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DIGITAL DEVELOPMENT - THE STRENGTHS AND WEAKNESSES OF GENERATION Y

Abstract:

In 2010 in European Union was started Europe 2020 strategy. Aims of this strategy are concentrated on smart, sustainable growth associated with social inclusion. One of 7 flagship initiatives described purposes is Digital Agenda for Europe. Another very important one, in area of smart growth, is Youth on the move. Compressed information's about Internet skills and uses of digital technologies are presented for EU Member Countries in the latest report on the implementation of new Digital Economy and Society Index - DESI (European Commission, 2014). The aim of the study is to determine strengths and weaknesses of the Poland and European Union countries and the risks of digital divide. Particular emphasis is placed on the analysis of the Y generation digital opportunities.

Keywords:

digital divide, generation Y, DESI, Digital Agenda

JEL Classification: P36, O30, C38

Introduction

The main determinants of process of the development analysis was the establishment of the Digital Agenda within the Europe 2020 strategy.

Europe 2020, it is the strategy for European Union countries targeted at smart, sustainable and inclusive growth of economy in years 2010-2020. In this three areas are defined also seven flagship initiatives: *Digital Agenda for Europe*, Innovation Union, Youth on the move (all in Smart growth area); Resource efficient Europe, An industrial policy for the globalisation era (both in Sustainable growth); Agenda for new skills and jobs, European platform against poverty (both in the Inclusive growth area). The Digital Agenda for Europe is understood in European Commission (2010*,* p.6) as a tool for „to speed up the roll-out of high-speed internet and reap the benefits of a digital single market for households and firms".

The package of Digital Agenda for Europe is indirectly associated with three of five headline target which should help in achieving Europe 2020 goals. They are:

1. Employment: employment rate of persons aged 20-64 lat: 75% (target for Poland: 71%);
2. Education: rate of early school leavers below 10% (in Poland 4,5%); rate of persons with tertiary education at least 40% of 30-34 years old (45% for Poland);
3. Fighting poverty and social exclusion: at least 20 million fewer people in or at risk of poverty and social exclusion (1,5 million in Poland).

The results of Digital Agenda should indirectly support the achievement of all mentioned targets. In OECD definition of digital divide is written that it „refers to the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard to both their opportunities to access information and communication technologies (ICTs) and to their use of the Internet for a wide variety of activities." (OECD Publications, 2001, p. 5). It can therefore be noted that the role of the Digital Agenda is to reduce the risk of digital exclusion. In order to control the progress of work on the Digital Agenda has been created the Digital Economy and Society Index – DESI (European Commission, 2015). Analysis of the level of this indicator inform about extent of the digital competitiveness. In Digital Divide many factors plays an important role, including age and gender (OECD Publications, 2001, p. 21) and also region (OECD Publications, 2001, p. 27). The need to reduce the digital divide is also stimulated by the action of the human environment. Today, more and more terms used in everyday life is preceded by "e-". This indicates the constant need to use modern digital technologies and thus access to these technologies and efficient handling of them. Digital divide may by compared with knowledge gap in 1970s. (Hüsing & Selhofer, 2002). When analyzing the digital divide should, however, always remember the complexity of this phenomenon. Digital divide not only depends on the availability of the Internet and new technologies, but also the willingness of use and openness to new solutions, and thus the willingness to acquire relevant skills.

„Having a connection to the Internet is not sufficient; it must be paired with the appropriate skills to take advantage of the Internet and of the myriad of possibilities unravelled by a digital society" (European Commission, 2015, p. 3). Aspiration to spread the use of the Internet and new technology also requires parallel actions of promoting the ethical use of digital goods and services.

Aim of the study, data set and methods of statistical analysis

In the study were two main aims. First indication of the digital differences between Generation Y in EU countries. Second determination of strengths and weaknesses of the Poland and European Union countries and the risks of digital divide**.**

To find differences between countries in level of digital development, especially between people belonging to Generation Y were used the data from the DESI 2014 in five main dimensions and aggregated values for EU member countries and separately for Poland. The main dimensions are: Connectivity, Human Capital, Use of Internet, Integration of Digital Technology and Digital Public Services. Next, the analysis was conducted in dimension of Use of Internet for Generation Y. In dimension of Use of Internet are eights sub-dimensions defined: 3a1 Individuals who used the Internet to read online news sites, newspapers or news magazines, (NEWS); 3a2 Individuals who used the Internet to play or download games, images, films or music (MVG); 3a3 Percentage of households subscribing to any form of Video on Demand (VOD); 3a4 IPTV Penetration (IPTV); 3b1 Individuals who used the Internet to make telephone or video calls (VIDCALL); 3b2 Individuals used the Internet to participate in social networks (create user profile, post messages or other contributions to facebook, twitter, etc.) (SOCNET); 3c1 Individuals who used the Internet to use online banking (BANK); 3c2 Individuals who ordered goods or services online (SHOP). Unfortunately data for 3a3 and 3a4 are not observed for age groups, so in the analysis of digital divide are taken into account only six indicators.

The analysis was focused on the people of the youngest generation of participating in the labor market due to several reasons. Firstly modern information technologies for people born between 1980 and 2000 are natural technologies. "Generation Y in every area of life is using technology and digital media" (Stanimir, 2014, p.24). This way of life also affects to the fact that in the work they are willing to use modern digital solutions. At the same time Generation Y consists of three groups of people: "people who are already functioning the labour market (age 25-34), those that are starting a job search (18-24) and the youngest who are completing their training (14-17)" Stanimir (2015, p. 211). Regardless of which group they belong, they will in future leaders or managers and their skills will be marked out the path of development.

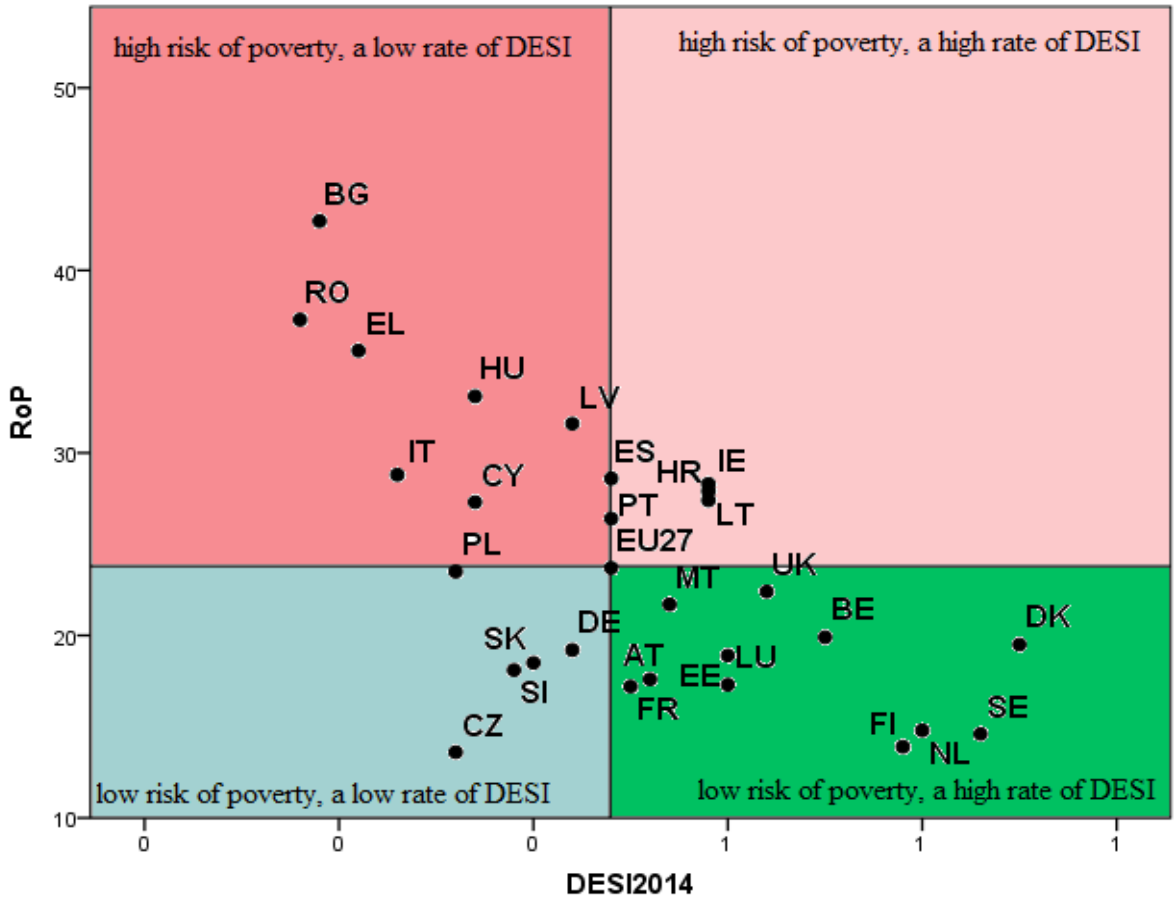
In the analysis were used appropriate methods to the measurement scales of observed variables. Simple and multiple correspondence analysis with observations doubling were used. Correspondence analysis is a perfect method for finding interactions between categories of many nominal variables. It could be used for

ordinal variables, specially ranked values, with doubling of observations (Greenacre, 1984, p. 171, Blasius, 2001, p. 335).

Results of the study

The first analysis was performed comparing the indicators of People at risk of poverty or social exclusion by age and sex (EUROSTAT data: ilc_peps01) and DESI. Risk of poverty was observed in 2013 and digitalisation index in 2014 (most components were observed in 2013). Results are shown in Figure 1.

Figure 1: Risk of poverty or social exclusion versus DESI 2014

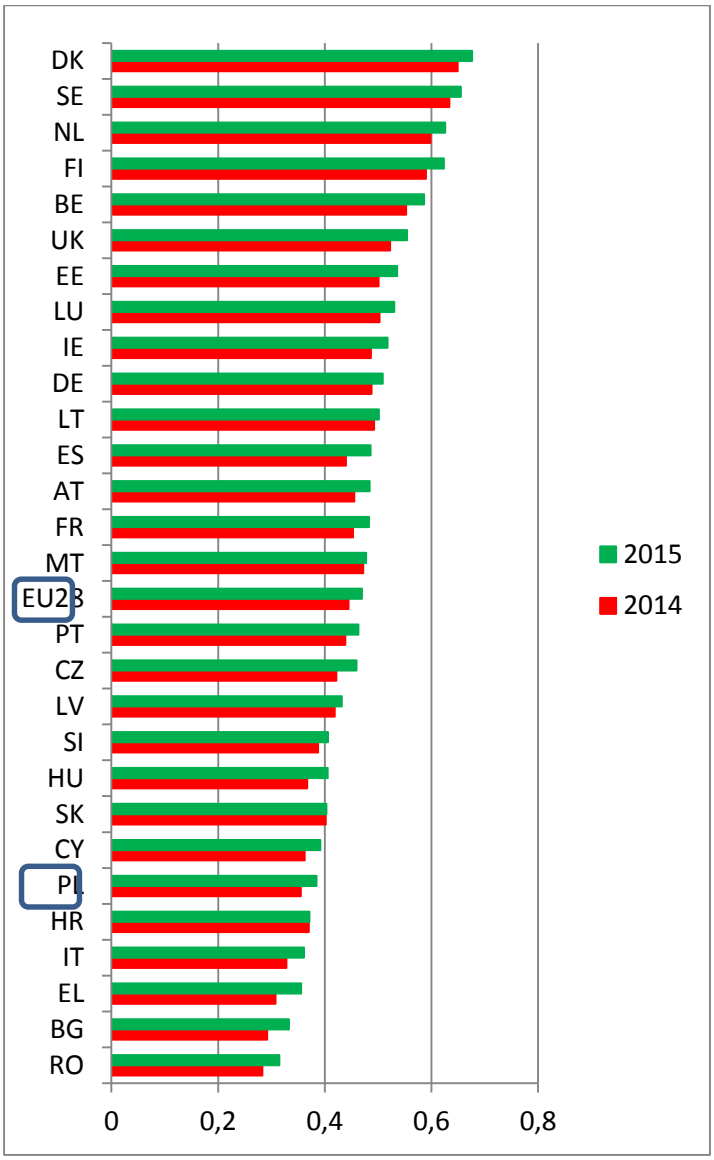


Source: Own elaboration on EUROSTAT data: ilc_peps01

In Figure 1 are added references lines that intersect at a point depicting of average values of indicators for the EU27. The lowest risk of poverty and higher rates of DESI are observed in Finland, Netherlands, Sweden, Denmark. The lowest rates of DESI and the higher risk of poverty are in Bulgaria, Romania, Greece, Hungary, Italy, Cyprus, Latvia. In Poland risk of poverty was in 2013 at the same level as a mean value for EU27, but the level of DESI was lower than average value for member countries of EU. The correlation between DESI and risk of poverty is –0,64.

Figure 2 presents the values of DESI in 2014 and 2015 in 28 member countries of EU. The highest increase of DESI was observed in Spain, Greece, Bulgaria and Hungary, but only in Spain the value in 2015 is higher than average value in EU. The values of DESI for Greece and Bulgaria are still the lowest among values for other member countries. Poland is ranked seventh from the end.

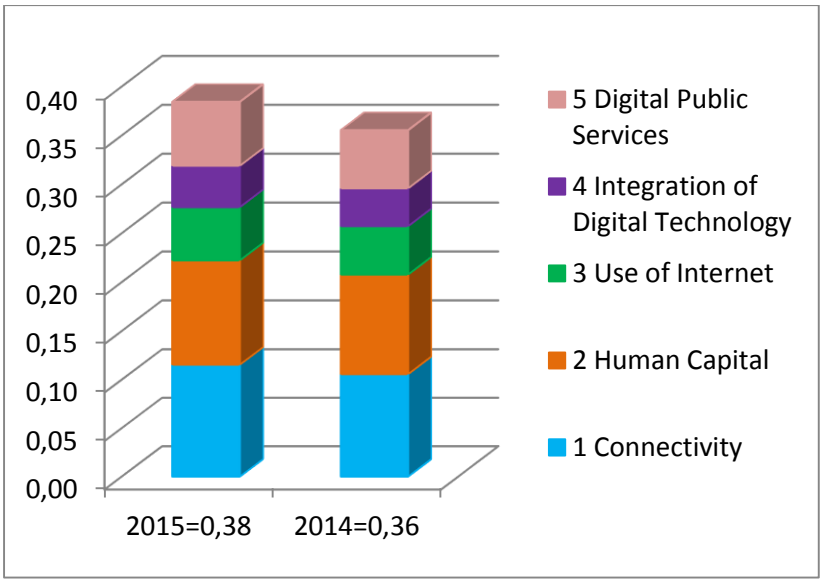
Figure 2: Rates of DESI in 2014 and 2015 for EU countries.



Source: Own elaboration on European Commission, Digital Agenda Scoreboard

„The Digital Economy and Society Index (DESI) measures progress of EU countries towards a digital economy and society" (European Commission, 2015, p. 1). In DESI was done normalisation and all sub-indicators are measured on scale 0-1. Also in DESI are provided the weights. The Weights for five main dimensions are as follow: Connectivity – 25%, Human Capital – 25%, Use of Internet – 15%, Integration of Digital Technology – 20%, Digital Public Services – 15%. The weights in sub-dimensions of Use of Internet are: 3a Content 33%, 3b Communication 33%, 3c Transactions 33%.

Figure 3: Values of all main dimensions observed in Poland in years 2014 and 2015



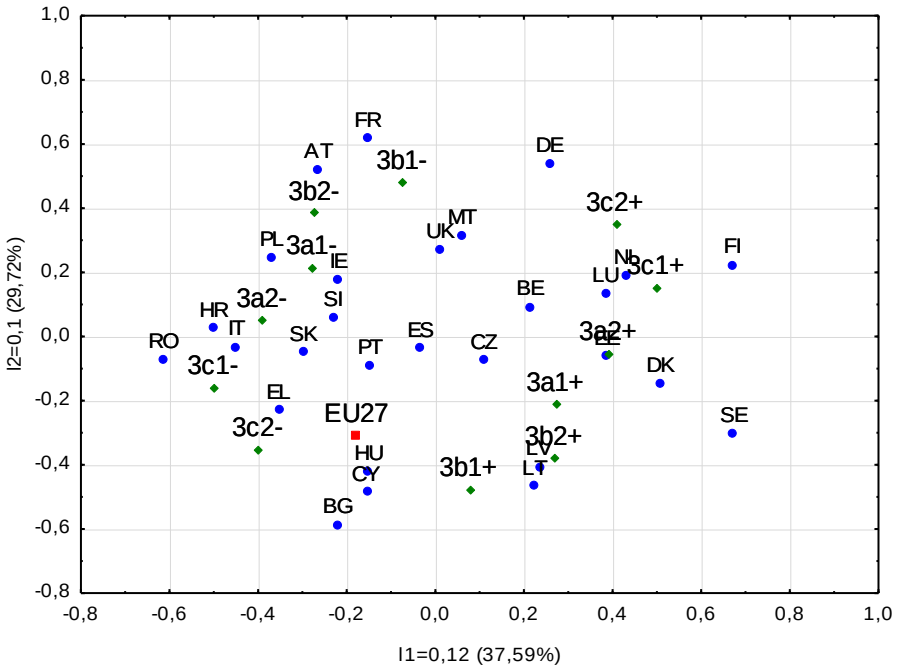
Source: Own elaboration on European Commission, Digital Agenda Scoreboard

In Figure 3 are shown values of all main dimensions observed in Poland in years 2014 and 2015. The higher increase was observed in dimension of Digital Public Services, than in Connectivity. The values in Use of Internet index was in 2014 on level of 0,05 and 0,054 in 2015. The largest differences in the values of component factors of DESI between Poland and the countries with the highest DESI values occur in areas of Human Capital and Integration of Digital Technology. In dimension of Integration of Digital Technology in 2015 Poland is ranked on 26th position, but in dimension of Digital Public Services on 14th position.

Analysis of the strengths and weaknesses associated with the use of the Internet by young people was carried out using correspondence analysis.

From the EUROSTAT were selected indicators 3a1, 3a2, 3b1,3b2,3c1, 3c1, 3c2 for people aged 24-34. In this age were in 2014, persons belonging to the generation Y, which already fully participate in the labour market. To determine the strengths and weaknesses of young people from EU member countries the observations of variables were ranked. The country with the worst value of variable held the rank 1 and the country with the best value of variable – 28. In order to determine the weaknesses of young people was conducted doubling of the observations of variables by assigning to each variable a new variable with opposite ranks. In this way, instead of one variable 3a1, two variables are analyzed: 3a1+ (depicting strengths) and 3a1– (imaging weaknesses).

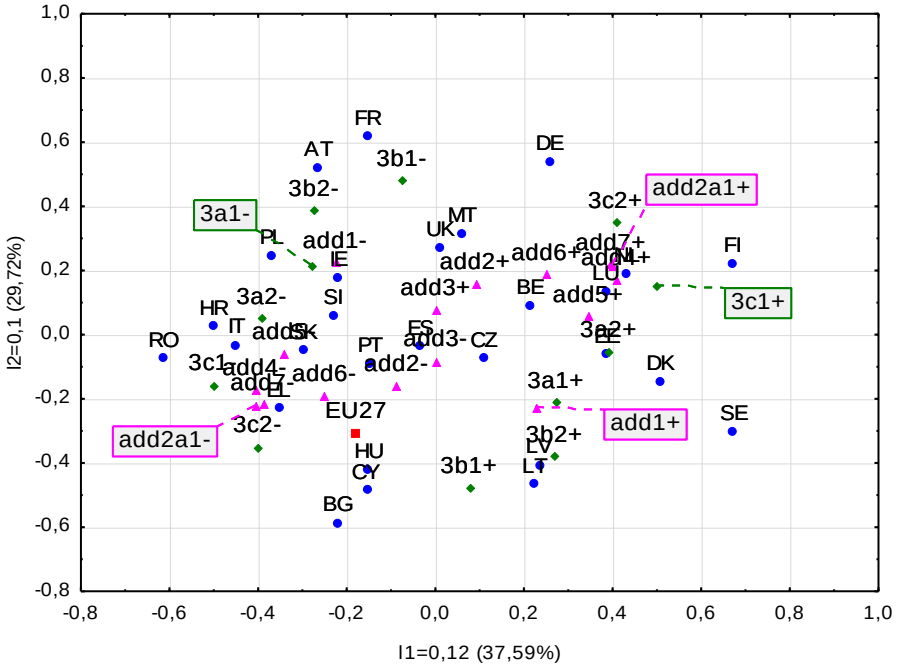
Figure 4: Results of analysis of six sub-dimensions of Use of Internet



Source: Own elaboration on European Commission, Digital Agenda Scoreboard

Figure 4 shows the results of analysis of sixs sub-dimensions of Use of Internet. The analysis also uses supplementary points whose coordinates are determined based on the eigenvalues calculated during the analysis of the active variables. The point describing average values for EU-27 is added as supplementary point. The strengths are on the right side of figure and weaknesses of left side. Figure 5 shows results of the analysis with more supplementary points.

Figure 5: Results of the analysis with additional supplementary points



Source: Own elaboration on European Commission, Digital Agenda Scoreboard

In last analysis were taken into account also additional variables for individuals from Generation Y, such as: regular internet users (add2a1); uploading self-created content to be shared (add1); looking online for a job or sending a job application (add2); looking online for information about education, training or course offers (add3); interacting online with public authorities (add4); sending filled forms to public authorities, over the internet (add5); taking part in on-line consultations or voting to define civic or political issues (add6); Used internet storage space to save documents, pictures, music, video or other files (add7). The strengths in 3a1 and 3b2 correspond to add1+, and this is characteristic of the young Latvians and Lithuanians. Possitive aspects of 3c1 and 3c2 are close to regular Internet users and add7, add4. Young Estonians are using the Internet to downloading games, films (3a2), sending filled forms to authorities (add5).

Conclusions:

The point describing young Poles is situated in the left side of Figure 5, so the young Poles are at risk of digital divide, particularly in the following areas: reading online news sites, newspapers or news magazines, playing or downloading games, images, films or music, participating in social networks and uploading self-created content to be shared. The weknesses of young citizets of Greeace, Slovakia, Croatia, Italy and Romania in use of internet are in area of: using the Internet to play or download games, images, films or music (3a2), online banking (3c1); ordering goods or services online (3c2), regular Internet using (add2a1), interacting online with public authorities (add4), sending filled forms to public authorities, over the internet (add5), taking part in on-line consultations or voting to define civic or political issues (add6), using Internet storage space to save documents, pictures, music, video or other files (add7).

Many strengths are found as characteristics for the inhabitants of Luxembourg, Netherlands, Belgium and Estonia: using the Internet to play or download games, images, films or music (3a2), online banking (3c1), regular Internet using (add2a1), interacting online with public authorities (add4), taking part in on-line consultations or voting to define civic or political issues (add6), using Internet storage space to save documents, pictures, music, video or other files (add7).

Acknowledgments

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