research often under-theorizes the internal psychological processes through which employees interpret, evaluate, and internalize workplace conditions (Bailey et al., 2017; Kossyva et al., 2023). As a result, engagement is frequently treated as a managerial outcome or attitudinal state, rather than as a psychological response that emerges through cognitive and affective processing (Christian et al., 2011; Shuck & Reio, 2011; Wittenberg et al., 2024).

Furthermore, prior studies tend to focus on isolated antecedents, such as leadership, job design, or human resource practices, examined independently (Gupta & Sharma, 2019; Lee et al., 2017; Wollard & Shuck, 2011). While valuable, these approaches provide only partial insights and offer limited understanding of how organizational, relational, and role-based conditions jointly shape engagement through internal psychological mechanisms (Kim & Kim, 2021; Saks et al., 2022). Although research increasingly recognizes the importance of psychological empowerment and psychological safety as pathways to engagement (Bakker & Albrecht, 2018; Carmeli & Gittell, 2009; Seibert et al., 2011), integrative process-based explanations remain underdeveloped, particularly in manufacturing MNC contexts.

To address these limitations, this paper advances a process-based conceptual framework of employee engagement grounded in the Stimulus–Organism–Response (SOR) model (Mehrabian & Russell, 1974). The framework conceptualizes ethical leadership, psychological safety, and role clarity as organizational stimuli that shape employees' internal psychological state of empowerment (organism), which subsequently gives rise to employee engagement as a behavioral response. By focusing on mid-level employees in Malaysian manufacturing MNCs, the paper offers a contextually grounded yet theoretically generalizable explanation of how engagement emerges through psychological processing, thereby contributing to engagement theory development and informing more effective organizational practice.

Theoretical Background: Employee Engagement as a Psychological Process
Kahn (1990) conceptualized engagement as the harnessing of employees' physical, cognitive, and emotional selves in work roles, emphasizing the psychological conditions of meaningfulness, safety, and availability. This foundational perspective framed engagement as a holistic and context-dependent experience rather than a mere attitudinal state.

Subsequent research introduced alternative conceptualizations, most notably the Utrecht Group's definition of work engagement as a positive, fulfilling state characterized by vigor, dedication, and absorption (Schaufeli et al., 2002; Schaufeli & Salanova, 2006). While this operationalization facilitated empirical measurement, critics argue that it narrows engagement to an affective–energetic state and underplays its contextual and role-based dimensions (Macey & Schneider, 2008; Saks & Gruman, 2014).

Collectively, these perspectives suggest that engagement is best understood not as a static trait or outcome but as a dynamic psychological process shaped by organizational conditions and individual interpretation.

Although widely applied, dominant engagement theories exhibit several limitations. The JD-R model emphasizes job resources but often treats them as interchangeable and does not fully explain how employees cognitively and emotionally interpret these resources (Van den Broeck & Parker, 2017). SET explains engagement through reciprocity but has been critiqued for its transactional orientation and limited attention to intrinsic motivation and meaning (Cropanzano & Mitchell, 2005). SDT focuses on individual motivation but may insufficiently account for structural constraints and power dynamics in organizational settings (Gagné & Deci, 2005).

These limitations underscore the need for an integrative framework that explicitly models internal psychological processing.

The Stimulus–Organism–Response (SOR) Framework
The Stimulus–Organism–Response (SOR) theory evolved from early behaviorist Stimulus–Response (S–R) models, which viewed behavior as a direct reaction to external stimuli without accounting for internal psychological processes (Skinner, 1954; Watson, 1913). Addressing this limitation, Woodworth (1927) introduced the concept of the "Organism" as an intervening mechanism, emphasizing that stimuli are cognitively and emotionally processed before eliciting behavioral responses. This conceptual advancement marked a shift toward psychologically mediated explanations of behavior. The SOR framework was later formalized and empirically operationalized by Mehrabian and Russell (1974), who demonstrated how environmental stimuli influence affective states that subsequently guide approach or avoidance behaviors. Since then, SOR has progressed into a widely adopted theoretical framework across disciplines, including organizational behavior, where the organism component has been extended to encompass cognitive, motivational states such as empowerment, attitudes, and engagement, thereby explaining how workplace conditions shape employee behavior through internal psychological processes (Bakker, 2022).

In organizational contexts, the SOR theory provides a structured explanation of how workplace conditions influence employee attitudes and behaviors through internal psychological mechanisms. Stimuli refer to external organizational factors such as leadership practices, organizational support, job design, compensation, and work–life balance policies. These stimuli are cognitively and affectively interpreted by employees, forming the Organism, which includes psychological states such as perceived organizational support, job satisfaction, psychological well-being, and empowerment. These internal states subsequently shape Responses, reflected in work-related behaviors and attitudes such as organizational commitment and engagement. By explicitly modeling this internal processing stage, SOR offers a robust theoretical lens for understanding how organizational practices influence employee engagement and related outcomes, thereby informing strategies to enhance performance and reduce turnover.

Applied to employee engagement, SOR offers three key advantages. First, it provides a process-oriented explanation linking organizational conditions to engagement. Second, it integrates structural, relational, and psychological factors within a single framework. Third, it accommodates contextual variation, making it suitable for diverse organizational environments.

Within this study, ethical leadership, psychological safety, and role clarity are conceptualized as stimuli; psychological empowerment as the organism; and employee engagement as the response.

Ethical Leadership as a Stimulus
Ethical leadership refers to the demonstration of normatively appropriate conduct through personal actions and interpersonal relationships, as well as the promotion of such conduct through communication and decision-making (Brown et al., 2005) Ethical leaders provide clarity, fairness, and consistency, thereby shaping employees' perceptions of organizational integrity.

Empirical studies have linked ethical leadership to positive employee outcomes, including trust, psychological safety, empowerment, and engagement (Burhan et al., 2023; Dey et al., 2022). Ethical leaders create environments in which employees feel respected and valued, thereby enhancing their willingness to invest in their work roles.

From an SOR perspective, ethical leadership functions as a salient organizational stimulus that signals fairness and moral legitimacy. These signals influence employees' internal psychological evaluations, particularly their sense of autonomy, meaning, and impact, core components of psychological empowerment (Schermuly et al., 2022; Spreitzer, 1995).

Psychological Safety as a Stimulus
Psychological safety refers to a shared belief that the work environment is safe for interpersonal risk-taking (Edmondson, 1999). When employees perceive psychological safety, they are more likely to express ideas, admit mistakes, and engage in learning behaviors. Subsequent scholarship clarified that psychological safety is not merely a trait-like comfort level but an emergent climate shaped by team norms, leadership behaviors, and interaction patterns (Edmondson & Lei, 2014). Meta-analytic evidence further indicates that psychological safety is reliably associated with learning behavior, voice, information sharing, and performance-related outcomes across diverse settings (Frazier et al., 2017).

In contrast, psychologically unsafe climates signal threat, employees anticipate negative evaluation or retaliation, thereby encouraging silence, surface compliance, and risk avoidance (Nechanska et al., 2020). This stimulus role is particularly important in contemporary organizations characterized by interdependence, rapid change, and continuous improvement demands, where learning and adaptation depend on employees' readiness to surface problems early (Edmondson & Bransby, 2023).

Within the SOR framework, psychological safety serves as a stimulus that reduces perceived interpersonal risk, enabling employees to invest cognitively and emotionally in their roles. Psychological safety enhances empowerment by fostering a sense of competence and impact, which in turn supports engagement.

Role Clarity as a Stimulus
Role clarity refers to the extent to which employees have a clear understanding of job responsibilities, expectations, and performance criteria (Rizzo et al., 1970). In structured environments, unclear roles can lead to stress, ambiguity, and disengagement.

Empirical evidence demonstrates that role clarity positively predicts engagement and reduces role stress (Towsen et al., 2020; Zettna et al., 2025). Moreover, role clarity strengthens the effectiveness of job resources by enabling employees to channel effort more effectively.

From an SOR perspective, role clarity acts as a cognitive stimulus that structures employees' interpretation of work demands. Clear roles enhance psychological empowerment by strengthening employees' perceptions of competence and control, thereby facilitating engagement.

Psychological Empowerment as the Organismic Mechanism
Psychological empowerment is defined as a motivational construct comprising meaning, competence, self-determination, and impact (Spreitzer, 1995). Empowered employees perceive their work as meaningful, feel capable of performing tasks, experience autonomy, and believe their actions influence outcomes.

In manufacturing environments, where work is often standardized, performance-driven, and tightly regulated, psychological empowerment plays a particularly critical role. Employees in such contexts may experience high job demands, limited flexibility, and constrained decision latitude. Psychological empowerment helps mitigate these constraints by allowing employees to perceive autonomy and influence within structured systems, thereby sustaining engagement and reducing disengagement or withdrawal (Arefin et al., 2019).

From a strategic perspective, empowered employees are more likely to engage in problem-solving, continuous improvement, and innovation, capabilities that are essential for manufacturing MNCs facing global competition and technological disruption (Seibert et al., 2011; Zhang & Bartol, 2010). Psychological empowerment thus supports not only individual well-being but also organizational adaptability and long-term competitiveness (Rahi, 2022).

Within the SOR framework, psychological empowerment represents the organism through which stimuli are internalized. Ethical leadership, psychological safety, and role clarity shape empowerment by influencing employees' cognitive–affective evaluations of work, which subsequently drive engagement.

Employee Engagement as the Response
Employee engagement represents the behavioral and psychological investment of employees in their work roles. Engaged employees exhibit vigor, dedication, and absorption, translating psychological empowerment into sustained effort and performance (Christian et al., 2011; Schaufeli & Salanova, 2006).

By positioning engagement as the response in the SOR framework, this paper emphasizes engagement as an outcome of psychological processing rather than a direct reaction to organizational conditions.

Proposed Conceptual Framework and Research Propositions
Building on the above discussion, this paper proposes a conceptual framework in which ethical leadership, psychological safety, and role clarity influence employee engagement

indirectly through psychological empowerment. This framework provides a theoretically grounded foundation for empirical testing and addresses gaps in existing engagement research.
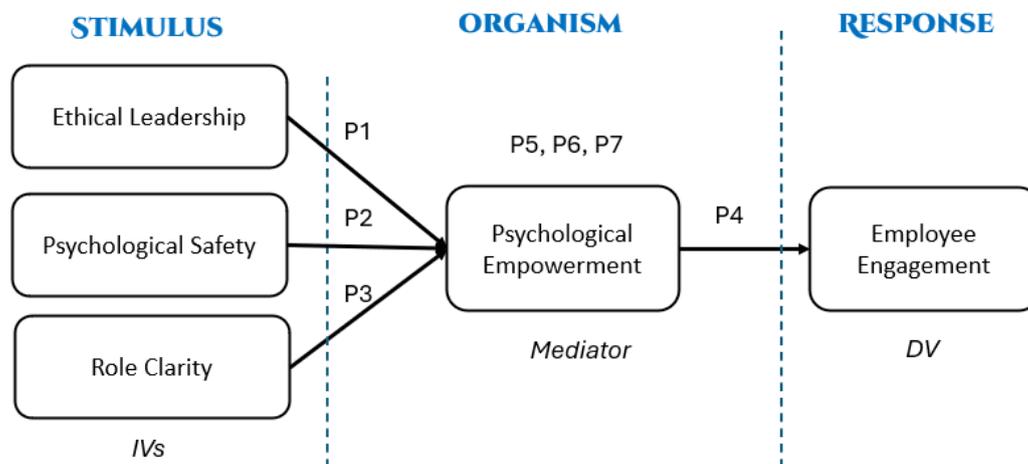

Figure 1: Conceptual Framework for Employee Engagement

Grounded in the Stimulus–Organism–Response (SOR) framework, the proposed relationships explain how organizational conditions (stimuli) influence employee engagement (response) through internal psychological processing (organism).

Ethical Leadership and Psychological Empowerment
Within the SOR framework, leadership behaviors constitute salient organizational stimuli that shape employees' cognitive and affective interpretations of the work environment. Ethical leadership, characterized by fairness, integrity, and principled decision-making, provides employees with consistent moral cues that reduce uncertainty and strengthen perceptions of legitimacy and trust. Such cues are particularly important in structured and hierarchical settings, where formal authority and compliance demands can otherwise constrain employees' sense of agency.

Prior research suggests that ethical leadership enhances employees' perceptions of autonomy, meaning, and impact by signaling that ethical conduct and voice are valued within the organization (Brown et al., 2005; Jada & Mukhopadhyay, 2018). Meta-analytic evidence further indicates that ethical leadership is positively associated with empowerment-related cognitions, although its role has often been examined indirectly or subsumed under broader leadership categories (Schermuly et al., 2022). From an SOR perspective, ethical leadership functions as an environmental stimulus that shapes employees' internal psychological evaluations, thereby strengthening psychological empowerment.

P1: Ethical leadership is positively related to psychological empowerment.

Psychological Safety and Psychological Empowerment
Psychological safety represents a relational feature of the work environment that influences how employees interpret interpersonal risks and organizational expectations. Within the SOR framework, psychologically safe environments act as stimuli that lower perceived threat,

enabling employees to engage cognitively and emotionally with their work roles without fear of negative consequences.

Empirical studies indicate that psychological safety facilitates learning, voice behavior, and proactive engagement by enhancing employees' confidence in their ability to influence outcomes and contribute meaningfully (Carmeli & Gittell, 2009; Edmondson, 1999). These experiences align closely with empowerment-related cognitions, particularly competence and impact. Recent evidence further suggests that psychological safety enables employees to frame job demands more positively, thereby strengthening internal motivational states (Espedido & Searle, 2021). Accordingly, psychological safety is expected to function as a relational stimulus that enhances psychological empowerment.

P2: Psychological safety is positively related to psychological empowerment.

Role Clarity and Psychological Empowerment
Role clarity serves as a cognitive stimulus that structures employees' understanding of work expectations, responsibilities, and performance standards. Within the SOR framework, clearly defined roles reduce ambiguity and cognitive overload, enabling employees to allocate effort more effectively and experience greater control over task execution. In structured and operational environments, unclear roles can generate stress, confusion, and reduced confidence, undermining psychological empowerment.

Conversely, role clarity provides cognitive structure, enabling employees to perform their tasks with greater confidence and perceived control. Empirical evidence consistently shows that role clarity enhances employees' perceptions of competence and autonomy, thereby strengthening psychological empowerment (Lan et al., 2025; Zahari & Kaliannan, 2023). This relationship is particularly salient in operational and manufacturing contexts, where task interdependence and procedural compliance heighten the consequences of role ambiguity. By providing cognitive structure and predictability, role clarity strengthens employees' internal sense of efficacy and control, thereby enhancing empowerment. Within the SOR framework, role clarity serves as a cognitive stimulus that shapes employees' interpretation of job demands.

P3: Role clarity is positively related to psychological empowerment.

Psychological Empowerment and Employee Engagement
Psychological empowerment represents the internal organismic state through which organizational stimuli are translated into behavioral responses within the SOR framework. Empowered employees are more likely to invest their physical, cognitive, and emotional energies into their work roles, which aligns closely with core definitions of employee engagement (Kahn, 1990; Schaufeli & Salanova, 2006).

Empirical studies consistently identify psychological empowerment as a strong predictor of engagement across organizational contexts (Juyumaya, 2022; Seibert et al., 2011). Empowerment enables employees to experience their work as meaningful and self-directed, fostering intrinsic motivation and sustained engagement. From an SOR perspective,

empowerment constitutes the key organismic mechanism that transforms external organizational conditions into engagement behaviors.

P4: Psychological empowerment is positively related to employee engagement.

Mediating Role of Psychological Empowerment
A central premise of the SOR framework is that environmental stimuli influence behavioral responses indirectly through internal organismic states. Applying this logic to employee engagement, ethical leadership, psychological safety, and role clarity is expected to influence engagement primarily by shaping employees' psychological empowerment.

Prior research supports the mediating role of empowerment in linking leadership and work conditions to engagement-related outcomes (Bakker & Albrecht, 2018; Monje-Amor et al., 2021; Wen et al., 2023). Towsen et al. (2020) found that psychological empowerment partially explains the relationship between role clarity and work engagement, indicating that empowerment is the mechanism through which clarity is transformed into sustained motivational states.

Existing research has typically examined these relationships in isolation, leaving limited understanding of how multiple organizational stimuli jointly operate through empowerment. Integrating these antecedents within a single SOR-based framework provides a more coherent explanation of how engagement emerges as a psychological response.

P5: Psychological empowerment mediates the relationship between ethical leadership and employee engagement.
P6: Psychological empowerment mediates the relationship between psychological safety and employee engagement.
P7: Psychological empowerment mediates the relationship between role clarity and employee engagement.

Expected Contributions of the Study
This study makes several important contributions to employee engagement research. Theoretically, it advances engagement scholarship by adopting the Stimulus–Organism–Response (SOR) framework to reconceptualize employee engagement as a psychological process rather than a static outcome. By integrating ethical leadership, psychological safety, and role clarity as organizational stimuli and positioning psychological empowerment as the central organismic mechanism, the study offers a coherent process-based explanation that addresses fragmentation in existing engagement frameworks.

Empirically, the study contributes by proposing an integrated model that simultaneously examines leadership, relational, and role-based conditions shaping engagement. The focus on mid-level employees in manufacturing multinational corporations responds to a notable gap in the literature, which has predominantly emphasized Western, service-oriented, or knowledge-intensive contexts. The framework provides a foundation for empirically testing mediation effects that clarify how organizational conditions are internalized into engagement in structured and operational environments.

From a managerial perspective, the study offers actionable insights by highlighting the importance of ethical leadership, psychological safety, and role clarity in fostering empowerment-driven engagement. For manufacturing MNCs, the framework underscores the need to design leadership practices and work systems that enhance employees' sense of meaning, competence, and control, thereby supporting more sustainable engagement.

Conclusion

Employee engagement continues to receive significant scholarly and managerial attention; however, theoretical fragmentation has limited the field's ability to explain how engagement emerges and is sustained across organizational contexts. Much of the existing literature remains dominated by static models that emphasize direct relationships between workplace conditions and engagement outcomes, offering limited insight into the internal psychological processes that shape employee responses.

This conceptual paper addresses these limitations by advancing a process-based framework of employee engagement grounded in the Stimulus–Organism–Response (SOR) model. By conceptualizing ethical leadership, psychological safety, and role clarity as organizational stimuli, psychological empowerment as the central organismic mechanism, and employee engagement as the behavioral response, the framework provides a coherent explanation of how organizational conditions are psychologically internalized into sustained engagement. In doing so, the paper reframes engagement as a dynamic psychological process rather than a static attitudinal state and integrates leadership, relational, and role-based factors within a unified structure.

Although conceptual in nature, the framework offers a clear agenda for future empirical research by advancing theoretically grounded propositions that can be tested across roles, industries, and cultural contexts. Overall, by positioning employee engagement within the SOR paradigm, this paper contributes to a more psychologically grounded and process-oriented understanding of engagement and provides a foundation for developing more effective and sustainable engagement practices in contemporary organizations.

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