RESEARCH IN PROGRESS

A Systematic Approach to Define Digital Well-Being at Work

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The advancements of digital technologies continuously reshape how, where, and when employees work. While such digitalization can bring benefits for employees, it may also impose a significant burden on employee well-being. Research on how digitalization in the workplace impacts employee well-being is highly fragmented due to the myriad of digital technologies studied, as well as the vast number of well-being indicators examined. The wide variety of conceptualizations and operationalizations for both digitalization and well-being indicators hinders the ability to draw concrete conclusions. With the rapid development of novel technologies, it is crucial to find consensus about what digital well-being at work entails. The aim of this review is to unravel the existing academic landscape on employees' digital well-being and work towards an overarching framework of employee digital well-being.

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1 Introduction

Technological advancements continuously impact how, when, and where employees work, presenting both challenges and opportunities for organizations and their employees. Many organizations have made a large scale shift towards an increasingly digitalized workplace, largely fueled by the COVID-19 pandemic. Moving forward, organizations are expected to undergo profound transformations due to technological advancements, with AI playing a crucial role in reshaping jobs and required skills (World Economic Forum, 2025).

As digitalization processes increase, so do the academic endeavors to unravel the impact of digital technologies on employee well-being. Despite – or perhaps due to – the rapid acceleration of academic endeavors, findings on the impact of digitalization on employees' well-being remain fragmented (cf. Cramarenco et al., 2023; Lunde et al., 2022). This fragmentation not only stems from the diverse range of digitalization processes studied, such as mobile connectivity and AI adoption (Büchler et al., 2020; Kong et al., 2021), but also from the variety of well-being outcomes under investigation, including life satisfaction, stress, and burnout (e.g., Lunde et al., 2022; Song & Gao, 2020; Tan et al., 2024).

Several meta-analyses have attempted to untangle the complex relationship between digitalization and employee well-being (e.g., Charalampous et al., 2019; Cramarenco et al., 2023; Johnson et al., 2020). Such overview studies often focus on specific forms of digital technologies, such as telework (Hill et al., 2024), or the implementation of AI (Cramarenco et al., 2023). Even though these overviews offer valuable insights into how particular forms of digital technologies influence employee well-being, they do not provide a comprehensive framework for synthesizing the broader concept of employees' digital well-being. With the rapid pace of emerging novel technologies, we face a research field in which it becomes important to find consensus about what digital well-being at work entails.

Employee well-being is a highly complex, multi-dimensional construct (Khalid & Syed, 2024). Collapsing diverse findings from a single well-being indicator into an overarching concept of well-being oversimplifies the complexity of the construct. For example, the spatial distance created between workers in remote work has been found to increase positive affect (for an overview see: Hill et al., 2024). Yet, based

on such a single indicator of well-being it cannot be concluded that remote work helps employee well-being. In fact, remote work is also associated with negative outcomes for well-being, such as burnout, emotional exhaustion, and loneliness (Hill et al., 2024). Given that digitalization impacts well-being in different ways, there is a need to focus on individual well-being indicators to accurately tap into the complexity of well-being.

This study aims to map the academic landscape of employees' digital well-being and develop an overarching framework. We conduct a qualitative systematic literature review (e.g., Paré et al., 2015; Schryen et al., 2021) focused on how digital technologies affect employee well-being. Beyond synthesizing existing research, the review integrates domain-specific insights to extend current theories and deepen our understanding of digital well-being (Schryen et al., 2021).

2 Theoretical Framework

2.1 Defining (employee) well-being

Employee well-being has been studied for decades, with anxiety, positive and negative affect, and stress as important outcome variables (Khalid & Syed, 2024). The variety of different indicators of well-being, indicates that well-being, as an overarching concept, oversimplifies the complex structure of the different dimensions of well-being that are impacted by digital technologies. To be able to scrutinize how digitalization at work affects employee well-being, it is required to differentiate indicators of well-being in more detail.

When a person experiences well-being, it is often described as 'feeling well' or 'doing well' (Martela & Sheldon, 2019). Feeling well refers to the hedonic part of well-being, whereas doing well reflects eudaimonic well-being. Hedonic well-being, often used interchangeably with subjective well-being, is reflected by subjective experiences of pleasure and includes aspects of life satisfaction, happiness, and positive affect (Kjell & Diener, 2021; Ryff et al., 2021). Eudaimonic well-being reflects the degree to which one is fully living up to one's potential (Ryan & Deci, 2001). Eudaimonic indicators of well-being include vitality, meaningfulness, and purpose in life (Huta & Waterman, 2014; Ryan & Deci, 2001). In the work context, an example of a eudaimonic indicator is work engagement (Hill et al., 2024).

Well-being is a subcategory of mental health. An individual's mental health constitutes of an individual's well-being and ill-being, which is known as the two-continua model of mental health (Greenspoon & Saklofske, 2001; Keyes, 2002). A person experiences ill-being in instances of disturbance or personal distress, and is sometimes also referred to as psychopathology (Lahey et al., 2017). Whereas ill-being and well-being have been studied on one continuum, more academic attention has recently been drawn to separating well-being from ill-being. Having low levels of stress (i.e., low indicators of ill-being), does not necessarily mean that someone is happy (i.e., high levels of well-being).

Events, daily experiences, or moment-to-moment occurrences may induce ups and downs in an individual's well-being and ill-being. When mental health indicators are assessed at a given time, within a specific period, or under specific circumstances they provide insights into the fleeting, so-called state components of mental health (Bakker, 2015; Huta, 2017). These ups and downs fluctuate around one's general level of mental health, which is an average degree of mental health that remains relatively stable over time. This is referred to as trait level well-being and ill-being (cf. Huta, 2017). Over time, the trait level component of mental health can gradually evolve (cf. Granic, 2005; Smith & Thelen, 2003).

The current study aims to delineate the domain specific aspect of digital well-being in the workplace. The study utilizes the current trends in distinguishing ill-being from well-being and examines both the more fleeting and more stable aspects of ill- and well-being. Ultimately, this would lead to a general overarching conceptualization of digital well-being and ill-being at work, which ought to be seen as a subcategory of the digital well-being framework at large.

2.2 Digital well-being (at work)

The rapid advancements in technologies and their impact on society have led to the emergence of the concept of digital well-being. Digital well-being, often used to describe how digital technologies shape overall well-being (Büchi, 2024), has become a societal buzzword and an emerging focus of academic research. The concept of digital well-being is generally built around daily uses of digital media such as the 24/7 mobile connectivity, screentime, and social media (Büchi, 2024; Twenge et al., 2018; Vanden Abeele, 2021). Whereas, a vibrant scholarly community is working towards

a framework for digital well-being in daily life (e.g., Büchi, 2024; Burr et al., 2020; Vanden Abeele, 2021), no such framework exists for digital well-being at work.

To a certain extent, similarities between technology use in daily life as described in the digital well-being framework and the work context exist. For example, the 24/7 mobile connectivity is very prevalent in daily life, but is also a significant concern in the work context for disturbing the work-life balance (Johnson et al., 2020). However, the introduction of innovative technologies at work also brings along unique job-related challenges and opportunities. That is, worries about how advancements in new technologies might render one's job obsolete are work-specific concerns, and can have a far-reaching impact on well-being (Ali et al., 2024). Hence, the (unique) concerns and opportunities that arise from digitalization at work, which can be seen as a subpart of digital well-being, needs to be studied on their own.

Understanding employee well-being often draws on job strain models, such as the Job Demands-Resources model, which unravels the impact on employee well-being as a result of job demand characteristics (Bakker, 2015; Bakker & Demerouti, 2018). While the mechanisms identified in digital well-being and job strain frameworks offer valuable insights into the mechanisms influencing (employee) well-being—both positively and negatively—these frameworks fall short in accounting for the evolving dynamics associated with the implementation and sustained use of digital technologies. Specifically, they tend to overlook the temporal dimension as a core aspect of digital well-being, thereby failing to capture the varying impacts that emerge across different stages of technology adoption.

To develop a comprehensive framework for employee digital well-being, we examine two key questions: (1) What are the associations between technology use and employee well-being and ill-being? and (2) What are the mechanisms that explain the relationship between technology use and well-being and ill-being outcomes? In identifying these mechanisms, we place special emphasis on the evolving nature of technology use and its implications for employee well-being, including the different stages of technology adoption and the temporal stability—or instability—of its impact over time.

3 Method

This systematic review will be conducted in accordance with the Preferred Reporting Items for Systematic Reviews, and Meta-Analysis (PRISMA) guidelines (Page et al., 2021). To identify the relevant studies, the review includes an identification, screening, and eligibility procedure.

3.1 Identification Procedure

To identify all potentially relevant publications, an extensive academic database search was conducted in April 2025. The searched databases include (a) Web of Science and (b) PsychINFO. The title, abstract and keywords of publications published in peer-reviewed journals written in English are searched for (a) mentions of digital technologies (e.g., artificial intelligence), (b) mentions of well-being indicators (e.g., well-being), and (c) words related to the work environment (e.g., employee). See Appendix I for a full overview of the advanced search strategy. Duplicate records were removed for the next phase. During the final phase, a backward search will be performed to scan for additional relevant publications.

3.2 Screening Procedure

The remaining abstracts from the identification procedure are further screened for relevance. This screening process is partially automated via ASreview. ASreview uses machine learning techniques to assist researchers in their effort to determine relevant publications (Van De Schoot et al., 2021). We adhere to the SAFE procedure when using ASreview (Boetje & Van De Schoot, 2024), including four phases. First, a random set of abstracts is screened and labeled by the researcher, used for the training data (1% of the publications from the identification procedure).

Second, the active learning process continuously improves predictions of the unlabeled publications. Based on the training set from phase one, patterns of relevant records are identified, and the researcher indicates whether or not these records are indeed relevant. The first default setup (TF_IDF with Naive Bayes) to identify patterns in the abstracts that the researcher codes as (ir)relevant has a fast and excellent overall performance (Van De Schoot et al., 2021). The active learning phase will be stopped when (1) key papers have been marked as relevant; (2) a

minimum of 10% of the total dataset has been screened; and (3) no relevant records have been identified in the last 50 records.

Third, to ensure that no relevant records are missed, more advanced and computationally complex models (such as doc2vec with a neural network) are trained to check if the fast model missed relevant records. In the last (fourth) phase it is essential to evaluate the accuracy to ensure the review is comprehensive. A simple learning model (TF_IDF with Naive Bayes) will be used to screen through records that have been identified as irrelevant during the previous phases. To train this final model, the 10 highest ranked and lowest ranked records from phase 3 are used. The researcher will stop screening when no extra relevant records have been identified in the last 50 records. After identifying all relevant records, a subset of the articles including both relevant and irrelevant records are evaluated by an independent coder, after which the interrater reliability will be established.

3.2 Eligibility procedure

The final step is to assess full-text analysis to determine if the record should be included in the review. Records should report on the link between a form of digitalization and indicators of employee well-being. Digitalization variables should be the independent variable, and employee well-being should be the dependent variable. In cross-sectional designs, variables can be analyzed in different directions, as there is no clear temporal ordering. For cross-sectional designs we will solely rely on correlational analyses to examine the relationships between variables.

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Appendix I

Search string indicators

Well-Being indicators
well-being, wellbeing, mental health, job satisfaction, work engagement, happiness at work, flourishing, work-life balance, ill-being, psychopathology, burnout, emotional exhaustion, cynicism, depersonalization, negative professional self-evaluation, bore-out, job dissatisfaction, work stress, job stress, work strain, job strain, work disengagement, job anxiety, workaholism, techno-stress, technostress, techno-eustress
Digitalization indicators
digital transformation, digitali*ation, technolog*, industry 4.0, industry 5.0, artificial intelligence, machine learning, automation, algorithms, cloud computing, robot*, Internet of Things, smartphone*, metaverse, augmented reality, virtual reality, extended reality, big data, ICT, machine, wearables, e-communication*, video conferenc*, video call*, e-mail, email, social media, instant messag*
Workplace indicators
Employee*, Worker*, Labo*r, workplace NOT students NOT adolescents