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Chapter: Advanced Perspectives on Financial Engineering, Economic Modeling and Portfolio Optimization

EFFECTS OF EMPLOYEES' ATTITUDES TOWARDS DIGITAL TRANSFORMATION FACTORS ON SMES' SUSTAINABILITY AND FINANCIAL PERFORMANCE

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Annotation. Digital transformation is the most frequently analysed from the technological perspective. The following research investigates the social elements of organisational digital transformation, by placing employees in SMEs in focus. After extensive literature review the research questions and related hypotheses were defined. To test the proposed hypotheses, a questionnaire was developed, and 635 responses were received from individual owners, managers, and employees in organizations from Serbia, Bulgaria, and Visegrad Four countries (V4). A structural equation model has been used to explore the mediating effect on the relationship between the employee's attitudes and their perceived opinions on the organisations' sustainability and financial performance. All relationships within stated hypotheses were confirmed. It was revealed that employees' positive attitude towards digitalisation is improving their self-efficacy in the digitalized work.

Keywords: digitalisation, anxiety, self-efficacy, sustainability, financial performance, SMEs.

JEL classification: L26, M14, O33.

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Introduction

Digitalisation has rapidly transformed the business landscape and has become increasingly important for large companies as well as small and medium-sized enterprises (SMEs) to stay competitive (Meier *et al*., 2025). The significance of digitalising operations has been well explainedin recent literature and proven in practice, especially during the COVID-19 pandemic (Meier *et al*., 2025). Many authors have pointed out that digital technologies, such as artificial intelligence (AI), big data analytics, and blockchain technology, significantly improve organisations' performances in various organisational areas (Meier *et al*., 2025; Milošević *et al*., 2022; Stojanović, 2022). Digital technologies can also be invasive, even though they are developing into sets of relationships that are essential for maintaining a competitive advantage (Ayaz *et al*., 2025). Certain authors add that there is a significant risk that digital transformation initiatives will fail (Oludapo *et al*., 2024). Evidently, concepts of intelligent manufacturing have to be assessed also from the aspects of identifying potential difficulties, which is highly important for the success of their digital transformation (Nadeem *et al*., 2024).

Based on a broad literature review, it is evident that the technological aspects of digitalisation are being extensively studied and well-elaborated in the recent literature (Ganzarain, Errasti, 2016; Tick *et al*., 2022). It should be noted that limited studies are available highlighting the human, social, environmental and economic factors related to the adoption of Industry 4.0 (I4.0), which are also significant for sustainable entrepreneurship. Accordingly, these "soft" elements of organisational sustainability are not being studied at the same level as the technological ones. Considering that at an early stage in the digitisation process, resource conflicts and a lack of expertise with new technologies might have a detrimental impact on organisations environmental performance (Yang *et al*., 2023), it is necessary for SMEs to make crucial decisions toward vital changes in the employees and the management structures attitudes toward digitalisation. This shall provide its positive impact on organisational sustainability. Additionally, there is limited research available related to digital transformation and resulting sustainable entrepreneurship in the context of East European countries SMEs.

To be able to fill the identified research gaps, this research was conducted in six East European countries—Serbia, Bulgaria, Poland, Hungary, the Czech Republic, and Slovakia. We have assessed the attitudes of employees, managers, and organisation owners towards digitalisation, their self-efficacy in the application of digitization, as well as their anxiety regarding the digitalised working environment, resulting from their personal abilities to accept the workplace modifications. The obtained results were analysed as the mediating effect influencing their attitude about the organisation's sustainability and financial performance, which is also a recent trend emerging in the contemporary literature (Jiang, Chen, 2024).

1. Literature Review and Proposed Research

1.1 Framework of Industry 4.0 and Sustainability in the SMEs

There are still numerous difficulties and prospects of digitalisation (Kagermann, 2015). Different company characteristics determine how possibilities and problems linked to I4.0 are perceived as precursors to digital technology implementation (Müller *et al*., 2018); thus, a special emphasis is needed regarding small and medium-sized enterprises (SMEs) is needed (Masood, Sonntag, 2020; Semeraro *et al*., 2023).

Numerous studies highlight the significance of the transformation of SMEs towards digitalisation (Cheah *et al*., 2022; Findik *et al*., 2023; Moeuf *et al*., 2018; Rauch *et al*., 2018; Sarlab *et al*., 2024). Notably, SMEs

can greatly benefit and enhance their operational efficacy, reduce waste, increase productivity, and improve overall financial performance (Grybauskas *et al*., 2022; Masood, Sonntag, 2020; Milošević *et al*., 2022; Semeraro *et al*., 2023). On the other hand, in certain situations, financial investments made to achieve environmental goals and additional costs for staff development and training could hinder the optimisation of economic performance (Dabic *et al*., 2023). I4.0 has the potential to empower SMEs to gather and scrutinise voluminous data from multiple sources, in addition to that, enable valuable insights into their performance, customer behaviour, market trends, and supply chain (Bordeleau *et al*., 2018). This valuable information can assist in decision-making, optimizing resource allocation, and identifying cost-saving opportunities, leading to improved financial performance (Chen, 2021).

There is also potential to increase and promote sustainability in SMEs (Ukko *et al*., 2019). Digital transformation could address pressing issues of sustainable development goals (Ghobakhloo, 2020). Belhadi *et al*. (2021) analyse the possible paths between I4.0 and sustainable performance. Consequently, they propose organisational ambidexterity to replace circular business models in the creation of new, sustainable businesses. It is evident that authors in Belhadi *et al*. (2021) and Ghobakhloo (2020) do not focus on the specifics of SMEs. Rakic *et al*. (2021) presented an insightful study in the Serbian context that has determined a prerequisite for sustainability, however took into account all manufacturing sectors and company sizes. Nasir *et al*. (2022) proved that innovative performance improves organisational sustainability more when it is integrated with I4.0 technology. In one of the few studies focused on SMEs, Ayaz *et al*. (2025) draws attention to the fact that Indian SMEs still have a ways to go in achieving sustainability in their manufacturing endeavours. Since they lack a number of essential resources, particularly in the area of I4.0 technologies.

Despite the considerable volume of research on various aspects of sustainability in the SMEs sector (Álvarez Jaramillo *et al*., 2019; Belhadi *et al*., 2021; Bilal, Shaheen, 2024; Khan *et al*., 2023; Costa *et al*., 2023; Betakova *et al*., 2023; Gadenne *et al*., 2009; Ghobakhloo, 2020; Kagermann, 2015; Kerr, 2006; Klewitz, Hansen, 2014; Müller *et al*., 2018; Nasir *et al*., 2022; Natarajan, Wyrick, 2011; Rakic *et al*., 2021), there is still limited research on the attitudes and participative thinking of employees, managers, and SMEs owners' towards the digitalisation of business processes, integration sustainable business practice in SMEs, and the barriers to achieving 'inclusive' sustainable digitalisation of the business practice (Caldera *et al*., 2019; Grybauskas *et al*., 2022; Kerr, 2006).

1.2 Research Model and Proposed Hypotheses

Based on the observed deficiencies, research objectives shall be proposed. The continuous advancement of digital technologies and changes in market conditions are persistently affecting fast-paced and unpredictable markets (Maran *et al*., 2022). Therefore, enterprises and employees must be open to accepting new digital technologies and possess adequate skills that enable them to quickly adapt and overcome the constantly appearing challenges. Possessing personality traits such as openness to new experiences and emotional stability, as well as having interests in investigative and prospective vocations, can lead to the development of digital self-efficacy (Maran *et al*., 2022). Employees' attitudes toward digital transformation considerably impact their perceived performance (Fahmi *et al*., 2023). When employees have a positive attitude towards digitalisation, it can significantly impact their perception of their self-efficacy (Schneider, Sting, 2020). Further, it is critical for employees to feel supported and encouraged by their colleagues in adopting digital tools and technologies, as this may make them more receptive to embracing change and exploring their potential benefits (Milošević *et al*., 2022). As a result, they may feel more confident in their ability to adapt to and efficiently utilise new

digital technologies, thereby improving their perceived efficacy in completing tasks and attaining goals. Moreover, an examination of the correlation between employee behaviour and technological advancements led to the conclusion that industrial organisations must hire proactive individuals with a soft culture (Spasojevic Brkic *et al*., 2020). Offering encouragement to colleagues can create a positive work environment that fosters learning, collaboration, and growth, further enhancing employees' self-efficacy and overall job satisfaction. In addition to that, the acceleration of digital transformation can be achieved by improving employees' digital technology skills and instilling positive attitudes regarding the process within the company (Fahmi *et al*., 2023). Evidently, employees' opinions and attitudes are crucial factors in their motivation to adopt digitalisation of their workplaces and use the positive benefits to increase their self–efficacy. Given the importance of people and society, reducing employees' anxiety and fear of digitalisation should be a fundamental step in inclusive development. As employees' issues, such as well-being, safety and security, social equity, labour practices, decent work, and rights, greatly affect their working environment and sustained business operations. Employee motivation, resulting from their workplace climate and practice, is, of course, strongly impacting the economic performance of the organisation, as well as their views and perspectives towards the environmental dimension of organisational sustainability (Frey, MacNaughton, 2016; Hughes *et al*., 2021; Johnson-Cramer *et al*., 2022; Kumari, Singh, 2023; Wood, Logsdon, 2019). Based on the above given-facts, the following research hypothesis was proposed:

H1: The attitude of the employees towards digitalisation is positively influencing their self-efficacy in digitalisation.

While digitalisation brings many advantages, it also carries risks and consequently can trigger negative responses, such as anxiety (Pfaffinger *et al*., 2020), a common symptom often associated with the pressure for social change caused by rapid advancements in science and technology. The process of digitalisation can bring uncertainty, as it is frequently unclear how it will impact and when changes will occur (Heerey, Kring, 2007). Kirchner (2023) found that in Germany, almost 40% of respondents felt uncertain and left behind by the digitalisation process. Moreover, authors in (Pfaffinger *et al*., 2020) focused on the impact of digitalisation on individuals' happiness and/or anxiety levels in the workplace. The general mindset of the people can significantly alter their willingness to adopt novel technologies (Donat *et al*., 2009). Attitudes towards digitalisation reflect their beliefs and values regarding the potential positive and negative outcomes it can have (Donat *et al*., 2009). Studies (Broos, 2005; Schneider, Sting, 2020) have shown that a higher level of self-efficacy in the implementation of digital devices and more positive attitudes toward digitalisation lead to less anxiety. In this context, the following hypothesis was developed:

H2: Positive employees' attitude toward digitalisation is negatively influencing their anxiety regarding the digitalized working environment.

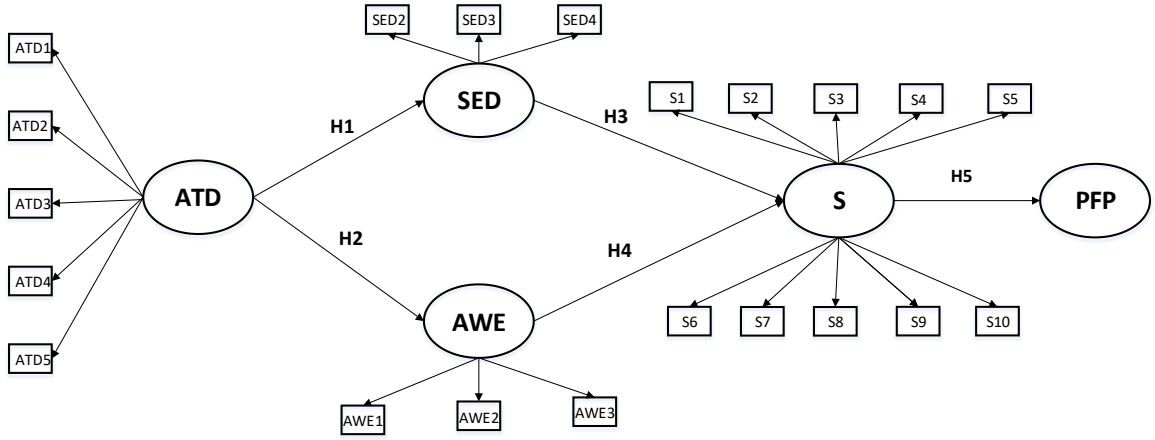
Employees who move the business forward by using new technologies are a crucial and primary element in attaining organisational sustainability (Lorincová *et al*., 2019; Stachová *et al*., 2018). Organisational values are built through the contributions of their employees, including their efforts in the acceptance of digital technologies in the contemporary environment (Lorincová *et al*., 2019). Managers and employees motivated to implement digital technologies in their business operations play a vital role in enhancing business efficacy, which ultimately affects the success and sustainability of the enterprise (Rosen, Kishawy, 2012). Therefore, self-efficacy in using digital technologies in the workplace often implies that

resources are used wisely and productively for the purpose of organisational sustainability (Stankeviciute, Savaneviciene, 2013; Tramontano *et al*., 2021). Hence, the next hypothesis was noticed:

H3: Employees' self-efficacy in digitalisation is positively influencing the organisation's sustainability.

Although digital work offers numerous advantages, it also generates stress and anxiety (Marsh *et al*., 2022). Excessive anxiety affects the level of employ engagement, which may reflect a lack of sustainability initiatives and their contribution to the organisation's sustainability goals. Improved productivity, communication and collaboration, engagement, and innovation lead to the adoption of digitization, which has a positive effect on organisational sustainability (Attaran *et al*., 2019; Baptista *et al*., 2020). However, the anxiety about adapting to new digital tools and platforms impede effective communication and teamwork, ultimately resulting in a breakdown of coordination (Marsh *et al*., 2022). This, in turn, hinders sustainability initiatives that necessitate collaborative efforts, such as sharing knowledge, brainstorming ideas, or working together on organisational sustainability goals. Anxiety related to a digitalized working environment may overshadow employees' attention to sustainability (Attaran *et al*., 2019). When employees are primarily concerned about the digital transformation itself, they may have limited mental and emotional capacity to prioritize the goals of organisational sustainability (Baptista *et al*., 2020; Maslach, Jackson, 1981). This could result in burnout due to the digitalisation-related stress or a lack of awareness, understanding, or commitment to sustainable behaviours and practices within the organisation (La Torre *et al*., 2020; Maslach, Jackson, 1981). The following hypothesis arises from all of the above:

H4: The expressed anxiety of the employees regarding the digitalized working environment is negatively influencing the organisation's sustainability.



Notes: ATD = Attitude toward digitalisation; SED = Self-efficacy in digitalisation; AWE = Anxiety regarding the digitalized working environment; S = Sustainability; PFP = present financial performance.

Source: created by the authors.

Figure 1. **Hypothetical Model of the Effect of Employees' Attitudes Towards Digital Transformation Factors on SMEs' Sustainability and Financial Performance**

Creating a strong business strategy relies heavily on an organisation's ability to achieve sustainable development and balance economic, environmental, and human development (Shank, Shockey, 2016). It is proven that business process management sustainability is closely linked to organisational success

(Dominguez, 2018). The sustainability of an organisation can positively influence employees' attitudes toward the organisation's financial performance (Nizam *et al*., 2019). When employees perceive their organisation to be sustainable, it creates a positive view of the enterprise's overall operations, including its financial performance (Alshehhi *et al*., 2018; Bartolacci *et al*., 2020). Employees who observe their organisation prioritizing sustainability practices develop a higher level of trust and confidence in the organisation's leadership (Shi, 2025). Weber (2017) reported a positive correlation between corporate sustainability performance and financial performance. This is based on the results in Waddock and Graves (1997), where a positive influence of corporate social performance on financial performance is proved. Alshehhi *et al*. (2018) point out that 78 percent of the 132 analysed publications document a favourable relationship between corporate sustainability and financial performance. Therefore, hypothesis H5 was defined as:

H5: The organisation's sustainability is positively influencing its financial performance.

The initial hypothetical model, is presented in *Figure 1*.

2. Questionnaire Design and Sampling

The research was conducted using the questionnaire method (Mihajlović, 2022). The questionnaire utilised in this paper was developed as part of an international project and was made publicly available on the project's website (Mihajlović, 2022). The procedures for the questionnaire development and initial measuring scale testing are available in (Mihajlović, 2022; Milošević *et al*., 2022; Tick *et al*., 2022). A standard Likert scale of 5 points (1– strongly disagree and 5– strongly agree) was employed. Respondents were required to provide demographic data, as well as their opinions using yes/no answers, check-the-box responses, lists of options, and open responses, too. To account for situations where respondents did not know how to answer, lacked an opinion on the issue, or preferred not to respond, a "not applicable" option was included.

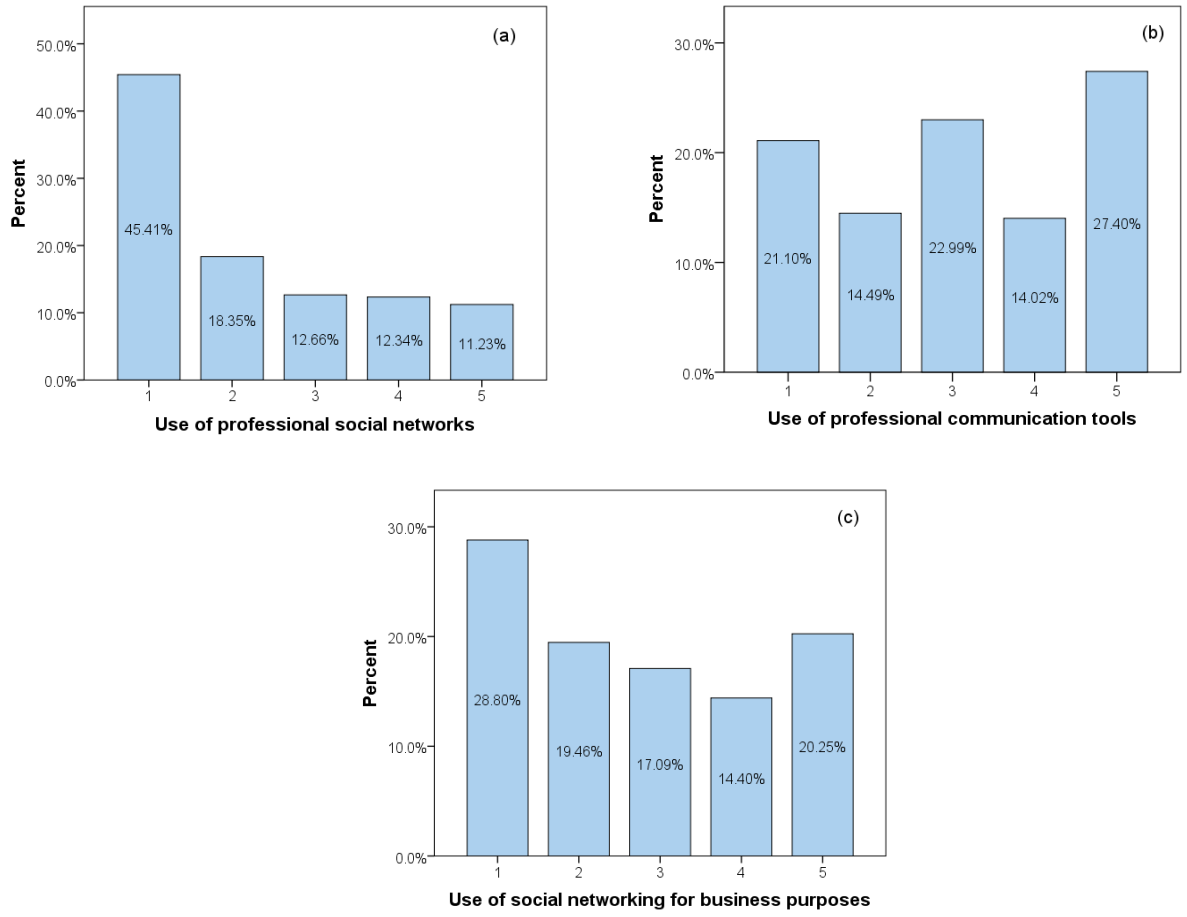
The study was conducted in Serbia, Bulgaria, and the Visegrad four countries (V4 countries), which are Poland, Hungary, the Czech Republic, and Slovakia. All the firms that were included in the study were SMEs in the dominant fields of production, trade, and service provision. Among them, several areas of business activities were selected: agriculture, construction and development, mining and ore excavation, manufacturing, wholesale and retail trade, information and communication, machinery and equipment, energy, finance, and insurance. Subsequently, an interviewing procedure was conducted in 63 organisations to obtain responses from individual owners, higher-level managers, lower-level managers (e.g., operative managers), and employees in each organisation. In this process, about 700 individual respondents from those organisations were selected. The questionnaires were distributed to organisations by the members of the research team from each of the above countries, who were also personally giving instructions to participants; 635 questionnaires were returned with valid responses (response rate: 90.71%). This exceptionally high response rate was due to the investigators' personal involvement in the organisations. The analysis was performed with the SPSS statistic package v. 22 and R statistics v.4.2.2 software using the Lavaan 0.6.15 package. The results obtained by R statistics software were verified with AMOS v.19. *Table 1* shows the subjects' demographics and the profiles of the analysed firms in the sample.

Table 1. Profiles of Analysed Firms and Respondents

Characteristics			Percent
Organisation (N = 63)	The country in which a firm operates	Czech Republic	14.0
		Hungary	17.3
		Slovakia	15.7
		Poland	15.9
		Serbia	21.1
		Bulgaria	15.9
	Number of employees	up to 9	38.3
		10-49	21.9
		50-249	24.1
		250 and more	15.7
	The total assets of the organisation	less than 2 mil. €	53.8
		from 2 to less than 10 mil. €	20.7
		from 10 to less than 43 mil. €	11.2
		43 mil. € and above	8.7
		I don't want to answer.	5.7
	The annual revenue of the organisation	less than 2 mil. €	52.2
		from 2 to less than 10 mil. €	21.5
		from 10 to less than 50 mil. €	11.4
		50 mil. € and above	9.3
		I don't want to answer.	5.5
	The business age of the organisation	less than 2 years	8.5
		From 3 to 5 years	9.6
		From 6 to 10 years	17.6
		From 11 to 20 years	23.5
		21 years and more	40.8
	Areas of business activity	Agriculture	4.6
		Mining and quarrying	2.2
		Machinery and equipment	6.0
		Construction and developers	8.8
		Wholesale and retail trade	12.4
		Information and communication	10.2
		Manufacturing	16.4
		Finance and insurance	5.8
		Industry, including energy	5.7
		Another sector	27.9
	Organisation focus	Exclusive domestic market	33.9
		Mostly on the domestic market	24.4
		Equally on the domestic and foreign markets	22.8
		Mostly on the foreign market	9.0
		Exclusively for foreign markets	2.8
		The firm is a multinational enterprise (MNE), a member of a group of companies.	7.1
Respondent (N = 635)	Age	18-30	23.9
		31-45	36.2
		46-60	32.1
		> 60	7.7
	Gender	Female	37.2
		Male	61.9
		Other gender	0.2
		I do not wish to answer.	0.8
	The position in the organisation	The owner	30.8
		Senior manager	15.8
		Manager	22.7
		Employee	30.8
	The years of work experience	Up to 5 years	28.1
		From 6 to 10 years	17.4
		From 11 to 20 years	23.5
		More than 20 years	31.0
	The level of education	Elementary school	/
		High school	21.9
		Bachelor	24.7
		Master	47.1
		Ph.D.	4.9
		Other	1.4

Source: created by the authors.

After the demographic questions, the respondents were questioned about the use of business software for managing production, services, and trade, and 54.8% answered with YES. Regarding the use of open-source software, the response was YES in 24.4 percent of cases. Then, the respondents were asked to rate their use of social networks, professional social networks (like LinkedIn), and professional communication tools for their business, and the responses are given in *Figure 2*.



Source: created by the authors.

Figure 1. **Respondents' Answers on the Use of (a) Professional Social Networks, (b) Professional Communication Tools, and (c) Social Networking for Business Purposes (1 – not at all, 5 – daily)**

The remaining sections of the questionnaire assessed the respondents' attitudes toward specific aspects of the digitalisation of their workplaces. This section included the following groups of questions: Attitude toward digitalisation: ATD (which initially included five questions); Self-efficacy in digitalisation: SED (which initially included four questions); Anxiety regarding the digitalized working environment: AWE (which initially included four questions); and Sustainability - S (which initially consisted of 13 questions). The obtained results and sampling adequacy measurements are presented in the following section.

3. Research Methodology and Obtained Results

3.1 Research Methodology

Considering the fact that the research was conducted in six different countries, in organisations of different sizes and annual revenues, from different areas and focuses of business activities, etc., the comparison of the differences in obtained questionnaire responses among different demographic groups was carried out using the Multiple Analysis of Variances (MANOVA) (Nelder, Wedderburn, 1972).

The reliability of the questionnaire measurement is linked to its internal consistency. The consistency was assessed by the Cronbach coefficient. According to the Cronbach's coefficient, the internal consistency should be above 0.7 (Adamson, Prion, 2013; Leontitsis, Pagge, 2007; Nunnally, Bernstein, 1994) for the entire population as well as for each group of questions in order to consider the measuring scale reliable. On the other hand, a high Cronbach's value does not necessarily point to high reliability, as it may be just the result of numerous items included in the analysis (Hair *et al.*, 1998). Taking this into consideration, an additional Spearman-Brown internal consistency test was performed. The Spearman-Brown coefficient represents the reliability coefficients that can be attained from all the possible combinations of dividing the questions into two sets (split-half) (Nunnally, Bernstein, 1994). The minimal proposed value of this coefficient is also 0.7.

The correlation among the variables was tested based on Bartlett's test of sphericity, while the Kaiser-Meyer-Olkin test was used to measure the sampling adequacy. Bartlett's test of sphericity is a statistical test utilised to assess how different the correlation matrix used in confirmatory factor analysis (CFA) is from the identity matrix (Cooley, 1969). The test is applied to indicate that there is a significant connection between the variables (Tobias, Carlson, 1969). The obtained value is distributed approximately as a chi-square with 1/2p (p-1) degrees of freedom. This particular test can be straightforwardly incorporated into the principal components and has been recommended for use before proceeding to CFA (Maxwell, 1959). The Kaiser-Meier-Olkin (KMO) measure of sampling adequacy provides an assessment of whether the variables are psychometrically interdependent and, therefore, whether the correlation matrix is suitable for factor analysis (Kaiser, 1970). furthermore, Common Method Bias (CMB) was performed to examine bias that occurs when respondents simultaneously answer questions related to independent and dependent variables, which can artificially increase the correlation between variables and lead to wrong conclusions about the existence of a relationship between them. Harman's One-Factor Test is one way to test CMB (Armstrong, Overton, 1977). This test is performed by including all variables in an exploratory factor analysis (EFA). If the EFA results show that one factor explains less than 50% of the total variance, CMB is considered to be absent. In other words, if the variables are associated with a single factor that explains less than 50% of the variance, this indicates the absence of CMB (Zhang *et al.*, 2022). The confirmatory factor analysis (CFA) was used to test for convergent and discriminant validity, as well as internal consistency. Convergent validity is established by assessing the correlation between items that belong to the same factor. Accordingly, standardised element factor loadings and average variance extracted (AVE) values for each construct were used to assess the convergent validity of the model (Fornell, Larcker, 1981; Hair *et al.*, 1998).

The final testing of the hypothesis was executed by implementing the Structural Equation Modelling (SEM). In accordance with the suggestions and indicators given by Hair *et al*. (1998), the goodness-of-fit (GFI) model had to be considered first. Within a GFI model, it is required to consider the measure of absolute fit, the measure of increased fit, and the measure of decreased fit. Due to the absolute

correspondence of the models, the indicators that can be utilised for incompetent strategic analysis are GFI and the index of corresponding values and approximate error expressed as RMSEA (root mean-square error of approximation). GFI is acceptable if it is over 0.90 (Byrne, 1998). RMSEA is based on an approximate error that occurs due to the expected degree of freedom within the population, and it is acceptable if under 0.08, while some authors accept this value as even under 0.10 (Kim *et al.*, 2016).

3.2 Research Methodology

The comparison of the differences among diverse demographic groups obtained using the MANOVA is presented in *Table 2*.

Table 2. Survey Response Comparisons by Respondents and Organisations Demographic Indicators (Discriminant Validity)

Demographic	Significance	ATD	SED	AWE	S
Ages	F	9.170[a]	3.055[b]	3.862[a]	3.732[b]
	p	0.000	0.028	0.009	0.011
Gender	F	0.468	0.964	7.600[a]	0.437
	p	n.s	n.s	0.000	n.s
The country in which a firm operates	F	8.966[a]	39.048[a]	27.812[a]	0.866[a]
	p	0.000	0.000	0.000	0.000
The position in the organisation	F	0.491	1.414	1.751	10.163[a]
	p	n.s	n.s	n.s	0.000
The years of work experience	F	2.660[b]	3.525[b]	4.776[a]	4.495[a]
	p	0.047	0.015	0.003	0.004
The level of education	F	0.096[b]	4.998[a]	2.562[b]	4.476[a]
	p	0.015	0.001	0.037	0.001
Number of employees	F	6.929[a]	7.751[a]	10.004[a]	14.992[a]
	p	0.000	0.000	0.000	0.000
The total assets of the organisation	F	7.461[a]	4.577[a]	6.377[a]	7.433[a]
	p	0.000	0.001	0.000	0.000
The annual revenue of the organisation	F	7.833[a]	5.896[a]	6.992[a]	7.603[a]
	p	0.000	0.000	0.000	0.000
The business age of the organisation	F	1.303	7.232[a]	5.356[a]	0.633
	p	n.s	0.000	0.000	n.s
Areas of business activity	F	9.659[a]	4.235[a]	1.505	5.249[a]
	p	0.000	0.000	n.s	0.000
Organisation focus	F	4.845[a]	3.021	6.378[a]	7.214[a]
	p	0.000	0.011	0.000	0.000

Notes: n.s. - Non-significance. a Statistically significant at 0.01 level. b Statistically significant at 0.05 level.

Source: own calculations.

Cronbach's α and the Spearman-Brown coefficients were greater than 0.70 and adequate for psychometric measurement requirements. *Table 3* illustrates the values for each group of analysed factors, i.e., constructs.

Data from the analyses revealed that the Kaiser–Meyer–Olkin measure of sampling adequacy was 0.94 (Kaiser, 1970). Bartlett's test of sphericity was at a significant level of $\chi 2 = 22973.29$, $p < 0.001$, which indicates that there were correlations among the analysed items and the correlation matrix was not a unit matrix.

Defined groupings of the questions in the questionnaire were tested using principal component factor analysis. Considering that a factor analysis was applied to a sample of 635 respondents and the number of questions in the initial analysis was 25, it can be confirmed that the sample size and the number of observational variables meet the recommended ratio of 10:1 (Hair *et al*., 2010). Although the Self-efficacy in digitalisation (SED) factor originally contained 4 questions, the factor analysis indicated that one of the questions, SED1 (I could complete a job if there is someone around to tell me what to do if I make a mistake), had to be eliminated due to the low value of factor loading. In addition, for the same reason, questions S11 (Electronic equipment and devices produce a high amount of e-waste), S12 (The production and use of ICT consume a growing amount of materials, which speeds up the depletion of natural resources), and S13 (The increasing demand for energy supply on digitalisation and data centres generates abundant emissions) had to be rejected from the Sustainability (S) factor for the same reason, as well as the AWE4 question (Digitalisation is somewhat intimidating to me) from the Anxiety factor regarding the digitalized working environment (AWE).

To test CMB, Harman's One-Factor Test was employed. In this research, since one factor explains only 35.646% of the variance, the results of Harman's One-Factor Test indicate the absence of CBM.

Table 3. Validity and Internal Consistency Coefficients of the Constructs in the Questionnaire

Scale	No. Of Items	Convergent validity	Discriminant validity	Cronbach's α	Spearman–Brown Coefficient
ATD	5	0.533	0.730	0.895	0.883
SED	3	0.478	0.691	0.883	0.864
AWE	3	0.424	0.651	0.850	0.971
S	10	0.503	0.709	0.921	0.832

Source: own calculations.

The results of the CFA analysis are presented in *Table 4*. In summary, *Table 4* demonstrates that the standardized loading factors of the measurement scales have achieved convergent validity (AVE), according to criteria in (Hair *et al*., 2010).

Table 4. Factor Loadings of the Attitudes of the Respondents toward Specific Sspects of Digitalisation

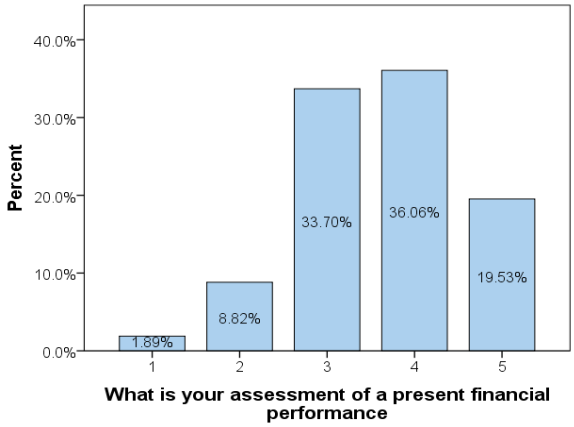
Item Code		Factor 1	Factor 2	Factor 3	Factor 4	Mean	SD
	Attitude toward digitalisation (ATD)						
ATD - 1	Digitalisation at the firm is a good idea.	**0.758**				3.883	1.212
ATD - 2	Digitalisation at the firm makes work more interesting.	**0.738**				3.665	1.203
ATD - 3	Working in a digitalised environment is fun.	**0.633**				3.321	1.305
ATD - 4	I like that the firm I work for creates a digitalised working environment.	**0.767**				3.556	1.269
ATD - 5	I believe that digitalisation at the firm creates a competitive advantage in the market.	**0.747**				3.816	1.225
	Self-efficacy in digitalisation (SED)						
SED - 2	I could complete a job if there was someone I could call for help.		**0.698**			3.231	1.417

Table 4 (*continuation)*. Factor Loadings of the Attitudes of the Respondents toward Specific Sspects of Digitalisation

Item Code		Factor 1	Factor 2	Factor 3	Factor 4	Mean	SD
SED - 3	I could complete a job or task in a digitalised working environment if there was a lot of time to complete the job for which the software was provided.		**0.699**			3.207	1.400
SED - 4	I could complete a job or task in a digitalised working environment if the help facility for assistance is built-in.		**0.688**			3.199	1.381
	Anxiety regarding the digitalized working environment (AWE)						
AWE - 1	I feel apprehensive about digitalisation.			**0.615**		1.869	1.122
AWE - 2	It scares me to think that I could malfunction in a digitalized working processes by hitting the wrong button.			**0.669**		1.937	1.186
AWE - 3	I hesitate to work in a digitalized working environment for fear of making mistakes I cannot correct.			**0.668**		1.871	1.132
	Sustainability (S)						
S - 1	Digitalising the firm helps to optimize and reduce the use of resources.				**0.770**	3.913	1.129
S - 2	Digitalising the firm helps to reduce costs.				**0.716**	3.859	1.155
S - 3	Digitalising the firm helps to adjust the business model to meet environmental needs and requirements.				**0.753**	3.685	1.188
S - 4	Digitalising the firm helps reduce carbon emissions.				**0.686**	3.364	1.297
S - 5	Digitalising the firm helps generate value to perform fair business practices that benefit the community and society.				**0.711**	3.507	1.229
S - 6	Digitalising the firm helps to extend the lifecycle of our products.				**0.728**	3.307	1.303
S - 7	Digitalising the firm helps to relocate funding for green investments.				**0.714**	3.326	1.273
S - 8	Digitalising the firm helps to achieve higher productivity and less waste.				**0.735**	3.701	1.190
S - 9	Digitalising the firm helps to achieve customized production.				**0.731**	3.661	1.235
S - 10	Our firm has integrated the SDGs into its long-term strategy.				**0.524**	3.215	1.350

Source: own calculations.

Employees attitudes toward the present financial performance of their firms were a single-variable question where respondents could rate the performance on a five-point Likert scale, from 1 (very low) to 5 (very high), as in *Figure 3*.



Source: created by the authors.

Figure 3. **Respondents' Attitudes on the Financial Performance of Their Organisation**

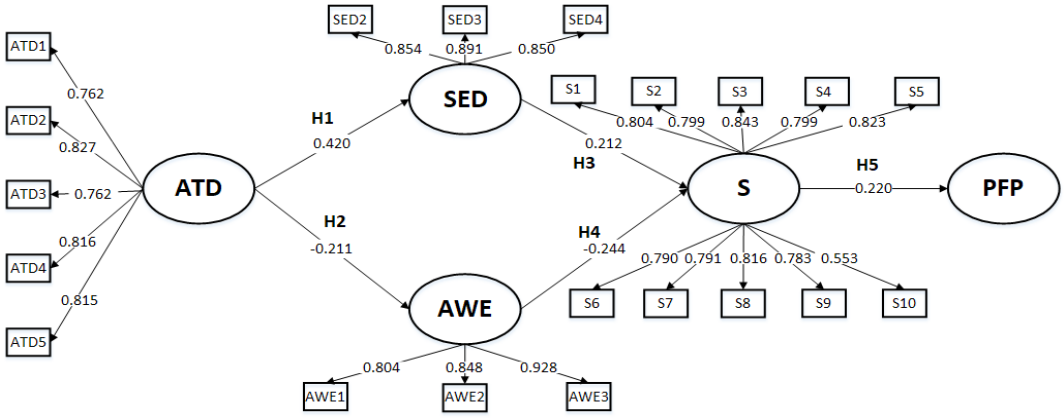
Good correspondence is indicated by the RMSEA indicator of 0.088 (Kim *et al.*, 2016). A GFI value is 0.91, which satisfies requirements (Byrne, 1998). The results of the path analysis for the structural model are displayed in *Table 5* and *Figure 4*.

Table 5. Results of Path Analysis and Hypothesis Testing

Hypothesis	Path	β coefficients	t - value	Support
H1	ATD → SED	0.420	7.288*	Accepted
H2	ATD → AWE	-0.211	-4.918*	Accepted
H3	SED → S	0.212	6.693*	Accepted
H4	AWE → S	-0.244	-5.819*	Accepted
H4	S→ PFP	0.220	5.215*	Accepted

Notes: *p < 0.01.

Source: own calculations.



Source: created by the authors.

Figure 4. **Structural Model of the Effect of Employees' Attitudes towards Digital Transformation Factors on SMEs' Sustainability and Financial Performance**

The path analysis results indicated that all tested hypotheses were confirmed. The supportive attitude of the employees towards digitalisation is positively influencing their perspectives on achieved self-efficacy (H1, $\beta = 0.420$, $t = 0.288$, $p < 0.01$). Then, the expressed anxiety of the employees regarding the digitalized working environment is negatively influencing their attitude towards digitalisation (H2, $\beta = -0.211$, $t = -4.918$, $p < 0.01$). The achieved high level of self-efficacy by the employees is positively shaping their opinion on the sustainability of their organisation (H3, $\beta = 0.212$, $t = 6.693$, $p < 0.01$). The expressed anxiety of the employees regarding the digitalized working environment is negatively impacting their attitude toward the sustainability of the organisation (H4, $\beta = -0.244$, $t = -5.819$, $p < 0.01$). Finally, a high evaluation of the organisation's sustainability by the employees is positively affecting employee attitudes towards the organisation's present financial organisation (H5, $\beta = 0.220$, $t = 5.215$, $p < 0.01$).

4. Discussion of Results

In order to examine the employees' attitudes on the sustainability and financial performance of SMEs based on adequate aspects of the available concepts of digitalisation, the 635 completed questionnaires in Serbia, Bulgaria, and the Visegrad countries were evaluated. The sample size, compared to the number of questions in the survey, has met the recommended ratio. Still, the reliability of the measurement model was additionally tested and proven based on appropriate tests of internal consistency. Most of the respondents were from micro and small enterprises, but also from well-established organisations. The majority of the organisations are exclusively or mostly focused on the domestic market. Most of the respondents were males, in the age group of 31-45 years, with a completed master's and bachelor's degree. The number of respondents who use business software for managing production, services, and trade is almost equal to the number of those who do not. The majority of respondents do not use professional social networks or regular social networks for business purposes in their everyday work activities; notwithstanding, they use professional communication tools.

Factor analysis indicated adequate grouping of the questions in the questionnaire, with just a few questions that had to be removed from the final model. The results confirm that most of the respondents agree that digitalising their workplaces is a beneficial decision (with a mean value of 3.883 on a scale of 5). Moreover, with lower value of 3.321, the majority of them claim that working in a digitalized environment is fun. When it comes to self-efficacy in a digitalised work environment, most respondents consider that they need support and adequate task time available when completing their tasks. They would appreciate support from someone they can contact if they require assistance and/or a help assistant built into the application. Reportedly, they did not express their positive attitude that some supervisors should monitor their work and give them direct advice. Regarding the anxiety resulting from the digitalisation of their work environment, it can be concluded that most of the respondents do not experience a high level of it, considering the low mean values of 1.869 to 1.937. Based on the respondents' rating, the only question from the AWE group that had to be excluded from the final modelwas the one saying that digitalisation is intimidating to respondents. Accordingly, it can be stated that employees do feel some small level of apprehensiveness; sometimes they are still afraid that they can make some processes malfunction by pressing the wrong button; and some of them hesitate to work in a digitalised work environment based on their fear that potential mistakes wouldn't be easy to correct. Nevertheless, they do not feel intimidated by the digitalisation of their work environment. When it comes to the influence of digitalisation on the sustainability goals of organisations, it can be noticed that the respondents clearly recognised all the positive impacts. The most profound impact is that digitising an enterprise can help optimise and reduce the use of resources (with a mean value of 3.913). Additionally, respondents were able to make a clear distinction between the positive and potentially negative

consequences of digitalisation. Thus, based on the received ratings, the three questions that considered the potentially negative consequences of digitalisation (S11-Electronic equipment and devices produce a high amount of e-waste; S12-The production and use of ICT consume a growing amount of materials, which speeds up the depletion of natural resources; and S13-The increasing demand for energy supply on digitalisation and data centres generates abundant emissions) were removed from this set of questions. On the other hand, from this list of potentially negative consequences of digitalisation, the mean values obtained were 3.370, 3.216, and 3.321, respectively. The answers imply that most of the respondents believe that electronic equipment and devices produce a high amount of e-waste, require a growing amount of resources, and, of course, lead to an increased amount of energy required to operate. Naturally, it has to be dealt with strategically. When it comes to respondents' assessment of the financial performance of their organisation, it can be noticed that most of them were rating it with a score between 4 and 3, with the overall mean value of this variable 3.625.

Based on the fact that this study was conducted on respondents of different ages, genders, years of work experience, positions in the organisational structure, and levels of education, as well as different types of organisations. The responses obtained from the survey made it worthwhile to assess the statistical importance of each of the assessed demographics based on the responses obtained from the survey. It can be observed that gender as a demographic factor is only statistically significant for the responses, considering the group of questions belonging to the factor anxiety regarding the digitalised working environment (AWE). Accordingly, when it comes to respondents' assessments of the questions from attitude toward digitalisation (ATD), self-efficacy in digitalisation (SED), and sustainability (S), it does not really matter to which gender group they belong. During a detailed analysis of the responses from the AWE group, it was determined that respondents belonging to the female gender were more apprehensive about digitalisation compared to the respondents belonging to the male or other gender group. Furthermore, female and other gender respondents explained that they were more scared about the possibility of making a mistake by pressing the wrong button. Similarly, female and other gender respondents were more likely than men to hesitate to work in the digitalised working environment due to the fear of making mistakes they could not correct, compared to male respondents. The demographic variable "position in the organisation" also revealed interesting obeservation, considering its influence on respondents' assessments. Namely, responses to the questions from the ATD, SED, and AWE factor groups are not influenced at all by the respondents' positions. On the other hand, position in the organisation is strongly influencing their responses to the questions assessing the sustainability of their organisational processes. This way, when analysed in more detail, it was observed that operational managers gave the highest ratings to questions S1-S9 (in *Table 4*), followed by employees, then senior managers, and owners. Accordingly, it seems that, the owners of investigated organisations have the lowest appreciation for the potential positive influences that digitalisation can bring to their firms. The situation is slightly different with the question S10, "Our firm has integrated SDGs into its long-term strategy." Senior managers and employees rated the importance of this issue higher compared to operative managers. The owners rated even this question lower compared to all the remaining respondents.

The first research question and related hypothesis were concerned with examining the employee's attitude towards digitalisation relative to their achieved self-efficacy. The generated results determined the strongest relationship between the considered constructs. Based on the results, in order to stay competitive, SMEs need to be willing to embrace new digital technologies, and employees are required to have the necessary skills to adapt to the ever-changing work environment (Maran *et al*., 2022). This is in

line with the findings of a study (Fahmi *et al*., 2023), which confirmed that employees' attitudes toward digital transformation considerably affect their perceived performance. In accordance with results presented in this study, it can be stated that by effectively adapting to and utilising new digital tools, employees gain confidence in their abilities. This, in turn, leads to improved self-perceived efficacy in completing tasks and achieving personal goals.

Then, in the defined research model, the relationship between employees' attitudes toward digitalisation and their digital anxiety was examined. This negative link was confirmed, which was highlighted in studies of other researchers, indicating that employees' attitudes significantly influence their willingness or anxiety to adopt novel technologies (Broos, 2005; Pfaffinger *et al*., 2020; Schneider, Sting, 2020). In this context, based on the obtained results of this study, it was proved that the more positive the attitude of employees towards the acceptance of digitisation, the more anxiety will be suppressed.

The third hypothesis investigated how digitalisation altered employee's attitudes regarding organisational sustainability. By testing this relationship, a positive result was achieved, and in that manner, this hypothesis was confirmed. Namely, employees' high opinion of self-efficacy in digitalisation positively impacts organisational sustainability when employees efficiently and productively use available technological resources for the needs of sustainable business. These results are in accordance with previous research, such as Stachová *et al*. (2018).

The fourth hypothesis confirmed the negative influence of the employees' anxiety regarding their digitalised working environment on organisational sustainability. This finding was also reported in previous literature sources such as Marsh *et al*. (2022) and indicates that when employees experience high levels of anxiety, it negatively impacts their level of engagement at work. Hence, this leads to a decreased employee focus on sustainability initiatives and a potential hindrance to the organisation's sustainability goals.

Finally, the last analysed hypothesis dealt with the relationship between employees' evaluation of their firm's organisational sustainability and financial performance. According to (Alshehhi *et al*., 2018; Dominguez, 2018; Nizam *et al*., 2019) sustainability in business process management is closely linked to organisational success (Dominguez, 2018) and positively reflects on its financial performance (Alshehhi *et al*., 2018; Dominguez, 2018; Nizam *et al*., 2019), which was also observed in this research, and accordingly, hypothesis H5 was also confirmed.

Most studies on the topic neglect the role of obtaining comprehensive information on the sustainability of the business and using that information to reshape the strategy. Authors (Dabic *et al*., 2023) examined digital business strategies through the two main dimensions needed to realise a digital business strategy: managerial capability and operational capability. The results of our research are related to managerial and operational capacity to optimise the workplace environment, based on input received from employees related to their acceptance of digital tools in their workplaces.

As noted in rare studies such as (Ghobakhloo, 2020), I4.0 may have a positive effect on sustainability, and an interpretive model of I4.0 could be extended by our results, which offer deeper insights. While the Belhadi *et al*. (2021) offer a number of answers to the sustainability issue, our research expands on those ideas and provides a more thorough examination. Our study builds on work by Rakic *et al*. (2021) and concentrates on Serbia, with a recommendation to focus on SMEs in other countries as well. The research by Nasir *et al*. (2022) proposed that a cross-organisational and cross-country study be carried out in the future, as we did across Serbia, Bulgaria, and the four Visegrad countries.

Moreover, it should be noted that we conducted structural analysis of proposed hypotheses on a systematic level, having at the same time tested direct and indirect correlations through a structural equation modeling approach. Accordingly, here we investigated the simultaneous influence of employees' attitudes toward digitalisation, self-efficacy in digitalisation, and anxiety regarding a digitalised working environment on their opinion considering the organisational sustainability and financial performance.

The theoretical, practical, societal, and methodological implications of our research are as follows: This study's theoretical contribution addresses five research issues formulated as research questions in this study that have been identified as unresolved by previous research. The methodological implications of this research prove that the use of structural equation modeling in quantitative research in a wide context in six countries is beneficial. The practical implications point out that the results of the study are essential to overcome the challenges of digitalization for SMEs in order to enable sustainability and financial performance indicators. Since the goal of this study was to assess how employees felt about the digitalization of their workplaces from the perspective of how they saw it affecting their self-efficacy as well as how they saw it affecting their anxiety due to their individual capacities to accept the changes that the digitalization process brought on the workplace. This research also offers social implications in order to close the identified research gap, primarily when it comes to the social aspect of organisational sustainability.

Also, our research was conducted in East European countries, including EU member states and non-EU states (e.g., Serbia), where the research on this and similar topics is not that evident in the recent literature.

Conclusions

Although digitalization has become increasingly essential for business processes, I4.0 brings various challenges for SMEs. This research aimed to analyse the relationship among employee attitudes towards digitalization, anxiety in a digitalized working environment, employee self-efficacy, and the direct impact on organisational sustainability and ability to achieve financial performance in their organisations. Hence, the findings of this research are drawn from the SEM methodology, which can provide a roadmap to managers and owners of SMEs and companies towards achieving sustainable financial performance.

Positive attitudes among employees towards digitalization can have a significant impact on self-efficacy in a digital working environment and reduce anxiety. When employees have a positive opinion about digitalization and accept the changes it brings, they are more likely to adapt to new technologies and processes effectively. Through positive attitudes and increased self-efficacy, firms can achieve sustainable business in the digital working environment. This means that they will be able to adapt to changes, continuously improve their processes, and achieve long-term competitiveness. Sustainable business in a digital environment can lead to various benefits, such as reducing costs, improving the quality of products and services, and more efficient management of resources, all of which contribute to achieving positive financial performance of SMEs. Hence, practical implications are reflected in creating guidelines for organisations, especially SMEs, to support employees in developing digital skills, provide training and education on new technologies, and facilitate their transition to a digital environment. Consequently, the management needs to create a positive work environment that encourages the acceptance of change and the development of a digital culture within the organisation.

The results elaborated in this manuscript present the initial insights revealed through the employees, managers, and owners' assessments, which are required to initiate potential strategic processes of organisational transformation in the context of I4.0 and sustainable digitalization. Leadership and change management are critical components in facilitating an organisation's effective transformation, particularly when navigating the complexities of Industry 4.0 and sustainable digitization. Both elements work in parallel to guide the organisation through the challenges of change, ensuring that the transformation is not only successful but also sustainable in the long term. To be able to achieve long-term success, it is mandatory for decision-makers to observe and collect the employees' attitudes toward their concerns and potential benefits that they recognize in the process.

Based on the results presented in this manuscript, operative managers and employees expressed a higher appreciation of the benefits of digitalization for overall organisational sustainability than senior managers and owners. This indicates that the structure of senior managers needs to improve their knowledge of possible sustainability improvements resulting from digitalization to be able to convince the owners to invest more in this direction. Basically, senior managers have to better understand the role of digitalization in sustainability and its practical implementation through leveraging external expertise, improving communication and organisational culture, continuous learning and adaptation, education, and training. This all has to be an additional element of strategic planning through cross-functional collaboration and further sustainability integration into the organisation's overall digital transformation strategy.

The main limitation of the research is related to the limited sample of investigated organisations in six countries, which may limit the generalisation of the results to a wider population. Therefore, the research could be expanded in the future to cover different sectors and the specifics of different industries in other contexts and countries. Furthermore, another limitation is reflected in the subjectivity of the measurement because the examination of respondents' attitudes relied on subjective evaluations, which led to a certain degree of bias in the answers. This limitation can be overcome by carefully measuring these factors and using appropriate methods to reduce subjectivity. Finally, the causal relationship between the observed factors may not be the only cause of an organisation's financial performance. This limitation can be easily overcome by looking at other factors that can affect the financial performance of the firms. In addition to obtaining the opinions of employees, managers, and owners, in order to achieve a successful organisational transformation, it would also be necessary to involve other stakeholders, such as customers and suppliers in the organisational supply chain, as well as the wider society, academic institutions, governments, etc., in the form of an open innovation approach.

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DARBUOTOJŲ POŽIŪRIO Į SKAITMENINĖS TRANSFORMACIJOS VEIKSNIUS ĮTAKA MVĮ TVARUMUI IR FINANSINIAMS REZULTATAMS

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Santrauka. Skaitmeninė transformacija dažniausiai analizuojama atsižvelgiant į technologinius aspektus. Šiame tyrime dėmesys sutelkiamas į MVĮ (angl. SME) darbuotojus ir nagrinėjami socialiniai įmonės skaitmeninės transformacijos elementai. Siekiant ištirti medijuojantį poveikį ryšiui tarp darbuotojų požiūrio ir jų nuomonės apie įmonių tvarumą ir finansinius rezultatus, taikytas struktūrinės lygties modelis. Patvirtinti visi nustatyti iškeltų hipotezių ryšiai. Nustatyta, kad teigiamas darbuotojų požiūris į skaitmeninimą gerina jų saviveiksmingumą skaitmenizuotoje darbo aplinkoje ir mažina jų nerimo lygį dėl tokių darbo vietų. Padidėjęs saviveiksmingumas ir sumažėjęs nerimas teigiamai veikia įmonės tvarumą, o tai teigiamai veikia finansinius veiklos rodiklius.

Reikšminiai žodžiai: skaitmeninimas; nerimas; saviveiksmingumas; tvarumas; finansiniai veiklos rodikliai; MVĮ.