An Approach to the Measurement of the Digital Economy

VIKTORIJA SKVARCIANY, DAIVA JUREVIČIENĖ

Abstract

The digital economy is a relatively new phenomenon associated with the so-called fifth stage of the industrial revolution. Digitalisation is associated with the further automation of processes based on connected devices, data analytics and artificial intelligence technologies. Consequently, it is vital to measure the current level of a country's economy to identify the level of its digitalisation. As digitalisation covers a wide range of activities, various indicators are considered for the measurement of the digital economy. The methodology developed should be based on the weight given to each indicator and the group of indicators disclosed. Hence, this article aims to propose a methodology for assessing the digital economy that is based on the methodology developed by the OECD. The primary goal of the paper is to revise the groups and their indicators and assign weights to them. The Analytic Hierarchy Process (AHP) was applied to give weights to the so-called groups and the underlying indicators for the evaluation of the digital economy. AHP is based on pairwise comparison, which is considered one of the most reliable techniques of expert evaluation. The main result of the current study is updated OECD methodology, which is devoted to measuring the level of a country's digital economy. One group of indicators – finance – was added, and the weights for each group and the underlying indicators were assigned. In other words, the present research contributes to knowledge of measuring the digital economy by providing a new group of indicators for assessing its level. The research results could be helpful for a country's policy-makers in terms of developing a strategy for the transition to the digital economy. The methodology provided would enable them to evaluate the present situation and to set a benchmark that should be achieved.

Keywords

digital economy, digitalisation, digital economy assessment, digital economy methodology

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Introduction

The digital economy had gained significant attention from a wide range of scholars from various scientific fields, especially during the COVID-19 pandemic, when a substantial part

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of services moved online. Hence, the digital economy could be treated as a condition for survival (Kolesnichenko et al., 2021). Before investigating the measurement of the digital economy, it is vital to define the concept of the digital economy. For that purpose, it is necessary to define digitalisation, as the concept of the digital economy is entirely based on it. According to Petrenko et al. (2017), digitalisation could be defined as the transition from an analogue form of information to a digital one, assuming not only digitisation but also the development of new products with more functionality and customer property. Jurčević et al. (2020) state that digitalisation is connected to "the intensity of information and comprehensive interpenetration and interactivity of various physical devices and resources". Based on that, the digital economy could be defined as an economic system that is fully based on the use of digital technologies.

The digital economy creates new opportunities for developing all types of economic activity (Yakimova, 2020), giving rise to unprecedented new business opportunities (Małkowska et al., 2021). For instance, scholars agree that the digital economy could provide a platform for creating new businesses and start-ups (Zhan et al., 2021) and thus contribute to the boost of the economy even in times of recession. Still, researchers investigate the digital economy from different perspectives. Scientists are examining the digital economy phenomenon in banking operations, mostly pertaining to digital currency (Shaikh, 2020). For example, Lee et al. (2021) claim that Central Bank digital currency is a primary tool used in the future digital economy. However, the digital economy is not the future, it is the present, and it is on the verge of developing even more in the near future. The digital economy is based on digitalisation, which is one of the most discussible topics in the scientific literature. Stroiko et al. (2021) state that digitalisation leads to a transformation of economic processes. Even countries with lower levels of digitalisation face new challenges (Bartosik-Purgat and Jankowska, 2020). In other words, digitalisation has led to the development of the digital economy; albeit an assessment of its spread is very difficult, but still vital. Hence, it is crucial to review the factors representing the digital economy and provide a technique for the measurement of the digital economy that will be used to establish a country's digital economy and help track countries' progress in these terms.

Consequently, the current paper aims to examine the existing techniques for evaluating the digital economy and provide an updated methodology (i.e. with new indicators added) that could serve as a methodology for measuring the level of the digital economy based on the current state of play. In other words, the current research results will fill the research gap in terms of assessing the digital economy, as at present many articles are investigating the concept of the digital economy. Still, there are a limited number of papers dealing with its measurement.

The paper is organised as follows. The introduction provides a view on the necessity of the transition to the digital economy and its importance. The literature review presents an updated OECD methodology for measuring the digital economy by adding a newly developed group of indicators – namely financial ones. The methodology provides information on the research method – the analytic hierarchy process (AHP) – and explains the experts' selection algorithm. The empirical findings show the weight assigned to the groups and indicators of the analysed methodology. The paper ends with conclusions and a discussion section.

1. Literature review

First, it is essential to review the existing methodologies developed for measuring the digital economy in order to select the most appropriate one and update it according to the actual state of play nowadays. One such tech-

nique is the Digital Economy and Society Index (DESI), proposed by the European Commission (2015), that was developed to track the evolution of the digital competitiveness of EU member states. In other words, the DESI is not developed to directly assess the level of the digital economy of a country, but to establish its competitiveness. The DESI is most often analysed by scholars (Česnauskė, 2019; Ershova et al., 2020; Laitsou et al., 2020; Thierry et al., 2020). Another index is the digital adoption index (DAI), which is devoted to measuring the digitalisation of countries. The DAI is an index that evaluates countries' digital adoption based on three dimensions of the economy: people, government, and business (World Bank, 2016). However, the current index could not be used for measuring the digital economy's level because digitalisation and the digital economy are different concepts, although they have the same background.

The methodology devoted to assessing the digital economy was proposed by the Organisation for Economic Co-operation and Development (OECD, 2018). The procedure provides four groups of indicators to study the digital economy, i.e. infrastructure, empowering society, innovation and technology adoption, and jobs and growth. However, in the present methodology, the finance sector, which is vital in terms of developing the digital economy, is omitted. Hence, in order to provide an up-to-date measurement technique, the finance group has been added to the model. It is worth mentioning that financial indicators have been mentioned in some proposed OECD (2018) groups but were not described separately. Because of this, such indicators were moved from the existing groups to the newly developed ones. One such indicator is e-commerce. This is an extensive topic, and it was divided into the following indicators: volume of digital transactions related to e-commerce, and money spent via e-commerce. This division was done because given the current state of play, especially in the COVID-19 era, e-commerce has spread widely. Due to this, it could not be treated as a general indicator, i.e. it was essential to split it into more specific indicators, which the authors duly did. Moreover, the indicator "Trade and ICT jobs" was split as well, and trade was assigned to the finance group as a separate indicator. In other words, two indicators represent trade, namely volume of online trade and volume of online services provided.

The literature review helps to complete the finance group, and some of the newly developed group's indicators have been distinguished therefrom. There are not many studies which have investigated that issue due to the novelty of the topic. For instance, Leong et al. (2020) treat mobile payments as a factor of the digital economy. The proposed OECD methodology expresses this factor via the mobile money indicator. However, as it is a financial indicator, it was allocated to the newly developed finance group. It has been claimed that cryptocurrency is a modern phenomenon of the digital economy (Petrova et al., 2020). Hence, it could be stated that the use of cryptocurrency serves as an indicator of the digital economy's assessment model. It is worth mentioning that cryptocurrency is not included in the OECD methodology, although it is directly connected to the spread of the digital economy. Digital currency will be the primary tool of the digital economy; hence, the volume could be treated as a measurement indicator of the level of the country's digital economy (Cao et al., 2019; Lee et al., 2021).

Moreover, scientists claim that electronic money is one of the elements of the digital economy (Egorova et al., 2019; Reznik et al., 2020). Hence, electronic money is treated as a finance group indicator.

The spread of electronic banking is an element of the digital economy (Reznik et al., 2020); hence, it is included in the electronic money indicator provided by OECD. In other words, two additional indicators have been developed, namely electronic money and mobile money. To sum up, the updated methodology consists of five groups and their indicators (Table 1).

Table 1. Methodology for the Measurement of the Digital Economy

Infrastructure	Empowering society	Innovation and Technology Adoption	Jobs and Growth	Finance
– Investing in Broadband – The rise of Mobile Broadband – Higher Internet speed – Prices for connectivity – Infrastructure for the Internet of Things – Secure server infrastructure – Household access to computers – Household access to the Internet	– Digital natives – Narrowing the digital divide – People's use of the Internet – E-consumers – Citizens interacting with government – Education in the digital era – Individuals with ICT skills	– Research on machine learning – AI-related technologies – Robotisation in manufacturing – R&D in information industries – Supporting business R&D – ICT-related innovations – ICT use by businesses – Cloud computing services	– Jobs in the information industries – Jobs in ICT occupations – Value added in information industries – The extended ICT footprint – ICT investment – ICT and productivity growth – ICT and global value chains – ICT jobs – ICT goods as a percentage of merchandise trade – Telecommunications, computer, and information services as a percentage of services trade	– Volume of digital transactions related to e-commerce – Money spent via e-commerce – Volume of online trade – Volume of online services provided – Electronic money (including e-banking) – Mobile money (including m-banking) – Cryptocurrency

Source: extended by authors based on OECD, 2018

It is necessary to assign weights to each group and each indicator before using the updated methodology to assess the level of a country's digital economy. The weights would help to evaluate the present state of the digital economy more thoroughly, which, in turn, would help countries distinguish the weakest parts of the digital economy. In other words, the indicators mentioned have a different impact on the final evaluation. For that purpose, an expert evaluation procedure, which is described in the next section, was employed.

2. Methodology

The questionnaire was prepared and disseminated among experts to assign the weights for the distinguished indicators and complete the updated procedure for the technique used to measure the digital economy. The experts were selected based on their contribution to research on the digital economy, i.e. the experts were chosen by searching the scientific papers in the CA WoS database and contacting the authors. All experts were contacted personally with a request to complete a pairwise comparison of the measurement dimensions and indicators pertaining to the digital economy. The number of experts was chosen based on the recommendation of Libby and Blashfield (1978), which states that the reliability of results received from eight experts exceeds the threshold of 90 per cent. Regarding the current study, eight experts participated in the research. The characteristics of the experts are provided in Table 2.

Table 2. Experts' characteristics

Expert	Degree	Position	Time spent researching the digital economy
E1	PhD	Associate Professor	5 years
E2	PhD	Lecturer	4 years
E3	PhD	Senior Economist	4 years
E4	PhD	Senior Lecturer	3 years
E5	PhD	Research Fellow	3 years
E6	PhD	Associate Professor	12 years
E7	PhD	Professor	5 years
E8	PhD	Assistant Professor	3 years

Source: own elaboration

The Analytic Hierarchy Process proposed by Saaty (1977) was employed to assign the weights to the factors. AHP is based on a pairwise comparison, which is viewed as more accurate than other expert evaluation methods.

According to the AHP, the experts should compare alternatives with each other by completing pairwise comparison matrices (see (1)):

$$A = (a_{ij})_{n\times n} \quad (1)$$

where: $a_{ij} = \frac{\omega_i}{\omega_j}, \forall\, i,j = 1,2,\dots,n,$

$\omega_n\ (n = 1,2,\dots n) -$ priority vector,

$a_{ij} = \frac{1}{a_{ji}}, \forall\, i,j = 1,2,\dots,n.$

To complete the individual comparison matrices, experts were invited to use a nine-point scale, where "1" means that alternatives are equally important and "9" means that one alternative is crucial over another. Every expert had to evaluate $(n(n-1)/2)$ pairs, where *n* is the number of alternatives (groups and indicators).

After the experts completed a pairwise comparison of the alternatives (groups and indicators), all the evaluations were aggregated using the geometric mean, and the normalised principal eigenvector was calculated. However, before its calculation, all matrices were tested for consistency. The pairwise comparison matrix is considered to be consistent if $a_{ik} = a_{ij}a_{jk}, \forall\, i,j,k$. In other words, there is such a priority vector $w = (\omega_1,\dots,\omega_n)$ that $a_{ij} = {}^{\omega_i}/_{\omega_j}, \forall\, i,j$.

In order to obtain a consistency index, the eigenvalue λ_{max} for each matrix should be calculated (see (2)).

$$\lambda_{max} = \sum_{j=1}^{n} \frac{(A\cdot v)_j}{n\cdot v_j} \quad (2)$$

where:

λ_{max} – the largest eigenvalue of matrix A,

n – number of independent rows in the matrix,

v_j – eigenvalue of the matrix.

After the value of λ_{max} is computed, the consistency ratio *CR* could be calculated (see (3)) (Zhang et al. 2017).

$$CR = \frac{(\lambda_{max} - n)/(n-1)}{RI} \qquad (3)$$

where:
CR – consistency ratio,
RI – random index (the values of the consistency ratio depend on matrix order *m*).

The consistency ratio computation is repeated for the aggregated matrix, and if it is consistent, priorities are calculated using the normalised geometric mean method (see (4)) (Franek and Kresta, 2014).

$$\omega_j = \frac{\sqrt[i]{\prod_{j=1}^{i} a_{ij}^{A}}}{\sum_{j=1}^{i} \sqrt[i]{\prod_{j=1}^{i} a_{ij}^{A}}} \qquad (4)$$

where:
ω_j – weight of *j* alternative.

3. Research results

As alluded to above, the OECD's proposed methodology was updated by adding the new finance group. This shows the uniqueness of the methodology provided, as the financial group could not be omitted as it is a part of the digital economy.

First, the indicators representing the digital economy measurement group were ranked and weights were assigned. The results are presented in Table 3.

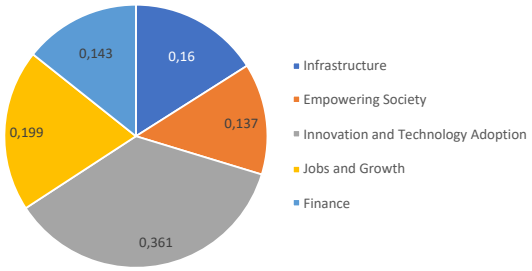
Table 3. Indicator weights of the digital economy measurement group

Group	Weight (Rank)
Infrastructure	0.160 (4)
Empowering Society	0.137 (5)
Innovation and Technology Adoption	0.361 (1)
Jobs and Growth	0.199 (2)
Finance	0.143 (3)
Technical Parameters	
λ; CR	5.109; 2.4%

Source: own elaboration

The results are presented in Figure 1 in visual form.

Figure 1. Visualised indicator weights of the digital economy measurement group



Source: own elaboration

As shown in Table 3 and Figure 1, the most significant indicator (group) with a weight of 0.361 is innovation and technology adoption, which is not surprising. The digital economy, i.e. innovation, is a relatively new concept. Moreover, it could not be reached without the adoption of new technologies. In other words, in order to transform from the traditional economic model to the digital economy, the adoption of new technologies is a must. In second place is the category of jobs and growth, with a weight of 0.199. This indicator correlates with innovation and the adoption of new technologies, as growth could not be reached without such concepts. Jobs are relevant as well, as even though we are in the era of artificial intelligence, everything is based on human knowledge; therefore, it is essential to create new workplaces in that area. The newly developed finance section was in third place, with a weight of 0.143, proving the theoretical insights that finance is an essential indicator of the digital economy and should be represented by a different group. The last two indicators – infrastructure and empowering society – were in fourth and fifth place respectively with weights of 0.160 and 0.137. The weights are not low, which demonstrate the importance of these indicators.

Further indicators of all the groups were analysed. The infrastructure group's indicator weights are presented in Table 4.

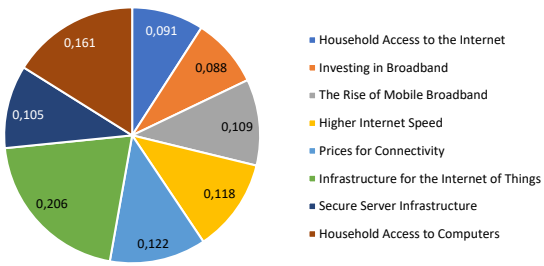
Table 4. Indicator weights of the infrastructure group

Indicator	Weight (Rank)
Household Access to the Internet	0.091 (7)
Investing in Broadband	0.088 (8)
The Rise of Mobile Broadband	0.109 (6)
Higher Internet Speed	0.118 (4)
Prices for Connectivity	0.122 (3)
Infrastructure for the Internet of Things	0.206 (1)
Secure Server Infrastructure	0.105 (5)
Household Access to Computers	0.161 (2)
Technical Parameters	
λ; CR	8.160; 1.6%

Source: authors' calculations

The results are presented in visual form in Figure 2.

Figure 2. Visualised indicator weights of the infrastructure group



Source: own elaboration

It could be concluded (Table 4 and Figure 2) that the most critical factor of the infrastructure group is infrastructure for the Internet of Things. This is a relatively new phenomenon in the economy, which could not be achieved without digitalisation. Chen

et al. (2021) state that smart infrastructure based on artificial intelligence, which the Internet of Things could be assigned to, is the main contributor to the digital economy. Second place deservedly went to household access to computers, as their use directly influences activities online, which are part of the digital economy. The prices for connectivity and higher internet speed are assigned almost equal weights. Such a result could be explained by the fact that there could be a positive relationship between those two factors, i.e. higher internet speed is more expensive. It is worth mentioning that there should be a balance between those two sub-indicators, as higher internet speed is necessary for the higher quality of the digital economy; however, the prices should be acceptable based on the level of the overall economy of the country. Secure server infrastructure was ranked in fifth place by the experts with an assigned weight of 0.105. Overall, it could be stated that all the sub-indicators except the Internet of Things are assigned similar weights, which shows the relatively equal importance of all the sub-indicators mentioned.

Indicators for the Empowering Society group are provided with the assigned weights (Table 5).

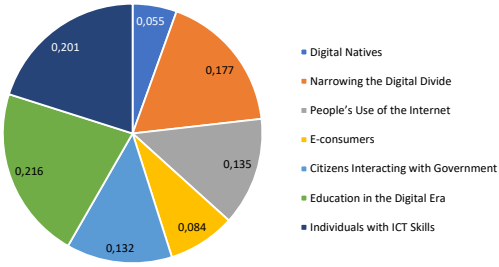
Table 5. Indicator weights of the Empowering Society group

Indicator	Weight (Rank)
Digital Natives	0.055 (7)
Narrowing the Digital Divide	0.177 (3)
People's Use of the Internet	0.135 (4)
E-consumers	0.084 (6)
Citizens Interacting with Government	0.132 (5)
Education in the Digital Era	0.216 (1)
Individuals with ICT Skills	0.201 (2)
Technical Parameters	
λ; CR	7.144; 1.8%

Source: own elaboration

The results are presented in Figure 3 in visual form.

Figure 3. Visualised indicator weights of the Empowering Society group



Source: own elaboration

As shown in Table 5 and Figure 3, education in the digital era was assigned the highest value of 0.216. The digital economy could not develop without the specific digital skills of humans because all services are being moved online within the framework of the digital economy; hence, education plays a vital role in this process. This result is proven by the fact that the second sub-indicator is individuals with ICT skills. The two sub-in-

dicators mentioned may have a relationship because individuals may obtain ICT skills during the education process. Narrowing the digital divide appeared to be a vital sub-indicator, in third place with a weight of 0.177. The digital divide has been a problem, especially when it comes to different generations or different cities in a country (i.e. the capital city compared to smaller cities). Globally, a digital divide could occur between countries with varying levels of development. Hence, the sub-indicator mentioned is vital in measuring the digital economy. Use of the Internet was in fourth place with a relatively high weight of 0.135. The digitalisation of the economy could not be achieved in a country if people did not use the Internet. A slightly lower weight was assigned to the indicator of citizens interacting with the government. All the positive changes lie in the interaction between the two sides, and the digital economy is no exception. The last two sub-indicators with the lowest weights (less than 10 per cent) are e-consumers and digital natives.

The next group is innovation and technology adoption, for which the weights of sub-indicators are provided in Table 6.

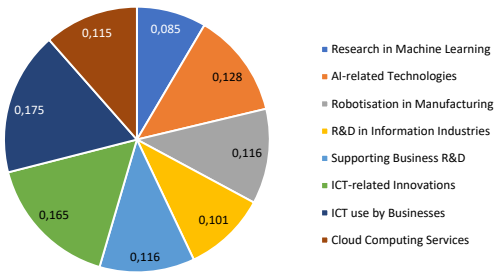
Table 6. Indicator weights of the Innovation and Technology Adoption group

Indicator	Weight (Rank)
Research in Machine Learning	0.085 (8)
AI-related Technologies	0.128 (3)
Robotisation in Manufacturing	0.116 (4-5)
R&D in Information Industries	0.101 (7)
Supporting Business R&D	0.116 (4-5)
ICT-related Innovations	0.165 (2)
ICT use by Businesses	0.175 (1)
Cloud Computing Services	0.115 (6)
Technical Parameters	
λ; CR	8.136; 1.4%

Source: own elaboration

The results are presented in Figure 4 in visual form.

Figure 4. Visualised indicator weights of the Innovation and Technology Adoption group



As shown in Table 6 and Figure 4, the two most influential sub-indicators are linked to ICT, i.e. ICT use by businesses and ICT-based innovations. Their weights are 0.175 and 0.165 respectively. The results are evident as ICT is an essential concept in overall digitalisation as in the digital economy. AI-related technologies were in third place with a weight of 0.128. Nowadays, many digital services are based on artificial intelligence; because of that, this sub-indicator received such a high evaluation. The sub-in-

dicators robotisation in manufacturing and supporting business R&D are assigned the same weight of 0.116, which is a high result. These sub-indicators are equal as robotisation in manufacturing is linked to supporting business R&D activities. Robotisation could be treated as part of R&D. Cloud computing services received almost the same weight, which shows that the last three sub-indicators mentioned go together and are related to digitalisation, and hence the digital economy. R&D in the information industries is in seventh place but still has quite a high weight of 0.101, which proves that R&D activities are vital in order for the digital economy to develop. The last sub-indicator of the analysed group is research in machine learning, with a weight of 0.85.

The weights of the Jobs and Growth group are provided in Table 7.

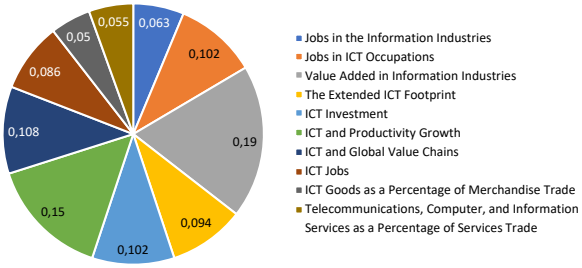
Table 7. Indicator weights of the Jobs and Growth group

Indicator	Weight (Rank)
Jobs in the Information Industries	0.063 (8)
Jobs in ICT Occupations	0.102 (4-5)
Value Added in Information Industries	0.190 (1)
The Extended ICT Footprint	0.094 (6)
ICT Investment	0.102 (4-5)
ICT and Productivity Growth	0.150 (2)
ICT and Global Value Chains	0.108 (3)
ICT Jobs	0.086 (7)
ICT Goods as a Percentage of Merchandise Trade	0.050 (10)
Telecommunications, Computer, and Information Services as a Percentage of Services Trade	0.055 (9)
Technical Parameters	
λ; CR	

Source: own elaboration

The results are presented in Figure 5 in visual form.

Figure 5. Visualised indicator weights of the Jobs and Growth group



Source: own elaboration

Table 7 and Figure 5 show that the highest weight was assigned to value added in information industries (0.190). This result is logical because the digital economy is linked to information industries. If there is no value added, it means that the digital economy is not necessary for developing a country. ICT and productivity growth indicators were ranked second, as ICT is an essential part of the digital economy. Growth in productivity allows the digital economy to expand. ICT and global value chains are assigned

a weight of 0.108, equal to the third position. Globalisation itself is a driver of the digital economy; for this reason, global value chains have earned such a high ranking. ICT investment and jobs in ICT occupation are ranked fourth and fifth, which shows their similar importance. Investment plays a vital role in the development of any phenomenon, and the digital economy is no exception. At the same time, jobs in the ICT occupation allow the digital economy to spread faster as more people are working in that field. ICT jobs have received a weight of 0.086. All activities related to ICT are ranked highly, as ICT is one of the backgrounds of the digital economy.

Table 8 shows the indicator weights of the Finance group.

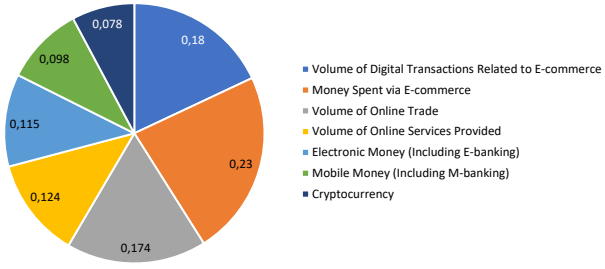
Table 8. Indicator Weights of the Finance group

Indicator	Weight (Rank)
Volume of Digital Transactions Related to E-commerce	0.180 (2)
Money Spent via E-commerce	0.230 (1)
Volume of Online Trade	0.174 (3)
Volume of Online Services Provided	0.124 (4)
Electronic Money (Including E-banking)	0.115 (5)
Mobile Money (Including M-banking)	0.098 (6)
Cryptocurrency	0.078 (7)
Technical Parameters	
λ; CR	7.123; 1.5%

Source: own elaboration

The results are presented in Figure 6 in visual form.

Figure 6. Visualised indicator weights of the Finance group



Source: own elaboration

In first place with a weight of 0.230 was money spent via e-commerce (Table 8 and Figure 6). E-commerce is one of the most vital spheres of the digital economy; it is for this reason that it has received the highest ranking. The volume of digital transactions related to e-commerce was assigned a weight of 0.180 and the volume of online trade a weight of 0.174, i.e. those sub-indicators are almost equal. The digital economy is sometimes defined as a phenomenon connected to online activities; hence, these two weights are not surprising. The volume of online services provided is in fourth place with a weight of 0.124. This result is essential to policy-makers because, as mentioned above, the digital economy is associated with activities, especially since this trend has increased during the COVID-19 pandemic. The last two sub-indicators are online money and cryptocurrency. This situation could be explained by the fact that not all people are used to using that kind

of currency (including m-banking). Still, those two sub-indicators are crucial in measuring the digital economy, and their weights could increase in the future.

4. Discussion and Conclusions

The digital economy is quite a new approach;, hence, there is a lack of techniques for measuring the level thereof. Certain methodologies were previously proposed, but there is no general methodology that reflects the present situation; consequently, the current paper aimed to update the existing methodologies for measuring the digital economy of a country. After reviewing the methodologies, it was found that the OECD proposed the only methodology that could be used to evaluate the level of the digital economy in 2018. However, it had one core drawback – finance was not considered a separate group, although the digital economy as traditional economy is directly related to finance. Hence, the abovementioned group was added to the OECD methodology, which was upgraded as a result. Notwithstanding this, in order to use it, the weights should have been assigned to every group and indicator. For that purpose, expert evaluation was employed, and weights were assigned to the groups and their indicators.

As such, the results obtained could be helpful for policymakers, as they will help to measure the level at which a country's digital economy presently finds itself, which is required in order to develop future development strategies. What is more, knowing where one stands could help to establish a benchmark and discover the best ways to reach it. In other words, the analysis of the present situation could serve as a roadmap for future development. The digital economy should be included in every country's strategy, as the adoption of digital services will not cease, but will only expand and deepen. Therefore, the progress of the digital economy is one of the core actions which is vital to the development of a country.

Moreover, the digital economy is vital to achieving sustainable development goals (SDG), which is one of the critical priorities across the globe. 17 sustainable development goals (SDGs) were announced by the United Nations (2015) and are expected to be reached by 2030 to achieve a high level of sustainable development. Meanwhile, the Council of the European Union (2017) adapted Sustainable Development Goals to the European Union. However, achieving sustainability is not the only priority of the European Union. One of the priorities is *A Europe fit for the digital age (von der Leyen, 2019)*. Politicians announced three activities to achieve this – one of which is *Shaping Europe's digital future*, which is being implemented through three pillars. One of the pillars is *a fair and competitive digital economy (European Commission, 2020)*. Based on this, it could be stated that an evaluation of the level of the digital economy is one of the main drivers by which to reach SDGs.

In summary, the results obtained could be used by different countries to measure the level of the digital economy, as knowing where we are at present could help to achieve better results in the future.

The current paper has some limitations. First of all, the research experts were all from Europe; hence, the methodology presented here could be viewed as more applicable to European countries than others. Secondly, the weights ought to be calculated by repeating the procedure from the very beginning in case of adding additional measurement factors.

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