PRACE NAUKOWE UNIWERSYTETU EKONOMICZNEGO WE WROCŁAWIU
RESEARCH PAPERS OF WROCLAW UNIVERSITY OF ECONOMICS AND BUSINESS

2020, vol. 64, nr 6

ISSN 1899-3192
e-ISSN 2392-0041

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THE LEVEL OF DIGITIZATION OF THE INFORMATION SOCIETY IN EU COUNTRIES AS A DETERMINANT OF THE USE OF OFFICIAL STATISTICS

DOI: 10.15611/pn.2020.6.02
JEL Classification: C38, C63, O35

Quote as: Becker, A. (2020). The level of digitization of the information society in EU countries as a determinant of the use of official statistics. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, *64*(*6*).

Abstract: The development of ICT and information culture has meant that the expectations of information recipients have changed, the more so that these technologies have permanently penetrated into many areas of life. This is expressed by the need to educate and activate those interested so that they can participate in the changing socio-economic reality.The article discusses the role of official statistics in socio-economic life and its impact on the information society. The challenges awaiting today and the participation of new technologies in the implementation of these projects were presented. The paper also presents the results of the classification study of EU countries according to the degree of digitization of society, obtained using the ELECTRE TRI method. The study used empirical material that came from the resources of the European Statistical Office (Eurostat). The results of multi-criteria analysis confirmed that EU residents are active users of the global Internet network. In terms of the use of ICT services, there are disproportions between EU countries.

Keywords: public statistics, information society, Information and Telecommunications Technologies (ICT), ELECTRE TRI.

1. Introduction

It is expected from official statistics to provide state authorities, public, central and local government authorities, the economic sector and the public with official data on the current economic, demographic, social and environmental conditions.

It seems intriguing for the public to be interested in this information, because the majority probably do not distinguish between official and unofficial data sources and are unable to assess their quality. However, year by year the facts made public, especially regarding households, are the subject of growing interest and analysis of people not always professionally related to statistics. This may be the result of belonging to the information society generation, focused on the production, collection and circulation of information, i.e. tasks entrusted to public statistics. For such a society, the computer, the Internet and all digital techniques are one of the most important aspects of life and work (Gołka, 2005, p. 254), as well as acquiring knowledge and raising competences in this area.

According to the definition provided by the Central Statistical Office (CSO, 2020), public statistics are a system of collecting statistical data, which are then collected, stored and developed. The tasks of official statistics include announcing, sharing and spreading the results of statistical surveys. The principles of the objective and independent conducting of statistical surveys, their organization, conduct and scope of duties are specified in the Act of June 29, 1995 on Public statistics (i.e. Journal of Laws of 2018, item 997), the results of which are statistical data.

The tasks of official statistics in shaping the information society are limited to its statistical description. For people who do not have the appropriate qualifications, it may be difficult to properly understand and interpret the published information. On the other hand, the development of ICT and information culture has meant that the expectations of information recipients have changed, the more so that these technologies have permanently penetrated into many areas of life. This is expressed by the need to educate and activate those interested so that they can participate in the changing socio-economic reality. To move on to intensive communication with the public, it is worth familiarizing oneself with the level of use of modern technologies, even among the European community.

The aim of the article is to examine the level of digitization of the information society in EU countries. It was assumed that digital competences are an important factor affecting the use of the potential of official statistics. The paper draws attention to the role played by public statistics in the life of the information society and whether it is significantly interested in innovative solutions and prepared to consciously use them. The work is of a research and analytical nature, and the research focused on grouping EU countries in terms of the degree of use of digital services of its inhabitants in 2019. The results of multi-criteria analysis obtained using the ELECTRE TRI method can be used to assess the occurrence of this phenomenon in the EU, as well as to select countries requiring support and supervision in the use of modern technology.

2. The role of official statistics in social life

In recent years many interesting papers have been published devoted to the issues of official statistics, indicating the educational, information and IT gaps in this field. Attention was also paid to the interest in this topic and the need to increase the competence of people who use official statistics. Ramasamy (2016) presented the postulate of compiling the indicators of a knowledge-based economy (KBE) in a holistic manner, as part of an official statistical system. The author stated that the needs and requirements of statistics users have changed significantly in recent years. The development of technology has contributed to this, above all the rapid exchange of information. In contrast, Gal and Ograjenšek (2017) explored the topic of support for statistics users who are not specialists in this field in expanding their knowledge of official statistics. The authors indicate the educational gaps and note the skills and competences that they should have, and suggest solutions to better understand official statistics.

Radermacher (2018) stated that in recent years the number of digital data created, stored and processed in the world has grown exponentially. He pointed out that in the case of official statistics on public information infrastructure provided by statistical authorities, the new era not only offers more opportunities, but also carries various threats. Porciani and Rondinella (2018) included insights into the scant knowledge of methods and tools used in official statistics among Italian students, and limited interest in this subject among researchers. The authors drew attention to the importance of data quality and official statistics, which should be disseminated not only by statistical authorities, but also constitute the subject of academic education. Silva and Aguilar (2018) discussed the steps that should be taken regarding official statistics to better understand important economic, socio-demographic, geographical and environmental facts and country management, and discussed the lack of interest in such statistics in the Mexican student environment and the difficulties faced by those who would be keen to become familiar with such information. In turn Izquierdo, Salcedo and Gómez (2018) noted the importance of cooperation between public data providers (owners of administrative data) and the private sector. They focused on analysing the shape of the said cooperation and the need for its legal support. Giczi and Szőke (2018) devoted their article to the advanced use of official statistics and the problems that statistics may encounter when using Big Data. The authors presented ways of traditional data collection and pointed out the differences that have to be faced when dealing with Big Data. They also discussed the characteristics of Big Data in comparison with traditional statistical methods based on qualitative criteria of official statistics, as well as the problems associated with Big Data analysis.

According to Allin (2019), the digitization of data collection for official statistics has a large potential impact on society. Nowadays much attention is being paid to access to large data sets, including from satellites, point of sale systems and social media. New data sources can provide evidence for, e.g. state strategies aimed at

improving society's quality of life. Komorowski (2019) presented in an interesting manner the way of using official statistics provided by national and local statistical organizations, international organizations and private organizations to analyse media policy. The advantages and limitations of working with official and industry statistics, including data reliability, were discussed.

Radermacher (2020a) focused on the topic of the scientific basis of official statistics and discussed the social position, role and function of statistics (in the sense of science, information and institutions). According to Radermacher (2020b), what awaits us in the future is not easy to predict and is not usually of interest to statisticians who tend to focus on the past. The author believes that there are some trends or mega-trends such as digitization and globalization, the effects of which are not yet known in detail, but which should be prepared for. The paper also highlights the consequences of statistical policy resulting from the changed environment and statistical conditions.

3. Challenges of official statistics

Since 2002, research has been carried out at the statistical offices of the European Union member states on the use of ICT in enterprises, households and individuals. The methodology of this research is based on the model developed by Eurostat, taking into account national needs and suggestions of experts who represent the statistical offices of EU member states, as well as representatives of the European Commission and OECD. Monitoring the level of advancement in modern information society technologies is of interest to official statistics. Its main goal in this area is to observe the changes related to the equipment and the use of ICT, especially computers and the Internet, as well as advanced Internet services (CSO Report, 2016, 2017, p. 22).

The indicators obtained thanks to the aforementioned studies are used in planning policy for development and supervision over national, regional and voivodeship strategic and program documents. The knowledge that comes from studies on the information society is used, among others, to draw up and monitor the National Strategy for Regional Development, the National Cohesion Strategy, the Innovative Economy Operational Program and the Information Society Development Strategy (Witkowski, 2014, p. 2). The collected information is also forwarded to the European Commission and the OECD, and then used for international analyses and comparisons. The results of the research on innovation are one of the main components of the set of indicators developed by the European Commission, which support the conduct of economic, scientific and technical policy (European Innovation Scoreboard – EIS).

The contemporary development of official statistics is carried out with the support of new technologies. One of the challenges of recent years is the unusual data sources that occur, among others, via social communication. These data represent huge potential due to their diversity, number and availability in real time

(Big Data, 2018). That is why official statistics become involved in national and international work, the purpose of which is to verify the usefulness and possibilities of using this data for official statistics. Work is progressing on applying Big Data in statistics, e.g. the activities that involve the use of data:

- posted on websites describing the labour market,
- derived from measuring devices on roads for transport testing,
- obtained from telecommunications operators, which are used for research related to tourism or daily commuting,
- generated by Twitter users for analysing moods and detecting tourist activity,
- regarding job offers published on Internet websites (CSO Report, 2016, 2017, p. 30).

The use of Big Data would allow partial replacement of traditional research, however this requires legislative, methodological and technical changes.

All studies, among others, by the CSO, emphasize the commitment and need to use ICT by modern societies and the role that these technologies play in the development of various socio-economic strategies. It is intriguing to learn about the level of involvement of EU citizens in the use of ICT, as well as the position of the Polish population in such a statement. Is society significantly interested in innovative solutions? Have the modern solutions surrounding us become an important element of our lives? There have been changes in the mentality of society for many years, especially in relations to the use of technological solutions, yet are they at a satisfactory level?

4. Level of digitization of EU residents

Since 2015 the European Commission (EC), using the Digital Economy and Society Index (DESI), has been comparing the digital advancement of individual Member States. The report published in 2019 (DESI, 2019) shows that Poland must be more active in the field of digital competitiveness. Out of 28 EU countries in the overall DESI index ranking, Poland took 25th place, ahead of Bulgaria, Romania and Greece, while Finland, Sweden, the Netherlands and Denmark were listed among the most advanced digital economies in the EU.

Attention should be paid to the competences of the Internet or digital device users who live in the EU. The EC research results published in 2019 (DESI, 2019) indicated that the leaders in the EU in terms of general Internet skills are residents of Luxembourg, the Netherlands and Sweden. In turn, in the field of advanced experience in the field of ICT, the leaders are Finland, Sweden and Estonia. The last positions in all rankings were taken by Bulgaria, Romania, Italy and Greece. The reasons for the lack of access to the Internet at home include the lack of need or interest, insufficient skills, and the high costs of access and equipment. In comparison to women, men showed at least basic digital skills, while the level of education and area of residence also influenced competences in this respect. Lower levels were recorded among rural

residents and people with primary education at most. By far the largest number of Internet users were young (97%, aged 16-24) and people with higher education (97%). On the other hand, people with low levels of education or low incomes, as well as the elderly, pensioners or inactive people used the Internet less frequently. It was also noted that not using the Internet was the reason for the lack of digital skills in around 10% of the EU workforce. In contrast, in 35% of people, such preparation was below the minimum of modern expectations in most jobs. In order to reduce the digital skills gap, in mid-2018, over 100 enterprises, educational institutions and NGOs committed to providing funds, e.g. for training, certification and raising awareness in the field of digitization.

Based on information published by Eurostat (Eurostat, Database, 2020), it can be concluded that in 2019, EU residents were significantly interested in using the Internet. The highest percentage (98%) of participants of the global network lived in Sweden, whereas the lowest percentage of Internet users was recorded by Bulgaria – 68%. Poland in this ranking was below the EU average, which amounted to 86%, and 80% of the surveyed inhabitants of Poland declared using the Internet. Figure 1 presents the evolution of the described phenomenon in individual EU countries. Telephoning or connecting via the Internet was definitely attracted the greatest interest among residents of Cyprus – 76%. These services were least frequently used

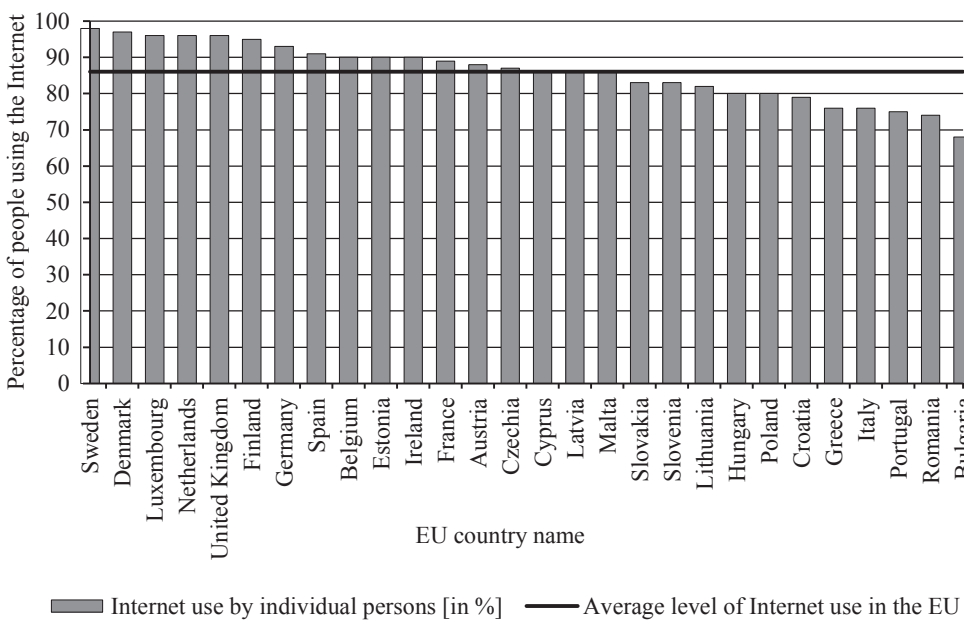

Fig. 1. Use of the Internet by EU residents against the background of the average in 2019

Source: own study based on Eurostat data.

by citizens of Portugal (40%) and Slovenia (42%). Poles were also not enthusiastic about the above solutions, only 49% of those surveyed, with an average of 54%. In 2019, Danes (81%) were the most active in social networks, with low frequency of the French (42%) and Italians (42%). In Poland, this percentage was 53% against the average of 62%.

Significant disparities were observed when using online banking. In Finland the percentage of people using this service was 91%, while in Romania and Bulgaria it was 8% and 9%, respectively. Poland recorded a result below the average (59%), the percentage was 47%. The highest percentage of people using the Internet to search for health information was recorded for Finland (76%), while the lowest for Bulgaria (30%) and Romania (31%). Among Poles this topic enjoyed moderate interest – 47% (compared to the EU average – 56%). The cloud service, i.e. data storage on the server of the service provider, was most frequently used by Swedes – 63%. A much lower percentage in this respect was noted by the Bulgarians – 18%. Poles were also not willing to use such services, the percentage of users was 21% against the average of 36%, and was 1% above the EU average (19%) in the case of the sharing economy, which consists in providing and using services between people using new technologies to make contact (Communication from the EC, 2016). These types of services were the most popular in Luxembourg (46%), while the lowest percentage was observed in the Czech Republic and Cyprus, with only 5% of users.

5. Disproportions in EU countries in terms of using ICT

In the research on the use of information and communication technologies by individuals in the European Union (EU-28), empirical material from Eurostat (Eurostat, 2020a) resources were used. The information received characterized the evolution of this phenomenon in 2019. The participants in the voluntary direct interview were people aged 16-74 living in the countries of the EU-28 member states. It should be mentioned that collecting relevant data requires the completion of Eurostat model questionnaires, which are sent annually by the national statistical offices (Eurostat, 2020b). The material obtained in this way is the basis for monitoring the digital economy and digital society, a program implemented in 2016-2021.

The variables that were consciously selected for classification studies due to their completeness and decision-making problem, formed a seven-element set of criteria that included the percentage of individuals:

- X1 – Internet use by individuals,
- X2 – Internet use: telephoning or video calls,
- X3 – Internet use: participating in social networks,
- X4 – Internet use: Internet banking,
- X5 – Internet use: seeking health care,
- X6 – Individuals – use of cloud services,
- X7 – Individuals – collaborative economy.

The selected criteria were the basis for research on the grouping of EU countries according to interest in ICTs by the inhabitants of the community. They were carried out using the ELECTRE TRI method, and the computer program J-Electre-v2.0 was used for the calculations. In this way the resulting division was obtained, which consisted of three groups. Their numbering resulted from the hierarchy of importance. The first class comprised countries in which inhabitants used ICT at the highest level, the second class included average representatives, while the third class was represented by countries with the lowest ICT involvement. Due to the assumption regarding the division into three classes ($k = 3$), two profiles defining class boundaries were defined, determined for each criterion by dividing the range into equal three sections. Three threshold values were determined for each profile and criterion. Each indistinguishability threshold accounted for 5% of the profile value on a given criterion, while the preference threshold was 25%, and the veta threshold for 50% of these values. Simulations were carried out taking into account even and different weights. Higher weights were given to the criteria related to communication, cooperation and social relations, which reflected the competence of society in using the potential of official statistics. The highest weight was given to the criteria describing: Internet use ($w_1 = 0.2$), participating in social networks ($w_3 = 0.2$) and collaborative economy ($w_7 = 0.2$). For the other criteria: $w_2 = 0.15$; $w_4 = 0.1$; $w_5 = 0.1$; $w_6 = 0.05$.

5.1. Multi-criteria decision support method

The methods grouped under the ELECTRE family (ELimination Et Choix Traduisant la REalité-ELimination and Choice Expressing the Reality) were designed as decision support methods that need to be taken into account considering the multiple criteria (Figueira, Greco, Roy, and Słowiński, 2010). They are widely used in decision-making problems, e.g. selection, ordering (ranking) and classification (sorting) (Merad, Verdel, Roy, and Kouniali, 2004). A comprehensive review of the applications of the ELECTRE family methods and related applications is provided by Govindan and Brandt (2016).

The ELECTRE family of methods is based on outperformance relation *S*. This is a binary relation that says that the variant *a* outranks the variant *b* (*aSb*), if, given the available information on the decision maker preferences, there are clear indications that variant *a* is at least as good as variant *b* and there are no compelling reasons to reject this statement (Roy, 1991; La Gauffre et al., 2007, p. 479; Roy and Słowiński, 2008, p. 185; Figueira, Greco, and Roy, 2009, p. 481).

The ELECTRE TRI method is an example of a procedure that can be used for classification (sorting) issues (Doumpos, Zopounidis, 2002; La Gauffre et al., 2007). Among the latest literature, in which the authors indicate the use of this procedure, the publication by Aggarwal, Grover and Ahuja (2019) on the topic of assessing

(in relation to 11 key criteria) the usability of mobile applications deserves attention. The proposal to use the ELECTRE TRI method in the area of autonomous computer technologies, which pose a big challenge for the IT industry, was discussed in the work by Dehraj and Sharma (2020). The authors focused their research on assessing the quality of stand-alone software. An interesting proposal to use this procedure was presented by Micale, Giallanza, Puma and La Scalia (2019). The application of ELECTRE TRI allowed to group the received initiatives under the project related to research and innovation in the agri-food sector into ideas that can be rejected, reviewed and qualified for funding. A sensitivity analysis was also carried out to examine the imperfections of non-funded projects. However, Mahdiraji, Hafeezand and Hajiagha (2020) proposed using ELECTRE TRI to identify key business processes to ensure business stability.

The main idea of ELECTRE TRI is based on the so-called class separating profiles. Each decision variant (object) can be described in terms of its values on the criteria (features). Inputs are the criteria weights and thresholds: indistinguishability, preferences and veta. It is also required to specify the number of classes and specify their boundaries, i.e. separation profiles. The operation of the calculation procedure is based on a number of tests (compliance and non-compliance) (La Gauffre et al., 2007, p. 488; Roy and Słowiński, 2008, pp. 186-187). This method compares each decision variant with all class separation profiles, after which a number of hypotheses are obtained which show whether the variant exceeds the given thresholds or not. Four situations can emerge from the tests: the variant is preferred over the profile, the variant is worse than the profile, the variant is indistinguishable from the profile or the variant is incomparable with the profile (Doumpos and Zopounidis, 2002, pp. 570-571; Dias and Mousseau, 2003, pp. 286-287; Merad et al., 2004, pp. 172-173).

5.2. The results of multi-criteria analysis

The allocation of individual EU countries to clusters was obtained as a result of two complementary procedures: optimistic and pessimistic. In the ELECTRE TRI method, the classification is made on the basis of knowledge of the overweight relation S for each ordered pair (a, b_h), where: a $(a_1, a_2, ..., a_n)$ is a decision variant (EU country), and b_h profile being the upper limit of class C_h and lower limit of class C_{h+1}, $h = 1,2,...,p$. The optimistic procedure consists in comparing variant a with profiles b_h $(h = 1,2,...,p-1,p)$, starting from the lowest profile (b_1). If b_h is the first profile encountered such that $b_h Pa$ (which means that b_h is preferred over a), then a is assigned to class C_h. In turn, in the pessimistic procedure, a comparison of a is made with the profiles b_h $(h = p, p-1, ..., 1, 0)$, starting from the highest profile (b_p). If b_h is the first encountered profile such that aSb_h, then a is assigned to class C_{h+1} $(h = 1,2,...,p)$ (La Gauffre et al., 2007; Doumpos and Zopounidis, 2002). The list of

EU countries and the cluster number into which the given country was classified is given in Table 1. It is considered that the surplus is indisputable when the reality factor σ exceeds the cutting level $l = 0.75$.

Table 1. Grouping results of EU countries by the ELECTRE TRI method according to the use of ICT by natural persons in 2019

Class 1	Class 1/2	Class 2	Class 2/3	Class 3
Ireland	Denmark	Belgium	Cyprus	Bulgaria
Luxemburg	Finland	Austria →	[Austria]	Greece
Sweden	the Netherlands	Croatia	Czech Republic	Portugal
Great Britain →		[Great Britain]	Latvia	Romania
[Malta] ←		Malta		Slovenia
		Estonia		Italy
		France		
		Spain		
		Lithuania		
		Germany		
		Poland		
		Slovakia		
		Hungary		

[…] – category change as a result of using different weights for the criteria for assessing countries; Class: 1, 2 and 3 – stable allocations; Class: 1/2, 2/3 – unstable allocations.

Source: own study.

Comparing the presented classification results, most countries were assigned to the second (average) group. The least numerous clusters (first) were created by countries whose inhabitants in 2019 were the most engaged in the use of ICT. The leaders include Ireland, Luxembourg and Sweden, while in the weakest class were Bulgaria, Greece, Portugal, Romania, Slovenia and Italy. The arrows (Table 1) indicate the direction of movement of countries between the classes depending on the weights adopted. A detailed breakdown of EU countries by weight and procedures is given in Table 2. Analysing the obtained divisions due to balanced and differentiated weights, slight changes were noted in class allocations. Great Britain with the same weights on the criteria was classified into the first cluster, while distinguishing criteria related to communication and exchange of data and services with social networks (different weights) to the second class. In the case of Malta, the opposite assignment to classes was observed. Attention should also be paid to Austria, which, as a result of the pessimistic procedure and different weights, was placed in class 3, while taking into account other assumptions, it was grouped in the second class. As a result of the pessimistic and optimistic procedure, a similar division of EU countries was obtained. Differences were observed in the case of Denmark, Finland and the Netherlands, which in pessimistic terms fell into the second class, while the optimistic approach categorized this country into the first class (Class 1/2). A similar

Table 2. Grouping results of EU countries by the ELECTRE TRI method in a pessimistic and optimistic approach according to the use of ICT by natural persons in 2019

Name of the country	Lambda 0.75			
	Levelled weights		Different weights	
	Procedure			
	Pessimistic	Optimistic	Pessimistic	Optimistic
	Class number			
Ireland	1	1	1	1
Luxembourg	1	1	1	1
Sweden	1	1	1	1
United Kingdom	1	1	**2**↓	**2**↓
Belgium	2	2	2	2
Austria	2	2	**3**↓	2
Croatia	2	2	2	2
Denmark	2	**1**	2	**1**
Estonia	2	2	2	2
Finland	2	**1**	2	**1**
France	2	2	2	2
Spain	2	2	2	2
Netherlands	2	**1**	2	**1**
Lithuania	2	2	2	2
Malta	2	2	**1** ↑	**1**↑
Germany	2	2	2	2
Poland	2	2	2	2
Slovakia	2	2	2	2
Hungary	2	2	2	2
Bulgaria	3	3	3	3
Cyprus	3	**2**	3	**2**
Czechia	3	**2**	3	**2**
Greece	3	3	3	3
Latvia	3	**2**	3	**2**
Portugal	3	3	3	3
Romania	3	3	3	3
Slovenia	3	3	3	3
Italy	3	3	3	3

Source: own study.

phenomenon was noted for the Czech Republic, Cyprus and Latvia, and it concerned the placement of these countries in the third class in pessimistic terms and in the second class using the optimistic procedure (Class 2/3). It should be added that countries that definitely belonged to their groups regardless of the procedure used can be described as stable.

6. Conclusions

Public statistics provide an essential element in society's information system. (PBSSP, 2020) Thanks to the data provided by official statistics services, the government of the state or voivodeship self-government can make specific decisions regarding social policy, economy, legal changes, etc. Statistical data also allows business owners to orient themselves in the economic situation of the country, its regions and foreign markets, whereas NGOs can obtain information that will expand their knowledge about the economic and social situation.

The knowledge derived from data published by official statistics services may also affect individual recipients and their decisions, therefore it is important to skilfully read and interpret this information, which is associated, among others, with the appropriate quality and presentation of statistical material. However, statistics are often perceived as a difficult discipline and requiring specialized competences. Hence the mission of official statistics in this situation may be to implement an education and information policy, which would have a positive impact on the increase of skills and development of the information society. A useful tool that would contribute to better communication, conducting training and courses could be more and more popular, and social networks whose participants would appreciate the speed and availability of information flowing through them.

Involvement in the virtual world is associated with the use of information and communication technologies. The research presented in the article shows that generally, EU residents are Internet users who are more willing to use the global network. However, in terms of using the popular services, there are disproportions within the Union. The leaders are countries that have achieved economic success, such as Ireland, Luxembourg and Sweden, with better technological opportunities and solutions and with significant financial resources. The ELECTRE TRI method allowed to capture the structure of the allocation of EU countries to the designated classes of involvement in ICT, taking into account many variables and their priorities.

Among Polish publications on the use of ICT, Turek (2016) deserves attention. The author thinks that publishing official statistics data has great potential for the active creation of an information society. This can be achieved by using the relevant data visualization and proper publishing channels. Nevertheless these tools are not the absolute answer to the problem, and a crucial element is required for the development of an information society i.e. statistical education, whereas Sułkowski (2015) points out that when we talk about means of communication, this actually always mean electronic communication. This form of communication with citizens is one of the standards of e-government, for example. Social media is increasingly being used for this purpose worldwide. The author emphasizes their importance as a tool supporting image building and social confidence in public administration. Recently, interesting research was carried out related to ICT by Pargaonkar, Mishra and Kadam (2019). The objective of the study was to identify the factors that affect

the use of ICTs by older adults and the barriers they face while adapting to the technology. De La Hoz-Rosales, Camacho Ballesta, Tamayo-Torres and Buelvas-Ferreira (2019) investigated the effects of ICT on development primarily from the perspective of their contribution to a country's economic growth. The results show that regardless of a country's level of development, the individual use of ICT has a positive impact on human development, especially on the dimensions measured by HDI (having a long and healthy life, being knowledgeable, and having a decent standard of living). Lucendo-Monedero, Ruiz-Rodríguez and González-Relaño (2019) became interested in identifying the spatial inequalities in digital development (digital divide, DD) of households and individuals in Europe at regional level. The results of this study lead to the conclusion that the digital development of households and individuals in European regions is based on access to broadband Internet. In this context, the level of digital development and the DD of European regions is related households and individuals' daily use of e-commerce, e-banking and e-government services. However, the use of social networks in households with broadband shows a lesser DD in Europe. Thus, a region's level of digital development is directly related to that of its neighbours, and geographical proximity/vicinity is an element to take into account when analysing the disparities of the DD.

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BADANIE POZIOMU CYFRYZACJI SPOŁECZEŃSTWA INFORMACYJNEGO W KRAJACH UE JAKO DETERMINANTA WYKORZYSTANIA STATYSTYKI PUBLICZNEJ

Streszczenie: Rozwój technologii teleinformatycznych i kultury informacyjnej spowodował, że oczekiwania odbiorców informacji uległy zmianie, tym bardziej że technologie te przeniknęły na stałe do wielu dziedzin życia. Wyrażane jest to potrzebą edukowania oraz aktywizowania zainteresowanych, aby mogli uczestniczyć w zmieniającej się rzeczywistości społeczno-gospodarczej. W artykule omówiono rolę statystyki publicznej w życiu społeczno-gospodarczym i jej wpływ na społeczeństwo informacyjne. Przedstawiono czekające ją współcześnie wyzwania oraz udział nowych technologii w realizacji tych przedsięwzięć. W pracy zaprezentowano także wyniki badania klasyfikacyjnego krajów Unii Europejskiej (UE) ze względu na stopień cyfryzacji społeczeństwa, otrzymane za pomocą metody ELECTRE TRI. W badaniach wykorzystano materiał empiryczny, który pochodził z zasobów Europejskiego Urzędu Statystycznego (Eurostat). Wyniki wielokryterialnej analizy potwierdziły, że mieszkańcy UE są aktywnymi użytkownikami globalnej sieci internetowej. Pod względem wykorzystania usług teleinformatycznych zauważa się występowanie dysproporcji pomiędzy krajami UE.

Słowa kluczowe: statystyka publiczna, społeczeństwo informacyjne, ICT, ELECTRE TRI.