The Relationship between Social Media and Human Development: An Analyze on Transition Economies

Mustafa Malkoc Yasar
Giresun University, Giresun, Turkey
malkocyasar@gmail.com

Abstract

The Human Development Index which measures the average achievements in a country in three basic dimensions is a summary measure of human development as known. The Human Development Index is one of the tools for comparing countries. On the other hand the use of social media is getting more important nowadays, especially after the Arab Spring. Even the statistics of social media use is becoming an alternative way for comparing countries. In fact some of the previous studies have shown that gross domestic product which is a dimension of human development somehow affected by the social media. In this study the aim is to investigate possible relations between human development and social media in transition economies by using statistical methods.

Keywords: Internet, Social Media, Facebook, Transition Economies, Development

Introduction

In early times countries had compared with their GDP values. It was not a fair situation for small populated countries. After that another comparison type has occurred. GDP per capita was calculated by dividing GDP to population. Today GDP per capita is not the only way for comparing countries. Human Development Index (HDI) is an alternative way for comparing countries. HDI is being affected from various variables. In this study the main aim is to investigate a possible relation between HDI and social media usage in transition economies. In this study only ex USSR countries will be examined as transition economies. Other transition economies will be ignored in this research.

Social media usage is a relative concept. Facebook is the biggest social media website in social networks. In this study almost all statistics of Facebook will be used to measure social media.

Firstly some explanations will be given about Human Development Index in section two. Secondly internet usage will be discussed in section three. Than effects of social media websites on development will be discussed in section four. Finally comparison will be done between social media and development in selected transition economies in section five. Results will be discussed in conclusion section.

Explanation of Human Development Index

The Human Development Index (HDI) is a summary measure of human development. It measures the average achievements in a country in three basic dimensions of human development: a long and healthy life (health), access to knowledge (education) and a decent

standard of living (income). The HDI sets a minimum and a maximum for each dimension, called goalposts, and then shows where each country stands in relation to these goalposts, expressed as a value between 0 and 1.

The HDI was created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. The HDI can also be used to question national policy choices, asking how two countries with the same level of GNI per capita can end up with such different human development outcomes.

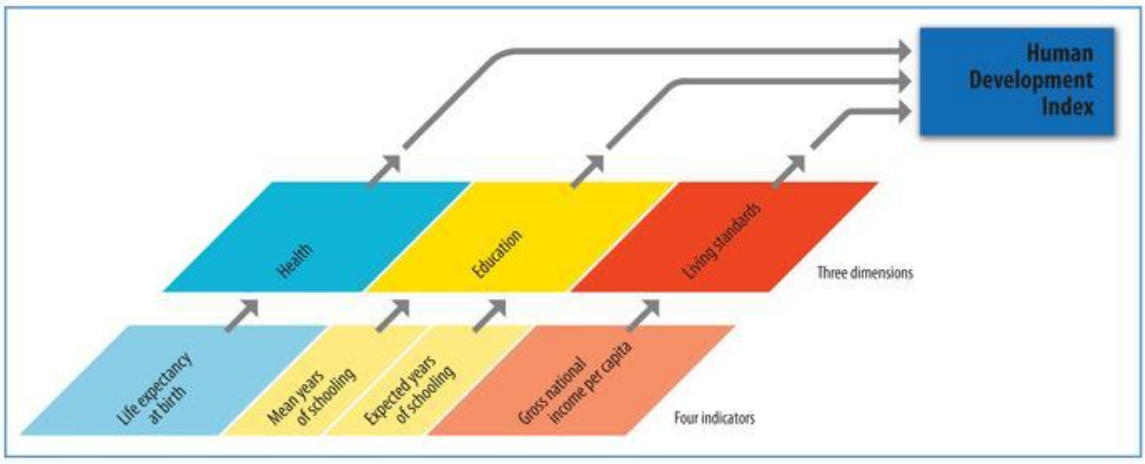
The education component of the HDI is now measured by mean of years of schooling for adults aged 25 years and expected years of schooling for children of school entering age. Mean years of schooling are estimated based on educational attainment data from censuses and surveys available in the UNESCO Institute for Statistics database and Barro and Lee (2010) methodology). Expected years of schooling estimates are based on enrolment by age at all levels of education and population of official school age for each level of education. Expected years of schooling are capped at 18 years. The indicators are normalized using a minimum value of zero and maximum values are set to the actual observed maximum value of mean years of schooling from the countries in the time series, 1980–2010, that is 13.1 years estimated for Czech Republic in 2005. Expected years of schooling are maximized by its cap at 18 years. The education index is the geometric mean of two indices.

The life expectancy at birth component of the HDI is calculated using a minimum value of 20 years and maximum value of 83.4 years. This is the observed maximum value of the indicators from the countries in the time series, 1980–2010. Thus, the longevity component for a country where life expectancy birth is 55 years would be 0.552.

For the wealth component, the goalpost for minimum income is $100 (PPP) and the maximum is $107,721 (PPP), both estimated during the same period, 1980-2011. (UNDP, 2012)

After these explanations above components of HDI can be seen from the Figure 1.

Figure 1:Components of the Human Development Index



Source: UNDP (http://hdr.undp.org/en/statistics/hdi/)

Internet Usage

In this section, internet usage around the world and internet usage in transition economies will be given respectively.

1 Internet Usage around the World

Internet usage around the world is getting higher day by day. The ratio of internet users in developing countries is lower than the developed countries. However developing countries made a significant progress during the past ten years. Today more than two third of people on the earth can be count as an internet user. Internet usage statistics per 100 inhabitants can be seen from the Table 1.

Table 1: Internet Usage per 100 Inhabitants

Source: International Telecommunication Union (ITU), (http://www.itu.int/ITU-D/ict/statistics/material/excel/20112/ictwebsite/Internet_users_01-11.xls)
*Estimate

Country Group/Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011*
Developed Countries	29,4	37,7	41,5	46,3	51,3	53,5	59,1	61,3	64,7	68,8	73,8
Developing Countries	2,8	4,3	5,5	6,6	7,7	9,4	12,0	15,0	18,5	21,1	26,3
Entire World	8,0	10,7	12,3	14,1	15,7	17,5	20,6	23,4	26,5	29,7	34,7

2 Internet Usages in Transition Economies

As mentioned in the section 1, in this study only focus on ex USSR countries. Percentage of individuals using the internet in related countries for past ten years can be seen from Appendix I. Due to huge number of statics related to 15 countries, it is not able to seen as a table here. But it can be said that, Estonia is becoming first among the related countries for using internet with 74,1% Latvia comes second with 68,42% and finally Lithuania comes third with the ratio of 62,12% with 2010 stats. Turkmenistan is becoming last with the ratio of 3%.

Effects of Social Media Websites on Development

In this section a short history of social media websites and effecting channels of social media websites on development will be given respectively.

1 A Short History of Social Media Websites

Actually users in internet in early times did not do different actions than today's users. Most of the early users used internet for accessing information, chatting and sharing things via personal web pages (Yaşar, 2011). The main advantage of social media websites is getting these things easier. Because without social media websites, users have to know HTML language a bit for prepare a personal webpage. Today a internet user can do those things in seconds via social media websites without any knowledge of HTML or any computer language. So that is the answer of that question: "Why are social media websites popular?"

Social media websites has started in 2002 with "Friendster". Many other websites has followed the way which has opened by "Friendster" until today. Today, the most popular social media website is "Facebook" with more than 900 million members.

2 Effecting Channels of Social Media Websites on Development

In this section effect of social media websites will be given by dimensions of HDI respectively.

2.1 Life Expectancy at Birth

Normally effect of social media websites on life expectancy is almost zero according to writer. Because of those effects of social media websites on this dimension was ignored even if exists more than zero.

2.2 Education

Social media websites have some positive effect on education. People can attend some educational programs online. Even they can use social media websites for getting documents which is related to their education. That encourages education institutions to open new online programs. People also will be encouraged to attend these programs. Due to the fact that social media websites can make mean years of schooling higher.

2.3 Income

First of all it must be underlined that social media websites have a big influence on GDP in various ways. Firstly the need of skilled labor which is well educated on technology is increasing with the parallel of technological development nowadays. Social media websites has become so popular that also brought new business fields.

Today most of the companies are sold a large part of their campaign via Facebook and other social media websites. This case is bringing the new demand of labor that know Facebook Markup Language and other web languages that is valid for social media websites. At the same time with that "Social Media Consultancy" is another sector that has newly formed. These two sectors will increase the labor demand and employment which has a positive effect on GDP.

Secondly social media will reduce the cost of companies. The reduction will increase aggregate supply (In AS-AD model, AS curve will shift to the right) that will cause an increasing on GDP. (Yaşar, 2011)

Comparison on Selected Transition Economies

In this section five of the ex USSR countries will be examined. These five countries have been selected due to their high ratio of internet usage. Because in these five countries at least one third of the people are using the internet. Comparison will be done by using HDI value and Facebook Penetration (FBP) value. Facebook Penetration value will be calculated by using Formula (1):

$$FBP = \frac{\text{Facebook Users In The Country}}{\text{Countrys Population}} \qquad (1)$$

Data sets of FBP for each country wereprepared by writer by using various sources. HDI values for 2012 were published yet. Those values will be launched on March 14, 2013 in Mexico (UNDP, 2013). At the end of the analyze 2012 HDI values will be estimated for available countries. [1]

1 Azerbaijan

[1] Estimations will be done by using Ms Excel software.

Azerbaijan is one of the most growth country about internet on earth. From 2000 to 2010 numbers of internet users have increased from 12.000 to 3.7 million. She had 30642% growth rate since 2000. (Pingdom, 2010) Azerbaijan's values of HDI and FBP can be seen from

Table 2: Azerbaijan's HDI and FBP Values

Year	HDI Value	FBP (%)
2009	No Data	No Data
2010	0,699	1,66
2011	0,700	3,73
2012	Not Published	9,54

Source: UNDP (for HDI values), and Various Sources[2] (for preparing FBP)

Statistics for Azerbaijan is very limited. From 2010 to 2011 FBP grown 2,07% by the time HDI value has increased 0,14%.

2 Estonia

Estonia is the most penetrated country about internet within those selected economies with the penetration rate of 74,1%. Naturally, she is also most penetrated country about Facebook. Statics for Estonia can be seen from Table 3.

Table 3: Estonia's HDI and FBP Values

Year	HDI Value	FBP (%)
2009	0,828	4
2010	0,832	17
2011	0,835	27,31
2012	Not Published	35,79

Source: UNDP (for HDI values), and Various Sources[3] (for preparing FBP)

If we put three years of HDI and FBP values to correlation analyze, the correlation coefficient will be calculated as 0,999.That coefficient means that there is a very strong relation between HDI and FBP values for Estonia. HDI index of Estonia can be estimated by using FBP values as 0,837585 for 2012.

3 Latvia

[2] FBP for all countries was calculated by using many sources. Those sources were given as footnotes in order to avoid interrupting text. All the webpages below was retrieved November 22, 2012.
http://en.trend.az/capital/it/1934386.html
http://www.rferl.org/content/how_azerbaijan_crushes_online_dissent/24515935.html
http://xeberler.az/eng/2010/11/20/number-of-facebook-users-grows-in-azerbaijan/
http://www.socialbakers.com

[3] All the webpages below was retrieved November 24, 2012
http://www.slideshare.net/arjantupan/fb-stats-201010v01-5631327
http://www-958.ibm.com/software/data/cognos/manyeyes/datasets/facebook-penetration-july-2010/versions/1
http://www.socialbakers.com

Latvia's FBP rate is not very bright. Twitter has very big effect for this situation. Twitter is second biggest social media website among the social networks in Latvia. Azerbaijan's values of HDI and FBP can be seen from Table 4.

Table 4: Latvia's HDI and FBP Values

Year	HDI Value	FBP (%)
2009	0,798	1,4
2010	0,802	9
2011	0,805	11,29
2012	Not Published	15,82

Source: UNDP (for HDI values), and Various Sources[4] (for preparing FBP)

The correlation coefficient for those two values is 0,97 for Latvia. HDI index of Latvia can be estimated by using FBP values as 0,807355 for 2012.

4 Lithuania

Lithuania has caught an impressive growth on FBP from 2009 to 2010. Lithuania's values can be seen from Table 5.

Table 5: Lithuania's HDI and FBP Values

Year	HDI Value	FBP (%)
2009	0,802	4,4
2010	0,805	22
2011	0,810	24,33
2012	Not Published	29,38

Source: UNDP (for HDI values), and Various Sources[5] (for preparing FBP)

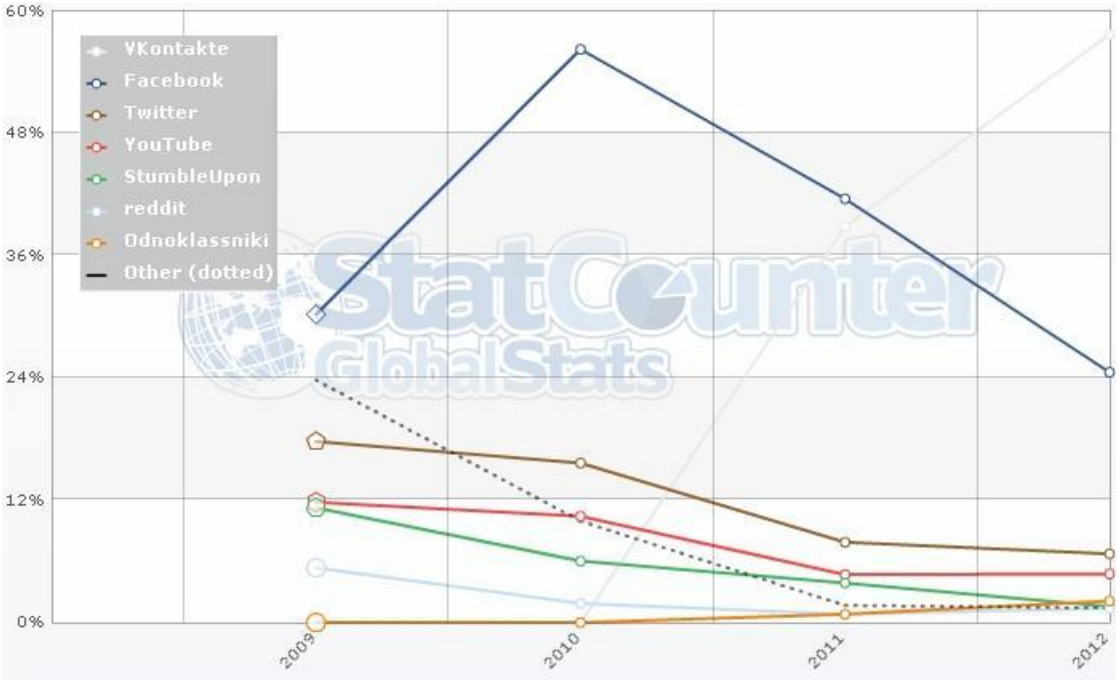
The correlation coefficient for Lithuania is 0, 84. Even the value of coefficient for Lithuania is lower than coefficients of Latvia and Estonia; it still shows the strong relationship between HDI and FBP values. If we try to estimate HDI value of Lithuania for 2012, we amount HDI value of Lithuania will be 0, 80958 in 2012. That can see as an unexpected result. Because, HDI values are growing for all selected countries year by year. But the analyze tells us HDI value of Lithuania will reduce or remain the same in 2012.

5 Russia

Russia's situation is very different among the selected countries. Top seven social media websites in Russia can be seen from the Figure 2.

Figure 2: Top Seven Social Media Websites in Russia

[4]All the webpages below was retrieved November 27, 2012
http://www.slideshare.net/arjantupan/fb-stats-201010v01-5631327
http://www.socialbakers.com
[5]All the webpages below was retrieved November 27, 2012
http://www.slideshare.net/arjantupan/fb-stats-201010v01-5631327
http://www.socialbakers.com



Source: Stat Counter Global Stats (http://statcounter.com/)

Facebook is not the most popular social media website in Russia. Vkontakte comes first with almost 60% usage. Facebook comes second with 24%according to Figure 2. Because of that fact the relationship between HDI and FBP values can not show the real situation. Statistics for Russia can be seen from Table 6.

Table 6: Russia's HDI and FBP Values

Year	HDI Value	FBP (%)
2009	0,747	0,3
2010	0,751	0,9
2011	0,755	2,70
2012	Not Published	4,38

Source: UNDP (for HDI values), and Various Sources[6] (for preparing FBP)

The correlation coefficient for Russia has calculated as 0,96. The estimation of HDI value of Russia for 2012 is 0,760. This estimation probably will not actualize due to Russia's different situation than other countries. Probably 2012's HDI value will be lower than 0,760 in Russia.

[6] All the webpages below was retrieved June 21, 2012
http://www.slideshare.net/oreillymedia/active-facebook-users-by-country-region-june-2007
http://www.ideagitalmarketing.com/facebook-penetration-by-countries-january-2011.html
http://www.insidefacebook.com/2010/07/06/europes-facebook-growth-moved-east-in-june-2010/
http://www.guardian.co.uk/media/2010/jun/23/mark-zuckerberg-facebook-cannes-lions
http://www.socialbakers.com

Conclusion

Analysis has done for five countries. Correlation analyzesand estimation has not been done for Azerbaijan due to limited data. All correlation coefficients are higher than 0,84. That result shows that there is a very strong relationship between HDI and FBP values. So it can be said that increasing the social media penetration is another way for development.

At the same time with that HDI values for 2012 has estimated for four countries. The next publication of Human Development Report which will be on March 14, 2013 in Mexicowill show the consistency of this research. It may be guessed that the estimation probably will be approximate for Estonia, Latvia and Lithuania. On the other hand due to her special status, estimation for Russia will not be show real value as mentioned before.

Internet usage is growing since the start of twenty first century. However social media websites are very popular among the internet user just a few years. Because of that, statistics for social media use are not quite enough even Facebook is heading 1 billion users. Especially marketers have become aware of the importance of those statics. Probably more social media statics will be used in more analysis in the future if they will be more possible to reach.

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Appendix I

Percentage of Individuals Using the Internet in Selected Transition Economies (From 2000 to 2010)

	Azerbaijan	Armenia	Belarus	Estonia	Georgia	Kazakhstan	Kyrgystan	Latvia	Lithuania	Moldova	Russia	Tajikistan	Turkmenistan	Ukraine	Uzbekistan
2000	0,15	1,3	1,86	28,58	0,48	0,67	1,04	6,32	6,43	1,28	1,98	0,05	0,13	0,72	0,48
2001	0,31	1,63	4,3	31,53	0,99	1,01	3	7,22	7,18	1,49	2,94	0,05	0,18	1,24	0,6
2002	5	1,96	8,95	41,52	1,59	1,67	3	21,94	17,69	3,79	4,13	0,06	0,3	1,87	1,08
2003	No Data	4,58	No Data	45,32	2,56	2	3,91	26,98	25,91	7,41	8,3	0,06	0,43	3,15	1,91
2004	No Data	4,9	No Data	53,2	3,89	2,65	5,09	38,58	31,23	10,63	12,86	0,08	0,75	3,49	2,59
2005	8,03	5,25	No Data	61,45	6,08	2,96	10,53	46	36,22	14,63	15,23	0,3	1	3,75	3,34
2006	11,99	5,63	16,2	63,51	7,53	3,27	12,31	53,63	43,9	19,62	18,02	3,77	1,32	4,51	6,39
2007	14,54	6,02	19,7	66,19	8,26	4,02	14,03	59,17	49,9	20,45	24,66	7,2	1,41	6,55	7,49
2008	17,08	6,21	23	70,58	10,01	11	15,7	63,41	55,22	23,39	26,83	8,78	1,75	11	9,08
2009	27,4	15,3	27,43	72,5	20,07	18,2	17	66,84	59,76	27,5	29	10,07	1,95	17,9	17,06
2010	46	No Data	31,8	74,1	26,9	31,6	18,4	68,42	62,12	32,3	43	11,55	3	23,3	20

Source: ITU (2013)