

# The Underlying Process of High-Performance Work Systems on Innovation through Collective Mindfulness

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## ABSTRACT

Many organizations today are in complex and dynamic environments. These conditions require all organizations to have reliability. Human resource systems are developed to support organizational reliability. The result of a synergistic alignment of high-performance work practices leads to high-performance work systems. This conceptual paper aims to explain the influence of high-performance work systems on innovation via collective mindfulness. This study proposes some propositions by the theoretical exploration of literature review from previous studies. The results of the proposition development explain that high-performance work systems can influence innovation through collective mindfulness, which is based on five dimensions which are (a) preoccupation with failure, (b) reluctance to simplify interpretations, (c) sensitivity to operations, (d) commitment to resilience, and (e) deference to expertise. Finally, this conceptual paper provides a research opportunity on this topic to be further analyzed.

**Keywords:** *Collective mindfulness, High-performance work systems, Innovation*

## 1. INTRODUCTION

Many organizations strive to maintain their performance, especially when faced with challenging and unexpected conditions that force them to improve their internal systems, such as volatility, uncertainty, complexity, and ambiguity. Various human resource systems are developed and enhanced through synergies that support organizational reliability. Researchers and human resource management practitioners have found that the human resource system can substantially improve organizational performance by procuring, developing, and motivating their best talents [1]. According to Posthuma et al. [1], human resource systems may improve the competence, commitment, and productivity in organizations. High performance work systems (HPWS) are a collection of several elements that improve organizational efficiency and effectiveness [1]. Furthermore, HPWS is an advanced level of *high performance work practices* HPWP [2]. Shin and Konrad [2] reported that HPWS helps organizations achieve better results. In

general, organizations are gradually adopting it to support their development and maintain ongoing internal processes and allow synergistic interactions between various human resource practices.

The current dynamic and complex environment require all organizations to have reliability. It enhances the output of the company, specifically in innovation. In the mechanism or process, HPWS cannot directly determine innovation unless it is through mindfulness. Mindfulness was emphasized in high-reliability organizations, especially in complex environments where safety and reliability are highly valued, such as aircraft carriers, power grids, commercial aviation, and firefighters. At the organizational level, this aspect is commonly known as collective mindfulness. Vogus and Welbourne [3] defined collective mindfulness as a series of human resource practices that support organizations to continue alert and flexible. Furthermore, human resource practices can play a role in increasing reliability through a collective mindfulness process,

i.e., first, reluctance to simplify interpretation; second, sensitivity to operations; and third, commitment to resilience. According to Vogus and Welbourne [3], mindfulness allows reliability-seeking companies to interactively notice weak signals from complicated surroundings and respond to them more effectively. It improves the ability to innovate by enabling a company to develop new categories, examine multiple views, and focus on processes, which raises the possibility of finding new solutions to challenges [4].

According to Weick et al. [5], collective mindfulness has five dimensions, which are: (a) preoccupation with failure, (b) reluctance to simplify interpretations, (c) sensitivity to operations, (d) commitment to resilience, and (e) deference to expertise. Preoccupation with failure entails intentional consideration and ongoing surveillance, with each failure treated as a possible indicator of a greater problem. A reluctance to simplify interpretation implies addressing questions of wisdom actively and using assumptions to uncover the points that are perceived negatively. Operations sensitivity involves an integrated understanding of the operations. A commitment to resilience increases employees' and organizations' capacity to adjust to and recuperate from unexpected occurrences. The underspecification of structure (deference to expertise) [6], improves concentration by delegating decisions to the greatest specialists,

allowing them to focus on present events without interruption. Therefore, based on the explanation above, HPWS is a collection of human resource practices that work together to form a system, which can help the organization to keep growing through various innovations.

Vogus and Welbourne [3] used human resource (HR) practices as an antecedent of mindfulness. Specifically, it was focused on only three dimensions: first, reluctance to simplify interpretations, second, sensitivity to operations, and third, commitment to resilience because these three processes are considered essential in anticipating change [3]. Vogus and Welbourne [3] only provided hypotheses of but did not test collective mindfulness. Also, they only focused on the direct influence of human resource practices on innovation and tried to explain collective mindfulness at the organizational level through only three processes, consist of: first, reluctance to simplify interpretations, second, sensitivity to operations, and third, commitment to resilience. This study uses HPWS as its antecedent, which differs from HR practices. Specifically, HPWS is a coordinated collection of synergistic HPWP (high-performance work practices) rather than a single individual practice. Furthermore, this study tries to define the relationship between HPWS, collective mindfulness with five processes, and innovation. The conceptual model is presented in Figure 1.



**Figure 1 Conceptual Model**

**2. LITERATURE REVIEWS**

An emergence-based human resource management (HRM) framework [7] is used to

examine the HRM experiences of employees that lead to innovation at an organizational-level. We concluded that a high-performance work system (HPWS) can foster innovation by leveraging employee experience. Concerning innovation, Li et

al. [8] also regarded the volatile market and innovation as short product life cycles. Innovation management presents its challenges in the process of sustainable knowledge creation. Ployhart and Moliterno [7] explained innovation management from the emergence-enabling process. Individual knowledge, skills, abilities, and other characteristics (KSAOs) emerge from collective interactions such as information exchange, influence, and interpersonal resources, according to Ployhart and Moliterno [7]. By the process, the KSAOs contained in each employee represents the raw materials. The process of combining and aggregating raw materials and manifesting human capital resources is depicted through collective interaction. Ployhart and Moliterno [7] introduced the emergence-enabling process, a mechanism through which individual-level KSAOs are elaborated to fit with organizational-level human resource. Through the perspective of the emergence-enabling process [7], the presence of HPWS that can be felt in the organization raises the high involvement of employees with the potential to promote innovation. This is as a result of HPWS-based collective interactions work is being the primary supply for information exchange and aggregation. Furthermore, HPWS does not directly determine innovation as well as performance. However, through mindfulness, one theory of self-regulation—self-determination theory (SDT) suggests that mindfulness may be of great value in facilitating behavioral choices consistent with the needs, values, and interests of a person [9]. Therefore, mindfulness facilitates the fulfillment of organizational requirements through synergistic practices. One example is HPWS, carried out to realize innovation.

### **2.1 High-Performance Work Systems (HPWS)**

HPWS is a collection of HPWP that are coordinated, and creates a synergistic effect where specific practices strengthen each other to improve efficiency and effectiveness [1]. According to Posthuma et al. [1], HPWS can be divided into four levels in the high-performance human resource architecture, including principles, policies, practices, and products. Principles are broad assertions that serve as organizational and human resource (HR) systems' guiding values. On the other hand, HR are the overarching concept that influences the development of HR systems. The concepts are sometimes referred to as guiding principles in strategic organizational hierarchies and may contain mission, vision, and value statements. These assertions are meant to provide the lower-level architecture with a unified

orientation. Furthermore, identifying principles is critical since they are more generalizable. The level beneath the principle is policy, which describes how the organization directs its efforts toward performance improvement. They should be in line with the strategy adopted by the organization. For example, companies may adopt internally oriented policies to emphasize long-term employment relationships. This makes employees more willing to experiment and attempt different things in case the strategy emphasizes job stability and fosters mutual commitment between employees and the organization. Practices are the exact methods and processes an organization uses to put its principles and policies into action. Specifically, practice forms the basis for building theory in the HPWP literature. In high-performance HR architectures, it is called HPWP.

### **2.2 Collective Mindfulness**

Collective mindfulness was designed to describe how high-reliability organizations (HROs) avoided disasters and operated practically error-free under experimental conditions [10]. This focus has evolved and pays attention to what is happening around them and refuses to operate on autopilot. Furthermore, collective mindfulness is a technique of paying attention to a detailed grasp of one's situation and the variables that obstruct that comprehension in ordinary social, organizational activities. As previously explained by Weick et al. [5], collective mindfulness consists of five interrelated processes at various levels of the organization, which are (a) preoccupation with failure, (b) reluctance to simplify, (c) sensitivity to operations, (d) commitment to resilience, (e) and underspecification of structures (deference to expertise). Preoccupation with failure entails intentional consideration and ongoing surveillance. Each failure being treated as a possible indicator of a greater problem. A reluctance to simplify interpretation indicates actively questioning accepted wisdom and operating opinions to uncover points not perceived to be better. Sensitivity to operations entails developing and maintaining a holistic view of operations. A commitment to resilience involves increasing the ability of employees and organizations to accommodate and learn how to discover way from unexpected events better. The underspecification of structures results from smooth decision-making that happens at a high rate. Decisions are delegated to the person in the company having the highest expertise and familiarity with the issue. The fifth process is often referred to as differentiation to expertise.

### **2.3 Innovation**

Human resource management practices, often identified in various terms used interchangeably, such as HPWS, high-involvement work practices, or high-commitment HR practices, are essentially helping organizations deliver better results. The HRM system is created at the organizational level and experienced by each employee to impact the organization. Similarly, Li et al. [8] argued that focusing on the HPWP shared by employees would encourage innovation by generating collective interaction. First, high-involvement team-based activities will allow employees to collaborate with diverse team members on issue exploration (i.e., a problem-driven sort of search focused at solving that problem), which is a crucial mechanism for producing creativity. Second, employee participation in information exchange, training, and rotation of the job might enable them to build up enough overlapping levels of knowledge for efficient communication and knowledge exchange amongst people with different local knowledge repertoires. As a result, efficient information aggregation is more likely to occur. Third, by lowering the rigidity of knowledge transfer, employee discretion and profit-sharing contribute to creativity (e.g., difficulties experienced in the knowledge transfer process).

## **3. METHODOLOGY**

This is a conceptual study that includes a model and propositions. Based on a review of previous literature, this study proposes some propositions. The previous literature clearly explains the effect of high-performance work systems (HPWS) on innovation through collective mindfulness. This study also aims to assist future researchers in carrying out research to test these propositions.

## **4. PROPOSITIONS DEVELOPMENT**

### **4.1 HPWS and Mindfulness**

Vogus and Welbourne [3] argued that HR practices are a structural starting point for mindfulness processing because they reference innovation. Vogus and Welbourne [3] also argued that HR practices have been shown to have a key role in keeping high-reliability organizations (HROs) performing at near-zero error levels. HROs and reliability-seeking companies are then further driven to avoid simplifying their interpretations in order to cope with the complexity of their

environment [11]. The reluctance to simplify understanding is to maintain a different perspective and a broad repertoire of actions. HR practices facilitate innovation by activating and relying on mindfulness processes. Weick and Sutcliffe [11] stated that if the mind in general refers to the entirety or collection of processes, mindfulness refers to the interconnections between those activities. An awareness perspective articulated in this pattern is evident in high-reliability organizations (HROs). These organizations meet unique challenges in a crisis and may lead to failure to satisfy goals during the next crisis. Weick and Sutcliffe [11] explained the five processes of collective mindfulness. Specifically, 1) small failures must be considered (preoccupation with failure), 2) their specificity maintained (reluctance to simplify), 3) people must be aware of ongoing operations that signal failure (sensitivity to operations), 4) Attention is also very important to find a path to recovery (commitment to resilience), and 5) the expertise in response to problems (deference to expertise). Therefore, the propositions are as follows.

Proposition 1: HPWS has a positive effect on collective mindfulness through preoccupation with failure.

Proposition 2: HPWS has a positive effect on collective mindfulness through reluctance to simplify.

Proposition 3: HPWS has a positive effect on collective mindfulness through sensitivity to operations.

Proposition 4: HPWS has a positive effect on collective mindfulness through a commitment to resilience.

Proposition 5: HPWS has a positive effect on collective mindfulness through deference to expertise.

### **4.2 Collective Mindfulness and Innovation**

Collective mindfulness includes five processes, i.e., preoccupation with failure, reluctance to simplify interpretations, sensitivity to operations, commitment to resilience, and deference to expertise. Weick et al. [5] argued that chronic concerns in high-reliability organizations are the presence of analytic errors embedded in ongoing activities, the presence of unanticipated failure modes, and limited foresight that can amplify these analytic errors. Fear of failure gives organizations many of the qualities that will characterize them. According to Weick et al. [5], the uniqueness that arises is that failure is a rare occurrence. This

means that organizations that are engrossed in overcoming these deficiencies will lead to an organizational learning mode. Suppose failure is considered an important prerequisite for learning. In that case, it will lead to various new creativity that leads to innovation and make all forms of mistakes into improvements that will encourage innovation in the organization. Effective companies employ at least three strategies: considering all failures as a sign of system health, conducting a thorough examination of failures, and focusing on the obligation to succeed in order to enable the organization to innovate. Thus, the next proposition is as follows.

**Proposition 6:** Collective mindfulness through preoccupation with failure has a positive effect on innovation.

The next process of collective mindfulness is a reluctance to simplify. According to Weick et al. [5], organization members often simplify complex tasks. Members may ignore facts and focus on the task because numerous frameworks or mindsets have been simplified. However, this can pose a potential danger to organizations seeking high reliability by increasing the likelihood of the unexpected. Intuition is ignored, and the unintended consequences grow more serious. Therefore, the main problem lies in finding the problems encountered and which must be considered in time. Simplifications often carried out in organizations provide limitations in channeling various creative ideas to hinder the emergence of innovation. Therefore, organizations that seek high reliability encourage a reluctance to simplify things in various situations. Therefore, the proposition is formulated as follows.

**Proposition 7:** Collective mindfulness through reluctance to simplify has a positive effect on innovation.

The next collective mindfulness process is sensitivity to operations, emphasizing the three phases of awareness, including situation, perception, and description. Weick et al. [5] explained the importance of operating sensitivity through alerting, interpreting, or signaling from complex environments. Unexpected occurrences are less likely to occur due to situational awareness and sensitivity to operations, minimizing time inactivity. According to Weick et al. [5], surgical sensitivity is obtained by a mix of collectively shared mental representations, with multiple measures and situations assessed by continuous updating, knowledge of physical interconnections, and active diagnosis of pre-planned procedure limits. Therefore, sensitivity to operations can increase awareness regarding environmental

demands and changes that always expect new things to be realized through innovation. Therefore, the proposition is formulated as follows.

**Proposition 8:** Collective mindfulness through sensitivity to operations has a positive effect on innovation.

The next part of the collective mindfulness process is the commitment to resilience. According to Weick et al. [5], organizations with high effective reliability tend to develop anticipation and resilience. Anticipation refers to predicting and preventing potential hazards before destruction is fulfilled. In contrast, resilience relates to the ability to overcome unexpected dangers and learn to bounce back. Systems with well-developed improvisation capabilities should determine the potential threat. The main form of resilience commitment is increased overall abilities, including the general ability to investigate, learn, and act. Vogus and Welbourne [3] reported that absorbing and taking advantage of change is vital for organizations seeking reliability. The ability to quickly respond to a highly dynamic environment determines the ability to stay alive. Organizations with fast and successful growth recognize their weaknesses and always strive to take responsive actions, such as innovation, to respond to environmental changes. Therefore, the proposition is formulated as follows.

**Proposition 9:** Collective mindfulness through a commitment to resilience has a positive effect on innovation.

The next process of collective mindfulness is deference to expertise or underspecification of structures. Decisions in the organization aim to find someone with special knowledge about an event. In many cases, this is someone who has worked longer in a specific career or job. Organizations that seek high reliability pay close attention to decision-making based on capabilities. Therefore, people with special and particular abilities may solve problems through new abilities in terms of innovation. Therefore, the proposition is formulated as follows.

**Proposition 10:** Collective mindfulness through deference to expertise (underspecification of structures) has a positive effect on innovation.

## **5. CONCLUSION**

The strategic human resources perspective shows that human resources need to be considered as a system. These considerations are based on the need for a synergistic interaction between human resource practices that gave rise to HPWS. HPWS

helps instill perspectives that allow for enhanced two-way communication, recognize the need to update skills, and build new capabilities to help seek reliability to innovate. However, the mechanism underlying the process can be explained through collective mindfulness, a complex combination of human alertness, experience, skill, communication, and mindfulness. Therefore, organizations with high reliability seek to improve their capabilities by avoiding and evaluating errors in order to be prepared to face complex and uncertain environments. Preoccupation with failure, reluctance to simplify, sensitivity to operations, commitment to resilience, and deference to expertise are five interconnected processes that occur at various organizational levels. Preoccupation with failure is an active consideration and continual attention that treats each failure as an indicator of a greater problem. Reluctance to simplify entails aggressively challenging conventional wisdom and assumptions to unearth the things not seen to be better. Furthermore, creating and sustaining an integrated understanding of operations is what sensitivity to operations entails. Increase the ability of employees and organizations to adapt to and recover from unforeseen occurrences by committing to resilience. Lastly, the deference to expertise or underspecification of structures results from smooth decision-making that considers expert opinion. Therefore, HPWS, through collective mindfulness, influences innovation.

## ACKNOWLEDGMENTS

We acknowledge that this study was funded by research grant program “Rekognisi Tugas Akhir (RTA)” from Universitas Gadjah Mada, Yogyakarta, Indonesia for 2021.

## REFERENCES

- [1] R. A. Posthuma, M. C. Campion, M. Masimova, and M. A. Campion, *A High Performance Work Practices Taxonomy: Integrating the Literature and Directing Future Research*, vol. 39, no. 5. 2013.
- [2] D. Shin and A. M. Konrad, “Causality Between High-Performance Work Systems and Organizational Performance,” *J. Manage.*, vol. 43, no. 4, pp. 973–997, 2017.
- [3] T. J. Vogus and T. M. Welbourne, “Structuring for high reliability: HR practices and mindful processes in reliability-seeking organizations,” *J. Organ. Behav.*, vol. 24, no. 7, pp. 877–903, 2003.
- [4] E. J. Langer, “Minding Matters: The Consequences of Mindlessness–Mindfulness,” *Adv. Exp. Soc. Psychol.*, vol. 22, no. C, pp. 137–173, Jan. 1989.
- [5] K. E. Weick, K. M. Sutcliffe, and D. Obstfeld, “Organizing for High Reliability,” *Res. Organ. Behav.*, vol. 21, pp. 81–123, 1999.
- [6] T. J. Vogus and K. M. Sutcliffe, “Organizational Mindfulness and Mindful Organizing: A Reconciliation and Path Forward,” <https://doi.org/10.5465/amle.2011.0002c>, vol. 11, no. 4, pp. 722–735, Jul. 2012.
- [7] R. Ployhart and T. Moliterno, “Emergence of the human capital resource: A multilevel model,” *Acad. Manag. Rev.*, vol. 36, no. 1, pp. 127–150, 2011.
- [8] Y. Li, M. Wang, D. D. Van Jaarsveld, G. K. Lee, and G. Dennis, “From employee-experienced high-involvement work system to innovation: An emergence-based human resource management framework,” *Acad. Manag. J.*, vol. 61, no. 5, pp. 2000–2019, 2018.
- [9] K. W. Brown and R. M. Ryan, “The Benefits of Being Present: Mindfulness and Its Role in Psychological Well-Being,” *J. Pers. Soc. Psychol.*, vol. 84, no. 4, pp. 822–848, 2003.
- [10] K. M. Sutcliffe, T. J. Vogus, and E. Dane, “Mindfulness in Organizations: A Cross-Level Review,” *Annu. Rev. Organ. Psychol. Organ. Behav.*, vol. 3, no. January, pp. 55–81, 2016.
- [11] K. E. Weick and K. M. Sutcliffe, “Mindfulness and the quality of organizational attention,” *Organ. Sci.*, vol. 17, no. 4, pp. 514–524, 2006.