

Szkoła Główna Handlowa w Warszawie

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Dr. hab. Krzysztof Tymicki

Does increased internet usage in young adults lead to less life satisfaction?

Jan Möhle

Student ID: 128485

E-mail: jm128485@student.sgh.waw.pl

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Introduction

Excessive internet usage, especially a lot of social media usage is widely suspected to lead to more depression and less overall life satisfaction and happiness in young adults. A study from Morrison et. al. (2010) already linked internet addiction to symptoms of depression. It shows that this thread has to be taken seriously.

In the following paper I am aiming to analyze the relationship between life satisfaction and the amount of internet usage of young adults between 15 and 24 using data from the tenth round of the European Social Survey from 31 European countries. First, I will give a short summary about the data set I used. Then I will explain the variables and methodology of this analysis. Finally, I will present the results and come to a conclusion.

Data set

The data set of this analysis stems from the tenth round of the European Social Survey (ESS). It is an academically driven cross-national survey which asks strictly randomly selected participants that are at least 15 years old standardized questions to gather social data for academical use. The tenth round took place between September 2020 and August 2022 and included 31 European countries. 22 of them had the interview in a face-to-face manner. The rest conducted the interview only in a self-completion manner via web or on paper due to the ongoing corona pandemic (ESS ERIC 2023).

In this analysis I used data from both interview forms. It has to be mentioned that the way an interview is conducted could change the outcome, so results of two different forms of interviews are not perfectly comparable, but since they are also not completely different and I am not aiming to compare different countries but rather use all countries for one analysis, combining them is still justifiable.

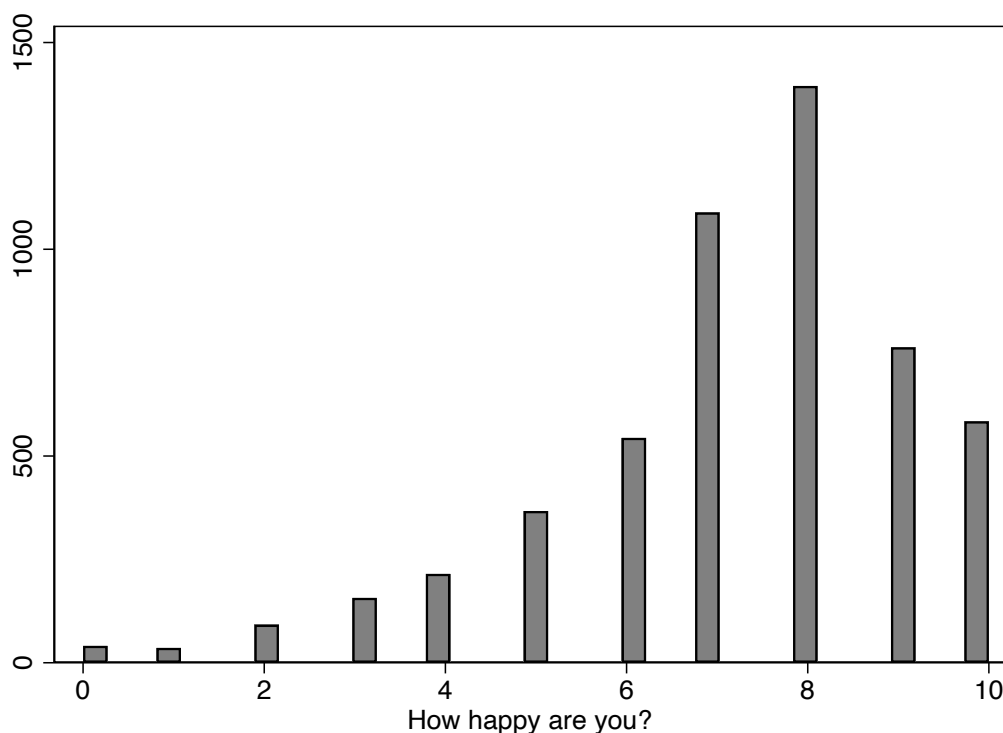
Also, the process of data collection took place over a relatively long period of time, so changes of attitude within this time period are possible. Attitudes and feelings in general could be heavily influenced by the corona pandemic especially regarding happiness and internet usage so the data set is not necessarily representative for normal times.

The subseted data set, used for this analysis, only contains data about participants between 15 and 24. It includes 5,283 observations from 31 European countries.

Variables

Dependent variable

The dependent variable of my analysis is a categorical variable that measures the self-assessed happiness of an individual person (happy). The question (C1) in the questionnaire is: “Taking all things together, how happy would you say you are?” (ESS ERIC 2023). It is measured with an unforced balanced Likert Scale that takes eleven different levels from zero to ten where zero is “Extremely unhappy” and ten is “Extremely happy”. The histogram below shows that the majority of the people over all countries answered with an eight. The mean value is 7.219 and the median is 8. Further descriptive statistics can be seen in the table below the histogram.

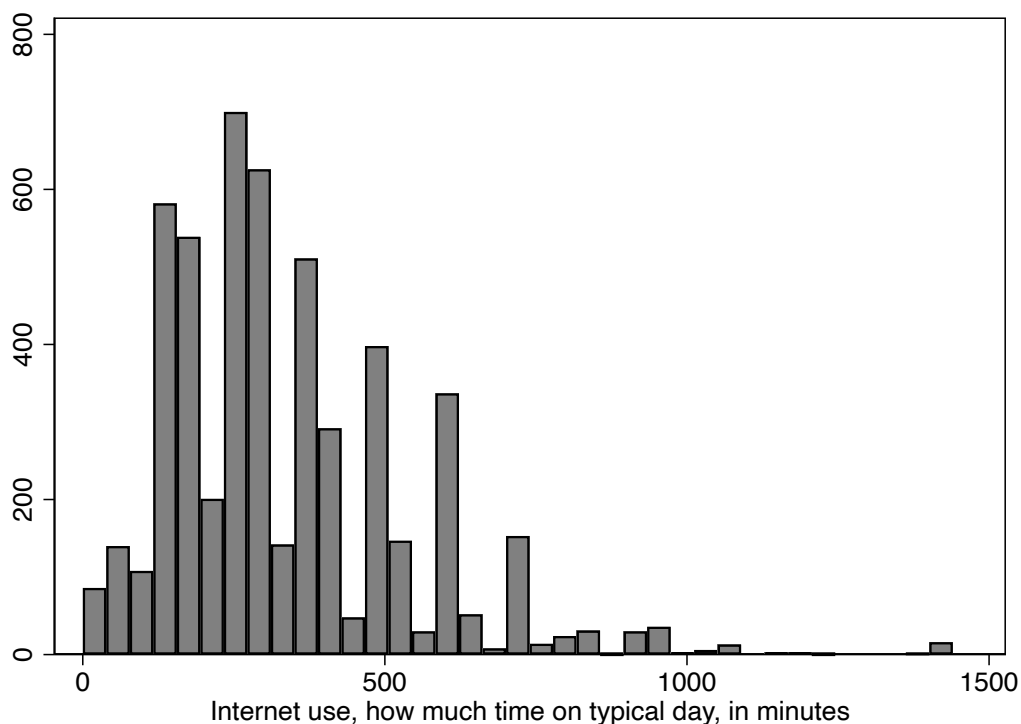


Variable	Mean	Std.	25%	50%	75%
happy	7.219	2.018	6	8	9

Independent variable

Main independent variable

The main independent variable of my analysis is a continuous variable that measures the amount of internet usage of an individual in minutes (netustm). The question (A1) in the questionnaire is: “On a typical day, about how much time do you spend using the internet on a computer, tablet, smartphone or other device, whether for work or personal use?” (ESS ERIC 2023). The mean value is 336.873 minutes, and the median is 300 minutes. Further statistics and a frequency histogram can be seen below.



Variable	Mean	Std.	25%	50%	75%
netustm	336.873	204.680	180	300	450

The hypothesis of my analysis is that the amount spend on the internet has got a negative influence on the overall happiness of a person, so I expect the coefficient between happiness and internet usage to be significantly negative.

Control variables 1: Social integration

I included three independent variables that should control for the amount of social integration of an individual, since I expect that social integration significantly influences the overall life satisfaction of an individual. Comprehensive statistics for these variables can be seen in the table below. The numbers correspond to categories (in case of categorical variable).

Firstly, I included a categorical variable that measures the amount of social meetings a person has with friends, relatives or colleagues (sclmeet). The question (C2) in the questionnaire is: “Using this card, how often do you meet socially with friends, relatives or work colleagues? “ (ESS ERIC 2023). Possible answers range with seven levels from “Never” to “Every day”. The reference category is “Never”. The influence on happiness of a person should be positive, since more social contacts are in general associated with a happier life.

The second variable is a categorical variable that measures the number of people a person can discuss personal matters with (inprdsc). The question (C3) in the questionnaire is: “How many people, if any, are there with whom you discuss intimate and personal matters?” (ESS ERIC 2023). The participant can choose in seven steps between “0” and “10 or more”. The reference category is “0”. I expect a positive relation between this variable and the happiness of an individual.

Lastly, I included a categorical variable that measures the self-assessed social activity compared to other people of the same age (sclact). The question (C4) in the questionnaire is: “Compared to other people of your age, how often would you say you take part in social activities?” (ESS ERIC 2023). Possible answers range in five steps from “Much less than most” to “Much more than most”. It is a balanced unforced Likert Scale. I set “Much less than most” as the reference category. The relationship to happiness should be positive for the same reason as previously.

Variable	Mean	Std.	25%	50%	75%
sclmeet	5.525	1.351	5	6	6
inprdsc	3.065	1.332	2	3	4
sclact	2.774	0.928	2	3	3

Control variables 2: Socio-economic factors

Additionally, to the social integration variables I also included independent variables to control for socio-economic factors, since these can also have a significant influence on a person's happiness in life.

The first one (F2) is a binary variable for the gender of a person (gndr). It is set to zero if a person is a male and to one if a person is a female. I do not expect any significant influence of this variable.

Secondly, I included a continuous variable that captures the age, calculated from the year of birth (F3), of a respondent (agea). It takes natural numbers between 15 and 24. I also do not expect a significant influence of the age on the happiness of a person.

The next variable measures the years of education of a respondent (eduyrs). The question (F16) in the questionnaire is: "About how many years of education have you completed, whether full-time or part-time? Please report these in full-time equivalents and include compulsory years of schooling." (ESS ERIC 2023). It is a continuous variable that takes only whole numbers that represent years. I do not expect any specific relationship with the happiness of a person.

Furthermore, I included a categorical variable that should account for the self-assessed general health (health), since I expect a positive relationship between the health status of a person and his or her happiness in life. The question (C7) in the questionnaire is: "How is your health in general?" (ESS ERIC 2023). Possible answers range in five steps from "Very bad" to "Very good". The reference category is "Very bad".

The last variable controls for the feeling of a person about his or her household's income (hincfel). It is a categorical variable. The question (F42) in the questionnaire is: "Which of the descriptions on this card comes closest to how you feel about your household's income nowadays?" (ESS ERIC 2023). The answers range in four steps from "Finding it very difficult on present income" to "Living comfortable on present income".

Variable	Mean	Std.	25%	50%	75%
agea	20.077	2.614	18	20	22
eduyrs	12.421	2.883	11	12	14
health	4.281	0.801	4	4	5
hincfel	3.212	0.792	3	3	4

gndr	Female	Male
number	2,786	2,497

Methodology

For my analysis I used a linear regression to look for a significant relationship between the amount of internet usage of a respondent with his or her self-assessed happiness. In order to reduce any bias in that relationship, I introduced several other explanatory variables that should capture the influence of other factors like social integration, income, and health.

Strictly speaking a linear regression is not perfect for that analysis since the outcome variable is not a continuous variable, as assumed with a linear regression. It is rather a categorical variable. I still chose a linear regression because the outcome variable has many levels (11) and I am mainly interested in the direction in which the amount of time spend during the day in the internet influences the life satisfaction of a person and less in predicting values. For that sake a linear regression is still applicable. In post regression tests I encountered heteroskedasticity in my model, which could come from the misspecification of the model or omitted variables, so I used linear regression with heteroskedasticity robust standard errors.

A problem of the data set is that it includes the total amount of time spend on the internet. It does not differentiate between the time a person spends on the internet during work, which probably has less of an influence on the happiness of a person, and the time during a person's free time, which is mainly of interest in that analysis. I still used this data set because I assume that only a minority of people between 15 and 24 already have a full-time job where they have to use the internet regularly, so the

majority of the time spend on the internet is still during their free time. But still, when analyzing the result, one should keep this fact in mind.

Results

The results of the linear regression can be seen in the regression table below. The coefficient of the main independent variable, which measures the amount of time a person spends on the internet during a day, is significant with $p < 0.01$. The coefficient is negative (as expected). An increase of one minute internet usage leads c.p. to a mean decrease in happiness of 0.0005. However, the coefficient is very small. If the coefficient gets multiplied by the maximum value of internet usage in that data set the result is -0.72. That means that the high internet usage of the person with the highest internet usage only leads to an expected decrease of happiness of 0.72.

Looking at the results from all social integration variables it can be seen that all coefficients are significant in the anticipated direction. Since the coefficients are relatively high, especially the ones for high quantity of social meetings, social integration seems to play an important role in life satisfaction, probably more important than the time spend on the internet.

Additionally, also the coefficients for the self-assessed health and feeling about the income of a household are significant with the expected direction. Both factors significantly contribute to the happiness of a person. Especially very good health has a high coefficient. Also, the impact of health seems to be higher than the impact of internet usage.

Interestingly the age, years of education and even the gender coefficients are significant. Older people (in the range of 15 to 24 years) have a higher expected happiness ($p < 0.05$). People with more years of education have a lower expected happiness ($p < 0.05$). Females seem to be on average slightly happier than males ($p < 0.1$). However, the magnitude is always very low and sometimes even neglectable.

The model as a whole is significant ($p < 0.01$) and it explains 22.51% of the variation in self-assessed happiness.

Variables		Coefficients	SE	$P > t $	
Internet usage (min)		-0.0005	0.0001	0.000	***
Quantity of socially meetings with friends, relatives, or colleagues (Never)					
Less than once a month		1.0675	0.5710	0.062	*
Once a month		1.5045	0.5672	0.008	***
Several times a month		1.7713	0.5552	0.001	***
Once a week		1.7418	0.5566	0.002	***
Several times a week		2.0588	0.5543	0.000	***
Every day		2.3230	0.5564	0.000	***
Number of people to discuss personal matters with (0)					
1		0.4408	0.2030	0.030	**
2		0.3886	0.1868	0.038	**
3		0.5317	0.1842	0.004	***
4-6		0.5601	0.1851	0.002	***
7-9		0.7197	0.1981	0.000	***
10 or more		0.6163	0.2212	0.005	***
Participation in social activities compared to others of same age (Much less than most)					
Less than most		0.1126	0.1225	0.358	
About the same		0.4641	0.1215	0.000	***
More than most		0.5331	0.1343	0.000	***
Much more than most		0.4935	0.1909	0.010	**
Gender (Male)					
Female		0.0850	0.0494	0.085	*
Age		0.0243	0.0115	0.034	**
Years of education		-0.0204	-0.0104	0.050	*
Personal health assessment (Very bad)					
Bad		-0.0021	-0.7812	0.998	
Fair		1.3779	0.7613	0.070	*
Good		2.2237	0.7597	0.003	***
Very good		2.8311	0.7606	0.000	***
Feeling about household's income (Very difficult on present income)					
Difficult on present income		0.3639	0.2078	0.080	*
Coping on present income		0.7590	0.1979	0.000	***
Living comfortably on present income		1.0718	0.1978	0.000	***
Constant		1.1542	0.9396	0.219	
N	5,283	F(27, 5255)	46.58	*	**
R ²	0.2251	p > F	0.000	p < 0.1	p < 0.05
					p < 0.01

Conclusion

From the results it can be concluded that the amount of internet usage seems to influence the overall life satisfaction and happiness of young adults. These findings are in alignment with other studies on that topic like the study from Morrison (2010) already mentioned in the introduction.

But other factors like social inclusion, physical health and economic situation still seem to play bigger role for the majority of young people. Still, with the rise of more and more new technologies that connect people to the internet, the impact of excessive internet usage, especially when it leads to addictive behavior, should not be underestimated in the discussion of mental health.

References

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Direct link to original questionnaire:

https://stessrelpubprodwe.blob.core.windows.net/data/round10/fieldwork/source/ESS10_source_questionnaires.pdf