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Promoting Worker Wellbeing in the Era of Data Economy

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Abstract. The data economy is expanding, and SMEs (small- and medium-sized enterprises) have found themselves under increasing pressure to digitalise their processes and to adopt data-based solutions for business development. SMEs act in an ever more networked data economy ecosystems with a great number of information systems, digital technologies, and interfaces to learn to keep up with the competition. Digital transformation has been accelerated by the Covid-19 pandemic, which forced many companies to take immediate digital leaps without proper preparation.

Meanwhile, data economy and digitalisation challenge worker wellbeing in SMEs in an unprecedented way: skills of entrepreneurs and workers related to digitised work seem to lag behind, leaving them with technostress and difficulties with coping and managing one's own work and collaboration. This has potential for serious negative impacts on structural, social and psychological capital, which all affect the overall wellbeing capital in SMEs.

To tackle these issues, Wellbeing at Work from Digitalisation (WWFD) project was established to develop a fair, participatory and sustainable framework for SMEs to build their skills and worker wellbeing in the context of the data economy. It aims at placing the knowledge worker in control of their work by offering tools for building worker wellbeing as wellbeing capital. Based on the initial mapping in Finnish SMEs around Turku region, the toolbox is built around workplace democracy, value alignment, skill development and knowledge sharing to ensure that worker wellbeing is not compromised while encouraging the ever-better acquisition of digital technologies. The toolbox will be piloted in SMEs and refined further, and the final manual for WWFD will be published in Fall 2023.

Keywords: Data Economy, Data Economy Ecosystem, Wellbeing Capital, Worker Wellbeing, Work engagement, Workplace Democracy, Technostress, Digitalisation.

1 Introduction

In the last few decades, our world along with the economy has turned online and activities are increasingly done by and with technology. Phenomena such as big data, artificial intelligence (AI), and Internet of Things (IoT) have increasingly steered attention towards ecosystems around data and data usage [13]. Consequently, companies are facing increasing pressure to digitalise their functions and to adopt data-driven technologies for business development to keep up with the competition.

Digitalisation has been ever more highlighted by the Covid-19 pandemic, which has forced many companies to turn their activities online, and the changes were made almost overnight. Knowledge workers had increasing demands in their daily work even prior to the pandemic [16]. Despite of benefits the pandemic may have brought, such as more equal social distribution between remote and on-site workers [56], many have faced unforeseen changes and job demands that are not necessarily compensated with additional job resources.

In the Southwestern Finland, these phenomena overlap with structural changes in regional economy: manufacturing and information technology (IT) industries, among others, have expanded, whereas the number of skilled workers lags behind [2, 37]. Based on preliminary interviews in SMEs, companies seem to struggle with finding skilled workers that understand data economy and are able to cope with new technologies, which can potentially affect the whole ecosystem. The problems seem to be amplified in SMEs that have smaller resources to invest in modern technologies or new employees. Lack of sufficient skills and knowledge is alarming, but recruiting new talent is perceived so risky and time consuming that it does not seem to be a safe option.

These phenomena have raised concerns about knowledge workers' wellbeing at work. Whereas digitalisation that thrives from data-driven systems has great potential to make work in SMEs more efficient, flexible and scalable [55], studies have shown that adopting new digital tools and learning to use them in everyday work can cause significant stress, information overload and interruptions amongst workers, which disrupts workflows and challenges wellbeing [4,8, 38,55,35].

To better understand the relationship between digitalisation and worker wellbeing and to offer tools for the companies to cope with the turbulent environment, the project Wellbeing at Work from Digitalisation (WWFD) was launched in September 2021. The two-year project is conducted by the University of Turku and the Tampere University of Applied Sciences, and it is funded by the European Social Fund as a part of actions in reaction to the Covid-19 pandemic. The project is developing a scalable framework with a set of tools that enables employees in SMEs to better take advantage of the possibilities offered by data economy. In this paper, we present the initial framework built based on a scoping literature review and an initial mapping consisting of seven semi-structural interviews in SMEs.

SMEs were chosen as the object, because of the weaker abilities and need for support in SMEs to address the issues in worker wellbeing [36]. Moreover, their relatively small size and agile structures enable the companies to pilot and implement practices that cover the entire organisation. By doing so, the project aims to develop struc-

tures that last from the early stage of development to the time when the companies grow and have ever greater impact on the entire data economy ecosystem. This is achieved by creating a framework around digitalisation that stems from the ecosystem and the individual in the operating environment. The framework thus focuses on worker wellbeing by putting knowledge workers in control of digital transformation: it offers a fairer, more open, sustainable and community-based approach to handling and developing one's work as a part of business development in a networked environment.

In the next Section, we discuss the concept of data economy and its implications for wellbeing in general. In Section three, we focus on how worker wellbeing could be promoted in data-intensive businesses where acquiring sufficient resources and capabilities of knowledge workers are among the core challenges. In Section four, the focus is on workplace democracy and its effect on wellbeing of knowledge workers. In Section five, we introduce the initial WWFD framework that is developed based on a scoping literature review on the effects of digitalisation on worker wellbeing and the initial mapping consisting of semi-structured interviews in Finnish SMEs. The framework describes crucial points of development identified in the Finnish SMEs as a result of data economy and digitalisation and introduces a starting point of a conceptual model for tackling the issues. Finally, in Section six we end up with conclusions.

2 Data Economy Ecosystem as Emerging and Challenging Business Field

Data economy and data ecosystems are new, central terms of digital business today. Yet, they are concepts still under formation and thus they are not established or commonly agreed upon. For example, [24] calls ecosystem a zombie category term, which means that it is a term alive and used but, at the same time, it lacks real content. This underlines the need for proper definition when discussing data economy and data ecosystems. The definition of data economy ecosystems (see Table 1. for key definitions of terms used in this article) calls for data as the main source of business.

Table 1.

Concept	Definition
Data Economy	Data economy is a subcategory for the economy, in which data and information are the core assets for business.
Data Economy Ecosystem	“is a network, that is formed by different actors of ecosystem, that are using data as a main source or instance for business. Different actors and stakeholders are connected directly or indirectly within network and it's value chains. Data economy ecosystem also incorporates the rules (official or unofficial), that direct action allowed in network.” [29, p. 2]
Worker wellbeing	Holistic state of experienced wellbeing, strongly linked to and shaped by factors related to work and workload, such as a balance between job resources and job demands.
Wellbeing capital	Combination of elements of human capital that contribute to worker wellbeing: social capital, organisation's structural capital and psychological capital. [35]
Work engagement	State of feeling vigorous, dedicated and absorbed in work, leading to workers taking initiative, being open for changes and performing well both in terms of formal requirements and voluntary efforts. [44,20,27]

Technostress	Stress induced by a worker's inability to cope or deal with information technology in a healthy manner. [4]
Workplace democracy	A form of corporate governance where all workers regardless of position are seen as stakeholders and thus are included (in varying intensity) in the planning and execution of the company's strategy and actions. No ownership is required.
Knowledge worker	A Knowledge worker is a person whose work contains unstructured, intellectual and cognitive tasks to be fulfilled in producing knowledge-based outputs (services or products). [46]

Data is ever more important when doing business, and in the future, it will most likely play even bigger role in organisations' business models and competition. This is visible, e.g., in the role of citizen-consumers that have turned from mere buyers into a more integrated in business and have their own channels and networks that may affect the business [30]. If an organisation does not recognise all relevant stakeholders and data that they may provide, it may end up in a situation where competitors possess the data, which can be a crucial advantage in conducting business. Therefore, even if data is not the main source for business today, it may be tomorrow, and this sets new demands for all actors of data economy ecosystems—including companies, employees, customers, citizens, governmental actors, and the third sector.

Data is the key element that has provided new ways of doing business and has created data ecosystems where data is used in different levels of society [58, 39]. Even though data can offer new opportunities, data economy has its dark side as well [54]. Zuboff is describing data economy as *surveillance capitalism*, in which people are a source for information feeding businesses. The logic behind surveillance capitalism is based on the accumulation of data, which is collected from a multitude of sources, then extracted, analysed, commodified, and finally used to make profit [62,63]. Couldry and Mejias talk about the era of new colonialism, *data colonialism*, which has normalised the exploitation of humans through personal data [12]. Like they noted, we should resist building societies based on total algorithmic control, where we are reducing humans to mere resources for economic purposes. This is relevant when thinking about the role of employees in SMEs. This does not mean rejection of data usage and collection, but rejecting current data practises [12] as they do not seem to fit into an idea of fair and ethical data economy [29] and thus an ethical workplace.

One example of a problematic data-based business area is the gig economy. The gig economy refers to a business that is based on short-term, on-demand, occasional, and typically task-based labour [50], such as Uber and DoorDash. The problem is that the gig economy easily lessens the people who provide the service to mere objects that are constantly evaluated and rated by customers and algorithms, have weaker social and legal protection (providers are labour but not employees), are under algorithmic management, and tend to gain lower salaries [50]. As autonomy and respect play an important role in worker wellbeing [18], this can have negative implications for the wellbeing of service providers.

Ever expanding data economy sets new demands for SMEs as it is a demanding area of economy, where specialised skills and knowledge are needed to carry out the business ethically. Problem is that those skills and knowledge may not be at the core of the business itself but are still needed, which creates a conflict concerning the allocation of scarce resources. There are questions of data/knowledge management, strat-

egies, technological competence, data security, privacy, ownership of data, ethics etc. that need to be answered to make ethically and legally sustainable business [59,52]. There is also a need to focus on the values of employees to ensure that organisations' values and actions do not conflict with them — an issue that may have a critical impact on an organisation but may be forgotten in the context of data economy [42].

Furthermore, studies imply that although digitalisation that thrives from data-driven systems has a great potential to make work in SMEs more efficient, flexible, and scalable [55], adopting new digital tools and learning to use them can induce stress, information overload and interruptions amongst workers, which disrupts workflows and challenges wellbeing [4,8,38,55,35]. In next Section, we explore in more detail what challenges worker wellbeing in today's data ecosystems and how workplace democracy could be helpful for overcoming the challenges.

3 From Individual Stress Factors to Wellbeing of Ecosystems

In worklife studies, research in the 20th century on worker wellbeing concentrated on analysis of stress factors with negative implications for employees and other aspects that cause unhappiness [26,10]. Since then, the focus has shifted towards encouraging positive aspects that strengthen wellbeing – a holistic understanding of factors on individual, organisational and environmental level that influence worker wellbeing [35,20]. In this Section, we explore the key concepts in worker wellbeing studies and their implications for knowledge work in data economy ecosystems in the light of findings from the first round of analysis of the interview data gathered during the initial mapping in Finnish SMEs.

3.1 Key Concepts in Worker Wellbeing Studies

First, the beginning of the 21st century was marked by the raise of positive psychology, which aims at building worker wellbeing and optimising processes around the strengths and job resources of workers, organisations and teams – a model balancing job demands and job resources as an example still relevant today [44,20,45,35]. Today, one of the key concepts in describing and measuring worker wellbeing is work engagement. It is about feeling vigorous, dedicated and absorbed [44], which leads to taking initiative, being open for changes and performing well both in terms of formal demands and requirements but also voluntarily [20,27]. Work engagement is seen as an ideal, sustainable state that persists over time as a result of worker wellbeing. Although personal attributes and individual wellbeing affects the feeling of work engagement, leadership plays a key role in building and strengthening it [21,53].

In data ecosystems, worker wellbeing can be experienced collectively. Several studies have found that work engagement is a collective phenomenon that can spread amongst people working together regularly [20]. It has been proposed that worker wellbeing could have positive impact on larger entities than only the organisation itself [43]. Involving the ecosystem – such as customers, partners and academic community – is one of the key factors in successful digitalisation efforts [25]. Our

interviews with Finnish SMEs revealed high dependencies among companies and stakeholders, which has relevance on worker wellbeing. This implies that building sustainably better, fairer and happier workplaces could have positive influence over organisational borders and thus encourage wellbeing in the ecosystem at large.

In this project, we approach worker wellbeing following a model presented by Manka [35], according to which worker wellbeing as wellbeing capital is a combination of social capital, organisation's structural capital and workers' individual psychological capital. Social capital refers to resources rooted in social aspects of one's work, such as participatory and motivating leadership, communication, and team skills. Structural capital entails organisational structures that enable flexible work and well-functioning environment, clear goals, and opportunities to participation and skill development. Psychological capital consists of workers' physical and mental health. [35] Considering the increasing importance of ecosystems in the context of SMEs, we extend this further to take into consideration elements rooted in the ecosystems as well. It is important to note that a truly holistic perspective on wellbeing includes both wellbeing at work and outside work [43,36]. Wellbeing cannot be entirely divided into distinct categories – aspects in one's personal life influence the experience of wellbeing at workplace, and *vice versa*. This could be highlighted by the Covid-19 pandemic and the increase of distance work from home. However, in this paper, we will mainly focus on aspects of worker wellbeing that emerge in the interaction between individual workers and workplaces, all by acknowledging this element and potential measures needed to address it later in the project.

3.2 Challenges in Knowledge Workers' Wellbeing in Data Ecosystems

To identify key factors that inhibit and encourage worker wellbeing in the context of knowledge work, a scoping literature review and an initial mapping consisting of seven semi-structured interviews with entrepreneurs and/or management of Finnish SMEs were conducted. The interview data was analysed using qualitative content analysis. Here, the first round of analysis of the interview data is used for constructing the initial framework.

In data ecosystems, companies are ever more dependent on data-driven technologies, regardless of industry. Digitalisation, which has been accelerated by the Covid-19 pandemic [3], has increased pressure to digitalise. However, SMEs might not be prepared for processing big data when it comes to IT infrastructure, analytic tools and ethical aspects of data [59]. Furthermore, even if the management has a strong vision for digitalisation, transformations do not always succeed [25].

One of the consequences for worker wellbeing has been an increase in technostress, referring to "one's inability to cope or deal with ICTs in a healthy manner" [4, p. 832], which can lead to many unwanted consequences, such as health issues and decreasing productivity [4,35,34,3]. Digitalisation can, particularly in the case of experienced workers, weaken the sense of self at work, if the value of pre-existing tacit knowledge is eroded when new tools and technologies are implemented [5]. Hence, digitalisation can be an important contributor to job related stress in today's data economy ecosystems. Technostress is found to be caused by factors related to system

performance, such as usability issues and techno-uncertainty, but also ones related to non-system performance, such as techno-complexity, information overload, techno-invasion, and lack of fit between demands and abilities [38]. Correspondingly, technology related aspects that seem to prevent workers from experiencing technostress are rooted in the use of systems, such as reliability, user experience, usefulness, usability, and provision of technical support [38]. This has led to the extension of the concept of work engagement to *techno-work engagement*, which refers to "a positive and fulfilling well-being state or experience that is characterised by vigour, dedication, and absorption with respect to the use of technology at work" [34, p. 2]. Technology can thus be seen as a job resource that has potential to support worker wellbeing. As Mäkiniemi et al. [34] point out, the relationship between technology and worker wellbeing has so far concentrated on negative experiences and technostress, which underlines the need for research on technology's potential for increasing worker wellbeing.

Even if technostress and potential for techno-work engagement were recognised, building a necessary skill set to cope with current technologies is perceived challenging in SMEs [35,47]. During the interviews, several SMEs hoped for better functioning digital tools. When asked whether the technologies in use support their everyday work, several managers brought up issues in usability, which also led to difficulties in training new employees:

"The software we have to use was developed in late 70s. [...] It is lagging behind, and I must say that for those born in 2000s, it is really hard to teach a software that was made in the 70s. [...] Learning to use it requires a lot of learning by heart. You just have to remember that this is how it works. The interface is not intuitive."

Yet, threats to worker wellbeing are not limited to the acquisition and use of technology. Data masses enabled by digitalisation appear to complicate information management in individual level [35,55] but also in organisational level [59], which was brought up by several SME managers in our interviews. In worklife studies, this is conceptualised by the term information ergonomics that has come to accompany the traditional physical ergonomics. Information overflow increases stress levels, decreases productivity and lessens the overall wellbeing at work, including the management of everyday work [35]. Furthermore, digital tools enable and encourage multitasking and create constant interruptions and task fragmentation, which complicates information management [55,9]. Digital work is easier to take home, making it harder to establish boundaries between work and personal life. Consequently, coping with and internalisation of information becomes harder and endangers worker wellbeing. [55].

The interviews also revealed that SMEs hold great amount of tacit knowledge, which further challenges both workers' and entrepreneurs' information management and skill development. To encourage diffusion of tacit knowledge, SMEs can utilise both formal and informal organisational structures. First, enabling informal structures and organisational culture for storytelling and information circulation is vital to take use of tacit knowledge and to support problem solving, adaptation of new technolo-

gies and skill development [7,51]. Second, establishing formal documentation and feedback loops as well as collecting best practices to be explicitly shared [51] further enhances capturing tacit knowledge.

Coping with new technologies and enabling techno-work engagement thus requires more attention to skill development, effective and well-working digital tools that enable uninterrupted workflows, and ways to make tacit knowledge visible. Entrepreneurs and managers in SMEs seemed to be aware of most of the issues in their organisations but did not know how their employees or business partners experienced worker wellbeing and impacts of digitalisation. The work will thus continue by mapping the perspectives of employees in these companies. In the next Section, we explore adopting participatory processes to address these issues.

4 Workplace Democracy in Strengthening Knowledge Workers' Wellbeing

We argue that introducing aspects of workplace democracy in a company has potential to support the construction of a communicative and interactive workplace where the values of employees and organisation are aligned and where successful digitalisation reduces friction in workers' everyday tasks.

Several studies suggest that adopting participatory practices and leadership yields better results in digitalisation efforts, including acquisition of new technologies, information systems and software [32,1,25]. For example, whereas problems in information systems implementation are often related to user resistance, lack of understanding the systems and poor compatibility of a system with organisation's tasks [11], it seems that including all stakeholders in planning, developing, and implementing new technologies can mitigate resistance and lead to better understanding of the systems. Truly including workers who know their tasks could enhance the results of digitalisation efforts. Furthermore, workplace democracy is rooted in values, such as individual freedom, equality and justice, which are all aspects that play a role in worker wellbeing [35], having thus potential in creating healthier, happier and fairer workplaces in the data ecosystems.

Workplace democracy is subject to active debate [18,31,22,17,19,57]. Democracy itself is a complex concept without uniform definition. However, there is a shared idea that the power over workplaces should be shared to a certain extent between all stakeholders – workers included. Arguments that support workplace democracy are constructed around themes such as firm-state analogy [14,31], meaningfulness of work [61], justice [40,23], whereas the critical arguments contest its efficiency, implementation potential and its role in liberal economy [18].

The relevance of democratic practices is ever highlighted in data economy: As defined by Koskinen et al. [29], data ecosystem consists of actors and stakeholders that are connected within the network and its value chains. Anyone whose data is involved in data economy should thus be considered a stakeholder and should have agency in decision-making that concerns the data ecosystem. In Europe, people strive for control over data and data sharing, fairness and transparency of data processing, and us-

age and being informed on how personal data is used in the data economy ecosystems [42], which reflects democratic values. Similar values have also been connected to stronger worker wellbeing, when adopted at workplace [49,33,60,41,48].

At first glance, this seems to be in line with propositions of democratic theorists who argue for the workplace democracy for its own sake instead of its instrumental benefits. According to Dahl [14], the strong principle of equality – one of the corner stones of democracy according to which each citizen is equal and should thus be entitled to participate in decision-making that considers oneself – applies to workplaces as institutions just as well as to nation states. Dahl thus draws a direct analogy between a state and a workplace and places equality in the centre of human agency as universal principle that should not be tied to a specific institutional setting.

The state-firm analogy is, however, among the most debated arguments for workplace democracy. Frega [17] contests Dahl's analogy by arguing that the state and the firm are not in a horizontal but a hierarchical relationship, due to which the analogy leads to a category mistake. Furthermore, he argues that rooting workplace democracy on open lists of values is not justifying workplace democracy, and that these analogies shift the focus away from defining what the workplace democracy actually looks like [17]. On the other hand, Landemore and Ferreras [31] and Ferreras [15] argue that firms are political entities acting in a democratic society, and thus, firms should be subject to democratic principles. Hence, the debate around the analogy remains active.

Several instrumental arguments for workplace democracy bring up factors that have been identified to encourage worker wellbeing. A study conducted in Danish companies found a positive impact of workplace democracy on worker wellbeing [28]. Moreover, arguments that highlight the potential of workplace democracy to strengthen autonomy and practices for recognition [18] are highly relevant for worker wellbeing. Hirvonen and Breen [22] argue that for the workplace to fulfil the workers' basic need for recognition by respect and by esteem, each worker should be treated equally and given an opportunity to participate in decision-making. According to them, any other situation would be unequal [22]. These elements matter, because research indicates a connection between job meaningfulness and worker wellbeing, comprising the need for recognition and autonomy [20,35]. Furthermore, several studies have shown that participatory practices and inclusion of workers in decision-making have positive impact on worker wellbeing, either by increasing the success of digitalisation and adoption of new technologies [11,32] or directly by strengthening different aspects identified to contribute to worker wellbeing [35,20,6].

Yet, the potential positive impact of workplace democracy on worker wellbeing is not certain. For example, high involvement management, which includes aspects common with workplace democracy, usually increases job demands. If not balanced with appropriate job resources, such as enhanced autonomy, it can weaken worker wellbeing [6]. Democratic workplace does not offer solutions to all challenges brought by digitalisation in data ecosystems. To build a framework that addresses the issues introduced above as extensively as possible, it is necessary to develop tools that extend further than only democratic practices. For example, although workplace democracy can foster culture that supports organisational learning and workers' skill

development, it is not alone sufficient to train workers on data economy and digitalisation. Nevertheless, workplace democracy seems to have strong potential to enable structures that lead to more efficient, fairer and happier workplaces by establishing sustainable values and participatory structures. In this project, we aim to put this hypothesis to test and put workplace democracy in the very centre of the WWFD model which we present in the following Section.

5 WWFD - Framework for Wellbeing at Work from Digitalisation in Data Economy Ecosystems

Based on the scoping literature review and semi-structured interviews described above, to support SMEs in their digitalisation efforts in a way that sustains and builds worker wellbeing, we introduce a framework for SMEs to train their employees to better understand data economy and digitalisation, all by establishing democratic practices and further supporting worker wellbeing (Figure 1.).

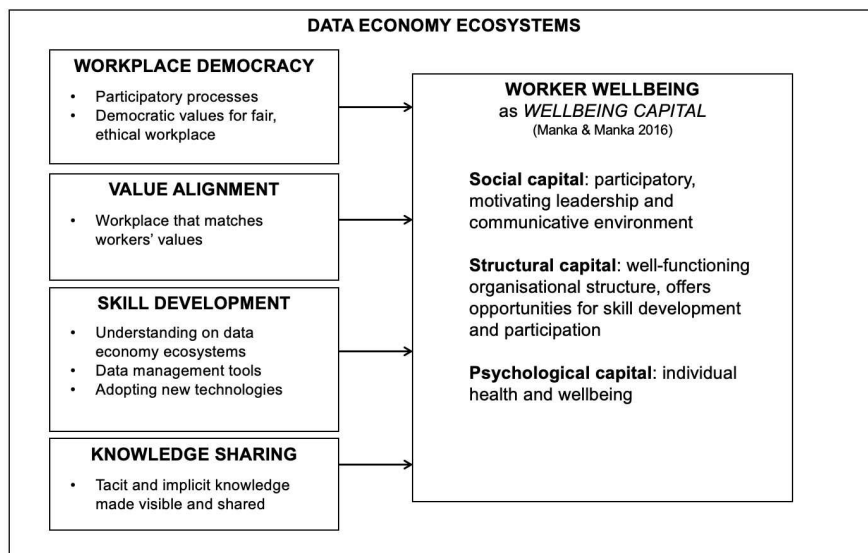


Fig. 1. WWFD Framework

The framework aims at offering tools for building wellbeing capital in data ecosystems. First, workplace democracy aims at building social and structural capital via participatory processes and psychological capital via value alignment. WWFD framework draws from both instrumentalist statements and arguments on democracy's value per se (see Figure 2.) We explore the potential of workplace democracy as an instrument for increasing worker wellbeing, while simultaneously considering democracy as a goal per se to ensure fair, ethical workplaces and value alignment. We

expect fairness and worker wellbeing to be interlinked, forming sustainably better workplaces as part of data ecosystems.

Secondly, promoting value alignment aims at building psychological capital by supporting workers' mental wellbeing as well as social capital by easing communication. Third, skill development contributes to structural capital by developing skills to cope with the changing environment and to enhance organisational learning, and to psychological capital by strengthening the feeling of coping in one's work by reducing techno-stress and strengthening techno-work engagement. Finally, knowledge sharing reaches all three dimensions by strengthening community (social capital), enables skill development (structural capital) and helps to cope and manage one's workload (psychological capital).

Based on this framework, the project has begun the development of a set of tools for SMEs. They will be piloted in three rounds, between which they will be evaluated and refined. In the first piloting round, SMEs will be offered tools such as methods for dialogue to find a shared understanding of their initial situation, recommendations on building transparent and commu-

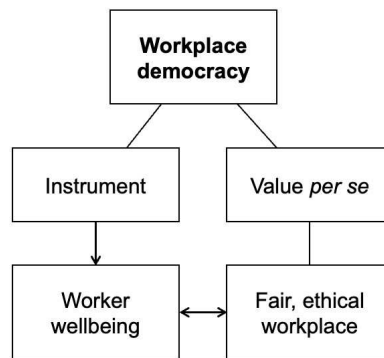


Fig. 2. Role of workplace democracy in WWFD framework

nicative platforms for everyday interaction, participatory processes for successful digitalisation initiatives, and feedback models for efficient and interactive organisational learning. They will be guided on how to choose the most acute point of development in collaborative processes and how to pursue the process in a way that fits the organisation's needs and resources.

The number of interviews included in the initial mapping is expected to grow as the project advances, and several rounds of further analyses will be conducted – the framework is built iteratively. Thus, to proceed with the first pilots, this is the first understanding of the framework to be brought into academic discussion.

Finally, based on the WWFD framework and the fine-tuned toolbox, a guidebook will be drafted and published around August 2023. The guidebook will be freely available online for all.

6 Conclusions

In this paper, we introduce a Wellbeing at Work from Digitalisation (WWFD) framework for increasing worker wellbeing in SMEs in data economy ecosystems. The study is conducted as a part of a research project that aims to help SMEs with developing their skills to match the requirements and aspirations arising from the data economy, all by strengthening worker wellbeing.

In the course of the project, we have examined the effects of data economy and digitalisation on worker wellbeing. SMEs act in an ever more networked data economy ecosystems with a great number of information systems, digital technologies, and interfaces needed to keep up with the competitive environment. Working with data raises questions on ethics and how the organisation's values are aligned with those of the workers when collecting and processing data. It was recognised that these aspects might have severe negative impacts on knowledge workers' wellbeing at work.

The initial mapping conducted by WWFD project in form of first round of semi-structured interviews with entrepreneurs and managers of seven Finnish SMEs in Turku region supported the existing literature in implying an increase in technostress and difficulties with managing the vast amount of information and digital tools in everyday work, which was due to pressure to go digital and use data-based technologies for business development. The interviews suggested that many companies would like to take existing data-based technologies in use, but knowledge and skills were missing, and recruitment was considered risky for small businesses. The interviews are still ongoing as new companies join the project, and further rounds of analyses are conducted using methods of qualitative content analysis.

To address these issues, we introduce the initial WWFD framework in Section five. The model aims at strengthening worker wellbeing as wellbeing capital by offering tools around workplace democracy, value alignment, skill development and knowledge sharing. These elements are expected to positively affect a) social capital by strengthening participation, motivation and communication, b) structural capital by reducing friction in organisation's daily functions, supporting skill development and participation, and c) psychological capital by contributing to the feeling of coping and managing one's work with a sense of agency and sufficient recognition. Based on this model, we will provide SMEs with practical tools that will be piloted in three rounds during 2022 and 2023. Between the rounds, the toolset and the framework are iteratively developed further based on interview analyses and piloting experiences.

We hope this model inspires others working on building better workplaces to address issues caused by digitalisation and spark discussion on other viable tools and aspects found elsewhere. This project is focusing on SMEs in Turku region, because of a recognised need for skilled workers in expanding fields, such as manufacturing industries, technology, and all supporting actions.

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