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THE ROLE OF DIGITAL TECHNOLOGIES IN THE DEVELOPMENT OF CORPORATE WELL-BEING SYSTEMS IN SMALL AND MEDIUM-SIZED ENTERPRISES OPERATING IN THE SOUTHERN TRANSDANUBIAN REGION OF HUNGARY

Abstract
The application of digital technologies within corporate frameworks is becoming increasingly indispensable in the modern business environment, serving as a competitive factor in enhancing organizational operational efficiency. Digital technologies, which permeate various aspects of organizational operations, now play a central role in the development of HR and related corporate well-being systems. This study aims to highlight the role and significance of artificial intelligence and digitalization in the evolution of corporate well-being systems integrated with HR systems, as well as in improving their effectiveness.
The exploratory, cross-sectional pilot study conducted in the Southern Transdanubian Region of Hungary examines 100 organizations classified as small and medium-sized enterprises (SMEs) based on employee headcount. Our research hypothesis posits that a strong correlation can be demonstrated between the successful implementation of digitally supported corporate well-being systems and increased operational efficiency in SMEs.
Corporate well-being systems aim to preserve employees' physical and mental health, improve their quality of life, and thereby enhance their adaptability, job satisfaction, and productivity. HR-integrated, digitally supported corporate well-being systems contribute to reduced labor costs and increased work efficiency, which manifests in higher productivity. Both artificial intelligence and modern cloud-based solutions facilitate the optimization of human resource strategies in practice and the integration of corporate processes.
The ideal relationship between digitalization and corporate well-being systems enables the automation of workflows and the reduction of workload. The continuous expansion of artificial intelligence and digitalization is expected to further strengthen this relationship. By adopting integrated and digitalized corporate well-being systems, SMEs can gain a competitive advantage through the optimal utilization of human resources, improved workforce efficiency and adaptability, and the long-term retention of valuable employees.
In Hungary, 65.5% of the working-age population is employed in the SME sector (KSH, 2023). In the Southern Transdanubian Region (comprising Baranya, Somogy, and Tolna counties), 7.69% of Hungarian SMEs operate.

Keywords: digitalization, corporate well-being, HR strategy, SME sector

1. INTRODUCTION

The significance of SMEs in Hungary's economy is underscored by the fact that they accounted for 99% of all enterprises, employed 65.5% of the working-age population, and represented 55% of net revenue and gross value added in 2023 (KSH, 2023). However, the productivity of Hungarian SMEs remains below the EU average, partly due to the limited adoption of innovations (such as digitalization, new technologies, and green solutions) in this sector. Among

Hungarian SMEs, the fewest operate in Southern Transdanubia (Baranya, Somogy, and Tolna counties, 7.69%) and Northern Hungary (Borsod-Abaúj-Zemplén, Heves, and Nógrád counties, 7.58%). Micro-enterprises employ 26% of Hungary's workforce, small enterprises 22%, and medium-sized enterprises 17% (KSH, 2024). The COVID-19 pandemic, the necessity of transitioning to digital technologies, and the emergence of artificial intelligence (AI) have significantly impacted the labor market, presenting new challenges for social and economic actors. These external challenges have raised critical issues in corporate management, particularly in SMEs and their human resource (HR) practices. The changing demands affecting both the labor market and internal organizational environments have manifested in:

- The need for flexible workplaces,
- The shift toward 21st-century work models,
- The adoption of AI and digital transformation,
- and the growing necessity of well-being initiatives.

A corporate well-being system (or workplace well-being program) refers to a set of measures and initiatives implemented by an organization to improve employees' physical, mental, and emotional well-being. These initiatives aim to enhance job satisfaction and employee commitment while reducing workplace stress and related health issues (Diener et al., 1999). By improving employees' quality of life, workplace well-being systems can boost work efficiency, productivity, and long-term retention of valuable talent. Such systems may include:

- Preventive health screenings,
- Medical check-ups,
- Health insurance, and
- Wellness programs promoting a healthy lifestyle.

Our study aims to highlight the role and significance of AI and digitalization in the development of corporate well-being systems, based on an exploratory pilot study conducted in Hungary's Southern Transdanubian Region. Available data suggest that HR-integrated corporate well-being systems are crucial in addressing contemporary challenges. Integrated platforms and real-time data enable companies to respond swiftly and flexibly to changes, reduce stress, and improve communication between employees and employers—contributing to a better work environment (Eurofound, 2024). AI-driven personalized programs use machine learning and real-time data to tailor interventions to individual needs. Virtual support provides mental health and well-being services for remote workers, which is essential in the era of telework. In summary, integrating corporate well-being systems with digitalization and AI presents significant business opportunities. Technological advancements and integrated interfaces can enhance efficiency, productivity, and employee well-being simultaneously.

2. HOW CAN WE MEASURE CORPORATE WELL-BEING?

Employee well-being is a prominent area of organizational assessment, yet the definition of the concept remains debated among researchers (Diener et al., 1999; Forgeard et al., 2011; Keyes et al., 2002). While there is no precise and comprehensive definition, it is generally agreed that employee well-being is determined by a combination of physical and psychological factors. According to Warr (1999), the foundation of employee well-being lies in positive emotional engagement related to work, encompassing all work-related factors (Gelencsér et al., 2022).
Several methods and tools are available for measuring corporate well-being, including:

- Employee Surveys and Feedback: Regular surveys and questionnaires help assess employees' mental well-being, stress levels, work-life balance, and access to support mechanisms. Anonymous surveys can encourage honest feedback.
- Absenteeism and Turnover Rates: Changes in absenteeism and turnover rates indicate mental and other well-being issues within the workforce. These metrics may reflect workplace stress or inadequate operational conditions (Komáromi, 2023).
- Performance Metrics: Employee performance also reflects mental well-being. Regular performance evaluations and open communication help identify challenges (Parsakia et al., 2024).
- Sickness Rates and Absence Reasons: The frequency of illnesses and reasons for employee absences are important indicators of well-being (Parsakia et al., 2024).
- Psychometric Tools: Reports from validated psychometric tools serve as an ideal starting point for measuring corporate well-being.
- Gallup Surveys: Gallup research emphasizes five elements of life satisfaction: career, community, relationships, financial stability, and physical health. The Cantril Self-Anchoring Striving Scale* is particularly useful for measuring employees' current and projected future well-being (Gelencsér et al., 2022).

- Workplace Well-Being Indices and Applications: According to Deloitte research, an increasing number of companies are adopting new technological solutions to measure and enhance workplace well-being. (Komáromi, 2023):

The measurement approaches used in this field so far can be summarized based on the systematic literature review conducted by the author trio Gelencsér, Végvári, & Szabó-Szentgróti (Gelencsér et al., 2022), as presented in the table below:

Table 1. - measurement approaches

Measurement Methods by Reference and Factor		
Reference	**Factor**	**Measurement Methods**
Ko (2021)	Organizational social capital	Organizational Social Capital Scale based on Moon (2011)
	Workplace quality of life	16-item measurement tool based on Sirgy et al. (2001)
	Subjective well-being	3 global single-item measures for life satisfaction, happiness, and workplace QoL
	Organizational commitment	5-item scale based on Allen & Meyer (1990) and Mowday et al. (1979)
	Turnover intention	2-item scale based on Huang et al. (2007) and Campbell & Im (2016)
Koon & Ho (2021)	Authentic leadership	16-item scale based on Neider & Schriesheim (2011)
	Employee well-being	3 dimensions: life/job satisfaction, psychological well-being
	Employee commitment	6-item scale based on Schaufeli et al. (2002)
Kim & Beehr (2018)	Empowering leadership	12-item scale by Zhang & Bartol (2010), adapted from Ahearne et al. (2005)
	Job crafting	15-item scale based on Tims et al. (2012)
	Physical complaints	12-item Physical Symptoms Inventory (Spector & Jex, 1998)
	Depression	3-item short version of Mohr's (1986) scale (Dormann & Zapf, 2002)
	Career satisfaction	5-item scale based on Greenhaus et al. (1990)
	Career commitment	5-item scale based on Ellemers et al. (1998)
Wahab et al. (2021)	High-commitment work systems	Scale by Sing (2004)
	Corporate performance	Based on Gates & Langevin (2010)
	Burnout	Maslach Burnout Inventory (Maslach et al., 1996)
	Well-being	General Health Questionnaire (Cheung, 2002)
	Organizational support	Based on Hayman (2009)
	Employee effort	Based on Brown & Leigh (1996) and McClean & Collins (2011)
	Social desirability	Based on Crowne & Marlowe (1960)
Bosle et al. (2021)	Mental well-being	WHO Well-Being Questionnaire (1998)
	Workplace commitment	9-item Utrecht Work Engagement Scale (Schaufeli & Bakker, 2004)
Kundi et al. (2021)	Hedonic well-being	5-item scale based on Diener et al. (1985)
	Eudaimonic well-being	21-item scale based on Waterman et al. (2010)
	Affective commitment	6-item scale based on Allen & Meyer (1990)
	Job insecurity	5-item scale based on Chirumbolo et al. (2015)
	Employee performance	7-item scale based on Williams & Anderson (1991)
Lee et al. (2020)	Employee well-being HR attribution	5-item scale based on Nishii et al. (2008)
	External turnover intention	Scale by Wayne et al. (1997)
	Internal turnover	Job change intention scale (Cammann et al., 1983; Van

	intention	Veldhoven & Meijman, 1994)
	Task-related factors	Based on Rosen, Slater, Chang

Source: Gelencsér et al., 2022

3. THE IMPACT OF DIGITALIZATION ON CORPORATE WELL-BEING

The rapid expansion of digital technologies is fundamentally transforming workplace dynamics while creating new challenges and opportunities in the field of corporate well-being. Recent research clearly demonstrates that digitalization initiates a complex system of effects, where the interplay between technological advancements and human factors determines organizational performance and employee satisfaction (Zhan & Xie, 2025; Trennery et al., 2021).

3.1 Digitalization as a Double-Edged Sword for the Labor Market

According to the latest research findings (Zhan & Xie, 2025), workplace digitalization exhibits both positive and negative effects on corporate well-being.

3.1.1 Positive Effects:

- Increased productivity (35% more likely to be perceived positively).
- Greater autonomy (digital tools increase decision-making freedom by 27%).
- Flexible work arrangements (64% reduction in the feeling of being location-bound).
- Enhanced collaboration (cloud-based platforms improve teamwork by 41%).

3.1.2 Negative Effects:

- Increased time pressure (22% higher perceived stress).
- Disrupted work-life balance (17% deterioration).
- Digital skills gap (low digital literacy increases frustration by 39%..

Research led by Zhan and colleagues in China identifies key factors influencing the success of digital transition (Table 2), revealing fundamental correlations (Zhan & Xie, 2025).

Table 2: Three key factors determine the success of digital transformation

Factors Influencing Well-Being and Digital Transformation Success		
Factor	**Effect on Well-Being**	**Moderator Variable**
Perceived threat	+0.41 (positive correlation)	Digital literacy
Technology acceptance	-0.29 (correlation)	Leadership support
Technology acceptance	+0.37	Training opportunities

Source: Zhan & Xie, 2025

Relevant studies clearly show that employees with higher digital literacy are 2.3 times more likely to perceive digitalization as an opportunity rather than a threat (Trennery et al., 2021).

3.4 Addressing Challenges: Developing Resilience Strategies

Post-pandemic research proposes various approaches to managing these challenges. One of the most critical intervention areas is digital skills development. Differentiated training interventions yield varying effectiveness:

- Adaptive training programs show a 70% increase in effectiveness.
- Peer-learning and community-based platforms reduce the learning curve by 56% (Trennery et al., 2021).

Additionally, digitalization has significantly altered workplace design requirements. Future-oriented solutions such as intelligent ergonomic systems (e.g., AI-driven posture optimization) will play a key role (Hammed et al., 2022). A timely transformation of leadership culture can enable the implementation of real-time feedback systems, which, according to a 2021 study, ensure 57% faster problem-solving (Trennery et al., 2021).

4. METHODS

4.1 Literature Review

In conducting this research, we employed an accelerated literature review and analysis using relevant keywords. We examined topic-specific academic sources available in major international databases, including **Scopus, Web of Science, Google Scholar, PubMed, Embase, and ResearchGate**. The search focused on key terms related to workplace well-being, such as:
- Workplace health promotion and maintenance
- Health awareness
- Quality of work life
- Digitalization and artificial intelligence
- Change, crisis, and resilience

The collected publications were categorized by keywords to create a **relevant database** encompassing Hungarian and English-language literature from the past 15 years, including related research findings. The systematic literature review conducted by **Gelencsér, Végvári, & Szabó-Szentgróti** provided significant support in processing the academic material.

4.2 Applied Research Methodology

4.2.1. Sampling

The study sample consisted of small and medium-sized enterprises (SMEs) operating in Hungary's Southern Transdanubian Region (Baranya, Somogy, and Tolna counties). To determine the appropriate sample size, we used GPower 3.1 software, which calculated a required sample of 100 enterprises for 95% accuracy with a 5% margin of error. GPower is a free, widely used tool for statistical power analysis, supporting t-tests, F-tests, χ^2-tests, z-tests, and exact tests, while also enabling effect size calculations and graphical representation of results.

Sample Demographics:

- SMEs with 10–249 employees were included.
- Micro-enterprises (<10 employees) were excluded due to limited applicability of well-being systems.
- Large enterprises (>250 employees) were excluded due to fundamentally different operational and financial structures compared to SMEs.

Regional Justification: Southern Transdanubia is classified as a NUTS-2 region under the EU statistical system (Eurostat). Comprising Baranya, Somogy, and Tolna counties, it is considered a less-developed region, with per capita GDP below 75% of the EU average. This designation makes the area eligible for EU cohesion funds, supporting practical implementation of research findings. Since most Hungarian regions (except Central Hungary) fall under NUTS-2, the methodology can be standardized for national and EU-wide comparisons.

4.2.2. Data Collection and Processing

Research on corporate well-being systems typically employs a mixed-methods approach to understand their significance, practical application, and impacts (Forgeard et al., 2011).

Quantitative Research:

- Online surveys collected data from employees to assess workplace conditions and well-being factors.
- Financial and operational data were analyzed to evaluate the return on well-being investments.

Qualitative Research:

- Semi-structured interviews with managers and employees explored factors influencing corporate well-being and underlying relationships.

Data Analysis:

- 100 questionnaires and 100 managerial interviews were selected for statistical processing (SPSS 28.0, Microsoft Excel 2018, JASP).
- Descriptive statistics (mean, median, mode, SD) were complemented by:
- Correlation matrices (to examine variable relationships)
- T-tests and chi-square tests (for group comparisons)

The cross-sectional study integrated survey data, interview insights, case studies, and document analysis to provide a comprehensive understanding of corporate well-being practices in Southern Transdanubian SMEs.

4.2.3. Research questions

The research strongly focuses on the current challenges and opportunities affecting HR strategy and well-being measures in the internal environment of SMEs due to digitalization, which are becoming increasingly available and applicable year by year at lower costs. The research questions are as follows:

Q1: What well-being systems and measures can be identified in SMEs operating in the South Transdanubian Region?
Q2: To what extent are the well-being systems operating in SMEs in the South Transdanubian Region integrated into the HR strategy and system?
Q3: What factors influence the development and operation of well-being systems applied among the examined SMEs?
Q4: Along what goals, functions, and activities, and for which employee target groups do the well-being systems applied among the examined SMEs operate? Do the examined corporate well-being systems include measures implemented using various methods and tools, including digital ones, that support disease prevention, health maintenance, and health promotion?
Q5: Which of the applied well-being tools, solutions, and measures are operating or capable of operating on digital foundations?

5. CURENT RESEARCH RESULTS

Preliminary interviews with business leaders have clearly demonstrated that one fundamental tool for responding to the challenges posed by external environmental pressures, which permeate the internal environment of businesses and create a need for adaptation, could be the development and practical application of an integrated HR strategy that includes workplace well-being. Research conducted in similar fields (Trennery et al., 2021) unequivocally highlights that, in the future, the symbiosis of digital tools and human factors can be defined as the key to corporate competitiveness. According to the findings of a 2025 Chinese study (Zhan, X. & Xie, S., 2025), organizations that achieve lasting results are those that simultaneously apply technological advancements alongside programs aimed at enhancing employee resilience. The integrated management of digitalization and corporate well-being not only provides a competitive advantage but will also become a fundamental prerequisite for sustainable business growth in the next decade (Trennery et al., 2021). Following accelerated literature processing, measurement tools (including interview questionnaires and online surveys) were developed and tested. After defining the sample, contact was established with employers. The investigation is strategically supported by the National Association of Entrepreneurs, which facilitates communication with the businesses involved in the study. The ethical approval process required for the research is currently underway.

6. CONCLUSIONS

The expanding digitalization across various work areas has become a fundamental driving force and competitiveness factor in modern business life. The 21st-century work forms clearly rely on the use of modern digitalization technologies, which are well reflected in hybrid and remote work arrangements (Sztrakay, 2022). For this reason, it is crucial to select the most suitable hardware and software for work purposes. This involves considering what employees need to perform their jobs effectively. It is also important that the introduction of technology be preceded by careful consideration and strategy. This allows for achieving the right balance between technology use and human relationships with colleagues. The examination of this topic in Hungary can provide novel scientific results. Continuous development of technology, including ongoing training for employees and leaders, is essential for meeting current challenges and future expectations (Gelencsér et al., 2022, p. 49).

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