

# A Literature Review on Theories of Workplace Innovation\*

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## Abstract:

This abstract discusses the significance of reexamining the theory of workplace innovation (WPI) in the context of Nordic countries and Korea. The concept of WPI emphasizes the consideration of not only technological factors, but also social and psychological factors in order to improve both organizational performance and individual working life quality, thereby ensuring organizational sustainability.

However, Korean companies have been passive in adopting workplace innovation, focusing instead on technology-driven manufacturing innovation. The government's efforts have been limited to promoting workplace innovation consulting projects. Given this situation, there is a need to revisit the theory of workplace innovation, which has received insufficient attention, for the purpose of facilitating its social diffusion. To address this gap, this study aims to reconstruct the existing theories of workplace innovation by following the workplace innovation flow chart modified by the author.

This abstract presents an overview of the theoretical frameworks and perspectives relevant to workplace innovation. Firstly, the organizational design perspective at the structural level encompasses the Modern Social Technology System Design Theory (MSTSD), Job Demand-Control (JD-C) Theory, Job Demand-Control-Support (JDCS) Theory, and Job Demand Resource (JDR) Theory. Secondly, the cultural level perspective focuses on worker participation and encompasses theories such as Employee-Driven Innovation (EDI) theory, democratic dialogue theory, labor process theory, relational adjustment, and sociocracy. Thirdly, the strategic choice perspective of management incorporates resource-based theory, dynamic competency, high-performance work system, knowledge capital theory, lean management, management technology, high-reliability organization (HRD), and distributed leadership. Moreover, an integrated perspective is presented through the Integrated Workplace Innovation (TWIN) theory and the fifth factor model, which aim to integrate the perspectives of theorists, practitioners, and policy makers. Finally, the abstract concludes by discussing the limitations of the study and suggesting directions for future research.

**Keywords:** Workplace Innovation, Modern Sociotechnical System Design (M-STSD), Job Demand-Control (JD-C), Job Demand-Control-Support (JDCS), Job Demand Resource (JDR), Employee-Driven Innovation (EDI), Democratic Dialogue, Labor Process, Resource-based Theory, High Performance Work system (HPWS), Lean Management, Total Workplace Innovation (TWIN), the 5th Element.

## **Introduction:**

Workplace innovation (WPI) has been a central topic in Northern Europe for over half a century and was introduced in South Korea more than 20 years ago. The core of workplace innovation emphasizes that, to respond effectively to changes, not only technical factors such as production methods but also socio-psychological factors like workers' attitudes, behaviors, organizational structure, and design must be considered. This approach argues that improving organizational performance and the quality of work-life simultaneously is essential for sustainable organizations.

However, in South Korea, companies have predominantly focused on technological manufacturing innovation, while efforts to enhance the quality of work-life through workplace innovation have been limited. Government efforts have primarily been restricted to consulting projects. Given this context, reexamining under-discussed theories of workplace innovation is meaningful for its broader societal diffusion.

This study reorganizes existing theories of workplace innovation according to workplace innovation flowcharts. Theories are first presented from an organizational design perspective, including modern sociotechnical systems design (MSTSD). Then, cultural aspects, emphasizing worker participation and theories like employee-driven innovation (EDI), are discussed. Strategic perspectives and integrated approaches are also explored. Finally, the paper concludes by discussing limitations and directions for future research.

## **Section I: The Need for Discussion on Workplace Innovation Theories**

The socio-technical system (STS) movement that spread in Europe during the 1950s emphasized the interrelation between social and technical systems. This movement focused on principles for work organization and social relationships in the workplace, asserting that businesses and workers could efficiently utilize resources to enhance productivity while simultaneously improving the quality of working life (QWL) and health (Trist & Bamforth, 1951).

The STS movement was known by different names across regions: "quality of working life (QWL)" in Anglo-American countries, "industrial democracy" in Scandinavian countries, and "humanizing work" in Germany (De Sitter, Den Hertog, & Dankbaar, 1997; Van Eijnatten, 1993, 2007). Over time, the STS theory evolved to encompass new concepts such as high-performance work systems (HPWS), high-involvement work systems (HIWS), sustainable work systems, and workplace innovation (WPI) (Boxall & Winterton, 2015; Gittell, Seidner, & Wimbush, 2010). Despite the various names, the core principle remains the concept of "responsible autonomy," introduced by Trist & Bamforth (1951), which counters individual helplessness (Hvid & Scheller, 2017).

In recent years, advanced countries, including those in Europe, have faced dual challenges: the need to create innovative and flexible workplaces to address global competition and a declining workforce, while simultaneously fostering healthier workplaces (Van Amelsvoort & Van Hootegem, 2017). Bureaucratic organizations that maximize division of labor and centralize control may be suitable for stable mass production but struggle to adapt to dynamic changes in consumer demands and technological advances such as AI and robotics. This has led to a systematic approach emphasizing workplace innovation (Van Amelsvoort & Van Hootegem, 2017).

Despite these global trends, workplaces often still prioritize standardization and Taylorism, leading to precarious work conditions, deteriorating labor conditions, and increased managerial control (Standing, 2011; Alvesson, Bridgman, & Willmott, 2009). Data from the European Working Conditions Survey revealed that while quantitative job demands, such as workload and pace, have increased since 1995, workers' influence over their jobs and opportunities for learning have diminished.

In South Korea, discussions on workplace innovation began in the wake of the 1997 financial crisis. For example, Yuhan-Kimberly restructured its shift system, reducing working hours while increasing time for learning, achieving both job preservation and productivity gains. However, even 20 years later, workplace innovation has not gained widespread adoption, and theoretical discussions remain inadequate. The emphasis on technology-driven innovations for productivity is prevalent, yet such unilateral innovations are unsustainable in the long term.

Given these circumstances, workplace innovation is crucial for achieving sustainable growth, making it essential to consolidate the theories underpinning it. This paper seeks to systematically organize existing workplace innovation theories without delving into their practical application or barriers. These topics will be reserved for future research.

## **Section II: Discussion on the Concept of Workplace Innovation**

### **1. Development of Workplace Innovation Discussions in the EU**

Although discussions on workplace innovation began with the socio-technical system movement in the 1950s, this section focuses on developments since the 1990s. In 1995, the European Commission's Employment Directorate published "Europe's Next Step: Organizational Innovation, Competition, and Employment," a declaration on the future of work (Andreasen, 1995). Subsequently, in 1997, Eurofound conducted a large-scale research project titled "Worker Participation in Organizational Change," reaffirming the positive relationship between worker participation and organizational performance (Eurofound, 1997).

From 2004 to 2010, the Work-In-Net (WIN) association was formed as a network for work organization. Around the same period, the Employee-Driven Innovation (EDI) network was established. In 2005, the Lisbon Strategy's revisions prioritized employment as a critical political issue in Europe. Despite this, workplace innovation received limited attention outside Northern Europe, the Netherlands, France, and Germany (Ioannou, 2006; Pot, Totterdill, & Dhondt, 2017).

In 2013, the European Workplace Innovation Network (EUWIN) was established, encompassing 27 EU member states. EUWIN defined workplace innovation as practices and programs that enhance worker motivation, improve working conditions, and boost productivity, innovation capacity, market resilience, and overall competitiveness. The network emphasized that technological innovation alone was insufficient; social (or non-technological) innovation in the workplace was equally vital (European Commission, 2014).

Despite two decades of efforts, workplace innovation policies in the EU remain limited to guidelines rather than concrete legal frameworks or regulations. This lack of meaningful outcomes mirrors South Korea's challenges in promoting workplace innovation.

### **2. Preconditions for Workplace Innovation Discussions**

The concept of workplace innovation has predominantly been explored in advanced European nations. While the approaches vary, they share the common goal of simultaneously improving organizational performance and the quality of workers' lives. For meaningful discussions on workplace innovation, workers' rights must be socially guaranteed, and labor unions must hold stable positions for dialogue with employers. Without these conditions, applying workplace innovation theories in developing countries—where economic growth and competitiveness often take precedence—is challenging.

South Korea presents a mixed picture. By some measures, such as GDP and trade volume, it is considered an advanced nation. However, metrics like per capita income, unionization rates, and minimum wage levels suggest otherwise. Furthermore, issues like unstable labor relations and industrial accidents indicate that South Korea does not meet the necessary conditions for widespread adoption of workplace innovation.

Nevertheless, the government has promoted workplace innovation for over a decade, and discussions on industrial transformation, including "just transition," have been ongoing through institutions like the Economic, Social, and Labor Council.

### **3. Social Innovation and Workplace Innovation**

Social innovation, in a broad sense, encompasses not only work organization, human resource management, and labor relations in workplaces but also strategies for marketing and collaboration with suppliers, research institutions, and social partners (Pot, Rus, & Oeij, 2017). The essence of non-technological innovation lies in workers' participation and the effective utilization of human capital, aiming to simultaneously improve workers' performance and organizational outcomes.

Terms like high-performance workplaces, innovative workplaces, and sustainable work systems are often used interchangeably with workplace innovation (OECD, 2010; EESC, 2011). Fundamentally, workplace innovation stems from the belief that "people are a key asset" (Alagaraja, 2013). The process involves participatory workplace practices that foster continuous reflection, learning, improvement, and collaboration among employees, management, and stakeholders.

The EUWIN network defines workplace innovation as a series of practices that reshape business structures, human resource management, labor relations, and the work environment. These practices aim to enhance motivation, working conditions, productivity, innovation capacity, and competitiveness. Empirical studies have shown that workplace innovation improves both the quality of working life and organizational performance, making it beneficial for companies of all sizes (Kalmi & Kauhanen, 2008; Dhondt & Van Hootegeem, 2015; Oeij, Dhondt, & Korver (2011) and Oeij & Vaas (2016) present results that emphasize enhancing the quality of working life and organizational performance (Eeckelaert et al., 2012; Ramstad, 2009). These findings explain that workplace innovation benefits businesses of all sizes. Consequently, workplace innovation has been recognized as a method to respond to intensifying global competition and technological advancements, drawing significant attention from companies, professionals, and policymakers (Boxall & Purcell, 2016)..

## **Section II: Discussion on the Concept of Workplace Innovation (Continued)**

### **4. Structural and Cultural Dimensions of Workplace Innovation**

Workplace innovation has been explored at both national and corporate levels, with academic contributions from fields like sociology, business management, and organizational behavior. However, these perspectives have often led to misunderstandings due to their diverse approaches (Beauregard & Henry, 2009). Thus, it is essential to organize these views comprehensively (Dhondt & Van Hootegem, 2015).

Workplace innovation can be viewed in two ways: as an outcome or as a process (practices, policies, etc.). When considered as an outcome, it includes the quality of working life (QWL) and organizational performance. Although QWL has been conceptualized since the work of Davis & Cherns (1975), there is no standardized definition (Martel & Dupuis, 2006). Research on QWL often focuses on variables like organizational commitment and job satisfaction, while studies on work engagement or work-life balance remain less prevalent. From a performance perspective, productivity, quality, and financial outcomes are commonly examined.

When viewed as a process, workplace innovation can be approached from two dimensions:

1. **Structural Dimension (Structure Orientation):** This focuses on the structure of work organization and job design (Oeij et al., 2015; De Sitter, Den Hertog, & Dankbaar, 1997). It involves elements such as division of labor and segmentation of task control, granting workers decision-making and control rights. For instance, employees may influence their work, management, and production systems through job design, budget, planning, and autonomous team systems. This approach emphasizes the fundamental choices in designing production systems and work organizations.
2. **Cultural Dimension (Culture Orientation):** This emphasizes workers' participation in organizational decision-making through dialogues and other engagement methods (Oeij et al., 2015). It aims to enhance worker commitment and involvement. For example, senior management visiting production sites to engage directly with workers exemplifies this approach. Worker engagement is not limited to individuals but extends to worker representatives in social dialogue or collective bargaining. By fostering participation, cultural approaches improve commitment levels and grant formal representation to workers (Totterdill & Exton, 2014).

Additionally, workplace innovation can be viewed as a special organizational capability involving strategic tendencies, smart organization, flexible labor, and product-market improvement (Eeckelaert et al., 2012; Oeij et al., 2014). This perspective focuses on the internal and external conditions influencing the adoption of specific policies or programs. Internal aspects include smart organization and flexible labor, while external factors address strategic orientation and product-market improvement.

## 5. EUWIN's Definition of Workplace Innovation

In 2013, the European Union adopted workplace innovation as part of its industrial innovation policy, establishing EUWIN to disseminate the concept and promote related policies. EUWIN involves over 5,000 experts, user groups, labor unions, research institutions, and government agencies. Due to the diverse participants, perspectives and theoretical foundations of workplace innovation vary significantly.

EUWIN defines workplace innovation as “a set of practices and interventions involving work organization, human resource management, labor relations, and new technologies.” It emphasizes both processes and outcomes, advocating participatory and inclusive approaches

for continuous learning and improvement. It highlights the integration of leaders' strategic knowledge, field-specific expertise, and organizational design expertise to promote dialogue and constructive engagement among stakeholders.

Workplace innovation is described as fostering mutual gains—a "win-win" outcome—by improving organizational performance and workers' quality of life simultaneously. It does not exchange one for the other but seeks to achieve both

## **Section II: Discussion on the Concept of Workplace Innovation (Continued)**

### **6. Oeij & Dhondt's (2017) Definition of Workplace Innovation**

Experts have offered various conceptual definitions of workplace innovation. For example, Oeij et al. (2012, 2015), Oeij & Vaas (2016), and Pot (2011) emphasize that workplace innovation is not an end in itself but rather a tool for achieving dual objectives: enhancing organizational performance and improving the quality of working life. They argue that workplace innovation encompasses changes within organizations influenced by strategic decisions, preferred management philosophies, and approaches to organizational design, as well as worker participation in decision-making.

Oeij & Dhondt (2017) consolidate this perspective into three key aspects of workplace innovation:

1. **Purpose:** Workplace innovation benefits both organizations and workers.
2. **Process:** It involves innovative changes and adaptations within an organization.
3. **Composition:** It includes theoretical frameworks that guide activities and interventions in the workplace.

Their definition highlights three central principles:

1. Workplace innovation pursues complex goals, enhancing both organizational performance (e.g., productivity, innovation, quality) and the quality of working life (e.g., well-being, skill development, employee engagement).
2. It underscores the active participation of workers in the innovation process.
3. A comprehensive approach is necessary to achieve these objectives.

Operationally, workplace innovation is defined as “a participatory mechanism involving interventions in both organizational structures (e.g., job design, organizational design) and cultural elements (e.g., leadership, coordination, organizational behavior) aimed at simultaneously improving organizational performance and workers' quality of life.” The participatory mechanism requires employee involvement in decision-making, which is a fundamental precondition for workplace innovation (Totterdill & Exton, 2014).

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## **Section III: Approaches to Workplace Innovation Theories**

The approach to workplace innovation varies depending on the perspectives of researchers, policymakers, and practitioners, as well as the starting points for organizational change. Change may begin with people, system restructuring, or processes. Some approaches emphasize human

relationships and communication, while others prioritize work organization, technology, and rules.

Three main factors influence the starting point for workplace innovation: strategic choices by management, the degree of centralization or decentralization in management approaches (command and control versus participation and trust), and the current state and political-economic context of the country (Oeij & Dhondt, 2017).

### 1. Three Academic Approaches

Three academic disciplines provide insights into workplace innovation:

1. **Organizational Sociology and Psychology:** This discipline seeks to explain employee behavior within organizations. Discussions on high-performance work systems (HPWS) emphasize that bundles of HR practices are more impactful than individual HR practices (Subramony, 2009). However, the discipline does not provide concrete guidance on how to bundle these practices effectively.
2. **Insider Econometrics:** Insider econometrics expands economic analysis to the organizational level (Gibbons & Roberts, 2013). It poses three main questions:
  - Does a new management practice improve productivity?
  - Why does it improve productivity?
  - Why is it being adopted?While it evaluates the effectiveness of practices, it often lacks guidance on their implementation or detailed consideration of employee autonomy and teamwork.
3. **Engineering and Operations Management:** This discipline adopts modern sociotechnical thinking (MST), which combines structural and HR perspectives in organizational design (Mohr & van Amelsvoort, 2016). Critics argue that it often focuses too heavily on HR elements, neglecting the structural aspects of organizations. Integrated approaches are necessary to connect both dimensions, emphasizing that HR practices and structural design are equally critical to workplace innovation.

## Section III: Approaches to Workplace Innovation Theories (Continued)

### 2. Classification of Workplace Innovation Theories and Flowcharts

#### (1) Classification of Workplace Innovation Theories by Oeij & Dhondt (2017)

Oeij and Dhondt (2017) classify workplace innovation theories into four broad categories. These categories focus on varying aspects of workplace innovation, from human relations to organizational systems, processes, and strategic management.

Major Classification	Subcategories
1. Emphasis on Human Relations and Communication	1.1 Relational Coordination (RC) 1.2 Job Demands-Resources Model (JD-R)
2. Emphasis on Institutions, Work Organization, Technology, and Rules	2.1 Modern Socio-Technical Systems Design (M-STSD) 2.2 Job Demands-Control-Support Model (JD-CS Model) 2.3 Lean Management
3. Emphasis on Change Processes and Interventions	3.1 Fifth Element Theory (EDI) 3.2 Employee-Driven Innovation 3.3 Democratic Dialogue 3.4 Labor Process Approach

Major Classification	Subcategories
4. Emphasis on Strategic Choices and Management Systems	4.1 Resource-Based Theory/Dynamic Capabilities/High-Performance Work Systems/Knowledge Capital 4.2 Management Technology 4.3 High Reliability Organizations (HROs)

**Source:** Oeij, P.R.A. & Dhondt, S. (2017), Theoretical approaches supporting workplace innovation in Oeij, P., Rus, D., & Pot, F. D. (Eds.). *Workplace Innovation: Theory, Research and Practice* (pp. 63-78). Springer.

Examples of theories within these categories include:

1. **Relational Coordination (RC) and Job Demands-Resource Model (JD-R):** These emphasize the importance of relationships and resources for achieving both organizational and worker outcomes.
2. **Modern Sociotechnical Systems Design (M-STSD):** Focuses on balancing job complexity and control to create more flexible and efficient organizations.
3. **Employee-Driven Innovation (EDI):** Highlights workers' active participation in innovation processes.
4. **High-Reliability Organizations (HROs):** Prioritize safety and trust in their organizational strategies.

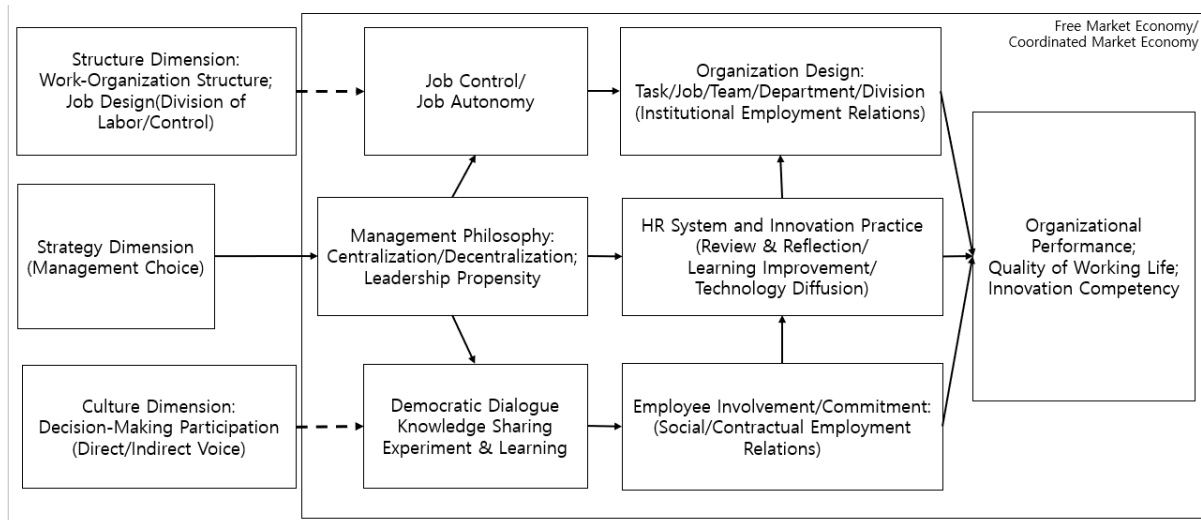
While these categories provide a framework for understanding workplace innovation, Oeij & Dhondt stress that successful implementation requires integrating strategy, structure, and culture into an interactive system. Workplace innovation involves a sequence of decisions and interventions guided by managerial strategies and worker participation.

## (2) Flowchart of Workplace Innovation

The flowchart (depicted as a diagram in the original document) outlines the process of workplace innovation. It conceptualizes workplace change by addressing key questions:

- Who initiates the change?
- Who participates in the process?
- What aspects of the workplace are changed?
- How are these changes implemented?
- What are the intended outcomes?





**[Figure 1] Flowchart of Workplace Innovation (translated from Korean version)**

*Source:* Adapted and extensively revised by the author based on Karanika-Murray, M., & Oeij, P. R. A. (2017), “How can work and organisational psychologists fortify the practice of workplace innovation?”, in Oeij, P., Rus, D., & Pot, F. D. (Eds.), *Workplace Innovation: Theory, Research and Practice* (pp. 339-353), Springer, p. 343, Fig. 20.1.

The flowchart highlights two primary dimensions of workplace innovation:

1. **Structural Dimension:** Focuses on job design and organizational structure, including autonomy, team roles, and decision-making authority. Structural changes aim to enhance the alignment between job requirements and worker control.
2. **Cultural Dimension:** Addresses workers' involvement in decision-making, emphasizing dialogue, engagement, and participatory leadership. This dimension fosters stronger relationships between management and employees, increasing commitment and trust.

Strategic managerial decisions act as a bridge between these dimensions, shaping organizational culture and HR systems. The ultimate goal is to achieve a win-win outcome: improved organizational performance and enhanced quality of work-life.

### 3. Organizational Design from a Structural Perspective

#### (1) Modern Sociotechnical Systems Design (M-STSD)

M-STSD builds upon the socio-technical systems theory (STS) introduced in the 1950s. It aims to simultaneously improve organizational performance (e.g., quality, flexibility, efficiency) and workers' quality of life by balancing technical and social aspects within organizations. Central to this theory is achieving harmony between job demands (qualitative and quantitative) and job control (autonomy).

Key elements include:

- **Control Requirements and Capabilities:** Ensuring workers have sufficient autonomy to meet job demands at individual, team, and organizational levels.
- **Job Design for Complexity:** Moving from simple jobs within complex organizations to complex jobs within simple organizations.
- **Worker Autonomy:** Granting workers discretion over how tasks are performed, which improves well-being, motivation, and organizational outcomes (Hackman & Oldham, 1976).

Empirical studies support M-STSD's benefits, showing that job autonomy enhances learning, reduces turnover, and fosters organizational growth (Preenen et al., 2016; Holman et al., 2009).

## **(2) Job Demand-Control (JDC) Theory**

Karasek's (1979) JDC theory posits that workers perform best when job demands are high but are accompanied by high levels of job control. This balance creates "active jobs," which reduce stress and promote learning. Conversely, high demands paired with low control lead to stress and negative health outcomes.

## **(3) Job Demands-Control-Support (JDCS) Theory**

Building on JDC theory, JDCS adds the element of social support from colleagues and supervisors. This framework emphasizes the role of supportive environments in mitigating stress and enhancing well-being and performance (Johnson & Hall, 1988).

## **(4) Job Demands-Resource (JD-R) Model**

The JD-R model classifies workplace factors into two categories:

- **Job Demands:** Aspects requiring sustained physical or mental effort, potentially leading to exhaustion and stress.
- **Job Resources:** Factors that reduce job demands, promote growth, and motivate workers.

The model suggests that job resources buffer the effects of high demands, fostering motivation and engagement (Bakker & Demerouti, 2007).

## **Section III: Approaches to Workplace Innovation Theories (Continued)**

### **4. Worker Participation from a Cultural Perspective**

While structural dimensions of workplace innovation focus on job design, cultural dimensions emphasize worker participation. This perspective highlights direct participation by individual workers rather than indirect participation through labor unions or workers' councils. In Northern Europe, worker participation is often framed as "democratic dialogue."

Worker participation plays a critical role in achieving the dual objectives of workplace innovation: enhancing organizational performance and improving the quality of working life (De Sitter et al., 1997; Karasek & Theorell, 1990; Ramstad, 2009). However, participation does not inherently lead to win-win outcomes. If participation is used solely as a tool for achieving

specific organizational goals, such as increasing productivity, it is unlikely to be sustainable (Cressy, Totterdill, & Exton, 2013).

Participation extends beyond organizational performance or well-being. Democratic societies require individuals to participate in decision-making processes, even outside traditional political domains (Emery & Thorsrud, 1976; Gustavsen, 1992). Democratic workforce structures, information sharing, and participatory workplace practices are central to corporate ethics and sustainability (Cressey, Totterdill, & Exton, 2013).

### **(1). Employee-Driven Innovation (EDI)**

**Definition and Historical Context** Employee-driven innovation (EDI) is based on the belief that all workers have the potential to contribute to organizational innovation. Unlike top-down innovation processes, EDI follows a bottom-up approach grounded in workers' everyday experiences and knowledge. EDI emphasizes direct participation by individual workers rather than indirect involvement through unions or councils. In Norway, EDI has been viewed as a form of democratizing the innovation process.

Historically, EDI emerged in Norway during the 1950s as part of efforts to shift away from hierarchical, employer-centric decision-making. In Northern Europe, EDI has been institutionalized, with worker participation embedded in mechanisms like work environment committees, works councils, and departmental councils.

**Key Propositions of EDI** Hansen, Amundsen, Aasen, and Gressgård (2017) outline four key propositions of EDI:

1. **Participation Enhances Productivity:** Workers who influence their work processes are more satisfied and motivated, leading to higher productivity.
2. **Participation as a Means of Empowerment:** Worker participation balances power between employers and employees.
3. **Participation Reduces Conflict:** Collaboration between employers and employees fosters social agreement and reduces workplace conflict.
4. **Participation Contributes to Social Democracy:** Beyond political domains, workplace democracy is essential for broader societal democratization.

For EDI to succeed, certain conditions must be met, including job autonomy, opportunities for learning, and supportive organizational environments. Additionally, EDI relies on cooperative relationships between workers and management to drive meaningful innovation.

### **Cultural Characteristics**

- **Commitment:** High commitment to innovation among workers.
- **Cooperative Attitude:** Belief in mutual agreement on cooperation between the company and workers.
- **Pride:** A sense of pride in working for a particular company.
- **Trust:** The organization is characterized by trust-based relationships.
- **Tolerance:** Acknowledgment of diversity and acceptance of mistakes as part of the process.
- **Sense of Safety:** Workers feel safe to express themselves; suggestions are encouraged and linked to training or new job opportunities.

- **Development Orientation:** Belief that improvement and innovation are integral parts of the job.
- **Open-mindedness:** Internal and external communication is characterized by openness.
- **Autonomy:** Workers can exert influence while performing various tasks.

*Source:* Translated from Hansen, K., Amundsen, O., Aasen, T. M. B., & Gressgård, L. J. (2017), "Management practices for promoting employee-driven innovation," in Oeij, P., Rus, D., & Pot, F. D. (Eds.), *Workplace Innovation: Theory, Research and Practice* (pp. 320-338), Springer, p. 333, <Table 19-1>.

## (2) Democratic Dialogue

Democratic dialogue is directly linked to worker participation. Typically, in labor markets, negotiations occur between employers and representatives of employees. However, democratic dialogue theory emphasizes the direct participation of workers in discussions on all issues (Gustavsen, 2016: 189).

Dialogue begins from a perspective of communication. To be recognized as a dialogue, all participants must have equal opportunities to express their opinions. It should be an egalitarian, innovative communication method that builds trust and ensures collaboration. The level of trust among participants, their willingness and ability to cooperate, and their participation in creating new organizational forms are critical. In workplace innovation, democratic dialogue plays a crucial role in facilitating worker involvement processes within the workplace.

For democratic dialogue to be feasible, constructive labor relations must be established at the national or industry level. A notable point is that democratic dialogue theory may conflict with expert-driven organizational design approaches. When organizational design experts focus solely on efficiency, they may find democratic dialogue disappointing and warn that emphasizing such dialogue could lead to suboptimal rather than optimal outcomes. This can create practical challenges.

One theory that values the process of workplace innovation is the concept of "productive reflection," which involves integrating workers' opinions into organizational structures. It actively utilizes workers' formal or implicit skills and competencies in processes of improvement, innovation, and change (Cressey, Totterdill, & Exton, 2013: 221).

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## (3) Labor Process Approach

The labor process approach, based on Marxist perspectives, views capitalism as a system of unequal power relationships. It explains how employers control workers through deskilling, technological polarization, low wages, and minimal social security. Proponents of the labor process approach argue that collective actions, such as strikes, are necessary to improve workers' conditions, compensation, and job quality.

While this approach is radical, it acknowledges that employers recognize the need to invest in their workers. It suggests that power dynamics are always present in workplace innovation and that institutionalized negotiation and a minimum level of trust in society or organizations are prerequisites for cooperative change.

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#### **(4) Relational Coordination (RC)**

The relational coordination theory posits that work requiring frequent interactions is most effectively coordinated through shared goals, shared knowledge, and mutual respect. It emphasizes frequent, timely, accurate, and problem-solving communication as key elements (Gittell, 2016). Studies have shown a positive relationship between relational coordination and the performance of organizations and workers.

The design of work systems can either support or hinder relational coordination. Relational coordination becomes critical in situations where tasks are interdependent, uncertain, and time-constrained. Its core focus is on "teamwork" from a horizontal perspective, highlighting cooperation. In essence, workplace innovation is achieved through employee participation (Gittell, 2016).

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#### **(5) Sociocracy**

Democratic values are essential for creating innovative and human-centered organizations. Sociocracy emphasizes participatory aspects in strategic decision-making (Lekkerkerk, 2016). Participatory and democratic strategic decision-making enhances control over strategic tasks, fosters worker engagement, and plays a vital role in improving labor relations.

Sociocracy was first mentioned in the Netherlands in the 1970s, though it did not gain widespread adoption. Sociocracy involves engaging individuals from various positions in strategic decision-making, including innovation and organizational change (Endenburg, 1998).

### **5. Strategic Choices and Management Systems**

For strategic choices and management systems to be incorporated into workplace innovation theories, they must address not only economic goals like productivity, quality, and financial performance but also the quality of working life (QWL), including giving workers a voice. If management solely emphasizes organizational performance, it may align with innovation theories but cannot be considered part of workplace innovation theories.

#### **(1) Resource-Based Theory/Dynamic Capabilities/High-Performance Work Systems/Knowledge Capital**

These theories adopt a systemic perspective, emphasizing internal resources that provide a competitive advantage, such as management techniques, work organization, knowledge, and capabilities. A competitive advantage arises when these internal resources enhance efficiency and efficacy but are challenging for other organizations to replicate.

Resource-based theory and dynamic capability theory (Eisenhardt & Martin, 2000) stress the need for organizations to adapt to environmental changes. This involves the deliberate creation, expansion, and modification of resource bases (Helfat et al., 2007). Although the accounting undervaluation of knowledge capital remains an issue, the OECD (2012) highlights that investments in knowledge capital significantly enhance innovation capacity.

High-Performance Work Systems (HPWS) emerge from resource-based theories and focus on economic performance, though they often pay less attention to job quality (Appelbaum, Hoffer Gittell, & Leana, 2011; Boxall & Macky, 2014). HPWS assumes a correlation between job quality and productivity but does not emphasize job autonomy. Among HPWS approaches, the High-Involvement Work System (HIWS) stands out for emphasizing job autonomy and worker participation, which supports workplace innovation by predicting higher job satisfaction and better work-life balance (Boxall & Macky, 2014).

## **(2) Lean Management (Lean Thinking)**

Lean management shares similarities with job design theories like M-STSD. It focuses on minimizing waste and reinvesting savings into improving job quality and employee skills, benefiting organizations, workers, and consumers (Womack & Jones, 2005). Lean practices provide tools to quickly respond to market demands and improve task control by addressing inefficiencies.

However, empirical support for lean management is limited (Landsbergis, Cahill, & Schnell, 1999). Worker exclusion during change processes often leads to excessive standardization, overwork, and reduced autonomy, worsening working conditions (De Menezes, Wood, & Gelade, 2010; Koukoulaki, 2014). To align lean management with workplace innovation, improving QWL must be a central goal, and workers must actively participate in innovation processes.

## **(3) Management Technology**

The management technology approach argues that combining appropriate management capabilities with economic performance is crucial (Bloom & Van Reenen, 2010). Managers' choices regarding strategies and management systems significantly impact economic outcomes, independent of market conditions.

Management practices and tools affect productivity and innovation. Besides tangible assets, attention to intangible assets and management practices is essential. Workers' participation is critical for enhancing productivity and achieving innovation. Dhondt et al. (2013) developed a maturity model for workplace innovation, outlining 37 competencies related to management, HR, production processes, and communication, which organizations should adopt to drive workplace innovation.

## **(4) High-Reliability Organizations (HROs)**

HROs are organizations that perform atypical tasks under critical conditions, such as power delivery systems, air traffic control, nuclear-powered aircraft, hospital emergency rooms, and accident investigation teams. While HROs emphasize safety, they require intense work under short timeframes (Weick & Sutcliffe, 2007).

Despite high levels of standardization and formalization to prevent catastrophic errors, unique circumstances demand deviations from established rules. HROs continuously review and modify standards and rules, resulting in flexible job designs. These active jobs are typical of workplace innovation, demonstrating its characteristics and outcomes.

## **(5) Shared and Distributed Leadership**

Leadership is a key factor enabling workplace innovation. Through delegating authority, promoting autonomy, and adopting people-centered leadership styles, leaders inspire passion and emphasize decentralized, trust-based systems. Totterdill et al. (2002) highlight that workplaces should allow workers to fully develop and utilize their skills, knowledge, and creativity.

Shared or distributed leadership involves delegated authority and distributed responsibilities for driving change, distinguishing it from charismatic leadership models (Buchanan et al., 2007; Caldwell, 2005). Distributed leadership fosters organizational capacity, utilizing workers' knowledge, skills, and creativity, making it a vital component of workplace innovation.

In free-market economies, workplace innovation often depends on management's choices, where distributed leadership plays a crucial role.

## 6. Integrated Approaches

### (1) Total Workplace Innovation (TWIN)

Even with differing perspectives on workplace innovation, addressing change, competitiveness, and innovation requires various viewpoints and theories. These perspectives allow for mutual learning, though it may not always be necessary to use every approach simultaneously. For instance, when employing M-STSD (Modern Socio-Technical Systems Design), lean management practices might not be required. Similarly, when using the JDC (Job Demands-Control) model alongside job crafting, the details of democratic dialogue organizations may already be inherently reflected. The critical aspect is ensuring worker participation and engagement in the change process.

Total Workplace Innovation (TWIN) seeks to consolidate discussions on workplace innovation by organizing perspectives related to management, operations, HR, and ICT, starting from M-STSD. Although TWIN is not yet fully developed, it emphasizes the importance of worker participation to improve organizational performance and QWL (Quality of Working Life). It also acknowledges that workers experience cycles of joining and leaving the organization and constant adjustments between individuals and their environments.

TWIN theory builds on M-STSD by incorporating additional concepts, such as lean management (logistics and quality control), total productive maintenance (integrating operations and management), HRM (human resource management policies), relational coordination theory (enhancing horizontal communication), ICT (information infrastructure design), and sociocracy (participatory strategic decision-making and policy formulation) (Van Amelsvoort & Van Hoottegem, 2017).

M-STSD views organizations as networks of individuals performing tasks and roles through interactions using tools and technologies. Tasks and roles are allocated to individuals, teams, departments, and business units. The theory distinguishes between two structures:

- **Production Structure (PS):** Core task processes.
- **Control Structure (CS):** Structures managing implementation and core task processes.

According to M-STSD, tasks and roles must integrate to form cohesive processes. Each individual's role and task collectively contribute to a team's or organization's overall task,

ideally producing a final output from start to finish. However, this ideal is rare, and roles often depend on connections between nodes, requiring collaboration. These nodes interact to address unforeseen disruptions caused by internal changes (e.g., communication errors, incomplete inputs) or external changes (e.g., human errors, resource shortages).

To address these changes, M-STSD suggests redesigning division structures to reduce interaction complexity or increasing task control at the source of changes. De Sitter et al. (1997) emphasize simplifying organizations while making jobs more complex to respond to dynamic environments. Bureaucracies, in contrast, create oversimplified jobs that are ineffective in dealing with complexity. TWIN builds on this by advocating for complex jobs to handle complex environments (Mohr & Van Amelsvoort, 2016).

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## (2) Fifth Element Theory

The Fifth Element theory is built on a system of four interdependent elements:

1. **Task and Team Autonomy:** Delegation of authority to self-managed teams.
2. **Flexible Structures:** Trust-based systems and procedures with a people-centered approach.
3. **Opportunities for Improvement and Innovation:** Systematic opportunities for worker-led innovation.
4. **Worker Voice in Strategic Decisions:** Co-creation and distributed leadership that includes workers in strategic decision-making.

**Source:** Totterdill, P. (2015). *Closing the gap: The fifth element and workplace innovation*. European Journal of Workplace Innovation, Vol. 1, No. 1, pp. 55-74.

The Fifth Element emerges when the above four elements are fully integrated into organizational practices. This leads to customer-focused thinking, worker participation, a culture of possibility, resilience, cooperative employment relations, and proactive behavior. These factors collectively result in high organizational performance, improved QWL, and sustainable organizations (Pot, Totterdill, & Dhondt, 2016; Totterdill & Exton, 2014).

## 7. Summary of Workplace Innovation Theories

This study organizes workplace innovation theories, starting from existing classifications and reorganizing them according to the workplace innovation flowchart discussed earlier. Among the theories used most frequently to explain workplace innovation, the Modern Socio-Technical Systems Design (M-STSD) theory stands out. M-STSD is based on job design and, within the framework of workplace innovation theories, falls under structural organizational design.



〈표 4〉 본 연구에서 제시하는 일터 혁신 이론 분류

대분류	소분류
1. 구조 차원의 조직설계 관점	1.1 현대 사회기술체계(Modern Sociotechnical Systems Design, M-STSD)이론 1.2 직무요구-통제(Job Demand-Control, JD-C)이론 1.3 직무요구통제지원(Job Demands-Control-Support model, JDCS)이론 1.4 직무요구-자원(Job Demands-Resource Model, JD-R)이론
2. 문화 차원의 근로자참여 관점	2.1 근로자주도 혁신(Employee-Driven Innovation, EDI)이론 2.2 민주적 대화(Democratic Dialogue) 2.3 노동과정론(Labor Process Approach) 2.4 관계조정(Relational Coordination, RC) 2.5 Sociocracy
3. 경영자의 전략적 선택 관점	3.1 자원기반이론(Resource-based Theory) / 동적역량(Dynamic Capability) / 고성능작업체계(High Performance Work System, HPWS)/지식자본(Knowledge Capital) 3.2 린경영(Lean Management) 3.3 관리기술(Management Technology) 3.4 고신뢰조직(High Reliability Organizations, HROs) 3.5 분배리더십(Shared/Distributed Leadership)
4. 통합적 관점	4.1 통합적 일터 혁신(Total Workplace Innovation, TWIN)이론 4.2 제5요소(Fifth Element) 모형

출처: Oeij, P.R.A. & Dhondt, S. (2017), Theoretical approaches Supporting Workplace Innovation in Oeij, P., Rus, D., & Pot, F. D. (Eds.). *Workplace Innovation: Theory, Research and Practice*(pp. 63-78), Springer를 기초로 필자가 수정해서 정리함.

Accordingly, this study first introduced structural organizational design perspectives related to job design, including the M-STSD theory, the Job Demands-Control (JDC) theory, the Job Demands-Control-Support (JDCS) theory, and the Job Demands-Resources (JDR) theory. Following this, the study explored the cultural dimension of worker participation, which contrasts with the structural perspective, including theories such as Employee-Driven Innovation (EDI), Democratic Dialogue, the Labor Process Approach, and Sociocracy.

Workplace innovation refers to the process by which organizations respond to external environmental changes such as globalization, competition, labor market shifts, advancements in information technology, automation, and robotics. In this process, strategic choices made by management play a crucial role. From this perspective, the study explains resource-based theories, high-performance work systems (HPWS), lean management, management technologies, high-reliability organizations (HROs), and distributed leadership.

## 8. Summary of Job Design-Related Factors

This study has reviewed various theories related to job design and examined their outcomes, particularly focusing on psychosocial factors in the work environment. Jain, Dediu, Zwetsloot, and Leka (2017) provide a comprehensive summary, categorizing factors into four perspectives:

### Job Design Perspectives

#### 1. Structural Organizational Design Perspective:

- **Modern Socio-Technical Systems Design (M-STSD):** Emphasizes simplifying organizations while making tasks more complex.
- **Job Demands-Control (JD-C) Theory:** Balances demands and control to reduce work stress.

- **Job Demands-Control-Support (JD-CS) Model:** Adds social support to the JD-C framework for better well-being.
  - **Job Demands-Resource (JD-R) Model:** Highlights the role of resources in balancing job demands and promoting engagement.
2. **Cultural Worker Participation Perspective:**
    - **Employee-Driven Innovation (EDI):** Focuses on worker involvement in the innovation process.
    - **Democratic Dialogue:** Promotes equal participation in organizational decision-making.
    - **Labor Process Approach:** Examines power dynamics and worker empowerment.
    - **Relational Coordination (RC):** Stresses communication and collaboration among workers.
    - **Sociocracy:** Encourages participatory decision-making in management.
  3. **Managerial Strategic Choice Perspective:**
    - **Resource-Based Theory/Dynamic Capabilities/HPWS/Knowledge Capital:** Focuses on leveraging internal organizational resources for competitive advantage.
    - **Lean Management:** Emphasizes reducing waste and reinvesting savings into worker development.
    - **Management Technology:** Stresses the role of management tools and techniques in improving performance.
    - **High-Reliability Organizations (HROs):** Focuses on task adaptability in high-risk environments.
    - **Shared/Distributed Leadership:** Encourages decentralized leadership and collaborative decision-making.
  4. **Integrated Perspectives:**
    - **Total Workplace Innovation (TWIN):** Combines structural, managerial, and cultural elements for holistic innovation.
    - **Fifth Element Theory:** Integrates worker autonomy, flexible structures, learning opportunities, and distributed leadership.

**Source:** Oeij, P.R.A. & Dhondt, S. (2017), *Theoretical Approaches Supporting Workplace Innovation*, in Oeij, P., Rus, D., & Pot, F. D. (Eds.), *Workplace Innovation: Theory, Research and Practice* (pp. 63-78). Adapted and revised by the author.

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## Psychosocial Factors and Their Effects

Key factors in the psychosocial work environment include:

- **Job Demands:** Workload and time constraints.
- **Autonomy:** Workers' control over their tasks.
- **Resources (Support):** Social support from colleagues and supervisors.

These factors significantly impact outcomes like burnout, depression, anger, cardiovascular diseases, and musculoskeletal disorders (MSDs). Proper management of these factors is critical for fostering positive results in workplace innovation.

The primary psychosocial outcomes for workers are:

1. **Job Engagement:** A state of fulfillment, passion, commitment, and immersion in work (Bakker, Demerouti, & Sanz-Vergel, 2014).
2. **Job Satisfaction:** A pleasurable emotional state resulting from evaluating one's job (Locke, 1969: 317).

Numerous empirical studies highlight the influence of psychosocial factors on job engagement and satisfaction, key indicators of workplace well-being.

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## **Empirical Research Findings**

1. **Job Burnout:**
  - Alacorn (2011); Hansen, Sverke, & Näswall (2009); Hakanen, Schaufeli, & Ahola (2008).
2. **Emotional Exhaustion and Job Satisfaction:**
  - Häusser, Mojzisch, Niesel, & Schulz-Hardt (2010).
3. **Depression:**
  - Rau, Morling, & Rösler (2010).
4. **Cardiovascular Diseases:**
  - Backé et al. (2012); Kivimäki et al. (2006); Netterstrøm, Kristensen, Jensen, & Schnor (2010).
5. **Musculoskeletal Disorders (MSDs):**
  - Hauke, Flintrop, Brun, & Rugulies (2011); Haukkal et al. (2011).
6. **Job Engagement:**
  - Christian, Garza, & Slaughter (2011); Crawford, LePine, & Rich (2010); Häusser, Mojzisch, Niesel, & Schulz-Hardt (2010); Mauno, Kinnunen, & Ruokolainen (2007).
7. **Job Satisfaction:**
  - Birtch, Chiang, & Van Esch (2016); De Jonge et al. (2010); Tims, Bakker, & Derks (2013).

These findings underline the importance of managing psychosocial factors to improve job engagement, satisfaction, and overall well-being.

Practical experts emphasize that no single theory is universally important for driving and successfully completing workplace innovation. Instead, a comprehensive approach tailored to the specific situation is critical. Based on this understanding, the study integrates Total Workplace Innovation (TWIN) and the Fifth Element theory as comprehensive frameworks for workplace innovation.

## **Factors in Negative and Positive Psychosocial Work Environments**

<b>Factor</b>	<b>Negative Psychosocial Environment</b>	<b>Work Positive Psychosocial Work Environment</b>
<b>Organizational Culture and Function</b>	Lack of psychosocial safety, inadequate support for problem-solving or development, unclear or unagreed organizational goals	Good psychosocial safety, clear organizational goals, adequate support for problem-solving and self-development, effective communication processes
<b>Job Content</b>	Lack of variety, short job cycles, fragmented or meaningless tasks, underutilization of skills, high uncertainty, frequent exposure to outsiders	Meaningful tasks, proper utilization of skills, jobs that engage worker interest and commitment, adequate support
<b>Workload/Work Speed</b>	Overload or underload, machine-paced work, high time pressure, deadline-driven work	Reasonable workload, appropriate work speed, clear and achievable deadlines
<b>Work Schedule</b>	Irregular shifts, night shifts, rigid schedules, unpredictable hours, long or isolated working hours	Appropriate shift systems, work hours that support work-life balance, flexible scheduling
<b>Control and Decision-Making</b>	Lack of participation in decision-making, limited control over workload, shift work	Participation in decision-making, control over work
<b>Environment and Equipment</b>	Poor use/maintenance/appropriateness, insufficient space, inadequate lighting, excessive noise	Good physical working conditions following guidelines
<b>Interpersonal Relationships at Work</b>	Social/psychological isolation, poor relationships with supervisors, interpersonal conflicts, lack of social support, harassment, violence	Positive relationships, teamwork, social support, appropriate policies and procedures for managing conflicts
<b>Organizational Roles</b>	Role ambiguity, role conflicts, responsibilities to outsiders	Clear roles and responsibilities, adequate support to achieve goals
<b>Career Development</b>	Career stagnation/uncertainty, lack of promotion opportunities or excessive promotions, low wages, job insecurity, low societal value of work	Appropriate career prospects, skill and performance-based development, balance between effort and reward, meaningful work, job security
<b>Work-Family Interaction</b>	Work-family conflicts, lack of family support, challenges of dual-income households	Work-life balance supported by organizational policies and practices

**Source:** Jain, A., Dediu, V., Zwetsloot, G., and Leka, S. (2017), "Workplace innovation and wellbeing at work: A review of evidence and future research agenda," in Oeij, P., Rus, D., &

Pot, F. D. (Eds.), *Workplace Innovation: Theory, Research and Practice* (pp. 111-130), Springer, p. 114, translated from <Table 8-1>.

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## 9. Quality of Working Life and Wellbeing

Quality of working life has been a central topic in workplace innovation, and recent discussions have increasingly emphasized the concepts of wellbeing and health. Key considerations include:

1. **Differences Between Developed and Developing Countries:** Working conditions in developing countries often fall short of the International Labour Organization (ILO)'s standards for "decent work," which include employment stability, living wages, social protection, workers' rights, and basic safety and health. These standards differ significantly from wellbeing-focused discussions in developed countries.
2. **The Myth of the Happy Worker:** The assumption that "happy workers are productive and innovative" is often misleading. Worker satisfaction often reflects how well individuals adapt to their environment rather than the inherent quality of their work. Studies show that individual or team performance depends less on worker satisfaction or motivation and more on participation and engagement in aspects such as worker representation systems, HR practices, and work organization (Judge, Thoresen, Bono, & Patton, 2001; Taris, Schreurs, Eikmans, & Van Riet, 2008).

Examples include:

- **Organizational Commitment:** Influenced by job autonomy and participation.
- **Work-Life Balance:** Supported by effective organizational policies and practices.

### Advice to Others and Learning Opportunities Influenced by Organizational Design

Karasek and Theorell (1990) emphasize that factors such as advice systems, learning opportunities, and organizational design significantly influence workplace wellbeing. Pot (2017) similarly argues that wellbeing is shaped more by job design and organizational structure than by individual working conditions.

To enhance levels of wellbeing, several approaches are identified:

- **Individual Level:** Developing personal abilities and social skills.
- **Job Level:** Increasing autonomy and control over work, balancing demands and support.
- **Organizational Level:** Implementing effective management practices, fostering an open organizational culture, and embracing innovation (Jain, Dediu, Zwetsloot, & Leka, 2017).

These approaches align closely with workplace innovation, which contributes to the activation and development of these elements. Such factors are also explained through job organization and psychosocial elements. However, Leka, Jain, & Lerouge (2017) highlight that these components should not be classified merely as workplace risk factors; they can also become positive factors depending on the effectiveness of management practices.

From a theoretical perspective, models like Karasek's Job Demand-Control (JDC) model (1979) and Bakker & Demerouti's Job Demands-Resources (JDR) model (2007) have discussed these ideas. While recent research often focuses on negative factors such as health issues, mental disorders, and burnout (Alarcon, 2011; Bonde, 2008; Eller et al., 2009; Kivimäki et al., 2006), there is also research highlighting positive outcomes, such as engagement and job satisfaction (Hakanen, Schaufeli, & Ahola, 2008; Taris & Schreurs, 2009).

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#### **IV. Limitations of This Study and Future Research Directions**

##### **Summary of Workplace Innovation Theories and Empirical Analysis Results**

This study has summarized and presented workplace innovation theories and their empirical analysis results. The following outlines the study's limitations and future research directions.

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##### **1. Limitations of This Study**

The primary goal of this study was to analyze theories of workplace innovation. However, due to its focus on European-centered research, it could not delve deeply into the practical aspects of workplace innovation at the field level. While practical workplace innovation issues are not the main objective of this study, they are identified as topics for future research.

The study's focus on European theories reflects the fact that workplace innovation research has been less actively pursued in the United States. Although many studies on workplace innovation have been conducted around High-Performance Work Systems (HPWS), these approaches tend to emphasize innovation from the company's perspective rather than through collaborative efforts with workers. As a result, HPWS often lacks attention to improving workers' Quality of Working Life (QWL), one of the two core components of workplace innovation.

Additionally, HPWS has already been extensively studied, so this study chose not to focus heavily on it.

The study also reorganized existing workplace innovation theories using a flowchart. However, it did not provide a strong rationale for categorizing theories into structural, cultural, and managerial strategic choice perspectives. While this approach is more systematic than Oeij & Dhondt's (2017) classification, it remains incomplete. Future research should aim to develop a more structured classification system for workplace innovation theories.

Lastly, this study did not address theories specifically applicable to the South Korean context. Some domestic research efforts have attempted to tailor workplace innovation theories to Korean realities, such as Jang et al. (2019) and Cho et al. (2021). These studies suggest combining existing theories like lean production, HPWS, socio-technical systems theory, and innovative labor policies to suit South Korean conditions. However, they fail to propose concrete models applicable to Korea. Developing such models remains a task for future research.

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## 2. Future Research Directions

**(1) The Impact of Technological Revolutions on Workplaces** Technological revolutions, including artificial intelligence (AI), automation, and big data, are transforming work and workplaces. However, systematic research on the impact of these changes is still lacking. While labor organizations voice defensive concerns, proactive responses are insufficient. Future research must develop theories and ideas to balance corporate performance with workers' job security and QWL. Collaborative robots are an example of technology that assists workers without fully replacing their roles, requiring concurrent skill development. Research is urgently needed to ensure technological advancements align with sustainable workplace innovation.

**(2) Developing a Korean Workplace Innovation Model** Developing a Korean-specific workplace innovation model is a long-standing issue. Research is needed to adapt European workplace innovation theories to South Korean realities. Central to workplace innovation is improving both corporate performance and workers' QWL through systematic worker participation. However, South Korea's workplace innovation often neglects QWL and excludes workers from the innovation process, making it indistinguishable from technology-driven manufacturing innovation.

For workplace innovation to be sustainable, worker participation must be integrated into the process. Government initiatives, such as workplace innovation indices, need fundamental improvements to ensure a balance between technology-oriented innovation and worker participation indicators.

**(3) Clarifying Workplace Innovation Procedures and Key Content** Workplace innovation aims to simultaneously enhance corporate performance and QWL. For this, research must systematically define and verify practical implementation processes, including preparatory measures, specific innovation content, and evaluation of goal achievement. Current workplace innovation consulting programs in South Korea produce numerous reports annually, but these are underutilized beyond evaluation purposes. Analyzing these reports could significantly aid in developing Korean workplace innovation theories and manuals.

**(4) Addressing Barriers to Workplace Innovation Adoption** Despite evidence supporting the positive effects of workplace innovation on corporate performance and QWL, many companies remain reluctant to adopt it. Future research should identify and address the barriers specific to the South Korean context. Examples from the UK highlight reasons for low adoption, such as focusing only on technical aspects, limited awareness of innovation benefits, insufficient resources for organizational learning, and resistance to delegating power to workers. Addressing these barriers could help promote workplace innovation as a legitimate and desirable strategy for sustainable organizational growth.

Finally, institutional theory suggests that organizations mimic successful practices from others in their environment, seeking legitimacy. If workplace innovation gains recognition as a legitimate and superior approach to business management, companies are likely to adopt it more actively. Research must focus on identifying and eliminating barriers to its broader adoption in South Korea.

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# Summary of "A Literature Review on Theories of Workplace Innovation"

[by ChatGPT]

**Introduction:** Workplace innovation (WPI) has long been a central topic in Europe, particularly in Northern European countries, with discussions beginning in the 1950s. In South Korea, WPI was introduced over 20 years ago but has not been widely adopted. Theories of WPI emphasize the importance of integrating technical and socio-psychological factors, such as worker attitudes, organizational structure, and job design. These elements aim to simultaneously improve organizational performance and the quality of work-life (QWL), creating sustainable systems for businesses and workers alike. However, South Korea's efforts have primarily focused on technological manufacturing innovation, with limited attention to improving the socio-psychological aspects of the workplace.

**Historical Background:** The socio-technical system (STS) movement in the 1950s laid the foundation for WPI, highlighting the need for balance between social and technical systems in workplaces. This movement evolved into related concepts such as high-performance work systems (HPWS) and sustainable work systems, all of which stress "responsible autonomy" and collaboration. Despite these advances, many workplaces globally still follow traditional, hierarchical models, leading to increased stress and declining QWL for workers.

**Development in the EU:** Europe has spearheaded efforts to institutionalize WPI, with initiatives like the European Workplace Innovation Network (EUWIN) promoting participatory practices. These efforts aim to enhance productivity, innovation capacity, and employee motivation through social innovation rather than relying solely on technological advancements. However, challenges persist due to limited policy enforcement and the uneven adoption of these practices across different EU member states.

**Key Concepts and Frameworks:** WPI theories can be categorized into structural and cultural dimensions. Structural elements include job design, team autonomy, and workflow optimization, while cultural aspects focus on worker participation, leadership style, and trust-building. Frameworks such as the Modern Socio-Technical Systems Design (M-STSD) and Employee-Driven Innovation (EDI) illustrate the interplay of these dimensions. M-STSD emphasizes simplifying organizational systems to increase worker autonomy, while EDI focuses on empowering workers to contribute directly to innovation processes.

**Applications in Practice:** Case studies highlight that successful WPI initiatives rely on participatory leadership, employee training, and strategic alignment with organizational goals. Examples include team-based systems and lean management practices that improve efficiency and engagement. However, barriers like resistance to change, cultural differences, and economic constraints often impede the widespread implementation of WPI.

**Challenges in South Korea:** Despite decades of WPI discourse, South Korea faces unique challenges due to its hierarchical work culture, unstable labor relations, and lack of robust policies supporting worker participation. Many organizations focus on immediate productivity gains through technology, neglecting long-term benefits associated with improving QWL and fostering collaborative environments.

## Conclusions on Workplace Innovation

**1. Theoretical Implications:** WPI theories underscore the importance of balancing structural and cultural dimensions to achieve dual objectives—enhanced organizational performance and improved QWL. Interdisciplinary approaches integrating sociology, psychology, and management are essential for developing comprehensive models of workplace innovation.

### 2. Practical Recommendations:

- **Policy Support:** Governments should provide incentives for organizations to adopt participatory practices, including tax benefits and funding for training programs.
- **Organizational Commitment:** Companies must prioritize participatory leadership and empower employees through training and team-based decision-making systems.
- **Global Collaboration:** International partnerships can help adapt WPI models to diverse cultural and economic contexts.

**3. Future Research Directions:** Further studies are needed to explore the long-term impacts of WPI, particularly in non-European settings like South Korea. Comparative research can identify best practices and barriers to adoption, offering insights for tailored strategies in different regions.

**Final Thoughts:** Workplace innovation represents a powerful approach to fostering sustainable growth for organizations and their employees. By addressing structural inefficiencies and promoting a culture of engagement, WPI can help organizations adapt to the dynamic challenges of modern work environments while improving workers' lives. For countries like South Korea, adopting these frameworks is essential for achieving both economic competitiveness and social well-being.

**Translation sent by the author in an email about part IV [p.22-23] (25 January 2025):**

IV. Limitations of this study and future research tasks

So far, we have summarized the theories related to workplace innovation and presented the empirical analysis results. Here, the limitations of this study and future research tasks are listed as below.

1. Limitations of this study

Although the purpose of this study was to analyze theories on workplace innovation, it was unable to analyze in more detail the workplace innovation that actually takes place in the field as it analyzed studies mainly in Europe. However, since workplace innovation in the field is far from the main research purpose of this study, I would like to mention issues related to workplace innovation in the field as future research tasks.

And the reason why it is mainly focused on the workplace innovation theories of European countries is because the United States has been less actively researching workplace innovation compared to European countries. Of course, a lot of research has been conducted on workplace innovation, focusing on high-performance work systems (HPWS). However, in the case of HPWS, since innovation is pursued from the company's perspective rather than jointly promoted by labor and management, there is a lack of interest in improving the quality of working life (QWL) through worker participation, which is one of the two key factors in workplace innovation. It can be said that it is. In addition, since much research has already been conducted on HPWS, there are aspects that were not covered in detail in this study.

Second, although this study reorganized and presented existing workplace innovation theories according to the workplace innovation flowchart, it did not provide a clear basis for why the theories on workplace innovation were divided into structural perspectives, cultural perspectives, and managers' strategic choice perspectives. Although it can be said to be more systematic than the existing classification of Oeij & Dhondt (2017) in that it applies a workplace innovation flow chart, it is acknowledged that it is still insufficient. The systematic classification of workplace innovation theories will be left as a future research topic.

Third, while organizing theories on workplace innovation, I was unable to organize theories applicable to Korean reality. In some domestic studies, efforts are being made to pursue workplace innovation theory tailored to the Korean context. For example, Jang et al. (2019) briefly summarizes existing theories, and Cho et al. (2021) presents them starting with lean production methodology, followed by high-performance work system theory, socio-technical system theory, and innovative labor policy theory. It is mentioned that in the Korean situation, it is necessary to apply them in a compromise. However, it can be said that it does not present a workplace innovation model that can be applied to the Korean situation in more detail. This point is also expected to be studied in the future.

2. Future research tasks

(1) Research on the impact of recent technological revolution, including artificial intelligence, on the workplace



Artificial intelligence, including the recently popular ChatGPT, robots, automation, and the use of big data are bringing revolutionary changes to existing work and workplaces, but no systematic research has been conducted on the impact of such changes on work and the workplace. Although there are loud voices of concern in the labor world at a defensive level, there appears to be a lack of movement to actively respond. In this situation, based on existing workplace innovation theories, there is a need to actively promote ideas and theories that can simultaneously maintain and develop the company's performance as well as workers' job security and quality of working life. A representative example would be collaborative robots. It is a method that assists workers in performing their duties, but does not completely replace the workers' jobs. Of course, for this to happen, workers' capabilities must also be developed, but arguments and theories that can simultaneously pursue the competitiveness of companies and the quality of workers' working lives must be developed. Research for this is urgently needed.

## (2) Development and discussion of a Korean-style workplace innovation model

Although this is a task that has been advocated for a long time, there is a need to develop a Korean-style workplace innovation model specifically for the workplace innovation that is taking place in Korea and to flesh out discussions on this. Research is needed on how to modify and supplement existing workplace innovation theories centered on Europe to suit Korea's reality.

Since the core of workplace innovation theory is to simultaneously improve corporate performance and the quality of workers' working lives, worker participation is very important in the workplace innovation process. However, the importance of quality of working life is decreasing in workplace innovation in Korea, and worker participation is being marginalized in the workplace innovation process. For this reason, Korea's workplace innovation is not differentiated from technology-centered manufacturing innovation.

If the systematic participation of workers, which is the core of the workplace innovation process, is reduced or omitted, it will not be able to differentiate itself from technology-centered manufacturing innovation, and ultimately, only information technology will be emphasized in the innovation process, and the status of workers will continue to decline. It will. As a result, it becomes difficult to become a sustainable company.

For the reason that the government develops and manages the Workplace Innovation Index, the Korea Labor-Management Service conducts a survey on the Workplace Innovation Index every year and discloses the results. However, questions are being raised about the validity of the workplace innovation index as an index. Although we regularly improve the factors included in the index, more systematic and fundamental improvements are needed. In particular, as time passes, innovation from a technological perspective is becoming more important, and the importance of indicators and content from a worker's participation perspective is decreasing.

The workplace innovation consulting project, which has been greatly expanded under the Moon Jae-in administration and is being continued under the Yoon Seok-yeol administration, needs to be improved so that a certain portion of the budget can support theoretical research on workplace innovation. Even if we reduce the number of consulting services, research on workplace innovation theories must be promoted. In addition, it is necessary to allow experts' academic conferences to run special sessions on workplace innovation, and to connect with organizations such as the European Workplace Innovation Network to ensure that continuous

theoretical research on workplace innovation is conducted. As these efforts continue, Korea's workplace innovation theory, K-Workplace Innovation Theory, will be developed and sustainable workplace innovation will be achieved.

### (3) Summary of procedures and important contents for implementing workplace innovation

It is important that workplace innovation does not exist in itself, but that the purpose of workplace innovation is to simultaneously improve corporate performance and the quality of working life. To this end, the theory and verification of workplace innovation are important, but it is also important to organize the specific implementation process of workplace innovation so that the corporate performance and quality of working life that workplace innovation aims for can be achieved simultaneously.

Of course, researchers have empirically shown not only workplace innovation theory but also workplace innovation is related to organizational performance and individual performance (Appelbaum, Hoffer Gittell, & Leana, 2011; Totterdill, Dhondt, & Boermans, 2016; Van Hootegem, 2016). However, these studies do not present rigorous verification results for the hypothesis. As a result, practitioners are not aware of what methods and systems should be used to innovate the workplace.

The specific details of workplace innovation, that is, the systems and methodologies for workplace innovation, need to be properly presented. The spread of workplace innovation will only be possible when practical details, such as preparations for workplace innovation, specific workplace innovation content, and evaluation of whether goals have been achieved, are organized in detail and verified empirically.

In Korea, many panel surveys are conducted at the company level, for example, the Korea Labor Institute's labor panel survey or business panel survey, as well as the Korea Research Institute for Vocational Education and Training's human capital panel survey. There is a need to enable these panel surveys to investigate specific details related to workplace innovation. Even if companies are interested in workplace innovation and try to promote it, there are many difficulties in systematically promoting workplace innovation because no specific details are provided and it mainly remains tacit knowledge. Therefore, it can be used to develop specific workplace innovation manuals or establish policies based on systematic surveys at the organizational level, including companies, rather than empirical research at the individual level.

In addition, as the government currently promotes workplace innovation consulting projects, more than hundreds of workplace innovation result reports are produced every year, but they are only used for consulting evaluation and no additional systematic analysis is conducted. Systematic analysis of the resulting reports will be of great help in developing Korea's workplace innovation theory and writing a manual.

### (4) Discussion on obstacles to spreading innovation in the workplace

This explanation is like two sides of the same coin, but in relation to workplace innovation, despite the argument that workplace innovation simultaneously improves corporate performance and the quality of an individual's working life, and the empirical analysis results supporting this, many companies do not engage in workplace innovation. The reality is that people are not actively participating in it. There is also a need to conduct research into why this

is so. It would be more desirable if discussions applicable to the Korean context were included. I would like to raise a few ideas for future research.

In the case of the UK, despite positive evidence on workplace innovation (Totterdill, 2015), it is explained that most British companies have not systematically introduced workplace innovation. Totterdill, Dhondt, & Milsome (2002) and Business Decisions Ltd. (2002) provide the following reasons for why workplace innovation is not widely spread in the UK: ① Innovation viewed only from a technological perspective; ② Low awareness of the innovation itself and its effects; ③ Lack of methods and resources to support organizational learning and innovation; ④ Immaturity of the knowledge-based management service market and lack of policy support; ⑤ Lack of vocational education and training that provides knowledge and skills for new work organizations. In particular, since power is a zero-sum game, concerns that delegating authority to workers will result in the loss of managerial power and consequently threaten the manager's role are also presented as a reason for insufficient diffusion (Hardy & Leiba-O'Sullivan, 1998).

Ichinowski & Shaw (2013) also explain why workplace innovation has not spread as follows. First, many practices of workplace innovation are not common, so they are not well known in practice. Second, because high-ranking managers in the workplace are buried in the existing structure and method, changes in business management methods are lower in priority compared to urgent daily tasks. Third, even with the same management technique, performance may vary. Ultimately, managers' uncertainty about new changes makes introduction difficult. Fourth, there are costs associated with institutional changes for workplace innovation. As a result, even within a company, workplace innovation systems may vary depending on the department. Fifth, even if a system is introduced, it takes a lot of time for it to take effect. Awano et al. (2010) stated that it takes about 4.1 years for investments in intangible assets to see financial effects. These findings ultimately suggest that the government needs to provide incentives for the introduction of workplace innovation systems because companies are aware of the positive effects of workplace innovation but are passive in making actual changes.

Lastly, the neo-institutional theory does not deny that markets, technology, and government regulations regulate business activities. However, it is emphasized that just because there are markets, technologies, and laws does not mean that a company can decide what is reasonable behavior, and that the right strategy is one that guarantees survival and prosperity. In this respect, organizations pursue institutional isomorphism by imitating other organizations and seek legitimacy under certain institutions. Here, the institutions include the government, financial institutions, customers, citizens, and labor unions. Therefore, it can be explained that an organization will try to actively promote workplace innovation if it can follow suit as other organizations around it are promoting workplace innovation, and if it can pursue better legitimacy through workplace innovation than other innovation management methods. Now, if we acknowledge what workplace innovation aims for, we need to actively conduct research on how to specifically identify and eliminate obstacles to the spread of workplace innovation.

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