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The Roles of Technology Acceptance and Technology Use Frequency in Employees' Quality of Work Life

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Abstract

The frequency of technology use is an important factor that can significantly influence employees' well-being and the perceived quality of their work life in an ever-changing digital workplace. The introduction of new technologies affects the lives of employees. It is therefore important how employees themselves perceive new technologies and the need to digitalize their work tasks. Previous studies have focused more on technology adoption or quality of work life separately. The main aim of the article is to present the results of analyses on how the frequency of technology use is related to employees' perception of digitalization in their workplace, as well as the impact these factors have on their perceived quality of work life. This study simultaneously examines the impact of perceptions of technological change and frequency of technology use on quality of work life in the context of medium-sized and large industrial enterprises in Slovakia. In this way, it is possible to better understand the connection between digitalization and employee well-being. The research tool was a questionnaire that focused on the perceived quality of work life of employees and questions related to the perception of digitalization and to the frequency of technology use. Hypothesis testing was processed using IBM SPSS version 25 software. Considering the results, it can be stated that a positive perception of technological changes and regular use of technology in the workplace are related to a higher level of quality of work life perceived by employees. The results can be used for multiple strategic and practical applications in organizational development and human-centered approaches to digital transformation.

Keywords: automatization; digitalization; employees; quality of work life; technologies

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1. Introduction

Digitalization and automatization play a key role in the transformation of industrial processes. Digitalization simplifies manufacturing operations, optimizes production lines, reduces costs, and increases the flexibility of enterprises. At the same time, the integration of these technologies opens up space for new business models, innovative organizational strategies and fundamentally changes the way businesses operate in the digital era.

Digital transformation integrates digitalization to increase the overall value and usability of information within organizations, impacting all operational activities [1] and also refers to the conversion of analog information into digital formats, which is a fundamental step in the broader process of digital transformation, which includes organizational changes and new business models [2].

Automation is increasingly being applied not only in traditional manufacturing, but also in operations management and business governance, reflecting a broader trend of mechanization across various industries [3]. It can therefore be stated that it simultaneously affects production, administration and also employees in managerial positions, which requires a human-centered approach in the design and implementation of new technologies [4].

Despite the benefits, it is also necessary to examine the perception of digitalization by employees, their readiness and willingness to adopt new technologies. The frequency of use of digital tools, such as automated systems, sensors, cloud solutions or digital platforms, varies with the degree of automation of production and digitalization of processes, as well as the level of digital competence of employees and the degree of support from the organization. Many employees may perceive digital changes as a threat or are unsure of how new technologies will affect their daily work.

Digitalization and automation have a multifaceted impact on employee well-being, presenting both risks and opportunities. The use of technology can lead to increased stress at work, known as technostress, which can worsen mental health due to higher workload and complexity [5]. On the other hand, increased use of computers and technology in the workplace is associated with better subjective health and a lower prevalence of physical discomfort, suggesting a less physically demanding work environment [6].

For this reason, it is important not only to implement new technological solutions, but also to monitor their real impact on employees, their working environment and work habits. Systematic examination of the frequency of use of digital tools and employees' attitudes towards digitalization allows for better change planning, more effective training and support of employees in the transformation process. Without taking into account the human factor, even the best technology can fail. Therefore, sufficient attention must also be paid to the social aspects of digital transformation.

Employees perceive the impact of digitalization on the work environment primarily through their attitude towards digital changes, the level of digital skills and how work stress affects their job satisfaction. Understanding these aspects can allow organizations to support their employees more effectively during digital changes, which can contribute to increasing their well-being and overall work performance.

Despite the existing and implemented research on digitalization and automation, there are still few studies that examine the combined impact of employees' attitudes towards technological change and the frequency of technology use on the perceived quality of working life. As the previous background has shown, studies often focus either on technology adoption or on the general well-being of employees, but the interaction and combination of these factors remains insufficiently explored. Since digitalization and automation are crucial especially for the industrial sector, the study focuses on medium and large industrial enterprises in Slovakia. The aim is to analyze how the perception of digitalization and the frequency of technology use are related to the assessment of the quality of working life of employees of the surveyed enterprises. By taking this approach, the study provides new insights into the human-oriented aspects of digital transformation and at the same time offers practical recommendations for organizational strategies to support employee well-being during technological change.

2. Theoretical Background

Rapid advances in digital technologies have fundamentally changed the workplace and affected how employees perceive and interact with technology. Perceptions of digitalization, frequency of technology use, and their subsequent impact on employee well-being are key areas of focus for this article. Employees' perceptions of digitalization and techno-

logical change are influenced by their attitudes and well-being, their level of digital literacy and skills, as well as the existing organizational climate and supporting infrastructure. Understanding these factors is crucial for organizations that are trying to effectively manage the challenges of digital transformation.

2.1. Employee Perceptions of Digitalization

The emergence of new management styles and advanced work organization methods are essential for the successful integration of new information technologies into organizational practices [7]. Digitalization of manufacturing processes is associated with improved business outcomes, suggesting that companies need to improve their digital capabilities to remain competitive [8]. Employees' expectations regarding autonomy, competence and connectivity significantly influence their attitudes towards digital workplace transformation, increasing their well-being and work performance [9]. Rapid changes in technology have raised concerns about employee resilience and well-being, particularly when it comes to adapting to job disruptions caused by digital transformation [10]. Positive perceptions of preparedness and administrative support by employees can lead to reduced technostress and increased job satisfaction [11]. The subjective attitude of employees towards the adoption of new technologies is represented by the perception of technology adoption, which is based on the theoretical frameworks technology acceptance model (TAM) and unified theory of acceptance and use of technology (UTAUT) [12]. These constructs allow us to assume to what extent the perceived usefulness and ease of use of technologies affect engagement and quality of work life.

2.2. Digital Literacy and Employee Skills

Digital literacy is crucial for employees to effectively use new technologies, and there has been evidence that there is a positive relationship between digital skills and the use of cloud technologies [13]. Enterprise technology adoption often lags behind consumer technology due to lack of information dissemination and inadequate employee training [14]. Organizations therefore also need to implement training programs to equip employees with the necessary skills to adapt to technological changes, especially in the context of Industry 4.0 [15]. Digital literacy is identified as a key factor that influences employees' ability to effectively use new technologies, which in turn affects their job performance and attitudes towards technology adoption [16]. The development of these competencies is dynamic and can serve as a trigger for advancing digital transformation within organizations [17]. Frequency of technology use measures how regularly employees use technological tools in the workplace. This fact is theoretically supported by research that shows that regular use of technology is associated with higher efficiency in the workplace, affects the assessment of efficiency, but also affects increased workload and an accelerated pace of life [18].

Digitalization tends to favor highly skilled employees, leading to increased job opportunities for them while reducing the number of jobs for low-skilled employees [19]. At the same time, this creates a dual impact on employment, with job creation in high-skill areas and potential job losses in low-skill sectors due to automation [20]. Automation and the introduction of new technologies significantly affect job tasks, required skills, and employees' perception of work [21], therefore it is important to consider it as one of the elements of examining technological change and the quality of working life.

2.3. Organizational Support and Climate

The transformation of the workplace due to digitalization requires addressing employees' psychological needs such as autonomy, competence and relatedness, which significantly influence their motivation to embrace change. Redesigning work processes and tools

requires a focus on employee engagement to foster an environment that supports digital transformation [22]. A supportive digital climate, characterized by employee involvement in technology choices and effective communication, increases employee well-being and facilitates digital transformation [11]. Leadership and organizational culture play a critical role in shaping employee perceptions and attitudes toward technological change. Multi-level factors, including team adaptability and organizational support, are essential for successful digital transformation initiatives [23]. The role of supervisor support and employee control over working hours is key in promoting well-being, especially for women and unsupervised employees [24]. Psychosocial aspects of work, including leadership and organizational climate, play a key role in employee well-being amid automation [25].

2.4. Quality of Life Outcomes of Digitalization

The relationship between digitalization and work stress is complex, with digital activities and employee attitudes significantly influencing stress levels [26]. Employee perceptions of work–life balance and job satisfaction can mitigate the negative impacts of the digital workplace [14]. Positive technologies and digital applications designed to support employee well-being have shown promising results in increasing psychological needs satisfaction and reducing burnout [27]. Managers and employee supervisors play a significant role here. A positive attitude of employees towards digitalization can increase self-efficacy and reduce anxiety in a digital work environment, contributing to the overall sustainability of the organization [28].

Perceived quality of work life (QWL) is a theoretically grounded construct that measures employees' subjective sense of well-being and satisfaction with their work and is related to organizational conditions and practices that aim to support employees' mental and physical health, safety and satisfaction [29]. This construct was selected as the dependent variable in the model and allows us to examine the impact of attitudes and technology use on quality of work life.

2.5. Conceptual Model

Digital transformation is a critical topic in information systems research, which focuses on the digitalization of business models and its effects on the workplace environment and employee attitudes towards change [9]. Based on the above theoretical insights, we constructed a model (Figure 1) that links perception of technology adoption and frequency of technology use with perceived quality of work life. In this way, all constructs in the model are grounded in theory and are connected to existing literature.

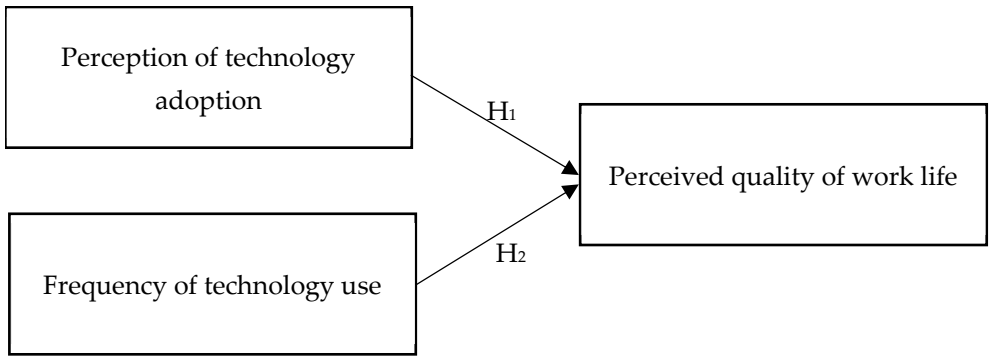


Figure 1. Research model on the impact of technology on quality of work life (own elaboration, 2025).

The model in Figure 1 depicts the relationship between two independent variables—perception of technology adoption (negative/neutral/positive) and frequency of technology use (regularly/irregularly)—and one dependent variable—perceived quality of work

life. Both independent variables are directed towards the dependent variable, thus visualizing two research hypotheses examining whether there is a statistically significant difference in the assessment of quality of work life depending on the attitudes and behaviors of respondents in relation to technology.

The hypotheses are as follows:

Null Hypothesis (H01): *There is no statistically significant difference in the assessment of the quality of work life between groups of respondents based on how they perceive the introduction of technology into work.*

Null Hypothesis (H02): *There is no statistically significant difference in the assessment of the quality of work life between respondents who use technical devices regularly and irregularly.*

3. Materials and Methods

The research was carried out using a research questionnaire consisting of three parts. The first part contained questions focused on the demographic characteristics of the respondents. The second part contained a 10-item questionnaire "Quality of Work Life—Feelings" [30]. The third part contained questions regarding the overall perception of the introduction of new technologies and the frequency of use of technical devices and technical systems.

As mentioned above, the second part of the questionnaire included part of the Quality of Work Life—Conditions/Feelings (QWL-C/F) instrument, compiled by Marshall Sashkin and Joseph J. Lengermann. This questionnaire was developed on the basis of a ten-year research program focused on the relationship between working conditions and employees' subjective feelings. The QWL-C/F instrument has two parts, Conditions and Feelings. The questionnaire thus consists of two short instruments. The first consists of twenty-five items and measures the extent to which three basic human work needs are satisfied by objective working conditions. The second instrument contains ten strongly interconnected items that measure the respondent's subjective feelings regarding his personal relationship to work. This second part provides a single score. This score, which represents the respondent's overall feeling of separation or alienation from his own work. Given that our work did not focus on examining working conditions but on the perception of technologies in relation to the extent of their use, we used only the second instrument, QWL-F, for the purposes of the research. The purpose was to investigate how perceptions of technology and the extent of its use are associated with negative or positive feelings. The QWL-F score can therefore help understand how perceptions of technology and the extent of its use affect people's feelings about work. Respondents rated individual statements (e.g., "I like the type of work I do.", "My job gives me the opportunity to do the things I am best at.") on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The construct "Perception of technology adoption" was measured by single item created for the purposes of this study based on previous literature on attitudes towards digitalization ("How do you generally perceive the introduction of new technologies?") on a scale of 1—negative, 2—neutral, 3—positive. Similar direct items for assessing perceptions of new technology adoption have been used in several empirical studies that differentiate respondents' responses by category (negative/neutral/positive). For this reason, we consider the single-item indicator in our work to be appropriate and consistent with practice in the field. The construct "Frequency of technology use" was measured by single item ("How often do you use technical devices/systems at work?"), with responses recorded on a scale of: 1 = regularly, 2 = irregularly. In the literature, frequency of technology use is measured in a variety of ways, from multilevel frequency scales (daily/weekly/monthly/occasionally)

to dichotomous divisions into regular vs. irregular users. Empirical studies have shown that the regular/irregular categories are practical and interpretable for comparing groups and are often used, especially in surveys aimed at comparing behavior between groups. Given the goal of our hypotheses (comparing groups by frequency of use), we chose a dichotomous scaling (1 = regular, 2 = irregular), which is consistent with the practice reported in the cited studies and allows for straightforward group comparisons (Table 1).

Data collection took place in the first half of the year 2025 through an online distributed questionnaire for employees of large and medium-sized organizations in Slovakia.

Table 1. Constructs and questionnaire items with literature support (own elaboration, 2025).

Construct	Item	Scale	Source/Support in Other Studies
Quality of work life—feelings (QWL-F)	10-item questionnaire compiled by Marshall Sashkin and Joseph J. Lengermann	5-point Likert scale (1 = strongly disagree, 5 = strongly agree)	Study focused on QWL using the sum of 25 items determining the composite QWL-C score and QWL-F score that contained 10 separate items with five response categories, using a Likert scale [31].
			Used Quality of Work life scale included two parts, Quality of Work life condition and the Quality of Work life feelings, 34 items were measured on 5-point Likert scale [32].
			The study measured relationship between dependent variable Quality of Work life further classified by two groups, conditions and feelings and independent variable that was type of organization [33].
			Measuring the importance of technologies and QWL as a dependent variable measured on a 5-point Likert scale [34].
Perception of technology adoption	How do you generally perceive the introduction of new technologies?	negative, neutral, positive	The construct is central to the research, items measuring general perceptions of new technologies are used, and the outputs are differentiated according to the level of perception (positive, negative, neutral) [35].
			To measure perceptions of AI and technology, the authors use categories (negative, neutral, positive, very positive) and recommend scaling [36].
			The study used the variable attitude towards using technology with a positive/negative perception [37].

Table 1. *Cont.*

Construct	Item	Scale	Source/Support in Other Studies
Frequency of technology use	How often do you use technical devices/systems at work?	regularly, irregularly	The study used scaling (regularly; irregularly) to distinguish between regular vs. irregular users of information systems and the Internet [38].
			Respondents in another study are categorized as regular/irregular users of Internet services [39].
			The survey uses a distribution of respondents by frequency of technology use (often, sometimes, rarely) [40], which is compatible with a dichotomous approach in the case of simplifying categories.

Data collection for the research was carried out in a combined manner. First, respondents from large and medium-sized organizations in Slovakia were approached via e-mail with an invitation to complete a research questionnaire. Organizations were selected from a publicly available database, with the main selection criteria being the number of employees exceeding 100 and available e-mail contact. These were general and publicly available contact email addresses of the organizations, through which representatives of the organizations, not individual employees, were approached. The addressed representatives subsequently distributed the questionnaire among their employees. The questionnaire was anonymous and each respondent agreed to participate before completing the questionnaire by selecting the option "I agree to participate in the research".

Subsequently, data collection was expanded through the "snowball sampling" method, where respondents who had already been approached further recommended the questionnaire to colleagues or acquaintances in other relevant organizations, thus ensuring the expansion of the sample beyond the original contact list.

The total number of respondents to whom the questionnaire was delivered is 1452. The total number of completed questionnaires is 324. The return rate is therefore 22.3%. Based on the calculation of the required minimum sample size ($n \approx 304$) for a basic set of 1452, a confidence level of 95% and a tolerated error of $\pm 5\%$, it can be stated that the actual number of respondents obtained ($n = 324$) meets the criteria for a statistically sufficiently large sample set.

The number of respondents (1452) represents the sampling frame, not the entire population of employees in medium and large enterprises in Slovakia. The actual number of employees in this population is higher and cannot be accurately quantified from publicly available sources. Therefore, the results are generalized within this sampling frame, while the response rate and sample size ensure adequate statistical power and validity of the analyses.

4. Results

Demographic characteristics of the research sample can be seen in Table 2. AF represents absolute frequencies, RF represents relative frequencies, and CF represents cumulative frequencies.

Table 2. Demographic characteristics of respondents—cross table (own elaboration, 2025).

Respondents	Women			Men		
	AF	RF [%]	CF [%]	AF	RF [%]	CF [%]
Year of birth						
1952–1959	0	0.00	0.00	3	1.92	1.92
1960–1969	15	8.93	8.93	6	3.85	5.77
1970–1979	37	22.02	30.95	33	21.15	26.92
1980–1989	40	23.81	54.76	51	32.69	59.62
1990–1999	41	24.40	79.17	43	27.56	87.18
2000–2005	35	20.83	100.00	20	12.82	100.00
Sum	168	100.00		156	100.00	
Sector						
Industrial production	74	44.05	44.05	106	67.95	67.95
Service provision	69	41.07	85.12	37	23.72	91.67
Public administration	25	14.88	100.00	13	8.33	100.00
Sum	168	100.00		156	100.00	
Job position						
Manufacturing position	13	7.74	7.74	21	13.46	13.46
Administrative position	71	42.26	50.00	33	21.15	34.62
Employee specialist	42	25.00	75.00	54	34.62	69.23
Managerial position	35	20.83	95.83	46	29.49	98.72
Other	7	4.17	100.00	2	1.28	100.00
Sum	168	100.00		156	100.00	
Highest achieved education						
High school without graduation	9	5.36	5.36	10	6.41	6.41
High school with graduation	53	31.55	36.90	62	39.74	46.15
University—bachelor degree	46	27.38	64.29	26	16.67	62.82
University—master degree	50	29.76	94.05	52	33.33	96.15
University—doctoral degree	10	5.95	100.00	6	3.85	100.00
Sum	168	100.00		156	100.00	

Based on the data in Table 2, a total of 324 respondents participated in the questionnaire survey, of which 168 were women and 156 were men. The majority of respondents were born in 1980–1989 (women 41%, men 33%) and 1990–1999 (women 34%, men 28%). The largest share of respondents works in industrial production (women 44%, men 68%), followed by the service sector. In terms of job position, women most often held administrative and specialized positions, while men held specialist and managerial positions. The educational structure shows that most respondents had completed a first or second level university degree (more than 60% for both genders). The distribution of cumulative frequencies indicates gradual increases in individual categories without significant extremes.

The questionnaire was tested for reliability. The results can be seen in Table 3.

The internal consistency of the scale determined by the 10-item questionnaire for the assessment of the quality of work life was verified using Cronbach's alpha (Table 3). The resulting value $\alpha = 0.842$ indicates a high reliability of the instrument and allows further processing of the results in the form of a summary or average score [41]. In addition to calculating reliability (Cronbach's alpha), the QWL-F instrument used is standardized and validated in previous studies, and its items have undergone expert evaluation [33,34,42].

This ensures that the questionnaire validly measures employees' subjective feelings in relation to work, and its use in our study (to measure technology perceptions and frequency of use) is appropriate.

Table 3. Cronbach's alpha evaluation (own elaboration, 2025).

Case Processing Summary			
		N	%
Cases	Valid	324	100.0
	Excluded [a]	0	0.0
	Total	324	100.0
Reliability Statistics			
Cronbach's Alpha		N of Items	
0.842			10

[a] Listwise deletion based on all variables in the procedure.

Variable *Perception of technology adoption* and *Frequency of technology use* were single-item; therefore, Cronbach's α is not applicable for them. Descriptive statistics: *Perception of technology adoption*—mean = *2.74*, SD = *0.546*. Most respondents therefore perceive technology as neutral to positive. The standard deviation shows relatively low variability in responses. *Frequency of technology use*—91% of respondents regularly and 9% irregularly. To demonstrate convergent validity, we present correlations between single-item variables and QWL: *Perception of technology adoption* vs. QWL: Spearman $\rho = 0.258$ ($p < 0.001$); Kendall's tau-b $\tau = 0.212$ ($p < 0.001$); *Frequency of technology use* vs. QWL: Spearman $\rho = -0.188$ ($p = 0.001$), Kendall's tau-b $\tau = -0.157$ ($p = 0.001$). According to the resulting correlations, both variables showed the expected relationships with the dependent variable, confirming their relevance for the research.

Statistical evaluations and hypothesis testing were performed in IBM SPSS Statistics 23. In order to select the correct test for statistical evaluation of hypotheses, a normal distribution test was performed. The evaluation of the normality test for H1 and H2 is shown in the following Tables 4 and 5.

The normality of the distribution of quality of work life feelings scores was verified using the Shapiro–Wilk test (Table 3) in the three groups according to the perception of technology adoption. In all cases, the *p*-value was higher than 0.05 (Group 1: $p = 0.323$; Group 2: $p = 0.076$; Group 3: $p = 0.640$), indicating that the assumption of normality was met.

The data in Table 5 contain data on normality tests. Normality was verified using the Shapiro–Wilk test. While in the group of respondents who use technical devices regularly, the assumption of normality was met ($p = 0.616$), in the group with irregular use of devices, this assumption was violated ($p = 0.004$). Therefore, the non-parametric Mann–Whitney U test was chosen to compare the groups.

Table 4. Evaluation of the normality test for H_1 (own elaboration, 2025).

Tests of Normality							
	How do you generally perceive the introduction of new technologies?	Kolmogorov–Smirnov [a]			Shapiro–Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Quality score	1—negative	0.192	17	0.096	0.940	17	0.323
	2—neutral	0.093	50	0.200 *	0.958	50	0.076
	3—positive	0.047	257	0.200 *	0.995	257	0.640

* This is a lower bound of the true significance. [a] Lilliefors Significance Correction.

Table 5. Evaluation of the normality test for H_2 (own elaboration, 2025).

Tests of Normality							
	How often do you use technical equipment/ technical system (e.g., computer, printer, reading/scanning device, . . .) in your work?	Kolmogorov–Smirnov [a]			Shapiro–Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Quality score	1—regularly	0.044	295	0.200 *	0.996	295	0.616
	2—irregularly	0.197	29	0.005	0.884	29	0.004

* This is a lower bound of the true significance. [a] Lilliefors Significance Correction.

At the beginning of the research, two research hypotheses were established. The One-Way ANOVA test and the Mann–Whitney U test were used to test the hypotheses.

Null Hypothesis (H01): *There is no statistically significant difference in the assessment of the quality of work life between groups of respondents based on how they perceive the introduction of technology into work.*

Alternative Hypothesis (H1): *There is a statistically significant difference in the assessment of the quality of work life between groups of respondents based on how they perceive the introduction of technology into work.*

Hypothesis H1 was tested using a One-Way ANOVA test. The results can be seen in Table 6.

The homogeneity of variance test (Levene's test) with a sig. = 0.845 value showed that the condition of equality of variances is met and therefore the ANOVA results can be trusted. One-way analysis of variance (ANOVA) showed statistically significant differences in the average quality of work life score depending on the assessment of technology implementation ($F(2, 321) = 9.985$, $p < 0.001$). Post hoc analysis (Games-Howell) showed that respondents who perceived technology implementation positively rated the quality of work life significantly higher compared to respondents with a neutral ($p = 0.001$) and negative assessment ($p = 0.034$).

Based on the results of a one-way analysis of variance (ANOVA), a statistically significant difference was found in the assessment of the quality of work life between groups of respondents according to how they perceive the introduction of technologies into the work environment ($F(2, 321) = 9.985$, $p < 0.001$).

Post hoc analysis using the Games-Howell test showed that:

- Respondents who perceived the introduction of technologies positively (M = 3.35) rated the quality of work life significantly higher than those who perceived them neutrally (M = 2.99; $p = 0.001$) or negatively (M = 2.88; $p = 0.034$).
- There was no statistically significant difference between the groups with negative and neutral attitudes towards technologies ($p = 0.824$).

These results indicate that a positive attitude towards technological changes in the working environment is associated with a higher perception of the quality of work life. The final results confirm that employees' attitudes towards the introduction of technology are significantly associated with their perception of the quality of work life. Respondents who perceive new technologies positively tend to evaluate their work experience more favorably than those who perceive technologies in a neutral or negative way. This finding points to

the importance of active communication and employee involvement in the processes of technological change in the organization.

Table 6. Results of testing the H_1 (own elaboration, 2025).

Descriptives

Quality score

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1—negative	17	2.8706	0.70601	0.17123	2.5076	3.2336	1.70	4.70
2—neutral	50	2.9860	0.64429	0.09112	2.8029	3.1691	1.90	4.60
3—positive	257	3.3549	0.65496	0.04086	3.2744	3.4353	1.40	5.00
Total	324	3.2725	0.67399	0.03744	3.1989	3.3462	1.40	5.00

Test of Homogeneity of Variances

Quality score

Levene Statistic	df1	df2	Sig.
0.168	2	321	0.845

ANOVA

Quality score

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.594	2	4.297	9.985	0.000
Within Groups	138.132	321	0.430		
Total	146.726	323			

Multiple Comparisons

Dependent Variable: Quality score

Games-Howell

(I) How do you generally perceive the introduction of	(J) How do you generally perceive the introduction of new technologies?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1—negative	2—neutral	−0.11541	0.19397	0.824	−0.5978	0.3669
	3—positive	−0.48428 *	0.17604	0.034	−0.9338	−0.0347
2—neutral	1—negative	0.11541	0.19397	0.824	−0.3669	0.5978
	3—positive	−0.36886 *	0.09986	0.001	−0.6080	−0.1298
3—positive	1—negative	0.48428 *	0.17604	0.034	0.0347	0.9338
	2—neutral	0.36886 *	0.09986	0.001	0.1298	0.6080

* The mean difference is significant at the 0.05 level.

In addition to statistical significance, the effect size was also examined, which was calculated based on a comparison of the variability between groups (SS_between = 8.594) and the total variability of the results (SS_total = 146.726). On this basis, the value $\eta^2 = 0.06$ was determined. This value represents a medium-strong effect according to Cohen's criteria [35]. We can therefore conclude that the way employees perceive the introduction of technologies explains approximately 6% of the variability in the assessment of the quality of working life. This result complements the statistical significance itself and also emphasizes the practical importance of the relationship found.

Subsequently, H2 was tested.

Null Hypothesis (H02): *There is no statistically significant difference in the assessment of the quality of work life between respondents who use technical devices regularly and irregularly.*

Alternative Hypothesis (H2): *There is statistically significant difference in the assessment of the quality of work life between respondents who use technical devices regularly and irregularly.*

Hypothesis H2 was tested using the Mann–Whitney U test. The results are presented in Table 7.

Table 7. Results of testing the H_2 (own elaboration, 2025).

Ranks				
	How often do you use technical equipment/ technical system in your work?	N	Mean Rank	Sum of Ranks
Quality score	1—regularly	295	168.01	49,562.00
	2—irregularly	29	106.48	3088.00
	Total	324		
Test Statistics [a]				
		Quality score		
Mann–Whitney U		2653.000		
Wilcoxon W		3088.000		
Z		−3.379		
Asymp. Sig. (2-tailed)		0.001		

[a] Grouping Variable: How often do you use technical equipment/technical system in your work?

The Mann–Whitney U test was used to determine whether there was a statistically significant difference in the quality of work life between two groups of respondents: a group that regularly uses technical devices at work (n = 295) and a group that uses them irregularly (n = 29).

The test results show that the difference between the groups is statistically significant (U = 2653, Z = −3.379, p = 0.001 (2-tailed)).

The mean values (Mean Rank) show that respondents who regularly use technical devices achieved higher quality of work life scores (Mean Rank = 168.01) compared to those who use them irregularly (Mean Rank = 106.48).

Based on the results, we can reject the null hypothesis that there is no difference between these groups. The results indicate that regular use of technological devices at work is associated with higher ratings of the quality of work life.

This result may indicate that technologies can contribute to better coping with work tasks, higher efficiency, or a greater sense of control over work, which can be positively reflected in the overall assessment of work well-being.

When evaluating the results, we also focused on the effect size. Based on the value of the test statistic (Z = −3.379) and the total number of respondents (N = 324), the value r = 0.19 was calculated. This is therefore a small effect according to Cohen's criteria [43]. The difference between the groups, although statistically significant, has a relatively weak intensity. The result thus suggests that regular use of technical devices is associated with a higher assessment of the quality of working life, but the size of this difference between the groups is rather moderate.

5. Discussion

Our research results show that employees' positive attitudes towards technological changes in the work environment are associated with higher perceptions of the quality of work life. Those respondents who perceive new technologies favorably evaluate their

work experience significantly better than those who approach technologies neutrally or negatively. These findings confirm the importance of psychological and attitudinal factors in technology adoption and are consistent with the authors' assertions that technology has a dual nature: while some perceive it as a burden that increases burnout, others see it as a source of improved work engagement [44]. Similarly, the importance of a positive digital climate is emphasized, which can reduce the risk of burnout and improve overall well-being [11]. The practical aspect should consider the targeted work of managers to create a positive attitude towards digitalization. To minimize resistance to change and maximize engagement, open communication, implementing training, and involving employees in the process of introducing technologies is recommended.

Our further findings showed that regular use of technological devices at work is associated with higher ratings in the quality of work life. This result may indicate that technology can contribute to better task management, increased efficiency or a greater sense of control over work. A similar relationship between technology use and work performance is described in another study, where the authors point to improved coordination, knowledge sharing and work–life balance thanks to digital tools [45]. At the same time, awareness of modern technologies, including artificial intelligence, can increase pressure for performance, but also promote engagement and job creation [46]. Flexible workspace configurations and integration of automated systems can lead to mutual benefits for both employers and employees, promoting well-being and performance [47]. In this sense, it is necessary to emphasize the necessity of accessible infrastructure, ongoing training and mentoring that will strengthen digital literacy and comfort with the use of technologies. Organizations should systematically support the regular and meaningful use of technologies and digital tools.

Several studies also point to the risky aspects of digitalization. Digital technologies can increase workload and task complexity, which can lead to stress reactions [5]. Moreover, fear of missing out on information and information overload pose serious risks to employees' mental health [48]. Other studies warn that digitalization can also have negative consequences, such as social isolation or concerns about professional development [49,50]. In this context, our results confirm that it is precisely the way employees perceive technology and how often they work with it that can influence their subjective assessment of work well-being—in favor of positively attuned groups. The issue of psychological support for employees should be one of the key aspects for managers, as the introduction of technologies should not be just a technical issue. Practice should consider the monitoring of stress factors in the workplace, the implementation of programs focused on well-being, as well as the prevention of employee burnout.

Our study findings support the need for measures that facilitate employees' adaptation to technological change. In this regard, it is essential to provide training and support, especially for less technically skilled employees [51]. Furthermore, a multi-level approach to digital transformation is recommended, which includes quality leadership, effective communication and a supportive organizational culture [23]. This corresponds with our recommendations for actively involving employees in technological change processes. Practice therefore emphasizes the need to approach digitalization as a comprehensive process, which means not only providing technical tools, but also providing training, developing digital skills and supporting an inclusive organizational culture.

Other studies confirm that positive perceptions of technology can promote informal learning and improve workplace well-being [52], while positive previous experiences with the technology increase its acceptance rate [53]. Organizations should therefore pay attention not only to the choice of tools, but also to how employees subjectively perceive them. The role of technology as a resource or as a requirement is key for optimizing the

work environment and preventing burnout [44]. There is a positive relationship between resilience, information and training opportunities, and acceptance of technology, which in turn leads to increased employee engagement [54]. Managers should focus on monitoring employees' perceptions of technology, and whether technology is perceived as a helper or a burden. If digitalization and new technologies are communicated correctly and employees are provided with sufficient support, they will become a source of engagement rather than a source of frustration.

However, it is also important to consider that technological implementation can also lead to negative attitudes or unwanted behavior. Perceived unfairness in the implementation of technologies such as service robots can have negative consequences on employee behavior [55]. Similarly, electronic monitoring can increase stress and affect job satisfaction [56]. Therefore, it is important for organizations to assess technology acceptance before implementation and consider the individual needs of employees [57]. It is essential that the implementation process is transparent and fair. The risk of negative reactions can be significantly reduced if employees are timely informed and involved in the discussion about new tools.

Last but not least, a positive emotional climate in the workplace and strategies focused on "happiness management" can significantly support the success of digital transformation [58]. While advanced technologies increase efficiency and sustainability, they can also raise concerns about job security, underscoring the need for sensitive change management [59]. Finally, digitalization can also be a tool for promoting mental health: if effectively implemented, technological intervention can have a significantly positive impact on employees' psychological well-being and performance [60]. As part of the practical implications, strategic change management is also important. Its focus should include a sensitive approach to employee concerns and supporting a positive atmosphere in the workplace. In this way, digitalization can be used as a source of performance and job satisfaction.

Although the research was conducted within industrial enterprises in Slovakia, its results have broader applicability. Slovakia is an industrialized country, and the relative impact of job automation is approaching a level below 9 (index levels range from 0 to 10). European countries such as Slovakia, Slovenia, the Czech Republic and Italy show similar characteristics in the labor market indices studied [61]. These findings therefore have broader implications for the field of human resource management and work organization.

6. Conclusions

The main aim of this study was to verify whether there is a difference in the assessment of the quality of working life depending on employees' attitudes towards digitalization and the frequency of technology use in the workplace. Our results showed that a positive perception of technology, as well as its regular use, is associated with a higher assessment of the quality of working life. In this way, we directly answered the established hypotheses and supplemented the existing literature with new empirical findings from the environment of medium and large industrial enterprises in Slovakia.

A positive attitude towards technological changes in the work environment is associated with higher ratings in the employees' feelings about the quality of work life. This fact suggests that technology can improve the management of work tasks, increase efficiency, and promote a sense of control over work, which contributes to better well-being at work. At the same time, these findings point to the importance of digital literacy and employees' readiness to adopt new technologies. Promoting a positive attitude and education in the field of digitalization can therefore become a key factor in improving working conditions and overall satisfaction in the workplace. The results therefore support the need for active employee involvement in digital transformation processes and at the same time show that

investments in the development of digital skills and a positive approach to technology have not only theoretical but also direct practical significance for organizational management.

The identified findings can serve both strategic and practical purposes in the implementation of digitalization to improve business performance of enterprises. The results show that supporting digitalization has a positive impact on employees and is therefore worth investing in. Organizations can purposefully develop digital infrastructure and working tools to increase employee satisfaction and well-being. The findings can serve as a basis for designing educational programs aimed at increasing digital literacy and comfort in using technology. Likewise, managers can better plan and communicate technological changes in a way that reduces resistance and increases their engagement. By identifying the connection between technology and work well-being, companies can look for ways to use technology to simplify work and support team performance. The findings can be used to create a work environment that better meets the needs of employees, thereby reducing turnover and increasing their satisfaction. The results can serve as a basis for a deeper analysis of the impact of specific digital tools or technological changes on various aspects of work.

The findings on the relationship between perceptions of digitalization, frequency of technology use and employees' quality of work life make an important theoretical contribution. They enrich existing models of well-being with a digital dimension and show that technologies can act as a support that reduces stress and increases satisfaction. They contribute to a deeper understanding of digitalization as a psychosocial process, not just a technical change. The results also support the creation of new research frameworks that connect the fields of psychology, management and information technology. They highlight the importance of digital literacy as a key factor in job satisfaction. These findings support the need for a multidisciplinary approach when examining digitalization in the workplace.

Possible limitations of the research include the limited general applicability of the findings due to the specifics of the sample selection, which consisted mainly of medium-sized and large organizations. Data collection was partly carried out through the "snowball sampling" method, which may have affected the diversity of respondents. Although the sample meets the requirements for size, an even representation of all sectors or professional groups is not guaranteed, which needs to be considered when interpreting the results. The research also does not consider the long-term effects of digitalization.

Future research directions should include expanding the sample to include smaller and more diverse organizations to increase the generalizability of the results. It is also recommended to investigate the long-term effects of digitalization on employee well-being and performance. A deeper examination of psychosocial factors such as stress and motivation in digital work environments is important. Furthermore, it would be useful to analyze specific digital tools and their impact on different professional groups.

Although the research was conducted in the context of industrial enterprises in Slovakia, its findings and conclusions can be applied to other countries with similar labor market characteristics or digitalization strategies, thus strengthening their practical and international relevance.

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