

Reviewing workplace innovation as a plea for a practical approach

Peter R. A. Oeij¹  | Steven Dhondt^{1,2} 

¹TNO, Netherlands Organisation for Applied Scientific Research, The Hague, the Netherlands

²KU Leuven, Leuven, Belgium

Correspondence

Peter R. A. Oeij, TNO, Department Healthy Living & Work, Unit Sustainable Productivity and Employability, Anna van Buurenplein 1, 2595 DA, The Hague, the Netherlands.

Email: peter.oeij@tno.nl

Abstract

Workplace innovation (WPI) approaches share the ‘advancement’ of work as a commonality, that is, the notion of good jobs and its relation with good business performance. How WPI approaches contribute to the advancement of work is discussed in this ‘narrative review’ of the WPI literature, which intends to provide direction to future study and implementation of advanced work. A human-centric theoretical position is chosen with regard to WPI, good work and well-performing organisations. The heart of the review is investigating the roots of WPI and its historical development along the lines of four different research streams: sociology and organisation research, safety science and organisation research, economic strategy and human resources research, and psychology and behavioural research. These streams are evaluated from their contribution to advanced work, ‘good jobs’. In this review of WPI as a plea for a practical approach, we conclude how the streams connect to the conceptualisation of WPI and human-centricity, discuss the implications for practice and some limitations, and make recommendations for future research.

KEYWORDS

good jobs, human-centricity, narrative review, practical approach, resilience, sustainability, workplace innovation

1 | INTRODUCTION

Workplace innovation (WPI) is a concept with many different interpretations, which impedes a homogenous scientific understanding and complicates implementation in practice. However, There seems to be a common 'sensitizing conceptualisation' that points in the direction of the 'advancement' of work and its results: WPI is connected to the notion of good jobs and has a positive relation with an organisation's business performance. This comes as no real surprise since WPI is rooted in sociotechnical systems design, humanisation of work, and the human relations approach. These are all approaches that have an affinity with studying and implementing ways to improve jobs and work from the viewpoint that this will benefit not only the workers themselves but how companies perform as well. The way WPI approaches contribute to the advancement of work is a central point of attention in this review of the WPI literature.

We start by arguing why we chose a narrative review that gives direction to future study and implementation of advanced work. Some examples of systemic review studies that deviate from this approach are used as an illustration. We subsequently develop our theoretical position with regard to WPI and well-performing organisations in terms of what these are and how they can be achieved. Then, we investigate the roots of WPI and its historical development along the lines of four different research streams. Finally, we connect the streams that contribute to the advancement of work and that are composed of ways to enhance meaningful work in responsible organisations within the near future.

The contribution of this article is twofold. First, it meets the demand to help practitioners design practical WPI interventions, practices and implementations because our conceptualisation of WPI is directly related to technology, organisation and personnel issues. This review evaluates WPI in a theoretical and historical context and links it to topics that have an evidence-based effect when applied as interventions. Second, this review makes a contribution to theorising about WPI. Our conceptualisation of WPI is rooted in the need to optimise technical, social and economic goals (sociotechnical systems design, human relations school, Resource-based view of the firm (RBV)) and assures that the design of production processes and jobs within such processes meet human needs (quality of work approach, job/work design approach). Given the strategic objective of an organisation, the optimisation of business performance and human performance are then the functional criteria for the design of WPI interventions, practices and implementations. Our narrative form of the review intends to make the theory more practical for practitioners and follows Lewin's adage that "nothing is so practical as a good theory" (Lewin, 1945). If a theory is an explanation, a set of ideas about how something works, then the practical application of a good theory is established (Crabtree Tonges, 2016). A good theory, based on empirical evidence, advances knowledge in a scientific discipline, guides research towards crucial questions, and enlightens the profession of management (Van de Ven, 1989). An actionable theory informs us how to create or produce intended consequences by our actions, for example, as managers (Argyris, 1996). This implies that knowledge about WPI should help users realise the intended effects as practical hands-on advice.

In the past years, four edited books on WPI have been published (McMurray et al., 2021; Kopp et al., 2021; Oeij et al., 2017, 2023a, 2023b, 2023c), four special issues of scientific journals have appeared (Howaldt & Oeij, 2016; Oeij et al., 2019b; Rus et al., 2017, 2019), three literature review articles were written (Almeida & Moreira, 2022; Prus et al., 2017; Weerakoon & McMurray, 2021) and in 2015 the European Journal of Workplace Innovation was launched; in 2021 we counted 426 scientific and non-scientific articles, reports and books that were dealing with WPI (Oeij et al., 2021). Because the proliferating field is very heterogeneous, it is time to take stock. Lewin's (1945) statement applies to our review because recent systemic literature reviews of WPI fail to contribute to a practical theory.

Three recent 'systemic' literature reviews on WPI try to contribute to theory development, but their endeavour is not leading to practical and actionable knowledge. Almeida and Moreira (2022) performed a systematic literature review. Guided by their research question "What are the determinants leveraging WPI and what are their

interdependencies?”, they identified 38 topics which they clustered into five determinants: Organizational Dynamics, HRM, Collaboration, Information Technology Infrastructures and Other Facilitators (topics are Change management, WPI implementation and External Factors). However, the systemic literature review does not result in insight into how WPI can be achieved or implemented. Unfortunately, identifying 38 topics and clustering them as determinants does not raise our understanding of how to arrive at good jobs and better performance, the outcome of WPI.

In another systemic literature review, Prus et al. (2017) wanted to disentangle the ontological, epistemological and theoretical aspects of WPI. They clustered studies into research traditions and identified eight workplace dimensions, namely work system, workplace democracy, high-tech application, workplace boundaries, workspaces, people practices, workplace experience, and workplace culture. Their exploration leads them to define WPI as “an intentional comprehensive process of renovation that alters structural, organizational, cultural and experiential characteristics of workplaces with the purpose of bringing new social value” (Prus et al., 2017, p. 1266). Their work, unfortunately, does not give us much insight into what we must do to achieve WPI, let alone how it should stimulate good jobs and better organisational performance.

A third example of a WPI literature review is a citation analysis by Weerakoon and McMurray (2021), which was used to determine the most influential 17 publications of this discipline's area of concern, based on bibliometric software. These 17 highly connected publications indicated the existence of six main knowledge clusters within the WPI literature: (1) Leadership, Organisational Culture and WPI, (2) Forms of Work Organisation, Quality of Work and Employment, (3) Employee Participation in WPI, (4) Occupational Stress, (5) Occupational Safety and Health Innovation, and (6) Innovation in Social Aspects of Organisation. The citation network and main knowledge cluster, however, do not tell us much about the content of WPI, the coherence of topics and their explanatory power, nor do they inform us about how to implement WPI and what kind of outcomes might be expected.

To show how WPI can help to improve better jobs and better organisational performance, we first outline our ‘normative stand’ towards the subject and subsequently discuss WPI in four research streams as a form of a narrative review or ‘qualitative systematic review’ (Grant & Booth, 2009, p. 99).

We will address three research questions:

1. What is WPI, and what is our point of view?
2. How is WPI connected to various social scientific research streams that study work, and do we observe divergence or convergence?
3. What are the main challenges of future research into WPI?

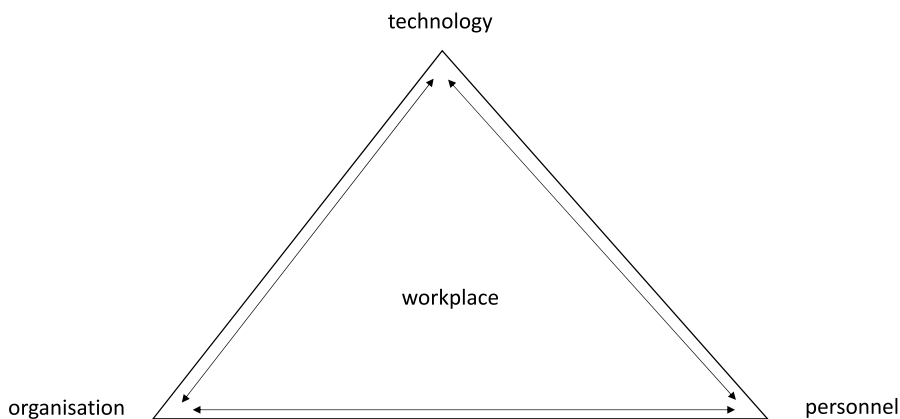
2 | WORKPLACE INNOVATION: A HUMAN-CENTRIC POINT OF VIEW

Consensus about the meaning of WPI is absent (Almeida & Moreira, 2022; Prus et al., 2017; Weerakoon & McMurray, 2021). There is no agreement on whether WPI should be seen as a cause, an effect or a mediating variable. This leaves a void in understanding WPI both scientifically and practically. Before we discuss the reviewed literature, we provide our viewpoint, as it gives direction to the reader to implement WPI. We regard WPI as a practice that improves how an organisation performs while maintaining or creating a good quality of work for its employees. Workplace innovation has human centrality as a point of departure. Human-centric describes the process of making the preferences of people the most important priority in the design of jobs and organisations, management decision making and problem-solving strategies (like the implementation of new technology). Human-centric values include freedom, dignity and autonomy, privacy and data protection, non-discrimination and equality, diversity, fairness, social justice, and internationally recognised labour rights. Organisational redesign measures can best achieve human-centricity.

The 'workplace' is defined as both the immediate working environment and the organisation as a whole (Oeij et al., 2015, p. 12) and is the setting where work is carried out according to a chosen division of labour as 'work organisation'. The term 'innovation' in WPI implies a renewal for the organisation that applies it (Johannessen et al., 2001). With regard to innovations in workplaces, we focus on the three major elements of the TOP model, technology, organisation and personnel in Figure 1 (Oeij et al., 2006, p. 256; Dul et al., 1996).

The working definition of WPI is formulated as *human-centric innovations with regard to Technology, Organisation, Personnel (TOP) in order to enhance business performance and human performance simultaneously*. The outcome of human-centric innovation with regard to people should be meaningful work in which they are productive, work healthy and safely, and are challenged to learn and develop new skills and knowledge. Workplace innovations or WPI practices are targeted at the optimisation of business performance and human performance. Choices about WPI practices should balance the workplace elements of Figure 1: Technology, Organisation, and Personnel.

The human-centric approach of WPI stems from sociotechnical systems design, which seeks to optimise technical and social systems, and humanisation movements that intend to protect the rights of people for decent work. These movements strived for the 'advancement of work' within the capitalist system as an instrument to enhance innovation. One specific sociotechnical systems design approach, whose hallmark was to combine the notion of good work with organisational designs that could excel in terms of quality, price and innovativeness, connected the psychological Job Demands–Control model (Karasek, 1979; Karasek & Theorell, 1990) with the operational design criteria of sociotechnical thinking. This 'modern sociotechnical systems design' approach is thus aimed at optimising business performance and human performance (De Sitter et al., 1997; Kuipers et al., 2020). Workplace innovation uses this lens of good work. A strategic, technological, organisational, or personnel innovation or change should meet the requirement to simultaneously improve business performance and human performance (which thus includes human-centric values).



Workplace innovation practices (examples):

- technology: taking into account that human work is not hollowed out, but augmented and supported
- organisation: ensuring a division of labour that enables meaningful work
- personnel: the qualitative and quantitative formation takes into account fair working conditions and learning opportunities

The basis for strategic choice and management behaviour is to put human interests not subordinate to economic interests

FIGURE 1 Workplace innovation (WPI) practices related to the Technology, Organisation, Personnel (TOP)-model.

3 | A HISTORICAL NARRATIVE OF WORKPLACE INNOVATION

A literature search has been carried out with the keywords ‘workplace’, ‘WPI’ and ‘innovative workplace’ between 1989 and mid-2021 in the databases of Scopus, PsycInfo, PubMed, OSH-ROM and Google Scholar, resulting in 426 scientific and non-scientific articles, reports and books. There are 170 publications dealing with ‘WPI’ and 10 with ‘work design as an example of WPI’. Our purpose is to connect WPI to relevant streams in the social scientific literature on work in the form of a narrative that informs us about agreements and disagreements between those streams and what this means for WPI research. We shall see that the four streams, while all connected to the topic of ‘work’, apply different explanations and argumentations. Some stress the level of jobs and persons, others the level of teams and departments; some underline the relevance of adaptation of the organisational structure or technology, whereas others point out the relevance of organisational behaviour and leadership styles. The point in common is that they represent a way of reasoning how WPI can be enhanced (Oeij et al., 2021, 2023b; Oeij et al., 2015). We connect those concepts to research in the sociological, psychological, economic and management fields of work, and discuss whether we see divergence or convergence in the field of WPI and those streams.

From a historical perspective, we can distinguish streams in research that are related to variants of WPI concepts and that can be connected towards a tendency to realise ‘good jobs’ (Rodrik & Sabel, 2019). These streams are located in the fields of sociology & organisation research, safety science & organisation research, economics & strategy and human resources (HR) research, and psychology & behavioural research. Moreover, these streams go beyond Europe, implying we can distinguish more geographical approaches to WPI. Although there is an overlap between the streams, we tried to demarcate them in Figure 2.

The row ‘sociology & organisation research’ (Watson, 2017) in Figure 2 depicts the development in a timeline of the above-mentioned first European variant of WPI. As said, it goes back to Socio-Technical Systems Design that stresses the joint optimisation of the social and technical system for success, in conjunction with the presence of (semi-autonomous) team-based work. From there, arrows go over to Human Relations, Humanisierung der Arbeit (Humanisation of work), Strategic Choice, and Democratic Dialog and Modern Sociotechnical Systems Design. Subsequently, arrows are going to the High-Road perspective, eventually feeding into the European Union (EU)

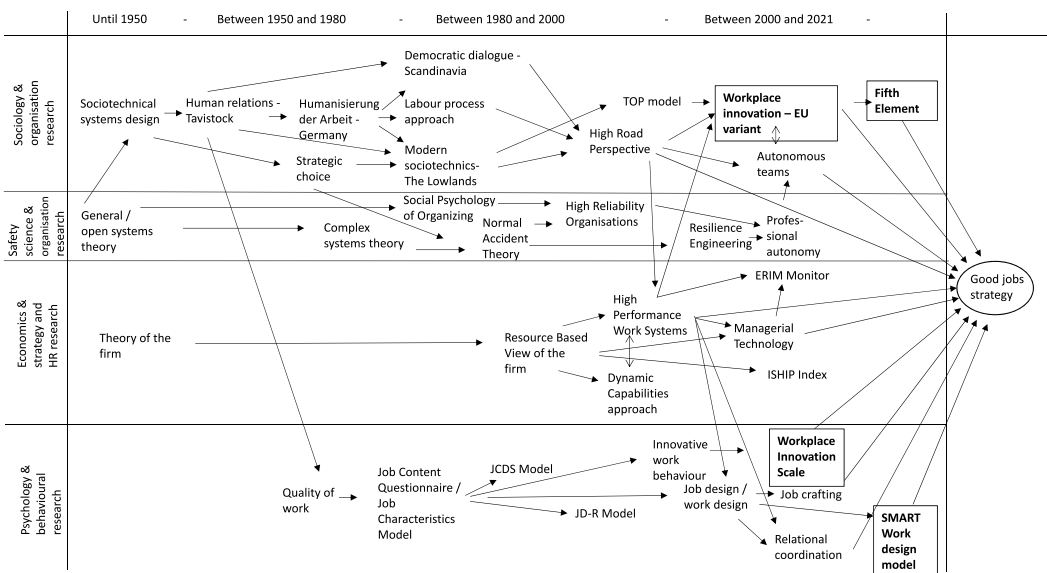


FIGURE 2 Research streams connected to Workplace innovation (WPI) and good jobs strategy (Oeij et al., 2023a, p. 216).

variant of WPI. What these approaches have in common, at least in Europe (Totterdill et al., 2002), is the weight put on a skilled workforce with decent jobs as a driver for innovation and performance. There is a choice to choose for High Road perspectives, for which it is important that top management is supportive and that power relations are not too asymmetrical (as is suggested by the Labour process approach). The EU variant of WPI is a mixture of sub-variants, as there are definitions by policymakers, researchers, and consultants, who each stress different aspects. Their common ground is the European Social Model and its values (Rogowski, 2008). The variant of WPI that is proposed by the European Workplace Innovation Network (EUWIN), is the Fifth Element Model (Totterdill & Exton, 2014). Expanding the Hi-Res framework (Totterdill et al., 2002), the Fifth Element identifies four bundles (or 'Elements') of working practices with a strong association between high performance and high quality of working life, namely: 1] Jobs, Teams & Technology; 2] Employee-Driven Innovation & Improvement; 3] Organisational Structures, Management and Procedures, and 4] Co-Created Leadership & Employee Voice. Alignment between these Elements creates a synergy in the form of the 'Fifth Element', a system of mutually interdependent parts that leads to a sustainable culture of innovation and empowerment embedded throughout the organisation. The purpose of the Fifth Element model is to achieve win-win outcomes for organisations and their employees. This then links with an arrow to the 'Good job strategy'. The stream 'sociology & organisation research' is strongly linked with our conceptualisation of WPI. Based on Socio-Technical Systems Design it stresses the organisational conditions for good jobs strategies.

The row 'safety science & organisation research' in Figure 2 takes another route (Weick & Sutcliffe, 2015; Woods et al., 2010). The start is, like in the former row, the Open systems theory. This connects to the theory of Complex Systems and the complexity view of the Social Psychology of Organising and the Normal Accident theory. From there, arrows go over into High-reliability organising and Resilience engineering. Both theories build on the need for professionals to deal with risks in a non-standard manner because these professionals must find solutions for problems that are difficult to predict and, therefore, very hard to handle. They must be prepared for the unexpected, think out of the box, and suppress the psychological habit of simplifying complex issues. For this reason, professional autonomy is indispensable and requires the design of jobs and teams that can operate highly autonomously. Although the term WPI is not used in this context, the term learning organisation is, and therefore, this type of work must take human needs into account to enable professionals to operate flawlessly under tiring conditions. Paradoxically, their work is at times extremely stressful and risky, but at the same time extremely rewarding when operations are successfully ended. Moreover, it is striking that the organisation of work is highly flexible and adaptable during operations, while it is rather bureaucratic and formalistic—namely hierarchic, with formal briefings and debriefings, and intensive training—when there is no disaster to combat. To attract highly qualified staff, it makes sense to follow a good jobs strategy. In nuclear plants and power plants, this is quite common, but not always in the case of professions of first responders in, for example, health care institutions. High-reliability organisations consider safety as very important, perhaps the most salient outcome of their processes, but this may go at the expense of a well-elaborated good jobs strategy. The stream 'safety science & organisation research' is strongly linked to WPI from the viewpoint that professional autonomy is crucial for successful outcomes for both business and human performance. Contradictory to WPI is the fact that in non-crises situations the organisations are rather bureaucratic, and the issue of work stress and job strain is more or less taken for granted as it is seen as 'normal' when combating the crisis.

The third row on 'economics & strategy and HR-research' (in Figure 2) focuses on the effects of HR bundles and intangibles of organisational performance. The RBV, stemming from the Theory of the firm, studies the strategic resources a firm can exploit to achieve sustainable competitive advantage (Barney, 1991). The RBV proposes that firms are heterogeneous because they possess heterogeneous resources, meaning that firms can have different strategies because they have different resource mixes. The RBV focuses managerial attention on the firm's internal resources to identify those assets, capabilities, and competencies with the potential to deliver superior competitive advantages. In a similar vein, the theory of Dynamic Capability is about the capability of an organisation to purposefully adapt an organisation's resource base. The RBV emphasises sustainable competitive advantage; the

dynamic capabilities view, on the other hand, underlines the issue of competitive survival in response to rapidly changing contemporary business conditions (Teece et al., 1997). Both theories have inspired developers of the High Performance Work Systems (HPWS) theory that studies which elements of 'HR-systems, bundles and measures' contribute to a firm's competitive advantage. Appelbaum et al. (2000) compared traditional production systems with flexible high-performance production systems involving teams, training, and incentive pay systems in three industries. The plants utilising high-involvement practices showed superior performance. Besides, workers in the high-involvement plants showed more positive attitudes, including trust, organisational commitment, and intrinsic enjoyment of the work. Various studies have demonstrated links with productivity. It is often connected to the notion of employee voice and empowerment (Boxall et al., 2019; Boxall & Winterton, 2018). On the one hand, the elements of high-involvement and high commitment of employees, which is part of the HPWS concept, fed into the WPI concepts applied by EU researchers (see first-row 'Sociology & organisation research'). On the other hand, it nourished economic and strategic research that was interested in investigating the effect of intangibles on business performance, such as studies into Managerial technology by Bloom and colleagues (Bloom et al., 2019; Bloom & Van Reenen, 2010). The managerial technology theory states that some aspects of management are considered as a technology or "best practice", and that adopting organisational best practices would improve productivity in a typical firm. Bloom & Van Reenen identify several basic management practices, that, for example, point to HR management measures, company governance measures, and performance monitoring measures.

The RBV and HPWS stream influenced the construction of the erasmus innovation monitor (ERIM) and, to a lesser extent, the Intrapreneurship Index (ISHIP) (Oeij et al., 2021). The ERIM Monitor (in full: The Erasmus Research Institute of Management's 'Erasmus Competition and Innovation Monitor') is a yearly research into the competition and innovation capabilities of Dutch firms. The monitor measures 'social innovation' and has a strong overlap with the EU WPI concepts. The monitor shows over the years that business performance depends more on social innovation than on technological innovation, which is an indication for firms of the relevance to investing more in social innovation than they do thus far (Volberda et al., 2013; Volberda & Van Den Bosch, 2004). ISHIP stands for Intrapreneurship Index, and its goal is to create insight into the conditions (organisational and individual) for entrepreneurship within established organisations (Stam, 2018). The ISHIP index (Intrapreneurship index) includes a construct of WPI, which is measured by assessing to what extent operating employees or work floor employees are engaged in innovation or renewal (applied in Putnik et al., 2019). In this stream of economic and strategy-related studies there is less attention to a good-jobs strategy. It is absent in the ERIM Monitor and ISHIP Index, and only partially related to the managerial technology studies. The third stream 'economics & strategy and HR-research' overlaps with the conceptualisation of WPI with regard to the importance of applying bundles of HR measures, 'social innovation in the workplace' (social innovation in Dutch is somewhat similar to WPI), and enhancing employee engagement. It differs from WPI in the sense that this stream puts stronger stress on economic goals than social goals. Their main understanding is that 'good jobs' are a necessary condition for good business performance (Rodrik & Sabel, 2019).

The fourth and final row 'psychology & behavioural research' has its focus on individual and group or team behaviour. The level of analysis underlines tasks in relation to human needs and capabilities, whereas the other streams emphasize the division of labour and work organisation. The basis is the experiences of the Human Relations school and the Quality of work movement. The driving force was the question of how work can satisfy fundamental human needs (Parker, Morgeson, & Johns, 2017). Job characteristics theory is a work design theory, and it provides core characteristics for enriching jobs in organisational settings, namely skill variety, task identity, task significance, autonomy, and feedback. These characteristics affect five work-related outcomes (i.e. motivation, satisfaction, performance, and absenteeism and turnover) through three psychological states (i.e. experienced meaningfulness, experienced responsibility, and knowledge of results) (Hackman & Oldham, 1975). In 1980, Hackman and Oldham modified the Job Characteristics Theory. The main changes included the addition of two more moderators- Knowledge and Skill and Context Satisfaction, removal of the work outcomes of absenteeism and turnover, and increased focus on Internal Work Motivation. Several of the outcome variables were removed or

renamed as well. In addition to the theory, Oldham and Hackman also created two instruments, the Job Diagnostic Survey and the Job Rating Form, for assessing constructs of the theory (Hackman & Oldham, 1980).

The Job content questionnaire (JCQ) has its roots in the functioning of stress theory and is a questionnaire-based instrument designed to measure the content of a respondent's work tasks in a general manner (Karasek et al., 1998). The JCQ originated from the Job-Control/Job-Demand-Control model (Karasek, 1979; Karasek & Theorell, 1990). The three central scales are Decision Latitude (a combined scale of Skill Discretion and Decision Authority), Psychological Demands, and Social Support (a combined scale of Supervisor and Coworker Support). These are used to measure the high-demand/low-control/low-support model of job strain development. The demand/control model predicts, first, stress-related risk and, second, active-passive behavioural correlates of jobs. The JCQ has been elaborated over the years and is still expanding. Other aspects of work demands are assessed as well, such as Physical Demands and Job Insecurity (Karasek, 2020).

Another branch that is connected to the Job Characteristics model and the Job Content Questionnaire is the Job-Demands Resources model (Bakker & Demerouti, 2014, 2017). The JD-R is used to predict employee burnout and engagement and, consequently, organisational performance. The JD-R model assumes that employee well-being (and work engagement, Bakker & Albrecht, 2018) is explained by job demands and job resources. Research has provided evidence for the existence of two simultaneous processes: the health process and the motivational process. High job demands exhaust employees' mental and physical resources and therefore lead to the depletion of energy and health problems (i.e., the health process). In contrast, job resources foster employee engagement (e.g. work engagement) and extra-role performance (i.e., the motivational process). Several studies have shown that job resources may buffer the impact of job demands on stress reactions. In addition, research has confirmed that job resources have motivational potential particularly when job demands are high. However, it is less clear what demands are most significant, and what features of the work meet these demands (Oldham & Fried, 2016). While the JD-R model and the Job Demands-Control-Support model of Karasek (1979) are both concerned with individual well-being, the latter plays a larger role in the design of jobs and organisations (mainly at the team level as in modern sociotechnical systems design), whereas the first plays a larger role in the management of burn-out, stress and work engagement (mainly at the individual level). The JD-R model includes more subjective or personal job resources than Karasek's model, whose focus is on objective job characteristics as job resources.

Another offspring of the quality of work movement is the stream of job design and work design (Knight & Parker, 2021; Oldham & Fried, 2016; Parker et al., 1997, 2017a, 2017b; Parker & Knight, 2023). Job design refers to the actual structure of jobs that employees perform; thus job design focuses on the work itself, that is, the tasks and activities that employees complete for their organisation on a daily basis (Oldham & Fried, 2016). Work design is broader and encompasses also the organisation of work, the crafting of work and includes the team level (Parker, Morgeson, & Johns, 2017). Job design dates back to the days of Taylor and scientific management when job simplification and standardisation were key to improving operations and profit. Counter-productive behaviours such as tardiness, productivity restrictions, and soldiering behaviour, however, made people aware that jobs should be enriched instead of simplified to improve productivity. This inspired the quality of work movement, for example, in Herzberg's Motivation-Hygiene theory. To enhance employee performance and job satisfaction, work should include 'motivators' to foster employee responsibility, achievement, competence, recognition, and advancement (Oldham & Fried, 2016). Job/work design is a core element of the Job Characteristics model and its successors the Job-Demand-Control model and Job Demand- Resources model, and its more recent variant of Job Crafting (Wrzesniewski & Dutton, 2001). Small wonder that job/work design overlaps with these theories and sociotechnical systems design, and autonomous team approaches. In the early years, job design stressed characteristics, like task variety, autonomy, task identity and feedback, that could enrich jobs by countering simplification and standardisation and thus motivate employees. When, by the end of the century, a global shift had taken place from a manufacturing economy to a knowledge and service economy, other job characteristics grew stronger. These were social dimensions of work, such as interactions, feedback, and social support (Oldham & Fried, 2016). Regarding the effects of job design, job satisfaction and better performance were of central interest in the beginning. But in later

years, there came more appreciation for a broader impact on individuals and their organisations, such as health, well-being, safety, innovation and profitability. Since the eighties, there has been a growing consideration for the design of work performed by teams, with major topics like autonomy, self-determination and self-directed teams, and team task interdependency. New fields were opened up that were connected to teams, such as group dynamics, team effectiveness, and team leadership (Parker, Morgeson, & Johns, 2017). Job/work design partly evolved into the practice of job crafting in the 2000s (Tims, Bakker, & Derks, 2013; Wrzesniewski & Dutton, 2001) and into team crafting and collective job crafting in the 2010s (Tims, Bakker, Derks, et al., 2013). The essential question is here: how individuals and teams can 'craft' their jobs, modify their tasks within certain limits, namely their job discretion, and make their work more meaningful? In reverse, job/work design can create room to manoeuvre for employees such that it affects their roles. Think, for example, of role breadth, extra-role behaviour/organisational citizenship behaviour, and proactive work behaviour, which can be linked to the concept of role orientation, which captures how individuals (and teams) construct their roles in different ways and, related to the world of work promote better job performance (Parker et al., 1997, 2017a). This role orientation approach was further developed into the SMART work design model, one of the latest branches of the job/work design stream. The SMART work design model consists of a selection of the existing job characteristics studied in the past 50 years, namely Stimulation (based on skill and task variety), Mastery (based on role clarity and task identity), Agency (based on autonomy), Relations (based on social support and feedback), and Tolerable demands (tolerable workload and stress risks - see Hay, Klonek, & Parker, 2020, Hay, Klonek, Thomas, et al., 2020; Parker & Knight, 2023).

Two other branches that are explained elsewhere (Oeij et al., 2021) are Relational Coordination (Gittel, 2016), which is a mutually reinforcing process of communicating and relating for the purpose of task integration, and Innovative Work Behaviour (IWB). Relational Coordination proposes that highly interdependent work is most effectively coordinated through relationships that are characterised by shared goals, shared knowledge and mutual respect and that are supported by frequent, timely, accurate and problem-solving communication (Gittel, 2016). The IWB literature (Janssen, 2000; Scott & Bruce, 1994, 1998; West & Farr, 1990) lacks a detailed definition and conceptualisation, which leaves De Spiegelaere et al. (2018) to conclude that IWB deals with employee behaviour aimed at bringing about innovations. The WPI scale (WIS) of McMurray and colleagues originated from this stream of psychological behaviour. It measures the employees' psychological orientation towards WPI (McMurray & Dorai, 2003; McMurray & Scott, 2023).

The fourth and final stream, 'psychology & behavioural research', has its focus on how work can satisfy fundamental human needs, which is in line with our conceptualisation of WPI. A significant difference is that WPI - in our view - is less interested in individual satisfaction and person-environment fit approaches. Closer to our conceptualisation of WPI is the more recent variant of job design/work design approach of Parker and colleagues. Although essentially also a fit-with-the-environment approach, it is less individualistic and seeks to connect human needs with a wide range of task, job, team and organisation design elements (Parker & Boeing, 2023; Parker & Grote, 2020, 2022; Parker & Knight, 2023).

4 | CONCLUSION AND DISCUSSION

To the extent to which the four scientific streams of 'work' research align with our conceptualisation of WPI, it is concluded that the 'sociology stream' has the strongest affinity. There is a strong relation with the organisational design of the production process. It is, therefore, interesting to see that within the 'psychological stream,' convergence can be observed with the SMART work design approach of Parker (Parker & Knight, 2023). They are linking the 'human needs' approaches to organisational conditions, and this enables a relationship between modern sociotechnical systems design and the SMART work design model (Oeij, Dhondt & Vaas, 2024). In this way, human-centric values are realised due to the emphasis on human needs in the psychological stream (e.g. motivation and job

satisfaction) and the limited division of labour in the sociological stream (e.g. opportunities for learning and autonomy).

The working definition in this contribution, formulated as “human centric innovations with regard to TOP (Figure 1) in order to simultaneously enhance business performance and human performance”, is in line with our earlier developed definition: *WPI is an integral set of participative mechanisms for interventions relating to structural aspects (e.g., organisational design) and cultural aspects (e.g., leadership, coordination and organisational behaviour) of the organisation and its people with the objective of simultaneously improving the conditions for performance and quality of working life* (Oeij & Dhondt, 2017, p. 66; Parker & Boeing, 2023, p. 92). The structural aspects in this definition correspond with the design of the production process, jobs and technology (T & O op TOP, see Figure 1), which overlaps with the production structure and control structure in modern sociotechnical systems design (Kuijpers et al., 2020); and the cultural aspects are a consequence of these structural aspects, in the sense that they enable and disable particular organisational behaviours and leadership styles (Karanika-Murray & Oeij, 2017). This corresponds with strategic choices and labour supply and HR policies (the P in TOP). The definition includes participative mechanisms, pointing to the distinction between the content of WPI (what) and the process of designing and implementing WPI (how). Participation and engagement are not only a hallmark of WPI but also of a human-centric approach (Breque et al., 2021).

With respect to the practical implementation of WPI, the sociological-organisational stream underlines the importance of the structural aspects, like the division of labour and the need for a systemic, ‘integral’ approach. This systemic approach also holds for the economic-strategic-HR stream, stating that ‘bundles’ of measures are needed, both economic and socio-organisational. From the psychological-behavioural stream, the most useful advice for WPI interventions are the insights into the broad range of human needs that should be linked to the ‘design knobs’ of characteristics of tasks in the production process. The linkage between human-centricity and sociotechnical systems design offers design principles and rules for implementing WPI practices that include human-centric values. Much has been written by practitioners, and there are many case studies of WPI available, for example, in the Knowledge Bank WPI (<https://www.workplaceinnovation.org/>). Those insights are underused.

Perhaps a limitation of the review is what is exactly lacking, and that is bringing theory a step further. Another limitation, perhaps, is that our approach is normative as it is embedded in a humanist way of thinking (Oeij, et al., 2019a). Our approach of WPI prioritises structural change approaches. It does not reject the benefits of processual approaches to organisational change but puts them in second place. On the other hand, we hope to clarify that although many different approaches study the benefits of WPI, our conceptualisation offers some hands-on suggestions. In essence, the advice is to see changes at the individual level as insufficient for good jobs because they do not affect the organisational structure and to regard organisational-level changes as necessary. A combination of individual and organisational-level changes is preferred. Another remark is that whilst there is longstanding and substantial evidence available about the working mechanisms of WPI (Appelbaum & Batt, 1993; Dhondt et al., 2017), it is only seeping through into the management literature rather slowly.

Future research on WPI should help to bring more focus and convergence but it encounters several challenges (Oeij et al., 2023c). The WPI field faces many contributions at the individual level and organisational levels by researchers from different backgrounds. It would prove very helpful to organisations that want to successfully deal with today's challenges (digitalisation, energy transition, tight labour markets, global conflicts, climate change) if these multi-level issues could result in evidence-based knowledge for practice. A second challenge is that although we see WPI spring up in several countries (USA, Europe, Australia, Asia, and even Africa), there are serious cultural differences in how WPI is understood and applied. Obviously, this has to do with different ways of doing business and managing organisations, the characteristics of the workforce, and cultural power relations. And so on. In order to better know the workings of WPI, it is important to share insights and organise debates about the results, and explain differences across cultures. The third challenge is the digital transformation, and with that, the energy transition and the improvement of the climate. Robotisation, automation, artificial intelligence, and machine learning will continue to develop. It both destroys jobs and creates new ones. Work is changing rapidly, and labour

markets and necessary skills are becoming less predictable. These uncertainties about the future of work require ongoing information on how we can continue to optimise business performance and human performance, and how WPI can help to support this. The recent rise of the concept of Industry5.0 gives human centricity a central position (Breque et al., 2021), and this is a new opportunity for implementing WPI.

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CONFLICT OF INTEREST STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

ORCID

Peter R. A. Oeij  <https://orcid.org/0000-0002-5746-0986>

Steven Dhondt  <https://orcid.org/0000-0002-8888-5231>

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AUTHOR BIOGRAPHIES

Peter R.A. Oeij his research is located at the intersection of work and organisation sociology & psychology, and organisation design & operational management. He has co-edited two books on workplace innovation, *A Research Agenda for Workplace Innovation: The Challenge of Disruptive Transitions*. (2023, Cheltenham, UK: Edward Elgar Publishing) and *Workplace Innovation: Theory, Research and Practice* (2017, Series 'Aligning Perspectives on Health, Safety and Well-Being'. Springer: Cham -Switzerland), and two special issues on workplace innovation, 'Workplace innovation—Social innovation: Shaping work organisation and working life' (Special issue of *World Review of Entrepreneurship, Management and Sustainable*, 2016, 12(1), pp. 1–129), and 'Workplace innovation in the era of disruptive technologies' (Special Issue of *International Journal of Technology Transfer and Commercialisation*, 2019, 16(3), 199–309). Before coming to TNO, where he presently is a senior research scientist, Oeij

worked at the Tilburg University's Institute for Social Research, IVA. He holds master's degrees in Sociology, History (both Erasmus University) and Psychology, and a PhD in Organisation Science (both Open University of the Netherlands).

Steven Dhondt his research is focused on the impacts of the newest technologies on organisational and work practices. He has authored and co-authored papers in the *European Journal of Workplace Innovation*, *New Technology, Work and Employment*, *Applied Ergonomics*, *Journal of Management and Training for Industries*, *International Journal of Technology Transfer and Commercialisation*, *Team Performance Management*. He has written several books on this impact and argues that the impact can best be channelled in organisational settings where workers can participate in decision-making. As a senior researcher at TNO and visiting professor at the KU Leuven (Belgium), he coordinates a major research programme at TNO on Smart Working, developing insights on the impacts of robotics and digitisation on organisational practices, and major EU-granted research programmes H2020 Beyond4.0, H2020 GI-NI, HorizonEurope Bridges 5.0 and HorizonEurope Seismec. Next to his research work, he has been pushing the European learning network on Workplace Innovation (EUWIN) since 2013 and is on the Steering Board of the Community of Practice Industry 5.0 of the European Commission. He holds a PhD in Sociology from Leiden University (Netherlands) and several Masters degrees (Political Sciences and Sociology at KU Leuven (Belgium); Information Management at Tilburg University (Netherlands)).

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