DIGITAL TECHNOLOGY TREND IN ROMANIA AND ITS IMPACT ON THE YOUNG SEGMENT

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ABSTRACT
Development of new technologies, the way they evolve and how society reacts to it are at very high interest level these days. Eurostat synthesizes through Digital Economy and Society Index (DESI) five dimensions like connectivity - broadband market developments in the EU, human capital - digital inclusion and skills, use of internet services, integration of digital technology and digital public services. The purpose of this article is to determine the pattern of digital technology in Romania compared to European Union countries, considering several measures of DESI index for 2017-2018. Twenty eight European countries are analyzed and four main components have been created: digital advcanced features, mass market digital, ultramodern acces to broadband and care for price or communication. Moreover, clustering techniques revealed two main patterns considering advanced digital features (highest number of mobile broadband services, highest penetration of digital public services, high usage of Internet content and high penetration of advanced digital skills) and the ones that do not score significant on this component.
The young segment, as a genuine early adopter of new technologies, is the one who is the most affected and their behoviour could easily reshaped. That is why a special interest should be on the impact that digital technologies have on the youngsters in Romania in order to compensate the country's digital skills deficit.

KEYWORDS: *digital technology, principal component analysis, Romania, youngsters*

1. INTRODUCTION

The purpose of this paper is to analyze the digital technology patterns considering indicators of Eurostat Digital Economy and Society Index, see how Romania is positionned among the 28 European Union countries and also to investigate younsters reaction to the digital capabilities.
In the first part of the paper, the focus is on digital technology presenting the trends of digital technology. Also, the level of digitization of Romania compared to the other countries of the European Union based on the components of the digital evolution index is analyzed.
The impact of digital technology on young people is considerable as digital technology had a stronger impact on them, growing with it. Young people distinguish remarkably from their previous generations, their parents, and their differences in behavior can also be highlighted by the comparison between the two generations. In addition to the way digital technologies influence young people, their preferences and behavior in everyday life are highlighted.

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The second part of the paper includes the survey on the impact of digital technology on young people. A questionnaire on a sample of 120 people to observe young people's preferences was made and conducted with objective to identify young people's views on the evolution of digital technology. We also wanted to highlight the main reasons why young people use the internet, how many hours they spend on average on the internet, and what other activities they prefer during their free time.

2. LITERATURE REVIEW

Sledziewska and Włoch (2015) have presented data concerning the current gap in the digital competences of human capital in Poland in comparison to other EU countries using also data from the Digital Economy and Society Index (DESI) and Eurostat. The data have shown that computer and Internet skills amongst Poles are significantly lower than the skills of other Europeans, including those from other new EU member states. The authors argue that the gap in human digital skills is the major cause of the low level of digitalization of the Polish economy as a whole, which may critically impair its development prospects in the context of the EU Digital Single Market.
Huculova and Solcova (2018) have shown that global technological trends affect broad spectrum of areas in our life, and through the implementation of particular tools, they are affecting the development of educational levels in particular countries and also educational process itself. They have compared and revealed of the effect of digitalization and e-skills on the level of education in 20 selected EU member countries by using Factor Analysis and Cluster Analysis. As a result, they considered four clusters of countries with similar characteristics in terms of education, digital literacy and public funding and expenditure on development of ICT and education. Population e-skills demonstrated almost identical levels. The implementation of technological trends into the educational process does not depend only on its positive effects on the educational level, but also on the real opportunity to use these modern tools within the educational process. This is determined by a number of socio-economic, political and cultural aspects.
Folea (2018) has shown that the concepts of "digital skills" and "digital competences" are key terms in the discussion related to the type of skills people need nowadays not only in terms of digital inclusion in the society but also in terms of employability. According to the latest definition by the European Union, digital skills "can be broadly understood as the ability to locate, organize, understand, evaluate, create and share information using digital technology, at different levels of competence" (European Commission, 2017). The rapid development of information and communication technologies (ICT) bring major transformations with respect to the individual's integration in society and employability. The paper analyses the 28 member states of the European Union (EU) from the perspective of the persons' digital skills and employability in the science, technology (including the ICT) sectors over the period 2015 - 2017. The paper covers the following areas of research: (1) Overall digital skills, computer skills, internet skills of individuals in the EU 28; (2) Human capital with advanced and specialist digital skills in ICT in the EU 28; (3) Evolution of the digital competitiveness of the EU 28 member states from the perspective of human capital over the period 2015-2017.
Stoica and Bogoslov (2017) have investigated DESI country progress for Romania relative to the European average trend showing that Romania has developed increasingly fast over the last years and reached a position closer to the EU average, which translates into a positive evolution. While positive, the obtained results are not enough to compensate the country's digital skills deficit.

3. RESULTS AND DISCUSSION

3.1 Statistic indicators used

In order to track the digital evolution of each country, the Digital Economy and Society Index (DESI) is used. It measures status on five criteria: connectivity, human capital, internet use, digital technology integration and digital public services and each category is based on several indicators that were retrieved in the following analysis.

• Connectivity tracks fixed and mobile broadband services, speed and pricing. These services refer to high-speed internet access.

• Human Capital refers to the fundamental force of development that consists in using the Internet and the acquired digital competences. The skills gained from using these technologies arise as a result of interacting in the online environment, using digital goods and services. Thus, starting from basic skills, advanced skills can be made to enable the labor force to take advantage of technology for growth and productivity.

• The Internet is used for many activities, from online content such as video, music, games, to banking applications, communication, and online shopping, banking or e-commerce.

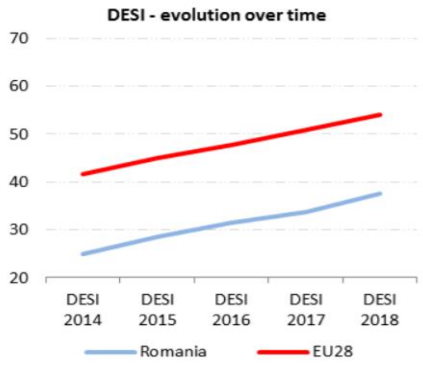
• Integration of the digital technology dimension measures business digitization and the exploitation of the online sales channel. By adopting digital technology, businesses can increase efficiency, reduce costs, and better engage customers, collaborators, and business partners. All this is done by using "cloud computing" technology. Moreover, the internet as a point of sale offers access to wider markets and growth potential.

• The size of public digital services measures the digitization of public services, focusing on e-government. The modernization and digitization of public services can increase efficiency for both public administration, citizens and businesses, as well as for providing better services to citizens.

Table 1. Romania progress on digital evolution index and on its main areas

DESI Index Components	EU		Romania			
	Score		Score		Ranking	
	2017	2018	2017	2018	2017	2018
1 Connectivity	58.5	62.6	49.5	58.1	26	22
2 Human capital	54.6	56.5	30.9	32.1	28	28
3 Use of internet	47.5	50.5	29.0	35.0	28	28
4 Integration of digital technology	36.7	40.1	18.6	17.8	28	28
5 Digital public services	53.7	57.5	37.1	41.4	26	26
DESI Index	50.8	54.0	33.7	37.5	28	28

Source: own representation based on DESI Database 2018



According to 2018 Eurostat Report, Romania ranks last out of the EU-28 in the DESI 2018. While its ranking remained unchanged over 2017, its score increased thanks to an improved performance in four of the five DESI dimensions. However, overall progress last year was slow and Romania did not manage to catch up. Digitization of the economy and digital skills in the population is low and hinders progress in most of the DESI dimensions. On the other hand, 44% of Romanian homes subscribe to ultrafast broadband (which is the 2nd highest in the EU). ICT contributes 6-7% to Romania's GDP and the digital sector is growing, with two major hubs in Bucharest and Cluj as well as significant ICT investments in other cities.

3.2 Statistical analysis of the digital evolution index - DESI

In order to determine patterns of countries' digital economy and society index, we selected for 28 European Union countries for 2017-2018, 14 scalar variables based on which we reduced the complexity of the data and turned it into fewer dimensions based on the analysis in principal components. The database used contains for each country in the European Union the values of the 14 variables of the 5 categories of digital evolution index:

1. Connectivity: fixed and mobile broadband, high speed and high speed mobile, the price index of these services,
2. Human capital: basic skills in using the internet, and advanced content,
3. Use of internet: content usage, communication,
4. Integration of digital technology: online transactions, business digitization
5. Digital public services: e-government services and e-health.

The correlation matrix that shows the link between the variables analyzed is obtained.

Table 2. Correlation Matrix

	1a Fixed Broadband services	1b Mobile Broadband Services	1c Fast Broadband sevices	1d Ultrafast Broadband sevices	1e Broadband Price Index	2a Basic skills & Internet Usage	2b Advanced skills and development	3a Use of Internet content	3b Communication	3c Online transactions	4a Business Digitization	4b E-Commerce	5a E-government	5b E-health
1a Fixed Broadband services	1	,042	,424*	,200	-,151	,634**	,336	,484**	,035	,468*	,384*	,385*	,196	-,001
1b Mobile Broadband Services	,042	1	,210	,167	,420*	,640**	,648**	,592**	-,177	,684**	,514**	,222	,651**	,627**
1c Fast Broadband sevices	,424*	,210	1	,837**	,137	,371	,255	,279	,347	,344	,286	,352	,402*	,050
1d Ultrafast Broadband sevices	,200	,167	,837**	1	,148	,260	,080	,234	,356	,210	,217	,197	,427*	,056
1e Broadband Price Index	-,151	,420*	,137	,148	1	,397*	,423*	,015	-,308	,492**	,131	,080	,271	,273
2a Basic skills and Internet Usage	,634**	,640**	,371	,260	,397*	1	,746**	,721**	-,195	,924**	,611**	,455*	,560**	,510**
2b Advanced skills and development	,336	,648**	,255	,080	,423*	,746**	1	,534**	-,302	,781**	,649**	,570**	,578**	,575**
3a Use of Internet content	,484**	,592**	,279	,234	,015	,721**	,534**	1	,153	,622**	,583**	,273	,548**	,610**
3b Communication	,035	-,177	,347	,356	-,308	-,195	-,302	,153	1	-,313	-,154	-,156	-,130	-,168
3c Online transactions	,468*	,684**	,344	,210	,492**	,924**	,781**	,622**	-,313	1	,578**	,572**	,634**	,529**
4a Business Digitization	,384*	,514**	,286	,217	,131	,611**	,649**	,583**	-,154	,578**	1	,509**	,716**	,655**
4b E-Commerce	,385*	,222	,352	,197	,080	,455*	,570**	,273	-,156	,572**	,509**	1	,475*	,232
5a E-government	,196	,651**	,402*	,427*	,271	,560**	,578**	,548**	-,130	,634**	,716**	,475*	1	,576**
5b E-health	-,001	,627**	,050	,056	,273	,510**	,575**	,610**	-,168	,529**	,655**	,232	,576**	1

Source: own representation based on DESI Database 2018

Principal component analysis (PCA) is used to reduce the complexity of the data and to present the information on fewer dimensions when all variables are quantitative. It is mathematically defined as an orthogonal linear transformation that projects the data to a new coordinate system (which is made by principal components) in order to obtain the greatest variance explained by this projection of the data.

By applying this method the projection of data on the first four principal components preserves 79.7% of the total inertia (45.4% for the first axis, 15.7% for the second axis, 9.8% for the third axis and 8.7% for the fourth axis).

Table 3. Total Variance of PCA components

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6,357	45,407	45,407	6,357	45,407	45,407	4,309	30,776	30,776
2	2,197	15,690	61,097	2,197	15,690	61,097	2,810	20,073	50,849
3	1,378	9,844	70,941	1,378	9,844	70,941	2,200	15,717	66,566
4	1,219	8,706	79,647	1,219	8,706	79,647	1,831	13,081	79,647
5	,881	6,294	85,941						
6	,508	3,626	89,567						
7	,398	2,841	92,408						
8	,282	2,017	94,424						
9	,268	1,917	96,341						
10	,166	1,187	97,528						
11	,140	,997	98,525						
12	,107	,764	99,290						
13	,077	,549	99,839						
14	,023	,161	100,000						

Extraction Method: Principal Component Analysis.

Source: own representation based on DESI Database 2018

In this case, the first component positively determines the main component according to the following variables: digital public services (e-government & e-health), mobile broadband services, use of Internet content, business digitization, and advanced skills in using the internet. As it contains indicators referring mainly to the more advanced skills in digital (mobile access to internet, advanced skills, business digitization, usage of internet content and higher access to digital enforced through digital public services availability), this axis could be called *digital advanced*.

Table 4. Component Matrix on PCA

	Component			
	1	2	3	4
5b E-health	.891	-.019	-.086	.106
1b Mobile Broadband Services	.809	.049	.090	.337
3a Use of Internet content	.792	.338	.145	-.277
4a Business Digitization	.719	.415	.071	.008
5a E-government	.713	.231	.309	.221
2b Advanced skills and development	.620	.512	-.029	.374
2a Basic skills and Internet Usage	.601	.647	.129	.229
3c Online transactions	.591	.605	.089	.413
1a Fixed Broadband services	.071	.866	.156	-.283
4b E-Commerce	.198	.698	.119	.172
1d Ultrafast Broadband services	.113	.088	.931	.069
1c Fast Broadband services	.096	.339	.884	.054
1e Broadband Price Index	.211	-.036	.135	.864
3b Communication	-.034	-.245	.578	-.595

Source: own representation based on DESI Database 2018

The second component also determines the main component in the positive sense, having as variables: basic skills in using the internet, online transactions, fixed broadband services and e-

commerce. This component could be called *mass digital* axis. The third axis is the one regarding *ultramodern access to digital technology*: fast and ultrafast broadband services. The fourth axis contains variables related to vox populi side, the one most used, felt and perceived by people - pricing & communication activities (social networks and videocalls): broadband price index and communication on negative impact side.

It can be seen the strong positive correlation between basic skills in using the Internet, business digitalization and digital government services, between advanced Internet usage skills, mobile bandwidth and online transactions and human capital, but also a positive correlation between the integration of digital technologies and digital public services. It is noticed that an improvement in high-speed services also contributes to the improvement of communication services over the Internet, through social networks, video calls, etc.

By applying Ward hierarchical classification method for the 28 countries in the European Union, 2 clusters could be defined. The first cluster includes the northern countries: Denmark, Sweden, Finland, Estonia, Luxembourg, the Netherlands and the United Kingdom, and the second cluster the rest of the European Union countries including Romania.

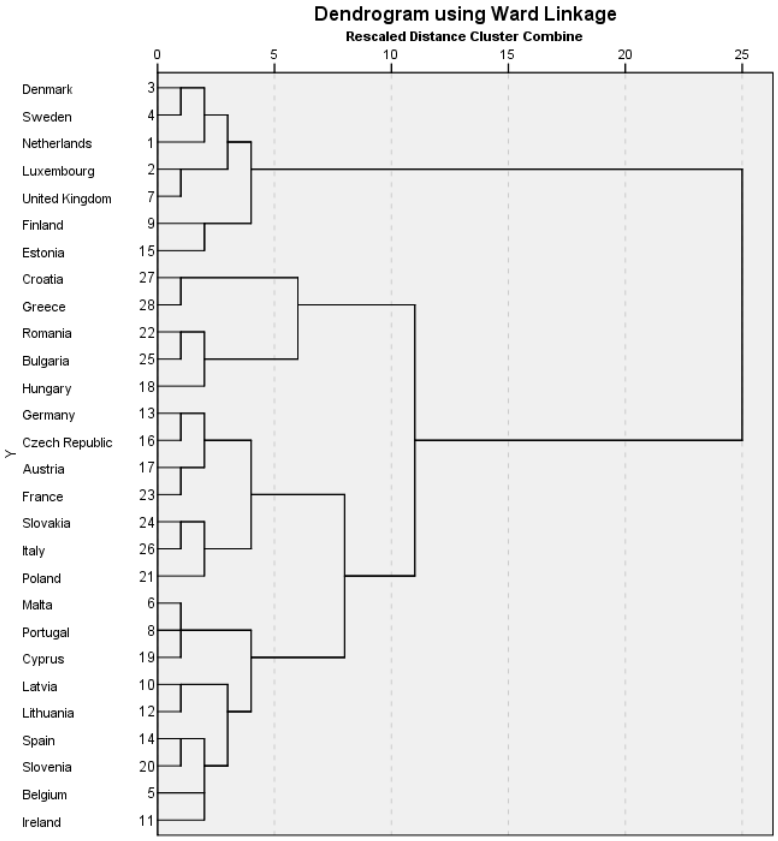


Figure 1. Dendogram on Ward Clustering

Source: own representation based on DESI Database 2018

By representing the countries on the first four principal components (Figure 2) it is observed that countries such as Finland, Denmark, Estonia and Sweden have high values for digital advanced component, namely highest number of mobile broadband services, highest penetration of digital public services, high usage of Internet content and high penetration of advanced digital skills. These countries are also among those 7 nothern countries included also in cluster one of Ward hierarhization.

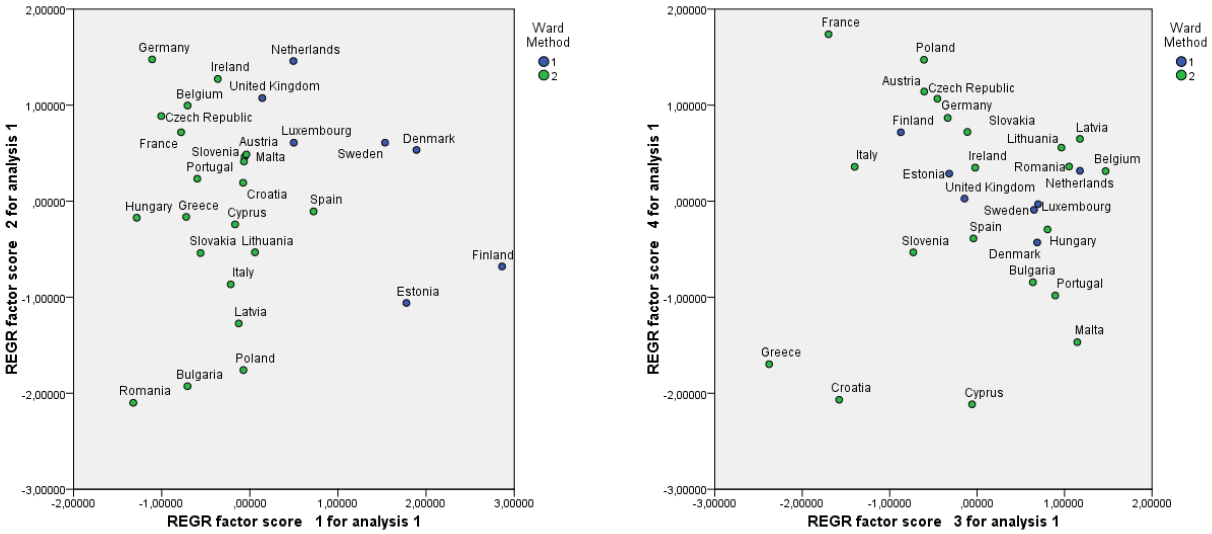


Figure 2. Projection of countries on the first four principal components
Source: Own representation based on DESI Database 2018

Netherlands, Germany, Ireland, United Kingdom and Belgium are countries that score the highest on mass digital component (the second axis) with Ireland having the highest e-commerce and the rest of countries having high fixed broadband penetration, high penetration with basic skills for internet usage and high number of online transactions.
Countries like Bulgaria and Romania are the most differentiated among these countries as being the least digital savvy on both first two axis (low rates of advanced digital indicators and also low rates for mass digital savvy indicators). However, considering the third axis (fast and ultrafast broadband services), Romania is consistently reducing the gap through providing ultra modern access to technology with speeds above 100Mbps.

4. SURVEY ON THE IMPACT OF DIGITAL TECHNOLOGY ON YOUNG PEOPLE

Within this chapter a statistical survey was conducted in order to observe the preferences and behavior of young people about digital technology, how they influence their daily lives or activities. Another objective of the research is to highlight the main advantages and disadvantages of digital technology.
The survey base is made up of young people between the ages of 18 and 24, as well as young people between the ages of 13 and 17, who are part of the adolescence category.
The method of collecting the information used is indirect and written, the questionnaires being filled in via the Internet without a dialogue between the respondent and the operator. This method is considered to have a wider coverage over time and can bring a larger number of respondents compared to direct face to face or over the phone methods. Thus, in order to gather the necessary information to carry out this investigation, questionnaire we has been compiled of non-ambiguous questions formulated in such a way as to facilitate the obtaining of clear information which has been distributed to young people through online environment. As the length of the questionnaire has been taken into account, the questionnaire contains a number of moderate questions, to avoid non-responses, which affects the representativeness of the sample, so that the time needed to complete it was not very high. At the beginning of the questionnaire, easy questions are found, following complex questions in the middle of the section, as respondents are more interested and pay more attention compared to the questions at the end, when usually a respondent gets bored. Most questions have been closed to make it easier to complete and to allow comparison. The end of the

questionnaire was made of socio-demographics questions related to personal data to distinguish certain characteristics of individuals by gender, age, occupation, or level of education.
The number of hours that young people spend on the internet daily is the first thing when measuring digital attraction. According to Table 5, the frequency of internet usage is analyzed. The average number of hours that young people spend on the internet is about 3 hours.

Table 5. How many hours do you spend on the internet on average per day?

	Frequency	Percent	Cumulative Percent
Less than one hour	3	2.5	2.5
Between 1-3 hours	35	29.2	31.7
Between 3-5 hours	43	35.8	67.5
Above 5 hours	39	32.5	100.0
Total	120	100.0	

Source: own calculation based on sample data

Based on absolute frequencies, of the total of 120 sampled people, only 3 young people spend an hour or less on the internet, 35 of them spend an average of 2 hours, that is, from one hour to 3 hours, most of them, 43 of the young people between 3 and 5 hours, and the rest of 39 young people spend over 5 hours a day on the Internet. The percentage of young people who spend less than one hour a day on the Internet is reduced by 2.5%, while young people who spend more than 5 hours are very high, accounting for 32.5% of all respondents. However, the highest percentage is due to young people spending between 3 and 5 hours per day, respectively 35.8%, but the percentage of those using the Internet for about 2 hours is 29.2%.
It is of interest to conclude if the age of young people influences the time spent on the internet. The two variables used in the analysis are numerical, and the link between them will be achieved by a Pearson correlation coefficient (0.35), which means there is a direct linear relationship between the two variables. Because the significance level is less than 0.05, the assumption is null, according to which there is a link between the number of hours spent on the internet and the age of the youngsters. This can also be seen in the table 6.

Table 6. Time spent on the Internet, on average, per day * Age Crosstabulation

Time spent on the Internet, on average, per day	Age			Total
	Between 13 and 17 years old	Between 18 and 22 years old	Between 23 and 25 years old	
Less than one hour	3	0	0	3
Between 1-3 hours	13	21	1	35
Between 3-5 hours	1	37	5	43
Above 5 hours	2	37	0	39
Total	19	95	6	120

Source: own calculation based on sample data

It is noted that only 3 adolescents aged between 13 and 17 use less than one hour a day the internet, 37 of the 18 to 22 year olds spend an average of 3 to 5 hours a day on the internet, 37 young people

spend more than 5 hours and only 21 young people use the Internet for around 2 hours a day. In other words, the younger the youngsters, the less they spend less time on the internet, and one of the reasons could be that they have limited access to the family. Instead, as increasing age, young people are more likely to use these services, as is the period of study, when most people learn to become independent.

The next step is to determine the main reasons why young people use the Internet. The variable used in the analysis is nominal, and due to the fact that the young people surveyed had the choice to choose from, the number of frequency tables coincides with the number of variants of this variable.

Table 7. How do you use the internet? [Information]

	Frequency	Percent	Cumulative Percent
Yes	86	71.7	71.7
No	34	28.3	100.0
Total	120	100.0	

Source: own calculation based on sample data

For 86 young people out of a total of 120, one of the reasons why they use the internet is information. 88 of them say they use it to communicate, 46 young people use it for entertainment, and most 108, respectively, have chosen the way they use the internet to relax.

Table 8. How do you use the internet? [Communication]

	Frequency	Percent	Cumulative Percent
Yes	88	73.3	73.3
No	32	26.7	100.0
Total	120	100.0	

Source: own calculation based on sample data

Using the Internet to communicate with others is one of the reasons chosen by 73.3% young people out of a total of 120.

Most young people chose the relaxation option. Thus, 90% of youngsters out of a total of 120 say they use the internet to relax.

Table 9. How do you use the internet? [Relaxation]

	Frequency	Percent	Cumulative Percent
Yes	108	90.0	90.0
No	12	10.0	100.0
Total	120	100.0	

Source: own calculation based on sample data

It is noticed that most young people do not consider internet as a source for entertainment, as per 62% mentioning it.

Table 10. How do you use the internet? [Entertainment]

	Frequency	Percent	Cumulative Percent
Yes	46	38.3	38.3
No	74	61.7	100.0
Total	120	100.0	

Source: own calculation based on sample data

Analyzing all four frequency tables, it is noted that the main reason young people spend a long time on the internet is to relax, to communicate and as a source of information, rather than to entertain.
In order to understand if there is any correlation between the level of respondents' current studies and the period of day they spend on the web, an analysis of those two nominal variables was made. The hypotheses are:
H_0: There is no association between the two variables
H_1: There is association between the two variables.

Table 11. What time of day do you use the internet more? What is the level of current studies? Crosstabulation

What time of day do you use the internet more?		**What is the level of current studies?**		**Total**
		School / Highschool	University	
Morning	Count	1	3	4
	% within What is the level of current studies?	5.3%	3.0%	3.3%
	% of Total	0.8%	2.5%	3.3%
Noon	Count	0	14	14
	% within What is the level of current studies?	0.0%	13.9%	11.7%
	% of Total	0.0%	11.7%	11.7%
Evening	Count	12	78	90
	% within What is the level of current studies?	63.2%	77.2%	75.0%
	% of Total	10.0%	65.0%	75.0%
Night	Count	6	6	12
	% within What is the level of current studies?	31.6%	5.9%	10.0%
	% of Total	5.0%	5.0%	10.0%
Total	Count	19	101	120
	% within What is the level of current studies?	100.0%	100.0%	100.0%
	% of Total	15.8%	84.2%	100.0%

Source: own calculation based on sample data

In the table 11 it is noted that 15.8% of the respondents attend secondary or high school education, and the remaining 84.2% attend university studies.

Table 12. Symetric measures

		Value	Approx. Sig.
Nominal by Nominal	Contingency Coefficient	.321	.003
N of Valid Cases		120	

Source: own calculation based on sample data

In Table 12, Pearson Chi-Square test (Approx. Sig.) shows a value of 0.03, which is less than 0.05, this will reject the null hypothesis and accept the alternative hypothesis that the level of studies influences the part of the day when young people use the internet most often for a level of significance of 95%. In fact, the value of the Phi Coefficient is 0.321, with a significance level of 0.003, suggesting that there is a significant association between the two variables, but a weak one.

5. CONCLUSIONS

Although the digital index is made up by 5 areas (Connectivity, Human capital, Use of internet, Integration of digital technology, Digital public services), principal component analysis made on the 14 variables of these 5 areas revealed different mixed of variables into main components:

- advanced digital: advanced part of Connectivity through mobile broadband services, advanced part of Human Capital through advanced skills in using the internet variable, part of Use of Internet content – news, music, video on demand, part of Integration of digital technology - business digitization and Digital public services
- mass digital: core part of Connectivity - fixed broadband services, core part of Human capital - basic skills in using the internet, transactional part of Use of Internet content - online transactions and transactional part of Integration of digital technology: SME e-commerce
- ultramodern access to digital technology: ultramodern part of Connectivity: fast and ultrafast broadband services
- vox populi: ultra-sensitive part of Connectivity - broadband price index and the most important variable of Use of internet – communication through social networks

Considering overall index, the most performant EU 28 countries are Denmark, Sweden, Finland and Netherlands exactly the ones that are including into Ward cluster as being over-performing considering most of the variables with Netherlands being focused mostly on mass digital with strongest focus on fixed broadband connection while other 3 countries focus is on advanced axis, mobile broadband connections.

The bet of Romania is on ultramodern access to digital technology, being the area where there is a strong focus and higher competitiveness between telco providers. It is visible that the connectivity index has improved, reaching almost the European Union average. The use of internet indicator has the highest growth among the rest of chapters of DESI for Romania (mostly due to social network increase of usage – Romania ranks 4th at this subchapter), however there is considerable gap vs EU average to cover (31%). Romania has kept similar gap also on Human capital and on Digital public services and due to this aspect it keeps the same place (28 and 26 respectively). A worsen situation it is met on Integration of digital technology area where there is a score decrease for Romania while EU average is on 9% growth, the gap vs EU average significantly deepening to -56%.

Wide development of digitalization in educational system can motivate young generations to support and create the digital know how in Romania in order to recover the gaps. At the time beeing, considering also the presented survey results, for the youngsters in Romania internet seems to be rather a way of consuming time, mainly for relaxation and less for information with slightly different behaviour for schoolyards and university students&graduates. Therefore, Romania should

consistently focus on developing the interest of the young people to perfectionate their advanced digital skills to ensure the growth in both Human capital and Integration of digital technology areas as soon as they become employees and they would have had the capacity to develop the companies' digital know-how.

REFERENCES

Capgemini Consulting for European Commission Directorate General for Communications Networks, Content and Technology. (2016). *International Digital Economy and Society Index (I-DESI)*. European Union, doi: 10.2759/185010

European Commission. (2014-2017). The Digital Economy and Society Index (DESI). Retrieved September 15, 2018, from Policies-Digital Single Market: https://ec.europa.eu/digital-single-market/en/desi

European Commission. (2018). Connectivity Broadband market developments in the EU, Brussels: European Commission

European Commission. (2018). The Digital Economy and Society Index (DESI). Retrieved September 15, 2018, https://ec.europa.eu/digital-single-market/en/scoreboard/romania

Folea, V. (2018). Digital Competitiveness of European Union Member States from the Perspective of Human Capital. *European Journal of Engineering and Formal Science*s, Volume 2, Issue 1

Huculova, E., Solcova, L. (2018). Cluster Analysis of Digital Performance in Educational Techniques in Conditions of EU. *4th International Conference on Higher Education Advances (HEAd'18)*. DOI: http://dx.doi.org/10.4995/HEAd18.2018.8138

Sledziewska, K., Włoch, R. (2015). (Un)digital Poland: the gap in the digital skills of human capital. *Proceedings of the Enterprise Research Innovation Conference*, s. 415-421 https://www.researchgate.net/publication/282868923

Stoica, E., Bogoslov, I. (2017). A comprehensive analysis regarding DESI country progress for Romania relative to the European average trend. *Balkan Region Conference on Engineering and Business Education*, *3*(1), 258–266. doi: https://doi.org/10.1515/cplbu-2017-0034