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RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

PERCEIVED ADVANTAGES AND DISADVANTAGES OF DIGITAL TRANSFORMATION FOR EMPLOYEES: A QUALITATIVE STUDY FROM THE PERSPECTIVES OF PARTICIPANTS IN DIFFERENT ORGANIZATIONAL POSITIONS

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Abstract

The aim of this study is to examine the views of participants holding different organisational positions regarding the perceived advantages and disadvantages that digital transformation may present for employees. The study examines the potential effects of digital transformation initiatives on employees' work processes, skills, job security and working conditions, based on the participants' assessments. The study was designed using a qualitative research approach, and data were collected through semi-structured interviews with 28 participants holding various positions in different organisations where digital transformation processes were being implemented. The data were analysed using thematic analysis with the MAXQDA 24 software. The findings indicate that participants assessed the main benefits of digital transformation for employees as increased worker productivity, time savings, continuous learning, and the development of flexible working and remote working opportunities. Conversely, the fear of job loss, the digital divide, constant monitoring of employees, misuse of technology, the weakening of interpersonal relationships and digital dependency were identified as the main disadvantages highlighted by the participants. The research indicates that digital transformation should be assessed from the employees' perspective not only in terms of productivity and the improvement of business processes, but also in terms of job security, interpersonal relationships and digital competencies. In this regard, it is recommended that organisations prioritise training programmes aimed at developing employees' digital skills, initiatives that support human-technology collaboration, and the ethical and balanced use of technology within their digital transformation processes.

Keywords: *Digital Transformation, Strategic Management, Qualitative Research Methods.*

JEL Codes*: M10, M29, M51.*

1.INTRODUCTION

Digital transformation has become one of the most significant drivers of change in contemporary organizations. Rapid developments in artificial intelligence, automation, cloud computing, the Internet of Things, big data, and other digital technologies are transforming organizational processes, business models, and the way work is performed. Digital transformation is not limited

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to the adoption of new technologies; it also involves changes in organizational structures, managerial practices, employee competencies, and organizational culture. Accordingly, digital transformation should be considered a multidimensional process that affects both organizations and the individuals working within them (Morakanyane et al., 2017; Mergel et al., 2019; Kraus et al., 2021). The increasing integration of digital technologies into workplaces has generated significant opportunities for organizations and employees. Digital technologies can facilitate faster information processing, improve operational efficiency, reduce errors, support decision-making, and increase productivity. They can also enable organizations to redesign work processes and provide employees with new opportunities for learning and skill development. Brynjolfsson and McAfee (2014) argue that technological development can increase productivity while also contributing to the emergence of new forms of employment. Similarly, Cruz and Soeiro (2025) emphasize that digital transformation can provide employees with greater flexibility in working arrangements and opportunities to develop digital competencies. Leão and da Silva (2021) also indicate that digital transformation can increase organizational competitiveness and efficiency while expanding the geographical scope of business activities. Despite these opportunities, digital transformation can also create important challenges for employees. The introduction of automation and intelligent technologies may change job requirements, alter existing tasks, and increase uncertainty regarding employment. Employees may need to continuously develop new digital competencies in order to adapt to changing work environments. Differences in access to technology, digital skills, training opportunities, and organizational resources may consequently create a digital divide among employees. In addition, technology-supported monitoring, increased connectivity, cybersecurity risks, and the weakening of interpersonal interaction may generate further concerns. Tarafdar et al. (2013), for example, emphasize that technology-related organizational initiatives can have negative effects on employees. Thus, digital transformation should not be considered inherently beneficial or harmful; its consequences may vary depending on how technologies are introduced and managed within organizations.

The relationship between employees and technology is therefore becoming increasingly important in understanding the organizational consequences of digital transformation. Wilson and Daugherty (2018) emphasize that the highest levels of performance can be achieved when humans and machines collaborate effectively. From this perspective, digital technologies do not necessarily have to replace employees; instead, they may complement human capabilities and allow employees to focus on tasks requiring cognitive, creative, and problem-solving skills. However, the extent to which such human–technology collaboration produces positive outcomes may depend on employee competencies, organizational support, training, job redesign, and managerial practices. Consequently, the same technology may create productivity gains for some employees while generating uncertainty or pressure for others. Existing research has examined various consequences of digital transformation, including productivity, efficiency, innovation, flexibility, employee skills, job insecurity, and technology-related risks. However, these consequences are frequently examined separately. Research focusing on the positive effects of digital technologies tends to emphasize efficiency, productivity, learning, and flexibility, whereas studies examining potential negative effects often concentrate on job insecurity, digital inequality, surveillance, stress, or technology-related risks. This fragmented perspective makes it difficult to understand how positive and negative consequences may coexist within the same organizational transformation process.Furthermore, there is a need for research that considers the perspectives of different organizational actors when evaluating the potential effects of digital transformation on employees. Managers, engineers, technology professionals, and other organizational actors may observe changes in employee tasks, skills, productivity, working conditions, and job security from different positions within the organization. Examining these perspectives can provide insight into how digital transformation is interpreted at the organizational level. At the same time, such a perspective should not be confused with direct employee experience. Therefore, examining participants' perceptions and evaluations of the potential consequences of digital transformation for employees represents an important complementary approach to studies based exclusively on

employee self-reports. The present study addresses this research gap by examining the perceived advantages and disadvantages that digital transformation may create for employees from the perspectives of participants occupying different organizational positions. The study focuses on organizations operating in the production and energy sectors in Türkiye and includes participants with managerial, engineering, analytical, and other professional responsibilities. Rather than examining employees' direct lived experiences, the study investigates how these organizational participants perceive and evaluate the possible effects of digital transformation on employees' work processes, skills, job security, and working conditions.

The study is guided by the following research questions:

How do participants perceive and define digital transformation in the workplace?

What advantages do participants perceive digital transformation to provide for employees?

What disadvantages do participants perceive digital transformation to create for employees?

How do participants evaluate the effects of digital transformation on employees' work processes, skills, job security, and working conditions?

The study makes several contributions to the digital transformation literature. First, it examines perceived advantages and disadvantages within the same qualitative framework, allowing positive and negative consequences to be considered simultaneously rather than as separate outcomes. Second, it identifies potential connections between these consequences, particularly through changes in work processes, digital skill requirements, training, organizational support, job redesign, and management practices. Third, it provides evidence from production and energy organizations in Türkiye and incorporates perspectives from participants occupying different organizational positions. Finally, the study contributes to an employee-sensitive understanding of digital transformation by demonstrating that the effects of technological change depend not only on the technologies adopted but also on how organizations support employees during the transformation process. Accordingly, the study approaches digital transformation as an organizational and socio-technical change process rather than merely a technological investment. Understanding both its potential benefits and its possible risks is important for organizations seeking to improve productivity and efficiency while maintaining employee adaptability, job security, autonomy, learning opportunities, and well-being. In this context, the findings provide both theoretical implications for understanding the employee-level consequences of digital transformation and practical implications for organizations designing and implementing digital transformation initiatives.

2. LITERATURE REVIEW

Digital transformation applications are one of the most popular topics of recent times. This field has caused a great stir in the academic world. Many scientists are conducting research in this area. First, there are many conceptual definitions regarding the definition of digital transformation applications. In general, the definitions of digital transformation applications in the literature are as follows:

Digital transformation was initially viewed as technological change, but it involves not only technology but also the alignment of other factors such as strategy, people, culture, mindset, talent development, and leadership (Goran et al., 2017). Businesses incorporate digital transformation requirements into their strategies to maintain their position in competitive markets. By doing so, they respond to new opportunities and work to become resilient against risks. This practice highlights the importance of digital transformation in remaining competitive in the digital economy. Digital transformation also delivers *impactful* increases in efficiency, cost reductions, and innovations (Kraus et al., 2021). Digital transformation applications have the power to enhance the customer experience by providing additional data-driven insights for business

decisions. Digital transformation is important in that it brings superior collaboration to the business by providing valuable opportunities, agility, and alignment across all units of the company (Aghamiri et al., 2022). The emergence of digital transformation is a turning point in the business environment and triggers a tectonic shift away from traditional models toward technology-focused models. At the same time, the implementation of digital transformation is a socio-technical process (Agustian et al., 2023). Digital transformation is defined as the use of new digital technologies to achieve significant business improvements and changes, such as improving customer experience, streamlining operations, and creating new business models (Wenting & Yahya, 2024). There is no complete consensus on the definition of digital transformation. This is because some authors focus on increased operational efficiency, while others emphasize its improvement of decision-making processes. Indeed, other authors view it as a process that optimizes customer needs, providing a competitive advantage (Gong &Ribiere, 2021). There are several reports that determine the stance of businesses on digital transformation. According to the MIT Sloan Management Review Research Report (2013), 78% of managers and executives in various sectors believe that implementing digital transformation is critical for their organizations. The benefits of digital transformation for businesses are quite valuable. It contributes significantly to increasing efficiency, improving operational processes, personalizing the customer experience, facilitating decision-making processes, enabling faster action, minimizing error rates, flexible working, and integrated activities (Morakanyane et al., 2017; Mergel et al., 2019; Kraus et al., 2021). The effects of digital transformation are business-based, employee-based, and manager-based. This study focuses on the employee-based aspect.

While some scientists express negative views on the digital transformation application, others express a very important perspective. In this study conducted on businesses using the digital transformation application and their employees, the advantages that the digital transformation application provides to employees are listed below:

•Automation and cyber-physical systems enhance human performance by enabling tasks to be completed faster, reducing overall and cognitive workload, and minimizing errors during procedural transitions. As a result, technological advancements that reduce human errors provide an advantage through accurate predictions and scenario forecasting (Cheng et al., 2024).

•Digital technologies make solving routine problems easier. In particular, the Internet of Things ensures compatibility between all devices and enables faster movement. This leads to the development of continuous learning environments, which become productive through effective work (Pinchuk et al., 2019).

•Thanks to information technology, access to real data has become easier, enabling the provision of accurate guidance.Thus, it can help collect the right data to make the right decisions at the right time. Furthermore, it enables the organization to operate with lower costs, fewer errors, and better performance in the face of internal changes. Access to the right data is becoming easier thanks to digital Technologies (Mokhtar et al., 2020).

•Digital transformation significantly reduces paper usage by enabling the transition of document and archiving processes to an electronic environment within businesses. In particular, e-documents, e-signatures, and cloud-based document management systems reduce the need for printing, thereby lowering costs and contributing to environmental sustainability. This supports the more efficient use of resources, enabling businesses to develop an environmentally friendly and sustainable management approach (Van Nguyen et al., 2021).

•Digital transformation helps increase employee productivity by automating a significant portion of manual tasks. With heavy work being done by machines, employees are engaged in innovative

activities, and the importance of using cognitive skills is increasing. Employees are becoming more productive and efficient (Lee et al., 2024).

•Digital technologies enable businesses to operate with flexible hours and offer significant convenience to employees. Especially after the Covid-19 pandemic, flexible working has been a major factor in ensuring business continuity. The Covid-19 pandemic has accelerated the momentum of digital Technologies (Soga et al., 2024).

•Robots that can lift heavy objects and navigate their way around warehouses could eliminate the jobs of factory and warehouse workers. Thus, humans are turning to cognitive skills, and heavy work is being done by machines (Spencer, 2017). Thus, human-machine collaboration emerges. While humans engage in innovative activities, machines perform routine and repetitive tasks (Parker & Grote, 2022).

•Especially thanks to digital technologies, it is possible to prepare instant reports, perform instant checks, and conduct continuous monitoring. For businesses, this saves time and increases productivity. Digital technologies enable employees to use their time more effectively (Bogatyreva et al., 2020).

•Remote work is becoming increasingly common thanks to digital technologies. This has been made possible by the proliferation of digital platforms (e.g., Google Meet, Microsoft Teams, Zoom, Webex, and Moodle), along with email services, instant messaging applications, and social media. It is made possible by the proliferation of digital platforms that enable employees to communicate simultaneously and/or asynchronously outside the Office (Battisti et al., 2022).

There are those who have access to technology, those who use it effectively, and those who still do not have access to it. There is a gap between those who use technology effectively and those who do not have access to it. This is called the digital divide. The digital divide also varies due to factors such as effective use skills, infrastructure, and resources (Muhammad et al., 2025). Owning digital technology is quite costly. Therefore, those who cannot afford it are exposed to the digital divide. Maintaining an innovative attitude in the face of environmental changes is crucial for businesses (Muwani et al., 2022).

•With the proliferation of digital technology, employees are exposed to a great deal of technology. As a result, they become digitally dependent. Digital dependency leads to a decrease in socialization among employees and their integration into the virtual world. Consequently, the social aspect of human beings is suppressed (Nawaser et al., 2024).

•With the widespread adoption of digital transformation applications, people are also exposed to risks such as cyberattacks and misuse of personal data. Unethical uses such as the unauthorized collection of employee or customer data, artificial intelligence systems producing biased decisions against certain groups, and the establishment of a culture of control rather than trust are at issue. This is seen as a factor that employees find disturbing and cause for concern (Taçain, 2026).

•With digital transformation applications, employees are constantly monitored by machines and devices. This situation causes employees to experience anxiety and stress. Being under constant surveillance leads to a decline in performance (Rosengren et al., 2016).

•With machines and robots taking over routine and heavy tasks from humans, people are experiencing fear of losing their jobs. Indeed, technological developments are also leading to the emergence of new professions. In this situation, workers are experiencing fear of losing their jobs and becoming unemployed. Factories capable of unmanned production exist, and smart machines enable accurate decision-making. In this situation, people are experiencing anxiety (Prokopowicz, 2022).

•Remote work models, continuous screen-based work patterns, and social media usage can sometimes weaken people's social relationships. This is because individuals become more isolated, thereby reducing their social capital capacity (Sánchez-Bayón & Aznar, 2020).

3. METHODOLOGY

The purpose, significance, methodology, implementation and analysis of the research will be discussed here.

3.1. Purpose of the Study

The aim of this study is to examine the views and assessments of participants holding different organisational positions regarding the perceived advantages and disadvantages that digital transformation may present for employees. In this context, the study examines the potential effects of digital transformation initiatives on employees' work processes, skills, job security and working conditions, based on the participants' assessments. The unit of analysis in this study is the participants' perceptions, views and assessments regarding the potential effects of digital transformation on employees. Consequently, the study does not examine employees' direct experiences or lived experiences of digital transformation processes; rather, it aims to reveal the assessments of participants in different organisational positions regarding the potential advantages and disadvantages that may arise for employees. Accordingly, the findings obtained are interpreted not as generalised statements regarding the experiences of all employees, but as the perceptions and assessments of participants in different organisational positions regarding employees.

3.2. Population and Sample

The population of the study consists of employees working in organisations that utilise digital transformation applications. The sample comprises 28 participants employed across 10 different organisations operating in the manufacturing and energy sectors. The participants consist of individuals with varying roles and responsibilities.Purposive sampling was used to select the participants. Accordingly, the aim was to identify participants working in manufacturing and energy sector organisations that utilise digital transformation initiatives and who possess the knowledge and experience necessary to evaluate digital transformation processes. As part of the research, contact was made with various departments and branches of different organisations, and semi-structured interviews were conducted with participants who agreed to take part in the study. As a result of this process, a total of 28 participants from 10 different organisations were reached.

Care was taken to ensure that participants held different organisational positions, with the aim of obtaining diverse perspectives on the potential advantages and disadvantages of digital transformation from the employees' point of view. Of the 28 participants in the study, 18 were men and 10 were women. Eleven participants held postgraduate qualifications, whilst 17 were undergraduate graduates. The participants held various positions, including general manager, regional and deputy manager, production and maintenance manager, engineer, planning engineer, project engineer, process engineer, production engineer and data analyst. Data saturation was taken into account when determining the sample size. As the interviews and the concurrent coding process progressed, it became apparent that the participants' statements were largely consistent with the existing codes, and that new interviews did not reveal any new codes or significantly different themes. Consequently, it was assessed that data saturation had been reached following the 28th interview, and the data collection process was concluded.In this study, the participants' views were not interpreted as statements representing the direct experiences of the entire workforce. The participants' assessments reflect their perceptions of the potential advantages and disadvantages that digital transformation might entail for employees. Consequently, the research findings have been interpreted within the context of the assessments of participants working in

different organisations and organisational roles within the manufacturing and energy sectors, rather than as a representation or generalisation of the workforce as a whole.

Table 1. Participant Characteristics

Participants Number	Position	Gender	Education
P1	General Manager	Male	Bachelor's degree holder
P2	Planning Engineer	Male	Bachelor's degree holder
P3	General Manager	Male	Bachelor's degree holder
P4	Planning Engineer	Female	Doctorate degree holder
P5	Project Engineer	Female	Doctorate degree holder
P6	Project Engineer	Female	Master's degree holder
P7	General Manager	Male	Doctorate degree holder
P8	Data Analyst	Male	Bachelor's degree holder
P9	General Manager	Male	Bachelor's degree holder
P10	Process Engineer	Female	Bachelor's degree holder
P11	General Manager	Male	Bachelor's degree holder
P12	Regional Manager	Female	Bachelor's degree holder
P13	Engineer	Female	Bachelor's degree holder
P14	General Manager	Male	Master's degree holder
P15	General Manager	Male	Bachelor's degree holder
P16	General Manager	Male	Bachelor's degree holder
P17	Process Engineer	Female	Bachelor's degree holder
P18	Manufacturing Engineer	Male	Bachelor's degree holder
P19	Process Engineer	Male	Master's degree holder
P20	Assistant Manager	Male	Master's degree holder
P21	Engineer	Male	Bachelor's degree holder
P22	Production and Maintenance Manager	Male	Bachelor's degree holder
P23	Planning Engineer	Female	Doctorate degree holder
P24	Process Engineer	Male	Bachelor's degree holder
P25	Process Engineer	Female	Bachelor's degree holder
P26	Planning Engineer	Male	Master's degree holder
P27	Process Engineer	Female	Master's degree holder
P28	General Manager	Male	Master's degree holder

3.3. Method of the Research

The study applied a data analysis methodology using thematic analysis. This work utilized qualitative research methodologies and a thematic content analysis framework. To ensure comprehensive capture of qualitative data, interview transcripts were meticulously transcribed word for word and then saved as digital documents. The documents were subsequently loaded into MAXQDA 24 software, and analyses were conducted. The analytical process was carried out following a systematic six-step framework: familiarization with the data, initial coding, developing potential themes, reviewing and refining themes, defining and naming themes, and finally synthesizing and reporting findings (Huy & Phuc, 2025). The questions developed within the literature-based research framework are as follows (Gillani et al., 2024):

The research questions were formulated as follows:

How do participants define digital transformation?

What advantages do participants perceive digital transformation to provide to employees?

What disadvantages do participants perceive digital transformation to create for employees?

How do participants evaluate the effects of digital transformation on employees' work processes, skills, job security, and working conditions?

The study was approved by the Karamanoğlu Mehmetbey University Social and Humanıtıes Scıentıfic Research and publıcatıon ethıcs commıttee on february 18, 2026, with decision number 58.

The coding process was carried out on the basis of initial codes developed by drawing on the literature in line with the research aim and research questions. For this reason, a predominantly deductive coding approach was adopted in the study. Key elements highlighted in the literature regarding the potential advantages and disadvantages of digital transformation from the employees' perspective served as a guide in determining the initial codes. However, the analysis process was not limited solely to the pre-determined codes; new statements in the participants' responses that did not directly correspond to the initial codes but were deemed meaningful in terms of the research objective and questions were also taken into account during the coding process. This ensured that the literature-supported initial codes were evaluated in conjunction with the new meanings emerging from the data.

Following the coding process, codes sharing similar content and meaning were compared, and their scopes and points of divergence were reviewed. Related codes were grouped under higher-level themes, and the resulting themes were then compared with the data set once more. At this stage, the code-theme relationships, the internal consistency of the themes, and their alignment with the research questions were assessed. Finally, the themes were defined and named, and participant statements illustrating each theme were identified and used in the presentation of the findings.

3.4. Data Collection Technique

In the study, the interview technique, one of the qualitative data collection methods, was preferred.Interview questions prepared within the scope of the interview were directed. Additional explanatory information was included in the interview questions, and a semi-structured interview was conducted. Indeed, while providing additional information to the participant, some explanations can be made for clarity. In such cases, interviewers can extend the dialogue based on pre-formulated questions, allowing for a more in-depth exploration of the topic. The interviews were conducted face-to-face or via online meeting platforms such as Google Meet. In this context, permission was obtained to interview relevant companies, particularly business owners, managers, or individuals responsible for digital transformation. Subsequently, the identified individuals were contacted, and the questions were s hared with them in advance. After

this stage, interviews were conducted with the relevant individuals. A total of 28 individuals were interviewed, and discussions approximately nine hours. The recordings obtained from the interviews were first transcribed and then prepared for analysis. After this stage, the analysis was performed using MAXQDA 24 software, and the relevant frequency values were obtained and presented in the findings section with visual tables. A detailed literature review was conducted on the advantages and disadvantages of digital transformation applications on employees. Subsequently, the advantages of digital transformation applications were identified as the first theme, and the disadvantages of digital transformation applications as the second theme. After the themes, codes were created within the framework of the literature, and the codes and references are presented in the table below:

Table 2. The **Advantage Digital Transformation for Employees**

Codings	**References**
Minimizing human error	(Chrusciak et al., 2025)
Providing continuous learning environments	(Pinchuk et al., 2019)
Easy access to information	(Mokhtar et al., 2020)
Eliminating paperwork	(Van Nguyen et al., 2021)
Increasing employee productivity	(Marfriady, 2023)
Flexible working hours	(Rani &Furrer, 2021)
Machines performing heavy tasks	(Malik et al., 2021)
Saving time	(Lazaro-Aleman et al., 2020)
Remote working	(Battisti et al., 2022)

Table 3. The Disadvantages of Digital Transformation on Employees

Codings	**References**
Digital Divide	(Muwani et al., 2022); (Revak & Gren, 2022)
Digital Addiction	(Kamasak et al., 2026)
Malicious Use	(Stewart, 2023)
Constant Monitoring of Employees	(Kensbock & Stöckmann, 2021)
Fear of Losing One's Job	(Dengler & Gundert, 2021)
Weakening of Human Relations Within the Company	(Rodriguez-Lluesma et al., 2021)

3.5. Validity and Reliability

To enhance the validity of qualitative research, researchers emphasize fundamental criteria such as reliability, transferability, dependability, and confirmability (Guba and Lincoln, 1982). This study places particular emphasis on these four criteria. On the other hand, three types of reliability processes have been identified in qualitative studies: stability, repeatability, and accuracy. This study has adhered to these processes (Krippendorff, 2019). In order to enhance the reliability of the study, inter-coder agreement was assessed following the coding process. The coding scheme and coding criteria developed by the researcher were presented to another expert, who was asked to independently recode the same dataset. The researcher’s codes were compared with those

produced by the expert. The comparison revealed that 13 out of a total of 15 coding units were coded exactly the same way; one coding unit was coded differently; and in one coding unit, the codes were found to be semantically similar. The coding unit with semantically similar codes was also considered to be in agreement, and it was thus observed that agreement was achieved in 14 out of the 15 coding units. Accordingly, the inter-coder agreement rate was calculated as 93.33 per cent (14/15). The coding unit showing a discrepancy was re-evaluated; during this process, the scope, definitions and criteria for distinguishing between the relevant codes were reviewed.

This process of comparison and re-evaluation contributed to verifying the consistency of coding decisions and to making the coding framework clearer and more systematic. The achieved consistency rate of 93.33 per cent supports the finding that the coding framework used in the study demonstrated a high level of consistency.

3.6. Findings

Twenty-eight employees working in organizations undergoing digital transformation were interviewed to explore their perceptions and evaluations regarding the advantages that digital transformation may provide to employees. First, nine codes were assigned to the theme of the advantages that the digital transformation application provides to employees. These codes are*: minimizing human error, providing continuous learning environments, easy access to information, eliminating paperwork, increasing employee productivity, flexible working hours, machines performing heavy tasks, saving time, and remote working.*

Table 4. The Advantage Of Digital Transformation For Employees Code Frequency Values

Advantages	Frequency (Participants)	Percentage (%)
Easy access to information	2	7.14
Eliminating paperwork	2	7.14
Machines performing heavy tasks	2	7.14
Flexible working hours	3	10.71
Minimizing human error	6	21.43
Remote work	6	21.43
Providing continuous learning environments	7	25.00
Saving time	8	28.57
Increasing employee productivity	9	32.14
TOTAL	**45***	**160.71***

Note: Frequency values indicate the number of participants who mentioned each advantage. Since participants could mention more than one advantage, the frequencies and percentages are not mutually exclusive and therefore their totals may exceed the number of participants and 100%, respectively. Percentages were calculated based on the total number of participants (n = 28).

Among the perceived advantages of digital transformation for employees, increasing employee productivity was the most frequently mentioned benefit, with 9 participants (32.14%) referring to this advantage. Saving time was mentioned by 8 participants (28.57%), while 7 participants (25.00%) emphasized the provision of continuous learning environments. Remote work and minimizing human error were each mentioned by 6 participants (21.43%). Flexible working hours were mentioned by 3 participants (10.71%), whereas easy access to information, elimination of paperwork, and machines performing heavy tasks were each mentioned by 2 participants (7.14%).

Below are the participants' statements:

P21: "They gain the ability to work faster and more efficiently."

P3: "It increases productivity. Technologies such as cloud computing save time in all kinds of business operations and increase efficiency."

P2: "Employees have access to flexible working hours thanks to digital technology. This is possible through online and remote work. They also have the opportunity to constantly monitor their work because data is continuously collected. Most importantly, I believe that machines should handle heavy tasks, allowing employees to focus on lighter tasks."

P7: "Reducing the workload on employees speeds up data preparation and usage. It offers the opportunity to work without being tied to a specific location. This creates more flexible working opportunities."

P26: "It reduces the rate of human error, saves employees time, and increases employee productivity."

P9: "Employees receiving training during the transformation process and developing themselves at the same time. Increased comfort. Increased value due to their involvement in managing the transformation."

P16: "It speeds up access to information and decision-making processes. Digitizing manual and repetitive tasks enables processes to be carried out both faster and error-free, saving time and increasing efficiency. It ensures work-life balance. (It can enable working in a hybrid system.) It reduces workplace accidents."

P25: "They can adapt to technology and seize the opportunity to improve themselves. Not only can their tasks in the process be defined more easily, but we may also be able to reduce the possibility of alienation to a certain extent."

The disadvantages of the digital transformation application were explored by asking twenty-eight participants questions through interviews. The participants' statements are grouped around six codes. Under the theme of the disadvantages that the digital transformation application has brought to employees: "digital divide, digital addiction, malicious use, constant monitoring of employees, fear of losing one's job, and weakening of human relations within the company."

Table 5. The Disadvantage Of Digital Transformation For Employees Code Frequency Values

Disadvantages	Frequency (Participants)	Percentage (%)
Digital Addiction	2	7.14
Weakening of Human Relations Within the Company	3	10.71
Constant Monitoring of Employees	5	17.86
Malicious Use	5	17.86
Digital Divide	8	28.57
Fear of Losing One's Job	11	39.29
TOTAL	**34***	**121.43***

Note: The total frequency is 34, as participants were able to mention more than one disadvantage. Consequently, the sum of the frequencies may exceed 28 participants, whilst the sum of the percentages may exceed 100 per cent. The percentages have been calculated based on n = 28.

Regarding the perceived disadvantages of digital transformation for employees, fear of losing one's job was the most frequently mentioned disadvantage, with 11 participants (39.29%) referring to this issue. The digital divide was mentioned by 8 participants (28.57%). Constant monitoring of employees and malicious use were each mentioned by 5 participants (17.86%). Weakening of human relations within the company was mentioned by 3 participants (10.71%),

while digital addiction was mentioned by 2 participants (7.14%).Below are the participants' statements regarding this topic:

P25: "Not every employee may have the knowledge and skills to integrate into digital transformation, which can create difficulties for employees in this regard"

P15: "It may lead to potential job loss. Data security issues may arise. Employees may be unable to adapt due to their digital inadequacies. If any data is incorrect, it may result in significant financial loss and lead to job loss."

P7: "From the perspective of employees, it carries risks such as increased risk of job loss, insufficient training for those who can use digital technologies, weakening of work-related relationships, reduced communication, and digital dependency."

P22: "Vulnerability to cyber attacks means there is a possibility of information theft. The lack of training means that not everyone has knowledge or experience in this area."

P19: "Feeling pressured by being systematically monitored. Accurate evaluation results based on thorough analysis of performance data from the entire historical data archive. No margin for error, as everything is known, from the duration of the bathroom break to the machine's production capacity per second. Suppression of the individual's level of freedom."

P1: "I'd like to list the first things that come to mind: job security concerns, workload stress, and weakening human relationships."

P14: "Digital transformation puts pressure on employees to constantly adapt to change and can also lead to negative consequences such as fear of losing one's job and disruption of work-life balance."

P18: "Individuals who are unable to adapt may experience increased job insecurity, performance pressure, and psychosocial risks."

4. DISCUSSION

The findings reveal that, from the participants' perspectives, digital transformation creates both important opportunities and potential risks for employees. The perceived advantages are primarily associated with productivity, time savings, continuous learning, flexibility, human error reduction, and the redistribution of physically demanding tasks, whereas the perceived disadvantages are concentrated around job security, digital skills, employee monitoring, data security, interpersonal relationships, and psychosocial well-being. These findings are broadly consistent with previous research showing that digital transformation affects not only organizational processes and technological infrastructure but also employees and the nature of work (Morakanyane et al., 2017; Mergel et al., 2019; Kraus et al., 2021). However, the present study extends this literature by demonstrating that the positive and negative consequences of digital transformation may emerge simultaneously and may be interconnected through organizational implementation practices.

Among the perceived advantages, increasing employee productivity was the most frequently mentioned, with 9 participants (32.14%) referring to this benefit. Participants associated productivity gains with employees' ability to perform their tasks faster and more efficiently. As P21 stated, "They gain the ability to work faster and more efficiently." Similarly, P3 emphasized that "It increases productivity. Technologies such as cloud computing save time in all kinds of business operations and increase efficiency." These findings are consistent with Lee et al. (2024), who emphasized that automation and digital technologies can increase employee productivity by reducing manual tasks and allowing employees to focus on more cognitive and innovative activities. The findings also support the broader literature associating digital transformation with efficiency and process improvements (Morakanyane et al., 2017; Kraus et al., 2021). Thus, from

the participants' perspectives, the employee-level value of digital transformation is strongly associated with improvements in the speed and efficiency of work processes.

Saving time was the second most frequently mentioned advantage, with 8 participants (28.57%) referring to this issue. Participants particularly associated time savings with the digitalization and automation of manual and repetitive activities. P16 explained that "Digitizing manual and repetitive tasks enables processes to be carried out both faster and error-free, saving time and increasing efficiency." This finding is consistent with Bogatyreva et al. (2020), who noted that digital technologies facilitate real-time reporting, checking, and information processing, thereby enabling employees to use their time more effectively. The present findings further indicate that productivity gains and time savings are closely related rather than independent outcomes. Productivity appears to be achieved partly through the redistribution of employees' time away from repetitive activities toward other work activities. Therefore, digital transformation may change the content and organization of work rather than simply accelerate existing processes.

Continuous learning was mentioned by 7 participants (25.00%) and represents another important dimension of the perceived benefits of digital transformation. P9 stated that employees can receive training during the transformation process and "develop themselves at the same time." Similarly, P25 emphasized that employees can "adapt to technology and seize the opportunity to improve themselves." These findings are consistent with Pinchuk et al. (2019), who associated digital technologies with continuous learning and the development of more effective work environments. More importantly, the present findings establish a direct relationship between learning opportunities and the risks associated with digital transformation. Continuous learning may enable employees to adapt to technological change, whereas insufficient digital skills may increase the risk of digital exclusion and job insecurity. Employee learning can therefore be interpreted as an important mechanism through which organizations may transform technological change from a potential threat into an opportunity for employee development.

Reducing human error was mentioned by 6 participants (21.43%). P26 stated that digital transformation "reduces the rate of human error, saves employees time, and increases employee productivity." P16 similarly noted that digitized processes can be carried out "both faster and error-free." These findings are consistent with Cheng et al. (2024), who emphasized that automation and cyber-physical systems can enhance human performance by reducing errors and cognitive workload. They also complement research emphasizing the efficiency-enhancing role of digital technologies (Morakanyane et al., 2017; Kraus et al., 2021). In the present study, error reduction appears as part of a broader chain in which automation reduces repetitive manual activities, decreases the likelihood of errors, saves time, and ultimately contributes to productivity. Digital technologies are therefore perceived not merely as substitutes for human activities but also as mechanisms for supporting employees in performing work more accurately.

Remote work was mentioned by 6 participants (21.43%), while flexible working hours were mentioned by 3 participants (10.71%). Participants perceived digital technologies as enabling employees to work independently of a specific physical location. P7 stated that digital transformation "offers the opportunity to work without being tied to a specific location" and that this "creates more flexible working opportunities." P2 similarly emphasized that employees can access flexible working hours through digital technologies and associated this possibility with online and remote work. These findings are consistent with Battisti et al. (2022), who emphasized the role of digital platforms in enabling employees to communicate and work independently of physical location, and with Soga et al. (2024), who highlighted the acceleration of digital technology adoption and flexible working following the COVID-19 pandemic. The findings therefore support the view that digital transformation can change not only what employees do but also where and when they work.

However, flexibility does not necessarily produce exclusively positive outcomes. Although remote work and flexible working arrangements may provide greater autonomy and convenience,

P14 stated that digital transformation "puts pressure on employees to constantly adapt to change" and may cause "disruption of work-life balance." This apparent contradiction demonstrates that the consequences of digital technologies depend partly on how organizational practices shape their use. Flexibility may become an employee benefit when accompanied by clear work boundaries and autonomy, whereas continuous connectivity and expectations of constant availability may increase work pressure. Consequently, the relationship between digital transformation and work-life balance should be understood as conditional rather than inherently positive.

Another perceived advantage concerns the redistribution of physically demanding tasks from employees to technological systems. P2 stated that "machines should handle heavy tasks, allowing employees to focus on lighter tasks." This finding is compatible with Spencer (2017) and Parker and Grote (2022), who discussed the redistribution of tasks between humans and machines and the increasing importance of human cognitive capabilities in technology-intensive work environments. Lee et al. (2024) similarly emphasized the potential of automation to reduce manual work and allow employees to focus on more value-adding activities. The present finding therefore supports a human–technology collaboration perspective in which automation does not necessarily imply complete human replacement. Instead, technology may contribute to job redesign by transferring physically demanding or repetitive activities to machines while increasing the relative importance of cognitive, creative, and innovative capabilities.

Despite these perceived advantages, the findings reveal substantial concerns regarding the consequences of digital transformation for employees. Fear of losing one's job was the most frequently mentioned disadvantage, with 11 participants (39.29%) referring to this issue. P15 stated that digital transformation "may lead to potential job loss" and that employees may be unable to adapt because of "their digital inadequacies." P18 similarly noted that "Individuals who are unable to adapt may experience increased job insecurity, performance pressure, and psychosocial risks." These findings are consistent with Prokopowicz (2022), who argued that automation and intelligent machines may generate concerns about employment even when technological developments create new occupations. The present study adds an important employee-oriented dimension to this argument by indicating that job insecurity may arise not only from direct technological substitution but also from employees' perceived inability to adapt to changing technological requirements.

The digital divide was the second most frequently mentioned disadvantage, with 8 participants (28.57%) referring to this issue. P25 emphasized that "Not every employee may have the knowledge and skills to integrate into digital transformation," while P22 stated that "The lack of training means that not everyone has knowledge or experience in this area." These findings are consistent with Muhammad et al. (2025), who associated the digital divide with differences in access, infrastructure, resources, and the ability to use digital technologies effectively. The present study extends this discussion by demonstrating how digital inequality may become connected to employment-related outcomes. Employees with stronger digital competencies may adapt more easily, whereas employees with limited competencies may experience greater uncertainty, performance pressure, and job insecurity. Thus, the digital divide may function as an important mechanism connecting technological transformation with unequal employee outcomes.

The relationship between job security and digital skills is therefore particularly important. The findings indicate that productivity-enhancing technologies and automation are perceived positively when they support employees, but they may also create anxiety when employees interpret technological change as a potential threat to their employment. This creates a dual effect: the same technologies that improve productivity and reduce routine work may also increase concerns about job replacement. This finding is relevant to the human–machine collaboration perspective of Wilson and Daugherty (2018). While their perspective emphasizes the potential of technology to augment human capabilities, the present findings indicate that augmentation alone may not eliminate employee concerns. The perceived outcome depends partly on whether

employees are supported in developing the capabilities required to work effectively with new technologies.

The findings consequently suggest a mechanism through which positive and negative consequences may emerge simultaneously. Digital transformation introduces new technologies; these technologies change work processes and task requirements; employees consequently require new digital competencies; employees who receive adequate training and organizational support may experience greater productivity, learning opportunities, and adaptability; whereas employees who lack such support may experience digital exclusion, performance pressure, and job insecurity. Accordingly, the consequences of digital transformation are shaped not only by the technology itself but also by organizational practices concerning training, communication, participation, job redesign, and change management.

Constant monitoring of employees was mentioned by 5 participants (17.86%). P19 provided a detailed account of this concern, stating that employees may feel "pressured by being systematically monitored." The participant further emphasized that extensive performance data can create "no margin for error" and may lead to the "suppression of the individual's level of freedom." This finding is consistent with Rosengren et al. (2016), who associated continuous surveillance with anxiety and stress. At the organizational level, digital monitoring may improve access to performance information and support control and decision-making. However, from the employee perspective, intensive monitoring may be experienced as surveillance and may reduce perceived autonomy. This finding therefore demonstrates another form of duality: the same digital capability can generate organizational efficiency while creating employee-level psychological pressure.

The misuse of technology was also mentioned by 5 participants (17.86%). P22 highlighted vulnerability to cyberattacks and the possibility of information theft, while P15 referred to data security problems and the potential financial consequences of incorrect data. These findings are consistent with Taçain (2026), who emphasized risks associated with unauthorized data collection, biased algorithmic decisions, and control-oriented uses of digital technologies. The present findings suggest that employee-related risks of digital transformation extend beyond employment and skills to include privacy, cybersecurity, trust, and ethical technology use. Accordingly, digital skills development should encompass not only operational technology use but also cybersecurity awareness, data protection, and responsible digital practices.

The weakening of human relationships within the company was mentioned by 3 participants (10.71%), while digital addiction was mentioned by 2 participants (7.14%). Although these issues were less frequently mentioned than productivity, job security, or digital skills, they demonstrate that digital transformation also has a social dimension. P7 referred to the "weakening of work-related relationships, reduced communication, and digital dependency," while P1 identified "job security concerns, workload stress, and weakening human relationships" among the first consequences associated with digital transformation. These findings are broadly consistent with Nawaser et al. (2024), who discussed digital dependency and its potential effects on socialization, and Sánchez-Bayón and Aznar (2020), who emphasized that remote and screen-based work patterns may weaken social relationships and social capital. The relatively lower frequency of these concerns should not be interpreted as evidence that they are unimportant; rather, it indicates that participants placed greater emphasis on immediate operational and employment-related consequences.

The coexistence of these findings is particularly important in the Turkish organizational context. Digital transformation in Türkiye takes place across organizations with potentially different levels of technological infrastructure, digital maturity, financial resources, workforce capabilities, and readiness for change. Consequently, employees may not experience technological transformation uniformly. The findings suggest that the organizational context in which digital technologies are introduced is important in determining whether employees primarily perceive transformation as

an opportunity for development or as a source of uncertainty. This interpretation is especially relevant for production and energy organizations, where automation, data-driven processes, and technology-supported work may directly alter task structures and skill requirements. Rather than assuming that digital transformation produces universal employee outcomes, the findings indicate that these outcomes are likely to vary according to organizational preparedness and the extent to which employees are supported during the transition.

The characteristics of the participants should also be considered when interpreting the findings. The study did not focus exclusively on employees describing their own lived experiences; instead, participants occupied different organizational positions, including managerial and professional roles. This perspective may partly explain why productivity, efficiency, process improvement, and technological adaptation are particularly visible among the perceived advantages. At the same time, participants also recognized employee-centered risks such as job insecurity, digital skill deficiencies, monitoring pressure, and psychosocial risks. Thus, the managerial and professional composition of the sample represents an important interpretive dimension of the study. The findings should be understood as participants' perceptions and evaluations of the possible effects of digital transformation on employees rather than as direct evidence of all employees' lived experiences. This distinction differentiates the present study from research based exclusively on employee self-reports.

Taken together, the findings demonstrate that the advantages and disadvantages of digital transformation are interconnected rather than independent. Increased productivity may coexist with job insecurity; continuous learning opportunities may help reduce the digital divide; automation may reduce physical workload while simultaneously creating concerns about job replacement; and remote work may provide flexibility while creating challenges for work-life boundaries and interpersonal interaction. Digital monitoring provides another example of this duality, as the same data-driven capability can improve organizational control while increasing employees' perceptions of surveillance and pressure. These relationships indicate that employee outcomes are shaped not only by the technological characteristics of digital transformation but also by how technologies are implemented, communicated, governed, and supported within organizations.

Accordingly, the findings support a shift from a technology-centered understanding of digital transformation toward an employee-sensitive and organizationally embedded perspective. The literature has demonstrated that digital technologies can enhance efficiency, productivity, learning, and human–machine collaboration (Morakanyane et al., 2017; Lee et al., 2024; Parker & Grote, 2022; Wilson & Daugherty, 2018). The present study complements this perspective by demonstrating that these benefits may coexist with job insecurity, digital inequality, surveillance, data-security concerns, and psychosocial risks. The findings therefore indicate that the consequences of digital transformation cannot be adequately understood by considering technological adoption alone. Instead, attention should also be given to changes in work processes, skill requirements, job structures, employee autonomy, and organizational support mechanisms.From a managerial perspective, digital transformation should consequently be managed as an organizational change process rather than merely as a technological investment. Organizations should provide continuous digital skills development, communicate transparently about changing job roles, involve employees in technology-related changes, support human–technology collaboration, and establish ethical principles for digital monitoring and data use. Such practices can help organizations capture the productivity and efficiency benefits of digital transformation while reducing risks associated with job insecurity, digital inequality, excessive monitoring, and employee well-being. Successful digital transformation therefore requires not only technological capability but also organizational and human capability to manage the consequences of technological change.

4.1. Theoretical and Practical Contributions and Originality of the Study

The main original contribution of this study is to demonstrate that the employee-related consequences of digital transformation should not be understood as exclusively positive or negative. Instead, the findings indicate that benefits and risks may emerge simultaneously and may be interconnected through changes in work processes, employee skills, job structures, and organizational management practices. This perspective moves beyond a simple classification of advantages and disadvantages by explaining how the same technological development may generate different outcomes depending on the organizational conditions under which it is implemented. For example, automation may increase productivity, reduce human error, and transfer physically demanding tasks from employees to machines, while at the same time increasing concerns about job replacement. Similarly, digital transformation may create continuous learning opportunities for employees while increasing the disadvantages experienced by employees who lack the required digital skills. Remote work and flexible working arrangements may increase autonomy and convenience but may also create work-life boundary problems and weaken interpersonal interaction. Digital monitoring provides another example: the same data-driven capability that can improve organizational control and performance assessment may also generate perceptions of surveillance, pressure, and reduced autonomy. These interconnected relationships constitute a central original contribution of the study. A second contribution concerns the empirical context and participant perspective. The study examines organizations operating in the production and energy sectors in Türkiye and incorporates perceptions from participants occupying different organizational positions. This context is important because digital transformation does not occur in an institutional or organizational vacuum. Technological infrastructure, digital maturity, financial resources, workforce capabilities, managerial practices, and readiness for change may influence how technological transformation is perceived and experienced. Furthermore, the inclusion of managers, engineers, and other professionals complements research based exclusively on employee self-reports by revealing how organizational actors evaluate the possible employee-level consequences of digital transformation.

The relatively limited number of studies integrating these dimensions may have several possible explanations. First, digital transformation research has historically placed substantial emphasis on technological adoption, organizational performance, innovation, efficiency, and business-model transformation. Second, employee-related consequences are often examined through separate research streams focusing on specific issues such as job insecurity, digital skills, remote working, surveillance, or well-being. Consequently, the simultaneous examination of employee-related benefits and risks within a single qualitative framework remains relatively less common. Third, studies involving participants from different organizational positions may require access to multiple organizational levels and therefore may be comparatively difficult to conduct. These factors may partly explain why research examining the multidimensional employee consequences of digital transformation through diverse organizational perspectives remains limited.

From a theoretical perspective, the findings support an understanding of digital transformation as an organizational and socio-technical change process rather than merely a technological investment. The results demonstrate that technological change can alter the distribution of tasks, the skills required to perform work, the mechanisms through which employee performance is monitored, and the nature of interaction among employees. In this process, human–technology collaboration, employee learning, job redesign, and organizational support become important mechanisms shaping employee outcomes. The study therefore contributes to the digital transformation literature by connecting the efficiency-oriented and employee-oriented dimensions of technological change within a single interpretive framework.

The study further contributes theoretically by identifying a possible mechanism linking positive and negative employee outcomes. Digital transformation changes work processes and task requirements, which increases the importance of digital competencies. Organizational training,

communication, participation, and support can facilitate employee adaptation to these changes. Successful adaptation may contribute to productivity, learning opportunities, flexibility, and improved working conditions. Conversely, insufficient training and limited digital capabilities may contribute to digital exclusion, performance pressure, job insecurity, and other psychosocial risks. This mechanism suggests that employee outcomes are shaped not only by the technologies organizations adopt but also by the organizational practices surrounding implementation and adaptation.

The practical contribution of the study is particularly relevant to managers responsible for digital transformation. First, organizations should establish continuous digital skills development programs rather than relying solely on one-time technology training. Second, managers should communicate transparently about how digital transformation will affect job roles and responsibilities in order to reduce uncertainty and unnecessary job-security concerns. Third, organizations should prioritize human–technology collaboration and job redesign strategies that allow technology to complement employees' cognitive and creative capabilities rather than focusing exclusively on labor substitution. Fourth, digital monitoring systems should be implemented according to clear ethical principles, with appropriate limits concerning privacy, autonomy, transparency, and responsible data use. Finally, organizations should consider employee well-being, work-life boundaries, and interpersonal relationships when designing digitally intensive work environments.

These contributions also provide directions for future research. Future studies could compare employees' direct experiences with managers' and other professionals' perceptions to determine whether these groups interpret the consequences of digital transformation differently. Quantitative studies could test the relationships among digital skills, training opportunities, job insecurity, productivity, employee autonomy, and well-being. Longitudinal research could examine whether initial concerns about job loss and technological adaptation decrease as employees acquire new competencies and become familiar with new work systems. Comparative studies across sectors and countries could further determine whether the dual nature of digital transformation varies according to technological maturity, organizational context, workforce characteristics, and institutional conditions. Overall, the study contributes to the literature by presenting digital transformation as a multidimensional organizational process in which technological opportunities and employee risks are not mutually exclusive. Its originality lies particularly in connecting productivity, efficiency, learning, flexibility, human–technology collaboration, job insecurity, digital inequality, monitoring, and psychosocial risks within a single qualitative interpretation. The findings therefore suggest that the success of digital transformation should be evaluated not only according to technological adoption or organizational performance but also according to the extent to which organizations enable employees to adapt, develop, participate, and work with technology under fair and sustainable conditions.

5. CONCLUSION

This study examined the perceived advantages and disadvantages of digital transformation for employees from the perspectives of participants occupying different organizational positions. The study does not claim to represent employees' direct lived experiences; rather, it examines how participants evaluate the potential consequences of digital transformation for employees. This distinction is important when interpreting the findings and defining the scope of the study.The findings demonstrate that digital transformation is perceived as a multidimensional process with both positive and negative consequences. The most frequently identified advantages were increased employee productivity, time savings, continuous learning opportunities, remote work, and reduced human error. These findings indicate that digital technologies may improve employee performance by reducing repetitive activities, accelerating work processes, supporting learning, and enabling more flexible working arrangements. At the same time, the findings reveal important employee-related risks. Fear of losing one's job was the most prominent perceived disadvantage, followed by the digital divide, constant employee monitoring, malicious use of

technology, weakening of human relationships, and digital addiction. The prominence of job insecurity and digital skills demonstrates that the benefits of digital transformation may not be distributed equally among employees. Employees' ability to adapt to technological change appears to be an important condition shaping whether digital transformation is experienced as an opportunity or a threat.

The study also highlights the coexistence of apparently contradictory outcomes. Digital technologies may increase productivity while simultaneously generating job security concerns; they may provide continuous learning opportunities while also creating a digital divide; and they may enable remote and flexible work while potentially creating pressure that affects work–life balance. These findings suggest that the consequences of digital transformation are determined not solely by the adoption of technology but also by how organizations manage technological change and integrate it into employees' work.The study contributes to the literature by bringing together the efficiency-related and employee-related dimensions of digital transformation and by highlighting their interdependence from the perspectives of participants working in different organizational positions. The findings from production and energy-sector organizations in Türkiye particularly emphasize the importance of digital skills, job security, human–technology collaboration, and responsible technology management. In this respect, the study demonstrates that digital transformation should be considered simultaneously as a technological, organizational, and employee-related transformation process. From a managerial perspective, organizations should accompany technological investments with continuous digital skills development, transparent communication about changing job roles, appropriate human–technology collaboration, and ethical technology governance. Particular attention should be given to employees who may experience difficulties adapting to new technologies or who perceive automation as a threat to job security. Organizations should also ensure that digital monitoring systems are implemented proportionately and transparently to prevent technological control from becoming a source of excessive pressure.

The study has several limitations. First, the findings are based on 28 participants working in 10 organizations operating in the production and energy sectors in Türkiye. Therefore, the findings should not be generalized to all employees, organizations, or sectors. Second, the study examines participants' perceptions and evaluations rather than employees' direct lived experiences. Future research could address this limitation by combining managerial and other organizational perspectives with direct employee interviews or quantitative surveys. Third, future studies could investigate how employees' psychological responses, motivation, organizational commitment, job security perceptions, and digital competencies change throughout digital transformation processes. Longitudinal studies could also examine whether perceptions of digital transformation change as employees and organizations gain greater experience with new technologies.

Future research could further compare different sectors and organizational contexts to determine whether the relationship between technological transformation, employee skills, job security, and well-being varies across industries. Comparative research could also examine whether organizations that emphasize human–machine collaboration and employee development experience more positive employee outcomes than organizations that primarily emphasize automation and efficiency. Such studies would contribute to a deeper understanding of the organizational conditions under which digital transformation can create sustainable value for both organizations and employees.

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