

Digital transformation of small and medium enterprises in European union harmonization process: a comparison between Turkey and Romania

Abstract

This paper aims to compare the digital transformation processes of Small and Medium-sized Enterprises (SMEs) in Turkey and Romania. With the increasing importance and impact of digital technologies, the digitalization process of SMEs has become critical to gain competitive advantage and achieve sustainable growth. Our aim in the study is to analyze the importance of digital transformation for SMEs, the advantages and disadvantages that this transformation provides to them by comparing a country that is full member of the European Union and another country that is in the process of accession, providing a valuable overview for policy makers, business owners and other relevant stakeholders to understand and improve the digital transformation process in both countries. The paper provides recommendations to encourage and support further research on the digital transformation of SMEs in Turkey and Romania.

Keywords: European Union, small and medium enterprises, digital transformation, digitalization

Volume 8 Issue 6 - 2024

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Received: November 10, 2024 | **Published:** November 25, 2024

Introduction

Turkey is a country in the process of negotiations for full membership to the EU, while Romania became a full member in 2007. Both countries are trying to strengthen their relations with the European Union and strive for harmonization with EU standards. This common goal shows that Turkey and Romania are moving in similar directions in the process of European integration.¹ SMEs, which constitute 99.8% of enterprises in the European Union and about two-thirds of employment, have an important place in economic life. The task of meeting the needs and demands of SMEs, which have a large share in the country's economy with their contributions such as: production, exports, effective resource utilization and resource creation, that encourage growth with a sustainable circular economy, especially in job creation is possible with government policies and supports.² The digital transformation and technologies are increasingly taking up a large place in our lives. It is observed that access to and use of these technologies not only in our daily lives but also in many sectors can be effective in companies' choice of new strategies or new business models.³ In today's economy, the rapid development in communication and transportation technologies has brought about fierce and intense competition. The most important competitive advantage for SMEs, which strive to gain an advantage in the field of competition, is undoubtedly the access and use of digital technologies.⁴

Traditional business models are constrained to adapt to today's constant changes and macro and micro economic dynamics. Digitalization has become an absolute necessity for SMEs from Turkey and Romania, whose activities are increasing and who want to increase their revenues and remain competitive in today's environment. This is an extremely important issue for the economic and social development of Turkey and Romania. Today, as a result of declining profits, rapid changes in the market and ever-increasing consumer expectations, companies are starting to evaluate different digital systems that have proven to be highly effective in increasing companies' competitive

sustainability and profit margins. The Accenture research shows that digitalization has the potential to increase average profitability by 38% by 2035.⁵

Businesses that have succeeded in integrating these digital technologies into their production processes have adopted the smart factory model production by interacting with products and machines unmanned for a more efficient and leaner production.⁶ This means that programs can independently execute given commands even without human intervention. A perfect example of this are autopilot cars or robots equipped with "artificial intelligence". Also in Turkey and Romania, in the European Union harmonization process, modern technology is closely related and dependent on access to data. Due to the constant increase in data flow, machine learning systems, cost reduction and innovations are becoming a business reality, the order of the day, and digitalization practices enable completely new business models. The governments of those two countries Turkey and Romania needs to reformulate policies to create an enabling environment for SMEs to embark on the digital transformation journey and provide support through incentives and grants to ensure compliance. It should develop policies and laws to encourage SMEs to rapidly channel new technologies that help them in today's business world, as well as to support them in reducing their financial burden by reducing existing infrastructure problems and facilitating access to digital technologies.⁷

The aim of this study is to make a comparative analysis of the role of SMEs, in their digital transformation journey in Turkey - a candidate country for EU membership and Romania - a full member.

Historical development and milestones of digitalization

Digitalization process

Digitization dates back to antiquity, when clay and wax tablets were replaced by papyrus, parchment and then paper in today's sense. This allowed information to be recorded manually. Later, with the invention of the mechanical typewriter, letters, symbols and numbers were transferred to paper with the help of an ink ribbon by pressing

keys. Electric and electronic versions followed. The most important development that paved the way for major developments in the digital transformation process was the invention of the computer.⁸ Tübitak defines Digital Transformation in its most general sense as “the process of using digital technologies such as the Internet of Things, artificial intelligence, advanced analytics and advanced production technologies such as robotic systems and additive manufacturing in the manufacturing industry at an increasing rate and in various forms”.

Gear computers played a crucial role in the start of digitization, but the computer science foundations of János Neumann were a real breakthrough when the binary system emerged and laid the foundations for the subsequent digital revolution. The first and second generations of computers using these so-called automatic codes appeared in the 60s, these were the first software. Besides military tasks, they also helped solve more complex problems in the technical and scientific world, and were always written only for these specialized machines. To simplify programming assembly language was later created. The third generation of computers required the creation of newer and more complex software (e.g. Fortran, Algol).

Writing programs has become a real technological innovation since the 1970s, as more advanced programming languages and methods have emerged, such as the Pascal and C programming languages. In Romania and Turkey, digital technology started to develop rapidly from the second half of the 1990s. The DOS operating system and the Windows text editor replaced the Word program used today. We have moved from saving data on magnetic tape to using cloud-based technology. The issue of digital transformation, which is experienced in Turkey as well as in the whole world has gained momentum in the 2000s and has led to radical changes in organizations and to business models in almost every field.⁹

The invention of the Internet, personal computers, cell phones and mobile phones have accelerated the evolution. In the process that is being talked about today under the name of society 5.0, digital developments serve as a bridge between individuals, organizations and companies in society. For this reason, digital transformation and adaptation to this transformation have started to occupy a very important place in societies, in recent years.¹⁰

Small and medium enterprises in Turkey and Romania

Small and medium enterprises (SMEs) in Turkey

Since SMEs have advantages that large enterprises do not have, they can fulfill many functions in economies that large enterprises cannot fulfill. In terms of ensuring functionality in economies with this feature, the importance of SMEs, which have become the building blocks of the systems, continues to increase in the world economies. Due to their importance, all countries, especially developed countries, develop policies that will prepare the appropriate environment for the birth, growth, development and protection of SMEs and offer many opportunities to SMEs.¹¹ Until the publication of the “Regulation on the Definition, Qualifications and Classification of Small and Medium-Sized Enterprises” in the Official Gazette dated November 18, 2005 numbered 25997, which entered into force on May 18, 2006, there was no common definition of SMEs in Turkey. Despite this common definition, which was amended by the regulation published in the Official Gazette dated November 4, 2012 numbered 28457, it is seen that both the definitions of SMEs and the criteria used in the definition of SMEs are different from each other in Turkey as in the rest of the world.

The most recently defined definition in Turkey and published by

Kosgeb; 24/5/2023 No: 7297 Date of the Presidential Decree and 25/5/2023 No: 32201 and Published in the Official Gazette with classification of SMEs;

ITEM 5 - (1) SMEs shall be classified as follows by taking into account their net sales revenues, financial balance sheet amounts and number of employees:

- I. Micro-enterprise: An enterprise with fewer than ten employees and an annual net sales revenue or financial balance sheet not exceeding ten million Turkish Liras.
- II. Small enterprise: An enterprise with fewer than fifty annual employees and whose annual net sales revenue or financial balance sheet does not exceed one hundred million Turkish Liras.
- III. Medium-sized enterprise: An enterprise with less than two hundred and fifty employees and whose annual net sales revenue or financial balance sheet does not exceed five hundred million Turkish Liras.

According to official data in Turkey, in TurkStat Business Records Statistics were been mentioned that in our country, in 2022, were active 4,640,564 enterprises and 4,634,678 from them were SMEs by the number of employees, and this rate was 99.87%. Total production value was 22 Trillion ₺. Of the total production value, 6.6% was micro-scale, 13.3% was small-scale, 16.4% was medium-scale enterprises and the share of SMEs in total production value was 36.3%.

Data on foreign trade in the TurkStat SME Statistics, 2022 bulletin are as follows:

- I. The total number of exporting enterprises was 112,444. Of the total number of exporting enterprises, 43% were micro-scale enterprises, 38.5% were small-scale enterprises, 13.4% were medium-scale enterprises and 94.9% of exporting enterprises were SMEs.
- II. 84.4% of high-tech, 92.4% of medium-high-tech, 91.8% of medium-low-tech and 92% of low-tech exporting enterprises are SMEs.
- III. Among exporting SMEs, 1.6% are high, 27.2% medium-high, 28.5% medium-low, and 42.7% low technology SMEs.
- IV. Total exports amounted to USD 249.7 billion.

Of the total exports, 2.4% were realized by micro, 11.9% by small, 17.3% by medium-sized enterprises and the share of SMEs in total exports was 31.6%. The share of Europe, the continent with the highest exports, in total exports was 55.2% and the share of SMEs in exports was 49.3%.¹¹

Small and medium enterprises (SMEs) in Romania

Romania remains in last place in the EU in 2022, regarding the value of Digital Economy and Society Index (DESI). The Faculty of Economic Sciences and Business Management (FESBM) in Cluj analyzed the evolution in recent years of DESI index. In 2022 compared to 2015, the DESI index for Romania increased by only 3.7 points compared to 13.4 the average increase of EU countries. Romania ranks last in the EU ranking with a score of 30.6 points compared to that of an EU average of 52.3 points.¹² In the last seven years, the DESI index for Romania increased by only 3.7 points, compared to 13.4 the average increase of EU countries. The same methodology being used in every country and every year.¹³ The Digital Economy and Society Index (DESI) tracks progress in EU

Member States in terms of digital competitiveness in areas such as human capital, broadband connectivity, the integration of digital technologies by businesses and digital public services.

Romania ranks last in the EU ranking, with a score of 30.6 points, compared to an EU average of 52.3 points. Finland, Denmark, the Netherlands and Sweden continue to be in the top spots in the EU. However, even the leading states have a number of challenges in the digital sector. «Romania's relative annual growth is lower than that of similar countries, which indicates that it is not convergent with the rest of the member states».¹² The country lagged behind in a number of indicators of the dimension of human capital, with a very low level of basic digital skills compared to the EU average, but maintains its leading positions in terms of the proportion of female ITC specialists in workforce (2nd place) and in terms of the number of ITC graduates (4th place). Romania has relatively good results in terms of connectivity, this being the dimension for which it gets the best score. The proportion of using fixed broadband coverage of at least 100 Mbps (57 %) and via very high-capacity fixed networks (87 %) exceeds the EU average. This is also important given the Digital Decade's goal of 100% coverage of all households by gigabit networks by 2030.

European experts point out, however, that the country's performance in terms of the integration of digital technologies and digital public services is weak compared to that of other EU member states. The share of SMEs with at least a basic level of digital intensity (22%) and the percentage of businesses exchanging information electronically (17%) are the lowest in the EU. Romania is the best in the Connectivity chapter, which mainly measures the existence and performance of digital infrastructure, such as household high-speed Internet access or the 5G coverage rate at the country level. In terms of connectivity, Romania ranks 15th in the EU, but 2022 represents the first year in which Romania falls below the European average in this indicator as well.

To the other three components of the index, respectively Human Capital (which measures aspects such as the level of digital skills or the existence of a sufficient number of ITC specialists), the Integration of Digital Technologies (which refers to the use of various digital solutions at the level of companies in Romania) and Digital Public Services (which measures the spread of digital tools in the public sector, made available to citizens and businesses), Romania is at the bottom of the EU.¹³ We have gotten here for the reason, that less than one in three Romanians (28%) has basic digital skills. A second reason is about the Romanian companies that choose to stay in the Middle Ages when we talk about digitization. Only 22% compared to the European average of 55% use digital technologies. In terms of digital public services, we are at the current stage compared to the rest of the EU, because we have not had a national digital identity. We have CSPDI (Centralized Software Platform for Digital Identification) in the pipeline. We have a law and very good premises to apply it; we have money for the Cloud, but also poor implementations for many of the e-government solutions.

Legislation in Romania

Starting on 2023 July 4, Law 9¹⁴ has come into force, a huge step towards the modernization and digitization of public administration in Romania. This law provides for a significant reduction of red tape in public institutions, including eliminating the need for the red file, a symbol of red tape that has characterized the relationship between citizens and public institutions for decades. Law 9/2023 provides that all public institutions in Romania have the obligation to receive

documents from citizens, including identity documents, in electronic format. This change means that citizens are no longer required to physically go to an institution to submit documents, but can do so online, saving time and resources. Public institutions are obliged to announce on their websites the email addresses through which documents can be sent in online format. This will facilitate access to public services and improve efficiency in public administration.

Digitization is a set of processes in which we use digital technologies to perform an operation. This innovative solution increases the efficiency of processes and is integrated into business and everyday life. Because it is about activities such as sending e.g. an e-mail, upload data to the cloud or an external carrier, make an online banking transaction, use the GPS and others. All this is possible through the combined work of hardware and software. A common and simple example: we can enter into a computer by scanning a written material or an image on paper or we can digitize from analog data storage carriers such as a film/video from a VHS tape or music from a disk. These data are thus converted from an analog signal into a digital signal, i.e. the numerical form. In this way, the information appears in the computer as binary numbers, different files. And these files are stored, processed or, when necessary, redirected in a very short period of time with great ease. The great advantage of digitization is that the quality of these data will not deteriorate and they can be multiplied and edited easily and quickly.

The importance of digital transformation for small and medium enterprises and opportunities provided

Digitalization has become an important tool for SMEs to increase productivity and growth, integrate with the global economy, and fulfill the requirements of the digital age quickly and easily. SMEs have had to accelerate their digitalization efforts to ensure business continuity, adapt to new technologies, reduce the limiting impact of new competitors, and manage changing customer preferences.¹⁵ Factors such as the additional costs of digitalization, limitations in access to technological knowledge, and difficulties in using technological knowledge can also negatively affect the digitalization of SMEs. Since the situation of SMEs being affected by digital technologies can have very different results from country to country, city to city, entrepreneur to entrepreneur, sector to sector; it is considered that it should be the subject of detailed research.¹⁶ Digitalized business processes take the products, processes or solutions that companies currently manage to a different dimension, and it is observed that companies that can adapt digital transformation and sub-technologies to all functions in their activities gain great competitive advantages in both cost, quality and time dimensions.¹⁷

Digital technologies and digital innovations affect business processes, products, services, and relationships, and businesses need to fundamentally change and restructure the way they do business and the mindset of their leadership team in order to survive.¹⁸ For a more successful digital transformation, SMEs can not only use existing technologies in production, in an effort to coordinate with resources and processes, but they may also need a radical infrastructural change with new strategies and decisions and a new organizational form.¹⁹

In 2022, the country group with the largest share in exports and imports realized by both SMEs and large enterprises was «Europe». Therefore, we can say that Turkey, which is in the process of harmonization, is taking initiatives both to establish better relations with European countries and to strengthen its relations with the remaining countries and is evolving towards a business model with similar communication and technologies. Traditional business models

have been replaced by digitalization through high-tech tools, mobile technologies, network structures and components, social media tools and cloud technologies, and this new form has been rapidly accepted all over the world, especially in Europe.²⁰

SMEs that have been able to adapt to this transformation will be able to make decisions based on solid data, eliminate all kinds of non-value-creating wastes thanks to digital technologies, and realize flexible, effective and efficient production just in time.²¹ On the other hand, the biggest advantage of digitization is that the quality of the data does not deteriorate and can be easily and quickly reproduced and edited. Digitalization can therefore be considered as a completely new production factor that reverses the trend of declining profits of recent years by optimizing processes. Intelligent automation systems improve human work and contribute to the process of continuous innovation. Each of us has noticed how much faster it is to write an email, to order food online in a few clicks than to cook at home. These are all things that are already a natural part of everyday life and that are made easier by digital technologies. Likewise in business life, digital transformation enables fast practical solutions.

Barriers to digital transformation of SMEs

In general, digital transformation of SMEs means businesses using technology to increase their productivity and competitiveness and support their growth. However, there are many barriers that SMEs face in this transformation process. These obstacles include financial constraints, lack of competence, security concerns and inadequate existing infrastructure. While digital transformation is an unstoppable trend today, there are still uncertainties in the industry about how to adapt. The most important factor that challenges companies to integrate digital transformation into their businesses is the high cost of investment and the need to change employee qualifications to adapt to this technology. Due to these high costs, SMEs have been hesitant about digital transformation and have often lost their competitive advantage. Investing in digital technologies is not something that SMEs alone can handle in today's world.²² SMEs, which are undercapitalized and dependent on government support for digital transformation, will become more adaptable to digital transformation by minimizing their financial difficulties as long as they can benefit from these supports.²³

Today's business world is characterized by a wide market network and fierce competition. The most important actor that determines competitiveness is digital transformation and adaptation to this

transformation. Because we have similar technologies with our business or competitors and our communication transportation and ways of doing business must be similar.²⁴ Therefore, for competitiveness in the market, companies will go for large-scale changes in their current business models. Because digitalization or digital transformation will not only be limited to the machines in the production track, but will also require transformation from the personnel who will use these machines to the employees in each department and within the system separately.²⁵

This transformation, rather than a transformation that SMEs will suddenly decide and adapt in their business, they should first adopt a positive and realistic attitude towards this transformation and think in many ways for optimal benefit. Otherwise, they will face inaction or wrong decisions due to lack of information.²⁶ Because with digitalization, the failure to embrace this transformation for businesses brings with it a devastating effect. The impact of the destruction in the face of the failure or insufficiency of this transformation, which will affect every department in the enterprises, will be very great. SMEs that can foresee this situation should determine different strategies for each department in their businesses to adapt to transformation.²⁷

In the ecosystem where digital transformation is the spokesperson, businesses that catch this transformation are expected to become leaders in competition, while dysfunctional organizations that have not been able to establish healthy communication with these environments and have not been able to overcome the problems of adaptation to digital transformation are expected to face unsuccessful results.²⁸ Digital transformation affects the different operational processes of a company, which are put on a digital basis as much as possible. This transition implies a new strategic tool that allows for an innovation revolution and the construction of a new business model. Digital transformation is essential for micro, medium and multinational companies that want to remain competitive.

Companies must keep pace with the development of digitalization, which not only refers to meeting the needs of the market, but is one of the main pillars of successful operation. If this is missing, the company «falls» and is no escape and no way out. Furthermore, according to the study conducted by McKinsey 50-54% of workplace activities carried out by Romanian employees - approximately 4.4 million jobs - could be digitized or automated, leading to a significant increase in the productivity and profitability of Romanian companies by 2030 (Table 1).²⁹

Table 1 highlights the perceived benefits and drawbacks of the digitalization process in global and Romanian companies. The following results from McKinsey, SAP Center, Gartner and Valoria 4 are highlighted

Benefits	Disadvantages
67% of companies that have implemented the digitalization of their activity in the relationship with customers confirm an increase in their satisfaction.	Lack of talent: Not enough employees are able to keep up with the implementation of new technologies or understand them.
64% of companies say their employees are more engaged thanks to digital transformation. In Romania, 35% of companies report that digitization has already had a major impact on their activity.	Fear of the unknown: Some executives are far too anchored in the old organizational culture and are quite reluctant to adopt new technologies.
46% of Romanian companies say that digitization brought them a decrease in costs and a simplification of their activity.	A large number of digitization technologies are still "technologies of the future" and await mass adoption.
34% of Romanian companies say that digitization has allowed them to better measure performance indicators, while improving their operational efficiency.	In Romania, the implementation costs are seen as too high, and the domestic business models are not strong enough to support radical changes.

Source²⁹.

In another study,² as a result of research on 103 SMEs, was found that there are many barriers even in cloud technologies alone. The study found that adoption of these technologies is influenced by six persuasive factors: compatibility, management support, firm size, competitive pressures and regulatory support, and as long as they can improve these factors, the barriers can disappear. The same researchers studied SMEs in different regions and found that the same factors have different effects in different regions. Therefore, the barriers to digital transformation in SMEs are very diverse and the impact of these factors is manifested at different levels.

From this point of view, we can say that in our research comparing Turkey and Romania, the infrastructure, management and administrative structure of the countries, government policies and incentives, business models and environments of SMEs, the market structure they want to adapt to, and the barriers that provide inequality between technologies should be well analyzed and improvement strategies should be determined accordingly.

Conclusions and recommendations

Governments can develop various policies and programs to support the digital transformation of SMEs. These policies and programs may include training and advisory services, financial incentives, infrastructure development projects and regulatory reforms. The role of the state is related to the design, implementation and monitoring of such policies and programs. If we make a comparison between Turkey and Romania, we can see that both countries face similar challenges in digital transformation of SMEs. Therefore, it would be more feasible for them to follow different policies and strategies. For example, Turkey has launched various support programs in recent years to encourage the digital transformation of SMEs. Romania is implementing similar policies and benefiting from EU funds within the scope of the EU harmonization process. In recent years, it has taken serious steps in digital transformation and offered various supports to encourage the digitalization of SMEs. In particular, the state has an active role in raising awareness, providing training and consultancy services in digitalizing SMEs. Turkey's policies in this area are aimed at accelerating the digital transformation process of SMEs.

However, when the supports provided for the digital transformation of SMEs are examined, they are mainly for SMEs in the manufacturing sector and production technologies, while other supports such as: personnel, transportation, cooperation and training for different industries and sectors should also be increased. On the other hand, Romania's policies and the role of the state in the digital transformation process may differ from Turkey. Romania's EU membership provides a significant advantage in terms of harmonizing with EU standards on digital transformation and benefiting from EU funds. Therefore, Romania's policies on the digital transformation of SMEs may be more aligned with the EU's overall digital strategies.

In our research, we tried to examine the digital transformation processes of SMEs in Turkey and Romania, and we can also say that the widespread use of the internet and the resulting digitalization has elevated information as a resource to a higher level. We live in an era where access to information as soon as possible has become a vital necessity in everyday life and especially in the business sector. Without a doubt, we are talking about an important resource that has a great impact on the functioning of a company. The entire organization is interconnected through a network of IT systems. Information removes doubts and provides a kind of security for the functioning

of the company. It is based on data that, when interpreted, becomes relevant information for a particular company. The company not only obtains and uses information, but also produces and provides it to partners, government and control bodies or employees. For proper use, it needs to have an inherent value, quality and to reach the person in question at the right time. Based on information exist the opportunity to efficiently run different business processes where employees in a certain position know exactly what their tasks are. Correctly processed data helps with clear communication between employees, conflict management and problem solving.

According to the latest research by eNet - Telekom, the digital competence of Central and Eastern Europe is still at a competitive level. It is disadvantaged compared to the European Union average. Despite digitalization gaining more and more ground, digital literacy affects almost a quarter of the population. The reasons for digitalization gaining more ground this include several steps: 1) inadequate internet coverage in some places, lack of signal; 2) lack of technological knowledge of the older generation; 3) lack of knowledge and use of software. Furthermore, digital literacy refers to the inadequate use of hardware and software to achieve a specific goal; The skills to use digital devices, the internet, apps and programs do the useful work seamlessly. This can be corrected through digital education and skills development at school and at work. This will help prepare to harness the digital transformation and create marketable human resources. The development of adequate technical and technological infrastructure also contributes to all this, namely access to high-speed internet for all and at a reasonable price.

In general, the role of states in the digital transformation of SMEs in the EU harmonization process is shaped by their current situation, objectives and resources. Therefore, a detailed study is required to compare the digital transformation processes of Turkey and Romania and to assess the role of the state. In conclusion, with the EU harmonization process, digital transformation stands out as a critical step for SMEs in Turkey and Romania to adapt to EU standards and increase their competitiveness. This process will enable enterprises to effectively participate in the EU market by strengthening their technological infrastructure and supporting sustainable growth.

This study highlights the strategic importance of the digital harmonization process for SMEs in Turkey and Romania and clearly demonstrates the inevitability of digital transformation for businesses in these two countries and the steps that need to be taken for success.

Acknowledgments

None.

Conflicts of interest

The author declares there is no conflict of interest.

References

1. Erkekoğlu H. Turkey's relative development level vis-à-vis member countries in the process of full membership to the EU: A multivariate statistical analysis. *Kocaeli University Journal of Social Sciences*. 2007;14:28–50.
2. Pathan ZH, Jianqiu Z, Akram U, et al. Essential factors in cloud-computing adoption by SMEs. *Human Systems Management*. 2017;36(4):261–275.
3. Alp Coskun E. The Role of Artificial Intelligence in Investment Decisions and Applications in The Turkish Finance Industry. *Gaziantep University Journal of Social Sciences*. 2022;21(4):2208–2222.

4. Kavcıoğlu Ş. SMEs in Turkey in the Process of European Union Membership. *Journal of Academic Studies*. 2013;14(56).
5. Accenture Report. *Accenture Report: Artificial Intelligence Has Potential to Increase Corporate Profitability in 16 Industries by an Average of 38 Percent by 2035*. Business Wire. 2017.
6. Karakaya O. Digital transformation in Turkey, the relationship between economic growth and unemployment. *Five Zero*. 2021;1(1):1–12.
7. Omrani N, Rejeb N, Maalaoui A, et al. Drivers of digital transformation in SMEs. *IEEE Transactions on Engineering Management*. 2022;71:5031–5043.
8. Tubitak T, Sanayi TC. *Digital Turkey's road map*. Ankara: Ministry of Science, Industry and Technology. 2018.
9. Tüsiad BC. *Industry 4.0 as a Necessity for Turkey's Global Competitiveness*. Emerging Economy. 2016.
10. Pakdemirli B. *The impact of digital transformation on economic growth: The case of Turkey*. 2016.
11. <https://webdosya.kosgeb.gov.tr/Content/Upload/Dosya/Mevzuat/2023>.
12. DESI Report. *Romania in the Digital Economy and Society Index. Shaping Europe's digital future*. 2022.
13. Reştea K. *GRAPH. Digitization in Romania, «below sea level»: Our country has the lowest growth rate of the DESI index in the last seven years. Economists: Convergence at the European level of digitization is becoming more and more distant/ Only a fundamental reform can change the perspective*. 2022.
14. Official Monitor No. 14 of 5 January 2023. *Law 9/2023: Reducing bureaucracy and encouraging digitization in public institutions*. 2023.
15. Dunay KE. The strategic importance of digitalization in the manufacturing industry and SMEs. *Anahtar Magazine*. 2021;385:14–18.
16. Wicaksono T, Nugroho AD, Lakner Z, et al. Word of mouth, digital media, and open innovation at the agricultural SMEs. *Journal of Open Innovation: Technology, Market, and Complexity*. 2021;7(1):91.
17. Autio E, Mudambi R, Yoo Y. Digitalization and globalization in a turbulent world: Centrifugal and centripetal forces. *Global Strategy Journal*. 2021;11(1):3–16.
18. Karimi J, Walter Z. The role of dynamic capabilities in responding to digital disruption: A factor-based study of the newspaper industry. *Journal of Management Information Systems*. 2015;32(1):39–81.
19. Taşkın K. Science Mapping Analysis on Digital Transformation in SMEs. *Journal of Bucak Business Faculty*. 2022;5(2):219–232.
20. Westerman G, Bonnet D. Revamping your business through digital transformation. *MIT Sloan management review*. 2015;56(3):10.
21. Dąbrowska J, Almpnopoulou A, Brem A, et al. Digital transformation, for better or worse: a critical multi-level research agenda. *R&D Management*. 2022;52(5):930–954.
22. Kozarkiewicz A. General and specific: The impact of digital transformation on project processes and management methods. *Foundations of Management*. 2020;12(1):237–248.
23. Julião J, Gaspar MC. Lean thinking in service digital transformation. *International Journal of Lean Six Sigma*. 2021;12(4):784–799.
24. Çetinkaya G, Susam N. Public-supported developments in the fourth industrial revolution: A comparison of selected countries and Turkey. *Journal of Life Economics*. 2021;8(4):413–429.
25. Tortorella G, Sawhney R, Jurburg D, et al. Towards the proposition of a lean automation framework: Integrating industry 4.0 into lean production. *Journal of Manufacturing Technology Management*. 2021;32(3):593–620.
26. Korpela K, Hallikas J, Dahlberg T. *Digital supply chain transformation toward blockchain integration*. Proceedings of the 50th Hawaii International Conference on System Sciences. 2017. p. 4182–4191.
27. Llopis Albert C, Rubio F, Valero F. Impact of digital transformation on the automotive industry. *Technological forecasting and social change*. 2021;162:120343.
28. Kifokeris D, Tjell J, Viklund Tallgren M, et al. *Challenges in the digital transformation of lean design methods: A case study*. In Proceedings of the 36th Annual ARCOM Conference. 2020. p. 445–454.
29. Fărăgau T. The first steps in digitization. What do you need to know? *Smart City Magazine*. 2021:57–58.