Research Article

Received: 25 July 2023 / Accepted: 20 November 2023 / Published: 5 January 2024

Willingness to Keep or to Give Up the Social Media for a Certain Monetary Compensation

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DOI: https://doi.org/10.36941/ajis-2024-0020

Abstract

Millions of people around the world use social media every day for various reasons, whether it is sharing information, self-presentation, filling free time, or communicating with friends. The use of social networks brings with it advantages, but also risks associated with information overload, loss of privacy, as well as fraud or criminal acts. Mostly young people are connected to social networks almost constantly and find it more difficult to give up using social networks compared to older age groups. The aim of the present paper is to find out the willingness of social network users to give up social network such as Facebook and Instagram for certain monetary compensation. The necessary data were collected based on a questionnaire survey within 4 months. A total of 2 095 responses were collected. The static methods Chi-Square test of independence, logistic regression and the statistical program SAS Enterprise Guide were used to evaluate the results of the questionnaire survey. Analysis of Maximum Likelihood Estimates was tested for five predictors: Age, Gender, Income, Activity on the social network, Number of subscribers on the social network, especially for the social network Facebook and Instagram. Based on the results of the questionnaire survey, it can be concluded that Facebook users (in all age groups and regardless of gender) demand a higher average monthly financial compensation for giving up the social network compared to Instagram users. The same conclusion follows when categorizing respondents into age categories. Regarding gender, women demand lower monetary compensation than men in relation to both social networks. There was a significant difference in the Activity predictor, where active users asked for a higher amount of money for the Instagram social network and, conversely, inactive users asked for a higher average monthly payment for the Facebook social network.

Keywords: *Digital economy, Data economy, Facebook, Instagram, Attitudes, Social Network Users*

1. Introduction

The term data economy means "the development of a digital economy in which data is collected on a mass scale. Data is collected by everyone, including ordinary citizens" (Lammi, Pantzar, 2019).

However, the term digital economy does not have a unified and generally accepted definition. According to various authors, the term digital economy was first used by Tapscott (1996) in his publication. Tapscott states the emergence of a new economy without a specific definition. The author also writes about the digital economy in the sense of the age of networked intelligence, as well as intelligent machines, but also about the networking of people through technology (Bukht, Heeks, 2018). However, the authors and scientists agree that the digital economy is an economy based on information technology. For example, Margherio et al. (1999) also do not give a specific definition, but mention four segments, which are internet building, e-commerce, digital goods, and services. The authors also state the sale of tangible assets, i.e., retail sales using information technology. The group of authors is the first to emphasize the fundamental principles of the digital economy rather than focusing on the economy itself.

A narrow segment of the digital economy are businesses based exclusively on information and communication technologies. These are often different platforms (Van Uytsel, 2021). Platforms are often criticized in practice for making economic competition impossible. Large masses of users are attracted to free services. Their presence can subsequently attract companies and generate profit (European Commission, 2016). The basic production factor in the data economy is data. However, determining the value of the data is difficult. Their value depends on their processing and the ability to extract the necessary from them (Coyle, Li, 2021). An example of a segment of the data massive use and the data economy are social networks, e.g., social network Facebook. Users mostly perceive Facebook only as a communication platform or a media company. Although, the founder Zuckerberg himself does not agree with these claims. Zuckerberg describes Facebook as a technology company, not a media company. Its asset is the data that Facebook obtains from users (Harvard Business Review, 2017).

Research in the field of social networks have different focuses. The research is focused, e.g., to the negative consequences of social networks. However, the results of these research are different (Mackson et al., 2019). On the contrary, some research points to the positive aspects of social networks. Seabrook et al. (2016) point to positive consequences in terms of social support and belonging. The research of Nadkarni and Hofmann (2012) concluded that the use of Facebook is determined by two basic needs, the need to belong somewhere and the need for self-presentation. For example, demographic and cultural factors contribute to the need to belong, and narcissism, shyness, and self-esteem feed into the need for self-presentation (Nadkarni, Hofmann, 2012).

Other type of research was done by Molina et al. (2020). They investigate the preferences of Facebook users interested in pharmaceutical products and health. As part of the research, the authors describe the connections between marketing communication, media, and user profiles, which enables them to design the right marketing strategy.

Laor (2022) focused his research on examining the differences in the extent and usage patterns of social networks such as Facebook, Instagram, and Twitter. In the research, the author notes that women tend to use Instagram and Facebook more frequently than men and are also more interactive. At the same time, author claims that younger individuals use Instagram more frequently and are also more active Instagram users compared to older individuals. The social network Facebook connects with education. Laor states that individuals with lower educational attainment share pictures, videos, and posts on Facebook more frequently than individuals with higher education. According to the author, the claims support the idea that social networks expand the space for self-expression and that each target group focuses on those social networks that align with their needs.

Research conducted by authors Alhabash and Ma (2017) examines the motivation and use of Facebook, Twitter, Instagram, and Snapchat among college students. The results were as follows: users spend the most time per day on Instagram, followed by Snapchat, Facebook, and in lastly

Twitter. The mentioned fact is also related to the intensity of each platform use. Regarding the motivation for using the platforms, the survey participants stated that they use all platforms equally to share information. The highest rated motivation is comfort and fun. The author's findings also point to little or no connection between the size of the network, i.e., the number of friends and followers, and the intensity of use of individual platforms. As the author states in the conclusion, the study used only a sample of university students, mainly women (Alhabash, Ma, 2017).

The individual social networks mentioned above differ in their functions. For example, Facebook provides the largest range of features, including text posts, photo sharing, and other features, as well as allowing users to connect with friends. There is no possibility to "make friends" on Instagram. It is only possible to follow someone or be followed by someone (Shane-Simpson, et.al., 2018). Motivation, activity, usage patterns on Facebook, Instagram, and other social networks are related to a certain user value that is challenging to quantify monetarily.

A large part of digital goods and services is free, which represents a "problem" for classically used economic indicators and measurement. Free digital goods and services are not included in GDP. If a good or service has a value of zero, then GDP is zero, because GDP measures the monetary value of all goods produced in the economy. In the world of the digital / data economy, tracking welfare changes based on GDP is insufficient. Using the example of Meta, the technology company behind Facebook, it can be argued that measurement is straightforward due to the revenue generated from advertising. However, some research could question this possibility (Brynjolfsson, Collis, 2019).

The authors Brynjolfsson, Collis (2019), as part of their research, deal with an alternative way of measuring the digital economy through consumer surplus. Consumer surplus is defined by the OECD as:

> *"a measure of consumer welfare and is defined as the excess of the social valuation of a product over the price actually paid. It is measured by the area of a triangle below a demand curve and above the observed price" (OECD, 2002).*

The conclusions show that this is a fraction of the consumer's surplus. A representative sample of Facebook users is asked *"For what financial value they would give up Facebook for one month?"* (Brynjolfsson, Collis 2019). The research was carried out at the Massachusetts Institute of Technology as part of the dissertation thesis of Collins (2020) under the supervision of Professor Brynjolfsson. Research results showed a value of €97 for Facebook users in Europe, while an average user in the US would be willing to give up Facebook for $48 (Collins, 2020). Similar research was also carried out by Corrigan et al. (2018), where the authors also used consumer surplus as part of their research and, using the example of Facebook, tried to find out what is the average value of Facebook for one user. The authors also used consumer surplus and determined the value by asking respondents *"What value they would give up Facebook for?"*. The conclusions point to the fact that the average Facebook user would demand $1,000 a year to deactivate their account.

The aim of the present paper is to find out the willingness of social network users to give up social network such as Facebook and Instagram for certain monetary compensation. The goal is also to estimate the amount of monetary compensation.

2. Methodology

2.1 Data

Based on primary research through a questionnaire form, the necessary data were obtained.

Data from 2095 respondents were obtained through a primary questionnaire survey conducted in the period from 5/8/2021 to 24/11/2021. We created a banner advertisement in Google Ads that included a call to fill out a questionnaire, which directed users directly to a page with the questionnaire and accompanying text. Subsequently, we created the same advertisements on the

social network Facebook. We also used small cards with a web address and a QR code that linked to an online questionnaire and distributed these cards in high traffic areas.

Some questionnaires were excluded, e.g., due to incorrect filling in, respondent was not a user of social networks, namely Facebook and Instagram, or a lack of income information. The total number of respondents is 895.

The goal of the research was to find out the willingness to give up a social network for a certain monetary value (compensation) or the decision to keep social networks. The primary question was the following: What would you prefer if you had to choose: Keep access to the social network Facebook/Instagram, or give up Facebook/Instagram for a year for a certain amount paid monthly?

Categorical variables in the questionnaire were as following:

- Age of the respondent in years (0 – from 18 to 34; 1 – from 35 to 53; 2 – 54 and over); acronym Age.
- Giving up the social network for a certain monetary value (0 – no; 1 – yes); acronym to give up the social network.
- Activity on the social network (0 – no; 1 – yes); acronym Activity.
- Gender of the respondent (0 – male; 1 – female); acronym Gender.
- Income of the respondent (0 – up to €600; 1 – from €601 to €1100; 2 – from €1101 to €2000; 3 – more than €2001); acronym Income.
- The number of subscribers of the respondent on the social network (0 – up to 200 subscribers; 1 – from 200 to 800 subscribers; 2 – more than 800 subscribers); acronym Subscribers.

2.2 Statistical methods

The Chi-Square test of independence and logistic regression were used to process the results of the questionnaire survey (Stančíková, Vojtková, 2007).

The Chi-Square test of independence is used to determine if there is a significant relationship between two nominal variables. The null hypothesis for this test is that there is no relationship between the two variables. The test statistic for the Chi-Square test of independence is as follows (1):

$$\chi^2 = \sum_{i=1}^{r} \sum_{j=1}^{c} \frac{(A_{ij} - E_{ij})^2}{E_{ij}} \quad (1)$$

where r is the number of rows, c is the number of columns, A_{ij} is actual frequency of occurrence in the i-th row, j-th column (i = 1, 2, ..., r; j = 1, 2, ..., c), E_{ij} is the actual frequency of occurrence in the i-th row, j-th column (i = 1, 2, ..., r; j =1, 2, ..., c).

The calculated test statistics is compared to the critical value from the χ^2 distribution with $(c-1)(r-1)$ degrees of freedom. If the calculated χ^2value is greater than critical χ^2 value, then we reject the null hypothesis.

In the case that the null hypothesis of independence is rejected in the Chi-Square test, it is necessary to determine how strong this relationship is. Cramer's V for the Chi-Square test of independence measures effect size (2):

$$V = \sqrt{\frac{\chi^2}{n \cdot (m-1)}} \quad (2)$$

where n is the sample size; m is the minimum number of rows and columns, $m = \min(c, r)$. Cramer's V ranges from 0 to 1. A higher Cramer's V indicates a stronger depencence. An effect size is a value measuring the strength of the relationship between two variables in a population. We assessed effect size using Cramer's V according to Cohen (1988). A large effect size means that research finding has practical significance.

2.3 Logistic regression

Logistic regression is used for predicting the categorical dependent variable using a given set of independent variables. Let the random variable Y be dichotomous, i.e., takes two values 0 or 1. The conditional probability p of the occurrence of a given event (Y = 1) depending on k explanatory variables (X_j; i = 1, 2, ..., k) of categorical and continuous type is predicted by binary logistic regression. The relationship is linear. For the mentioned reason, it is used the so-called logit transformation of this conditional probability p (3) (Stančíková, Vojtková, 2007):

$$logit(p) = ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k \quad (3)$$

The natural logarithm of the chance p/(1-p) is the basis of the logit transformation. The maximum likelihood method is used to estimate the model parameters β_i (i = 1, 2, ..., k). Through the reverse transformation, it is possible to obtain the conditional probability p (4):

$$p = \frac{e^{(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k)}}{1+e^{(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k)}} = \frac{1}{1+e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k)}} \quad (4)$$

Wald's Chi-Square test is used to assess the significance of a variable in logistic regression. The value of the test statistic is as following (5):

$$\frac{\widehat{\beta}_i}{standard\ error\ (\widehat{\beta}_i)} \quad (5)$$

We will use the likelihood ratio test to determine the overall significance of the logistic model. Test statistics is as following (6):

$$G^2 = -2logL_0 - (-2logL_k) \quad (6)$$

where $-2\log L_0$ represents the likelihood function value for the model without predictors; $-2logL_k$ represents the likelihood function for the estimated model with k predictors. The G^2 test statistic has approximately a $\chi^2(k)$ distribution, where k is the number of predictors in the model. If the G^2 value is significant, it indicates that all predictors together contribute significantly to predicting the outcome.

We could not use the classic coefficient of determination to assess the quality of the logistic model. We used McFadden's R squared measure (McFadden, 1973), which is defined by the equation (7):

$$R^2_{McFadden} = 1 - \frac{-2logL_k}{-2logL_0} \quad (7)$$

Higher values indicate better adaptation of the model. In practice, values between 0.2 and 0.40 indicate that the model responds the data well, values above 0.40 indicate that the model responds to the data very well. McFadden's R squared values greater than 0.1 up to the value 0.2 mean the model is not particularly strong.

The quality of the model will also be assessed by us based on the measures of association between the actual and predicted values of the modelled variable (percentage of matching pairs, area under the Receiver Operating Characteristic curve (ROC)) (Hebák et al., 2007). The largest area under the ROC curve, if the area is flat, is 1, the test has the ideal character (100 % sensitivity and selectivity). The area AUC (Area Under Curve) under the ROC curve is a quantitative index. The verbal evaluation of AUC values is as follows: 1.0 - 0.9 – excellent; 0.9 - 0.8 - very good; 0.8 - 0.7 - good; 0.7 - 0.6 – enough; 0.6 - 0.5 – insufficient.

The statistical significance of the models can be tested in several ways as follows:

AIC (Akaike's Information Criterion) estimates the quality of each model compared to each of the other models (Akaike, 1973). Thus, AIC provides a tool of model selection. The preferred model is the model with the minimum AIC value (8).

$$AIC = -2logL_k + 2(k+1) \quad (8)$$

where k represents the number of predictors included in the model.

SC (Schwarz Criterion), also known as Bayesian Information Criterion (BIC) is an index that helps to quantify and select the most appropriate least complex probabilistic model among several possibilities (9) (Schwarz, 1978).

$$SC = -2logL_k + (k+1)log(n) \quad (9)$$

where k represents the number of predictors included in the model and n is the range of the sample set.

As part of the research, we used the SAS Enterprise Guide (SAS EG) statistical program.

2.4 Estimation of the average monthly payment for giving up the social network

Each participant was asked to make a single discrete choice between two options:

- keep access to Facebook, resp. Instagram or
- give up Facebook for one month and get paid Euro.

According to Brynjolfsson et al. (2019) respondents choose one of price points: E = (1, 30, 50, 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000). Our estimate is from a regression that omits the extreme observation, for E = €1. According to the model, the willingness to accept price is estimated. It is the value of the willingness to accept demand curve in the value of the median.

2.5 Hypotheses

On theoretical knowledge, three hypotheses were established that required to be confirmed or disproved:

H1: Willingness to give up social network Facebook for a certain period for a certain monetary value depends on age, gender, and activity.

H2: Willingness to give up social network Instagram for a certain period for a certain monetary value depends on age, income, and number of subscribers.

H3: Give up Facebook or Instagram for a year for a certain amount paid monthly is the highest for age group 18-34, and for active respondents.

3. Results

The most relevant results of the present study are detailed below. The remaining sections of this paper are organised as follows:

- Frequency tables
- Statistical dependencies using the Chi-Square test of Independence
- Logistic regression
- Facebook
- Instagram
- Estimation of the average monthly payment for giving up the social network

3.1 Frequency tables

In terms of the respondents' gender (Table 1), a larger share was represented by women (65.03 %). The male gender represented a percentage of 34.95 %.

The largest number of respondents fell within the age range of 35 to 53 years (74.42% of respondents). The category 54 and over represented 17.76% of respondents, while the age category from 18 to 34 years accounted for 7.82% of respondents. The highest percentage of respondents in the category Income of the respondents was in the group from €601 to €1100 (38.77 %), followed by income up to €600 (32.51 %), in the range of €1101 to €2000 the percentage was 22.12 % and, in the category more than €2001, 6.60 %.

Table 1: Respondents' profile

Variable	Frequency	Percentage
Gender		
Female	582	65.03
Male	313	34.95
Age		
18-34 years	70	7.82
35-53 years	666	74.42
54 and over	159	17.76
Income of the respondent		
Up to €600	291	32.51
From €601 to €1100	347	38.77
From €1101 to €2000	198	22.12
More than €2001	23	6.60
Total	**895**	**100**

Source: Own calculations based on the questionnaire research results

Regarding the results shown in the frequency tables related to the social network Facebook, the option "To give up the social network for a certain monetary value" is about the same as in the case of the option "To keep the social network". Compared to the social network Instagram, 68.16 % respondents would give up social network for a certain monetary compensation, and 31.84 % of respondents indicated to keep the social network (Table 2).

The Activity of the respondents on the social network Facebook and Instagram represents approximately the same percentage expression (the activity on Facebook represents 94.41 % and on Instagram 94.64 %). In the case of inactive users, it is 5.59 % on Facebook and 5.36 % on Instagram (Table 2).

As it can be seen in the Table 2, the social network Instagram has a higher percentage share in the categories up to 200 subscribers (85.03 %). The social network Facebook shows a higher percentage share in the categories from 200 to 800 subscribers (28.38 %), and in the category more than 800 subscribers (3.46 %).

Table 2: Giving up of the social network

Variable	Social network			
	Facebook		Instagram	
	Frequency	Percentage	Frequency	Percentage
To keep the social network				
No	439	49.05	285	31.84
Yes	456	50.95	610	68.16
Activity on the social network				
No	50	5.59	48	5.36
Yes	845	94.41	847	94.64
Number of subscribers on social networks				
Up to 200	610	68.15	761	85.03
From 200 to 800	245	28.38	128	14.30
More than 800	4	3.46	6	0.67
Total	**895**	**100**	**895**	**100**

Source: Own calculations based on the questionnaire research results

3.2 Statistical dependencies using the Chi-Square test of independence

Regarding the following contingency table (Table 3), we state the following conclusions: To give up the social network Facebook in connection with the age structure of the respondents is represented by 290 respondents in the category 54 and over. To keep the social network for the age category from 18 to 34 years indicated 189 respondents, 136 respondents from 35 to 53 years category, and 131 respondents 54 and over category.

For the social network Instagram, the age distribution of the respondents is as follows: the highest number of respondents would give up Instagram in the age category 54 and over. Likewise, the highest number of respondents would keep Instagram in the 54 and over age category. To give up the social network Instagram in the category from 18 to 34 years represents 70 respondents, in the category from 35 to 53, it is 56 respondents and, in the 54 and over category 159 respondents.

Table 3: Contingency tables – age of the respondent and willingness to give up the social network

	Facebook			Instagram		
	To keep the social network		Total	To keep the social network		Total
Age	No	Yes		No	Yes	
18-34 years	63	189	252	70	182	252
35-53 years	86	136	222	56	166	222
54 and over	290	131	421	159	262	421
Total	439	456	895	285	610	895

Source: Own calculations based on the questionnaire research results

The gender of respondents (Table 4) regarding the social network Facebook in the female category was not significantly different. To keep the social network Facebook represented a larger share of male respondents (166).

Regarding the social network Instagram, in terms of the gender of the respondent, there was a greater difference between the female and male gender. Specifically, to keep the social network indicated 389 female and 221 men. To give up the social network showed lower values of 193 women and 92 men.

Table 4: Contingency table – gender of the respondent and willingness to give up the social network

	Facebook			Instagram		
	To keep the social network		Total	To keep the social network		Total
Gender	No	Yes		No	Yes	
Female	292	290	582	193	389	582
Male	147	166	313	92	221	313
Total	439	456	895	285	610	895

Source: Own calculations based on the questionnaire research results

Regarding the distribution of the respondents' income categories (Table 5), the results were as follows: The highest values to keep the social network Facebook were reported in the category from €601 to €1100 (160 respondents) and in the category up to €600 (151 respondents). Respondents willing to give up the social network Facebook are in the same mentioned two categories from €601 to €1100 (187 respondents) and category up to €600 (140 respondents).

The distribution of income categories for the social network Instagram is as follows: To keep the social network in the category from €601 to €1100 was indicated by 233 respondents and in the

category up to €600 by 197 respondents. To give up the social network in the category from €601 to €1100 was marked by 114 respondents and in the category up to €600 by 94 respondents. The indicated numbers are smaller compared to the social network Facebook.

Table 5: Contingency table – Income of the respondent and willingness to give up the social network

Income	Facebook			Instagram		
	To keep the social network		Total	To keep the social network		Total
	No	Yes		No	Yes	
Up to €600	140	151	291	94	197	291
From €601 to €1100	187	160	347	114	233	347
From €1101 to €2000	89	109	198	57	141	198
More than €2001	23	36	59	20	39	59
Total	439	456	895	285	610	895

Source: Own calculations based on the questionnaire research results

The predictor Subscribers on the social network Facebook had the following results: To keep the social network in the category up to 200 subscribers indicated 315 respondents, and 295 respondents indicated option "To give up the social network". With the social network Instagram, the largest numbers were in the category up to 200 subscribers with the option "To keep the social network" (527 respondents) and "To give up the social network" 217 respondents. Results are shown in the Table 6.

Table 6: Contingency table - Number of subscribers on the social network and willingness to give up the social network

Subscribers	Facebook			Instagram		
	To keep the social network		Total	To keep the social network		Total
	No	Yes		No	Yes	
Up to 200	295	315	610	217	527	744
From 201 to 800	126	119	245	55	73	128
More than 800	18	22	40	13	10	23
Total	439	456	895	285	610	895

Source: Own calculations based on the questionnaire research results

For activity on the social network, the results are as follows (Table 7): "To give up social network" - Facebook for active users represents 268 respondents and "To keep the social network" for inactive users 291 respondents. 336 respondents would give up the Instagram social network among inactive users, 358 respondents would keep social network Instagram among inactive users.

Table 7: Contingency table – Activity on social network (FB, Instagram)

Activity	Facebook			Instagram		
	To keep the social network		Total	To keep the social network		Total
	No	Yes		No	Yes	
No	171	291	462	336	358	694
Yes	268	165	433	103	98	201
Total	439	456	895	439	456	895

Source: Own calculations based on the questionnaire research results

In the following tables (Table 8 and Table 9), we present the results of the independence tests evaluating the dependency of giving up the social network Facebook and Instagram for a certain period for a certain monetary value (compensation). Through five predictors (Gender, Age, Income, Activity, Subscribers), we will determine the *p* value and intensity of dependency according to Cohen. We reject the null hypothesis of independence between to give up the social network Facebook for a certain period for a certain monetary value and the predictors Age and Activity. The intensity of these dependencies is medium for Age and low for Activity. Other predictors have negligible intensity.

Table 8: Evaluation of the dependence of giving up social network Facebook for a certain period for a certain monetary value (using the Chi-Square test of independence)

Predictor	Chi-Square test statistic	P value	Decision on H_0	Cramer's V	Intensity of dependency according to Cohen
Gender	0.09357	0.75967	Do not reject	0.03059	Negligible
Age	14.9701	0.00056	Reject	0.38691	Medium
Income	0.78543	0.85295	Do not reject	0.08862	Negligible
Activity	6.1782	0.01293	Reject	0.24856	Low
Subscribers	0.10498	0.94886	Do not reject	0.03240	Negligible

Source: Own calculations

We do not reject the null hypothesis of independence between to give up the social network Instagram for a certain period for a certain monetary value and for any predictor. The predictors Age and Subscribers have a low intensity of dependence. Gender, Income and Activity have a negligible intensity (Table 13).

Table 9: Evaluation of the dependence of Giving up the Instagram social network for a certain period for a certain monetary value (using the Chi-Square test of independence)

Predictor	Chi-Square test statistic	P value	Decision on H_0	Cramer 's V	Intensity of dependency according to Cohen
Gender	0.14674	0.70167	Do not reject	0.03831	Negligible
Age	1.471444	0.47916	Do not reject	0.12130	Low
Income	0.12850	0.98821	Do not reject	0.03585	Negligible
Activity	0.05593	0.81305	Do not reject	0.02365	Negligible
Subscribers	1.80787	0.40497	Do not reject	0.13446	Low

Source: Own calculations

3.3 *Logistic regression*

Facebook

We conclude that the predictors Income and Subscribers on the social network Facebook are insignificant, the *p* value for the Income is 0.7169 and Subscribers has a p value of 0.3282. The strongest predictor is Gender, followed by Activity and finally Age (Table10).

Table 10: Analysis of Maximum Likelihood Estimates for Facebook (model with five predictors)

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Odds ratio Exp (Estimation)
Intercept	1	1.7933	0.2294	61.0863	<.0001	6.00925
Age	1	-0.9073	0.0957	89.9228	<.0001	0.403613

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Odds ratio Exp (Estimation)
Activity	1	-0.6373	0.1539	17.1542	<.0001	0.528718
Gender	1	-0.4066	0.1573	6.6778	0.0098	0.665911
Income	1	-0.0309	0.0851	0.1315	0.7169	0.969573
Subscribers	1	-0.1308	0.1338	0.9560	0.3282	0.877393

Source: Own elaboration using the SAS EG statistical program and based on data from a questionnaire survey

Due to the insignificance of the predictors Income and Subscribers, we will exclude them from the model and will analyse the model for the following three predictors (Table 11).

In Table 11 the *p* value for the predictor Age is less than 0.0001, the value is less than the 0.05 significance level. It means that Age has a statistically significant effect on predicting the probability *p* of giving up the Facebook social network for a certain period for a certain monetary value.

The *p* value for the predictor Activity on the social network is 0.0001, it is less than the significance level of 0.05. Based on the abovementioned, the Activity on the social network has a statistically significant effect on predicting the *p* probability of giving up the social network Facebook for a certain period for a certain monetary value.

The *p* value for the predictor Gender is 0.0105, it is less than the significance level of 0.05. Therefore, Gender has a statistically significant effect on predicting the p probability of giving up the social network Facebook for a certain period for a certain monetary value.

The constant -1.6888 does not have a simple practical interpretation but is generally kept in the model regardless of its significance. In this case, it is significant (*p* value is less than 0.0001).

The predictors Age, Activity, Gender, and the constant are significant in the model. The Age factor is more important (because 0.8894 > 0.6502 > 0.3941; respectively 2.433669 > 1.915924 > 1.483049). We consider the Age, Activity on the social network Facebook and Gender to be the strongest predictors for the variable "To give up the social network".

Table 11: Analysis of Maximum Likelihood Estimates for Facebook (model with three predictors)

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Odds ratio Exp (Estimation)
Intercept	1	-1.6888	0.1861	82.3647	<.0001	0.184741
Age	1	0.8894	0.0938	89.8060	<.0001	2.433669
Activity	1	0.6502	0.1522	18.2634	<.0001	1.915924
Gender	1	0.3941	0.1540	6.5469	0.0105	1.483049

Source: Own elaboration using the SAS EG statistical program and based on data from a questionnaire survey

In the following table (Table 12), there are two different statistics showed *AIC* (Akaike´s Information Criterion), *SC* (Schwarz Criterion) and -2*logL*. Mentioned two different statistics are for the five predictors: Age, Gender, Income, Activity, Subscribers and subsequently, for three predictors, Age, Gender, Activity on the social network.

Table 12: Model fit statistics for Facebook

Criterion	Intercept Only	Intercept and Covariates for model with 5 predictors	Intercept and Covariates for model with 3 predictors
AIC	1242.411	1092.696	1089.971
SC	1247.207	1121.477	1109.158

Criterion	Intercept Only	Intercept and Covariates for model with 5 predictors	Intercept and Covariates for model with 3 predictors
-2 Log L	1240.411	1080.696	1081.971
G^2		159.715 (p <0.0000)	158.44 (p <0.0000)
$R^2_{McFadden}$		0.12875974	0.127732

Source: Own elaboration using the SAS EG statistical program and based on data from a questionnaire survey

Based on the comparison of Model Fit Statistics for five and three predictors, we conclude that lower values for the model with three predictors for the *AIC* and *SC* criteria indicate a more suitable model. In terms of $R^2_{McFadden}$, the models are not particularly strong.

P values for the test statistic G^2 are lower than the level of significance (0.05), therefor we can conclude that the predictor significantly predicts the probability of "To give up a social network" for a certain monetary value or "To keep a social network". The model for Facebook with three predictors is following:

$$\hat{p} = \frac{1}{1+exp\,(-(\beta_0+\beta_1\,Age+\beta_2 Activity+\beta_3 Gender)} = \frac{1}{1+exp\,(-(-1{,}6888+\,0{,}8894\,Age+\,0{,}6502\,Activity+0{,}3941\,Gender)} \quad (10)$$

where p is the probability of giving up the Facebook social network for a certain period for a certain monetary value.

In logistic regression, the effect of the regressor on the explained variable is quantified through the odds ratio (Table 13).

The odds ratio (odds ratio, i.e., exp $(\hat{\beta}_1) = exp$ (0.8894) for the predictor Age is 2.433669. It means that each transition from one age level to the next (and a constant level of Activity, Gender) is associated with a reducing of probability of giving up the social network by 2.433669 (243.37 %).

The odds ratio (odds ratio, i.e., exp $(\hat{\beta}_2) = exp$ (0.6502) for the predictor Activity is 1.915924, therefor each transition from one level to the next level of the predictor Activity (and constant level of predictors Age, Gender) is associated with reducing of probability of giving up the social network by 1.915924 (191.59 %).

The odds ratio (odds ratio, i.e., exp $(\hat{\beta}_3) = exp$ (0.3941) for the Gender predictor is 1.483049. It means that each transition from one level to the next level of the Gender predictor (and constant level of the Age, Activity predictors) is associated with reducing of probability of giving up the social network by 1.483049 (148.30 %).

Table 13: Odds Ratio Estimates and Wald Confidence Intervals for Facebook

Effect	Unit	Estimate	95% Confidence Limits	
Age	1.0000	2.434	2.025	2.925
Activity	1.0000	1.916	1.422	2.582
Gender	1.0000	1.483	1.097	2.006

Source: Own elaboration using the SAS EG statistical program and based on data from a questionnaire survey

To give up social network Facebook: with increasing Age (of the respondent), Activity (on the social network) and depending on Gender, the chance of giving up Facebook decreases.

The area of the *ROC* curve is higher than 70 % (Facebook - 73.41 %), the given model can predict the modelled value well (Figure 1). The expression of the area value for *AUC* is good, medium value of the interval.

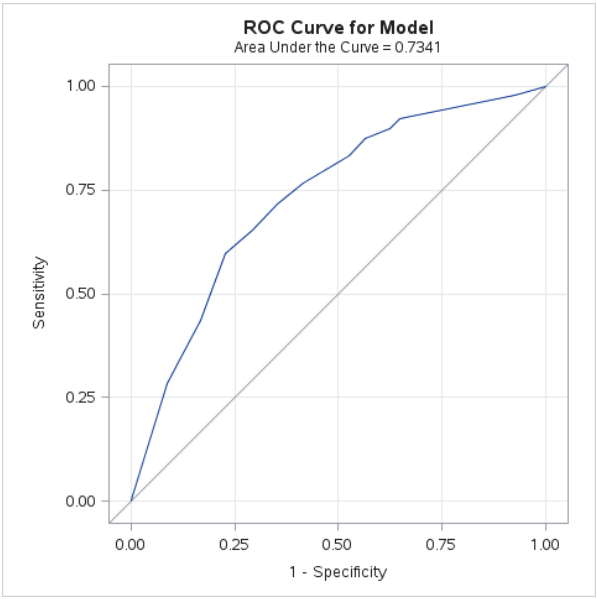

Figure 1: *ROC* Curve for Model for logistic model for Facebook
Source: Own elaboration using the SAS EG statistical program and based on data from a questionnaire survey

3.4 Instagram

Subsequently, we will investigate the significance of five predictors also on the Instagram social network (Table 14). For the predictors Gender, Income and Subscribers related to the social network Instagram, we state that they are not statistically significant. The p value of Gender is 0.0556, Income is 0.7251 and Subscribers on the social network Instagram is 0.1474.

Table 14: Analysis of Maximum Likelihood Estimates for Instagram (model with five predictors)

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Odds ratio Exp (Estimation)
Intercept	1	2.0043	0.2350	72.7496	<.0001	7.420897
Age	1	-0.4564	0.0987	21.3925	<.0001	0.63356
Activity	1	-1.5648	0.1874	69.7508	<.0001	0.20913
Gender	1	-0.2867	0.1498	3.6639	0.0556	0.750737
Income	1	-0.0308	0.0876	0.1236	0.7251	0.969669
Subscribers	1	-0.2579	0.1781	2.0986	0.1474	0.772672

Source: Own elaboration using the SAS EG statistical program and based on data from a questionnaire survey

Due to the insignificance of the predictors Gender, Income and Subscribers, we will exclude them from the model and will analyse the model for the following two predictors: Age and Activity.

The *p* value for the predictor Age and *p* value for the predictor Activity are lower than 0.0001, i.e., lower than the 0.05 significance level. Age and Activity on the social network have a statistically significant effect on predicting the probability *p* of giving up the social network Instagram for a

certain period for a certain monetary value. The constant 1.6962 is significant (p value is lower than 0.0001). Both predictors Age and Activity and the constant are significant in the model. The Age factor is more important (because -0.4105 > -1.6515; respectively 0.663319 > 0.191762).

Table 15: Analysis of Maximum Likelihood Estimates for Instagram (model with two predictors)

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Odds ratio Exp (Estimation)
Intercept	1	1.6962	0.1594	113.2692	<.0001	5.453186
Age	1	-0.4105	0.0947	18.8007	<.0001	0.663319
Activity	1	-1.6515	0.1764	87.6680	<.0001	0.191762

Source: Authors of the paper own elaboration using the SAS EG statistical program and based on data from a questionnaire survey

In the following table (Table 16), there are two different statistics showed, AIC, SC, and -2logL for the five predictors: Age, Gender, Income, Activity, Subscribers and subsequently, for two predictors, Age and Activity on the social network.

Table 16: Model fit statistics for Instagram

Criterion	Intercept Only	Intercept and Covariates **for model with 5 predictors**	Intercept and Covariates **for model with 2 predictors**
AIC	1121.976	1023.991	1021.891
SC	1126.773	1052.772	1036.278
-2 Log L	1119.976	1011.991	1015.891
G^2		107.985 (p <0.0000)	104.086 (p <0.0000)
$R^2_{McFadden}$		0.096417245	0.092935027

Source: Own elaboration using the SAS EG statistical program and based on data from a questionnaire survey

For Model Fit Statistics for five and two predictors, we note that for the *AIC* and *SC* criteria, the results indicate a more appropriate model for two predictors.

For the test statistic G^2 p values are lower than the level of significance (0.05), therefor we can conclude that the predictors significantly predict the probability of giving up the social network for a certain monetary value or keeping the social network. In terms of $R^2_{McFadden}$, the models are not particularly strong.

To give up the Instagram social network for a certain period for a certain monetary value is represented by the model (11).

$$\hat{p} = \frac{1}{1+\exp\left(-(\beta_0+\beta_1\, Age+\beta_2\, Activity\right)} = \frac{1}{1+\exp\left(-(1{,}6962-0{,}4105\, Age-1{,}6515\, Activity\right)} \quad (11)$$

Through the Odds ratio, we quantify the impact of the regressor on the explained variable in logistic regression (Table 21). The odds ratio (odds ratio, i.e. $\exp(\hat{\beta}_1) = \exp(-0.4105)$ for the Age predictor is 0.663319. It means that each transition from one age level to another (and a constant Activity level) is associated with decreasing the probability of giving up the social network by 0.663319 (66.33 %).

The odds ratio (odds ratio, i.e. $\exp(\hat{\beta}_2) = \exp(-1.6515)$ for the Activity predictor is 0.191762. It means that each transition from one level to the next level of the Activity predictor (and a constant level of the Age predictor) is associated with decreasing the probability of giving up the social network by 0.191762 (19.18 %).

Table 17: Odds Ratio Estimates and Wald Confidence Intervals Instagram

Effect	Unit	Estimate	95% Confidence Limits	
Age	1.0000	0.663	0.551	0.799
Activity	1.0000	0.192	0.136	0.271

Source: Authors of the paper own elaboration using the SAS EG statistical program and based on data from a questionnaire survey

To give up the social network Instagram in connection with Activity (on the social network) is the lowest, followed by the Age (of the respondent).

Activity on social network represents the lowest *p* value. The age of the respondent has a higher *p* value. Not a single predictor shows a value above 1.

The following graph (Figure 2) shows the value of the AUC area for the Instagram social network.

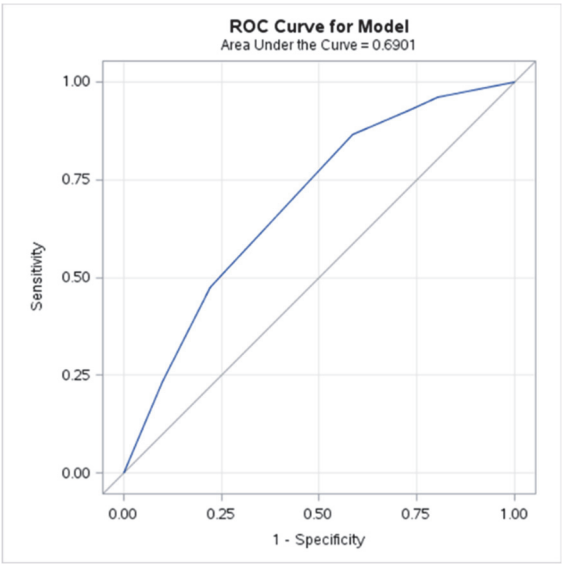

Figure 2: *ROC* Curve for Model for logistic model for Instagram
Source: Authors of the paper own elaboration using the SAS EG statistical program and based on data from a questionnaire survey

The area of the ROC curve is 69.01 %, the given model can sufficiently predict the modelled value. The percentage expression is lower compared to the social network Facebook, but the difference is minimal. The AUC value is sufficient, it represents the upper limit of the interval.

3.5 Estimation of the average monthly payment for giving up the social network for a year

Table 18 displays the willingness to accept demand curves and its coefficient of determination. For the other predictors, the coefficient of determination was very low. The results would not be correct (accurate).

Table 18: Willingness to accept demand curve

		Willingness to accept demand curve	Coefficient of determination R^2
Facebook		y = 887.93 x + 751.38	0.7691
Gender	Female	y = 819.54 x + 687.79	0.6738
	Male	y = 933.27 x + 761.81	0.7588
Age	18-34 years	y =775.37 x + 713.87	0.7691
	35-53 years	y = 854.59 x + 679.27	0.7023
	54 and over	y = 932.02 x + 771.22	0.7754
Activity	Active	y = 926.49 x + 774.37	0.7670
	Inactive	y = 855.25 x + 701.95	0.7122
Instagram		y = 915.08 x + 721.03	0.6940
Gender	Female	y = 902.25 x + 704.46	0.6544
	Male	y = 893.78 x + 732.52	0.7831
Age	18-34 years	y = 875.53 x+ 703.37	0.7177
	35-53 years	y = 900.02 x + 694.79	0.6172
	54 and over	y = 818.28 x + 654.72	0.5627
Activity	Active	y = 913.57 x + 791.99	0.7954
	Inactive	y = 892.94 x + 683.89	0.6261

Source: Own calculations

The following Figure 3 shows the average monthly payment for giving up the social network Instagram or Facebook.

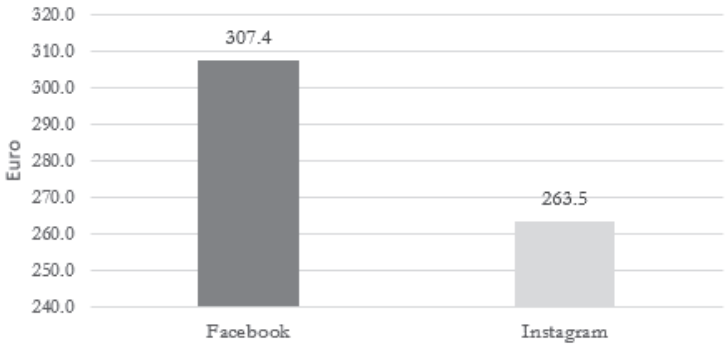

Figure 3: To give up social network Instagram and Facebook for a year for a certain amount paid monthly (in Euro)
Source: Own elaboration

Based on the results of the analysed Facebook user sample of all age groups and genders, it was found that Facebook users would give up the social network for a period of one year in exchange for €307.4 per month on average.

Instagram users would give up the social network for a period of one year for an average monthly payment of €263.5. As can be seen in the figure above, Facebook users demand a higher average monthly payment to give up the social network than Instagram users.

We divided users into age groups: from 18 to 34; 35 to 53; and 54 and over. The figure shows a comparison of the required average monthly payment for giving up Instagram and Facebook in individual age groups.

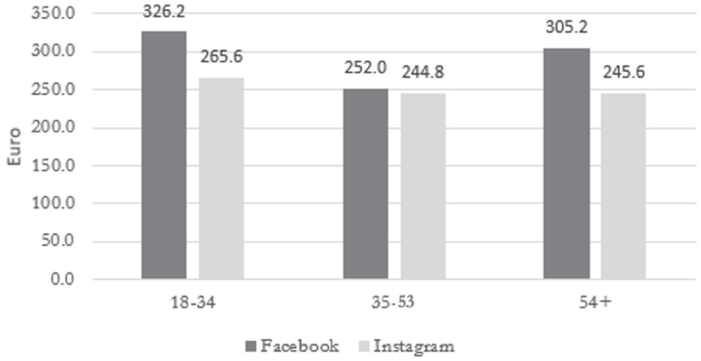

Figure 4: To give up Facebook and Instagram for a year for a certain amount paid monthly based on the age group of the respondents (in Euro)
Source: Own elaboration

Facebook users in the age group of 18 to 34 years would give up the Facebook for a period of one year for an average monthly payment of €326.2 and Instagram users for €265.6. In the age category of 35 to 53 years, respondents would give up Facebook in exchange for an average monthly payment of €252.0, while Instagram users would do so for €244.8. In the age category of 54 and over, respondents would give up using Facebook for €305.2 and Instagram for €245.6.

The smallest difference between Instagram and Facebook users can be found in the age category of 35 to 53 years. In all surveyed age categories, users demand a higher average payment related to Facebook.

In Figure 5, we divided Instagram and Facebook users into group of active and inactive users to compare the average monthly payment required to give up Instagram or Facebook for a period of one year.

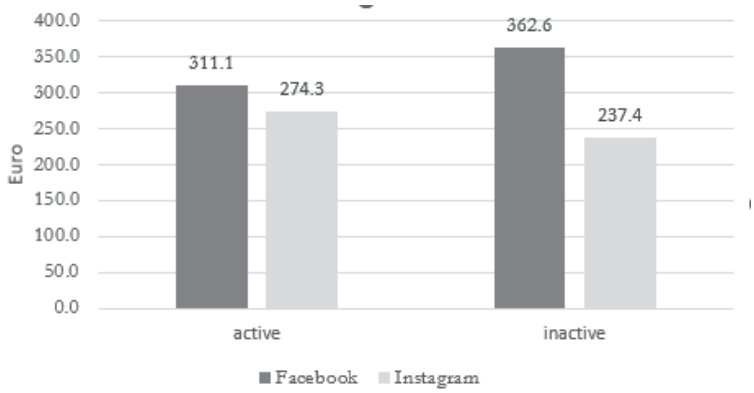

Figure 5: To give up Facebook and Instagram for a year for a certain amount paid monthly based on the activity (in Euro)
Source: Own elaboration

A higher monthly payment is demanded by active Instagram users compared to Facebook users (Instagram - €362.6 and Facebook - €311.1 in average). The situation is the opposite for inactive users. Facebook users request a higher monthly average payment compared to Instagram users (Facebook -

€274.3 and Instagram - €237.4).

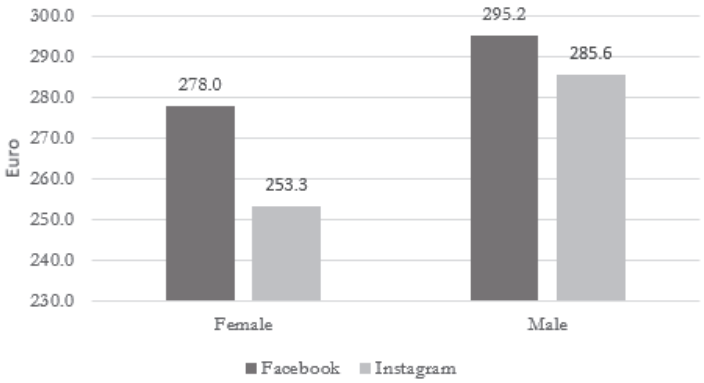

Figure 6: To give up Facebook and Instagram for a year for a certain amount paid monthly based on the gender (in Euro)
Source: Own elaboration

Based on the gender category of the respondents in both cases, males request a higher average monthly payment compared to females on Facebook and Instagram. For Facebook, males request €295.2, while females request €278.0. On Instagram, males request €285.6, and females request €253.3.

4. Conclusion and Discussion

We investigated giving up the social network Facebook and Instagram for a certain monetary reward or, on the contrary, keeping the social network. Analysis of Maximum Likelihood Estimates were tested for five predictors: Age, Gender, Income, Activity and Subscribers on the social network separately for Facebook and Instagram. In the context of the Facebook social network, both Income and Subscribers do not appear to be significant predictors, as indicated by their p-values. In our analysis, Income, Gender, and Subscribers on the Instagram social network were found to be insignificant predictors based on their p-values.

Subsequently, we proceeded to the analysis for three predictors: Age, Gender, and Activity on the social network Facebook and for two predictors, Age and Activity on the Instagram social network. We investigated using maximum likelihood analysis and odds ratio estimation, *AIC*, *SC*, $-2logL$, G^2, $R^2_{McFadden}$. The results from SAS EG were then interpreted through *ROC* Curve for Model.

In the detailed analyses of the predictors Age, Gender and Activity on the social network Facebook and Age and Activity on the social network Instagram, we came to the following conclusions: The *p* value for the predictor Age and Activity on the social network is less than 0.0001, the p value of the respondent's gender is 0.0105 and it is less than the significance level of 0.05. It means that Age, Gender, and Activity on the social network Facebook have a statistically significant effect on predicting the probability p of giving up the social network for a certain monetary value for certain period. Hypothesis H1 has been confirmed.

The Age is a more important factor compared to Activity and Gender (0.8894 > 0.6502 > 0.3941; respectively 2.433669 > 1.915924 > 1.483049).

The odds ratio (odds ratio, i.e., $exp\ (\hat{\beta}_1) = exp\ (0.8894)$ for the predictor Age (Facebook) is 2.433669. It means that each transition from one level of age to another (and constant level Activity, Gender) is associated with a decrease in the probability of giving up the social network by 2.433669,

i.e., 243.37 %. The odds ratio (odds ratio, i.e., $exp(\hat{\beta}_2) = exp(0.6502)$ for the predictor Activity on a social network Facebook is 1.915924, i.e. that each transition from one level to the next level of the Activity predictor (and the constant level of the predictors Age, Gender) is associated with a decrease in the probability of giving up the social network by 1.915924, i.e. 191.59 %. Odds ratio (sec. ratio, i.e., $exp\ (\hat{\beta}_3) = exp\ (0.3941)$ for the predictor Gender (Facebook users) is 1.483049, each transition from one level to the next level of the predictor Gender (and constant level of predictors Age, Activity) is associated with a decrease in probability of giving up the social network by 1.483049, i.e. 148.30 %. Based on the comparison of the results of Model Fit Statistics - Facebook, we state that lower values for the model with three predictors for the *AIC* and *SC* criteria indicate a more suitable model. P values for the G^2 test statistic are less than the significance level (0.05). Based on the abovementioned, it is possible to conclude that the predictors significantly predict the probability of giving up the social network for a certain monetary value or keeping the social network. In terms of $R^2_{McFadden}$, the models are not particularly strong. The area of the *ROC* curve is higher than 70 % (Facebook 73.41 %), the given model can predict the modelled value well. The expression of the area value for *AUC* is good, it is medium value of the interval.

The p value for the predictor Age and Activity on the Instagram social network is less than 0.0001, i.e., is less than the 0.05 significance level. Age and Activity have a statistically significant effect on predicting the probability p of giving up the social network Instagram for a certain period for a certain monetary value. Hypothesis 2 was only partially confirmed. The number of subscribers does not have statistically significant effect on predicting the probability p of giving up the social network Instagram for a certain monetary value within a certain period.

The Age is a more important factor than Activity (-0.4105 >-1.6515; respectively 0.663319 > 0.191762). The odds ratio (odds ratio, i.e., $exp\ (\hat{\beta}_1) = exp\ (-0.4105)$ for the predictor Age of respondent at Instagram is 0.663319, it means that every transition from one level of age to another (and constant level Activity) is associated with a decrease in the probability of giving up a social network by 0.663319, i.e. 66.33 %. Odds ratio (odds ratio, i.e., $exp(\hat{\beta}_2) = exp\ (-1.6515)$ for the predictor Activity on social of the network Instagram is 0.191762, which means that each transition from one level to the next level of the Activity predictor (and constant level of the predictor Age) is associated with a decrease in the probability of giving up the social network by 0.191762, i.e., 19.18 %. For the Instagram social network and based on the Model Fit Statistics results, we conclude that for the two-valued model, lower values for the *AIC* and *SC* criteria indicate a more appropriate model. For the G^2 test statistic, the p values are less than the significance level (0,05). Based on the mentioned, it is possible to conclude that the predictors significantly predict the probability of giving up a social network for a certain monetary value or keeping a social network. In terms of $R^2_{McFadden}$, the models are not particularly strong. The area of the *ROC* curve is 69.01 %. The given model can sufficiently predict the modelled value. The percentage expression is lower compared to the social network Facebook, but the difference is minimal. The *AUC* value is sufficient, it represents the upper limit of the interval.

In conclusion, we state that a model with three predictors Age, Activity and Gender is more suitable for the social network Facebook. From the point of view of the p value, the more important factor is the Age. For the Instagram social network, a model with two predictors, Age and Activity, is more suitable. The Age (of the respondent) is also an important factor for the social network Instagram, from the point of view of giving up the social network for a certain period for a certain monetary value.

Within the studied sample of all age groups and genders, Facebook users would give up the social network for a period of one year for an average of €307.4 per month. Instagram users would give up the social network for a period of one year for an average monthly payment of €263.5. Facebook users demand a higher average monthly payment compared to Instagram users.

Facebook users in the age group of 18 to 34 years would give up the Facebook for a period of one year for an average monthly payment of €326.2 and Instagram users for €265.6. In the age category of

35 to 53 years, respondents would give up Facebook for an average monthly payment of €252 and Instagram users for €244.8. In the age category of 54 and over, respondents would give up using Facebook for €305.2 and Instagram for €245.6. The smallest difference between Instagram and Facebook users can be found in the age category of 35 to 53 years. In all investigated age categories, users demand a higher average payment in the case of the Facebook social network.

A higher monthly payment is demanded by active Instagram users compared to Facebook users. For Instagram, the average monthly payment is €362.58, whereas for Facebook, it's €311.1. The situation is the opposite for inactive users. A higher monthly average payment is requested by Facebook users in comparison with Instagram. For Facebook, the amount is €274.3 and for Instagram €237.4. The results confirm the validity of hypothesis H3.

Based on the gender distribution in both cases, males ask for a higher average monthly payment to give up the social network compared to women on both social networks Facebook and Instagram. In the case of Facebook, it is €295.2 and in the case of Instagram €285.6, compared to females who demand €278.0 for the social network Facebook and €253.3 for the social network Instagram.

Several studies suggest that people are willing to accept a certain amount of money to give up using social networks. This may be because social networks can be a source of stress, anxiety, and depression for people. Social networks can also contribute to the spread of false information and hate speech.

Rewarding people for quitting social networks could be an effective strategy to reduce the negative consequences of social media. However, this strategy might be challenging to implement. Social networks are highly addictive, and individuals might try to avoid the reward for stopping using social networks. It is also important to consider the ethical implications of rewarding people for quitting social networks. Some individuals might see this strategy as a form of manipulation or pressure.

There is a significant gap in the peer-reviewed literature on the topic of quitting social networks for money, while the amount of non-peer-reviewed literature is substantial. The lack of peer-reviewed works in this area has led to the boom of unreviewed marketing literature, which often employs questionable methodologies and motives.

Serious theoretical foundations must be sought in the theory of valuation of **free goods**.

Brynjolfsson et al. (2019) tested the evaluation of Instagram, Snapchat, Skype, WhatsApp, Digital Maps, LinkedIn, Twitter as well as Facebook in a laboratory setting in the Netherlands. They offered participants a monetary amount for quitting these services for one month. The amount for quitting Facebook was €96.80 (February 2004), and for Instagram (October 2010) €6.79.

Brynjolfsson et al. (2019) collected responses from respondents in 2016-17 via Research Now, an online provider of professional panels. A total of 2,885 participants responded. The result was an estimated willingness to accept $506.04 per year (with a confidence interval of [390.36; 653.64]), paid monthly.

Sunstein (2020), using Amazon's Mechanical Turk in 2018, obtained the following values: the median amount they would quit Instagram was $100 and the average was $102.60. In the case of Facebook, the median amounts were $87.50, and the average was $89.17.

Corrigan et al. (2018) used experimental auctions to directly estimate the value US users place on Facebook. Auction winners were paid for deactivating their account for only one hour or one year. Since auction participants faced real financial consequences, they had a strong motivation to seriously consider what compensation they would need. In the third auction (US, 2015), the average bid in Amazon's Mechanical Turk sample was $1,921 (standard deviation $6,536), and the median bid was $100.

People attach less value to gains than to losses; they attribute higher value to the loss of a certain good than to the gain from the same good. Thaler (1980), like other economists, associated this effect with consumer aversion to loss (loss aversion). The asymmetry between the valuation of loss and gain subsequently leads to a higher willingness of consumers to accept compensation for a good (also a hypothetical sale price) than their willingness to pay for the same good (also a

hypothetical purchase price). The disparity between willingness to pay (WTP) and willingness to accept (WTA) is also pointed out by Sunstein (2020). Hence, the interpretation of the results depends on the way the question is asked.

Allcott et al. (2020) pointed out that monthly levels of willingness to accept (WTA) are influenced by the total length of the deactivation period reported in the survey and the credibility of enforcement measures.

Brynjolfsson, Collis, and Eggers (2019) stated that the relationship between valuation and the period is roughly log-linear rather than linear, i.e., a 1-year valuation is less than 12 times the 1-month valuation.

In addition to the above, we believe that the year, the country, of course the method of collection, the composition of the respondents and the size of the cohort are also important factors influencing the findings and hindering comparisons.

For the reasons mentioned above, we are unable to analyse the differences in the results and must be satisfied with merely stating the findings.

5. Acknowledgement

This article was completed thanks to support under the Operational Program Integrated Infrastructure for the project: National infrastructure for supporting technology transfer in Slovakia II - NITT SK IL, co-financed by the European Regional Development Fund and the Erasmus LS project titled ChemSkills: enabling the green and digital skills transformation of the chemical industry, No. 101103234.

References

Allcott, H., Braghieri, L., Eichmeyer, S., & Gentzkow, M. (2020). The welfare effects of social media. *American Economic Review*, 110(3), 629-676.

Akaike, H. (1973). Information theory and an extension of the maximum likelihood principle. In B. N. Petrov & F. Cs·ki (Eds.), *2nd International Symposium on Information Theory* (pp. 267-281). AkadÈmiai KiadÛ

Alhabash, S., & Ma, M. (2017). A Tale of Four Platforms: Motivations and Uses of Facebook, Twitter, Instagram, and Snapchat Among College Students. *Social Media + Society*, 3(1), 205630511769154. https://doi.org/10.1177/2056305117691544

Brynjolfsson, E., & Collis, A. (2019). How should we measure the digital economy. *Harvard Business Review,* 97(6), 140-148.

Brynjolfsson, E., Collis, A., Diewert, W. E., Eggers, F., & Fox, K. J. (2019). *GDP-B: Accounting for the value of new and free goods in the digital economy* (No. w25695). National Bureau of Economic Research.

Brynjolfsson, E., Collis, A., & Eggers, F. (2019). Using massive online choice experiments to measure changes in well-being. *Proceedings of the National Academy of Sciences*, *116*(15), 7250-7255.

Bukht, R., & Heeks, R. (2018). Defining, conceptualising and measuring the digital economy. *International Organisations Research Journal,* 13(2), 143-172. https://doi.org/10.17323/1996-7845-2018-02-07

Cohen, J. (1988). *Statistical Power Analysis for the Behavioural Sciences (2nd ed.)*. Lawrence Erlbaum Associates, Publishers.

Collis, A. (2020). *How should we measure the digital economy?* (Unpublished doctoral dissertation). Massachusetts Institute of Technology. https://dspace.mit.edu/bitstream/handle/1721.1/126980/1191222397-MIT.pdf?sequence=1&isAllowed=y

Corrigan, J. R., Alhabash, S., Rousu, M., & Cash, S. B. (2018). How much is social media worth? Estimating the value of Facebook by paying users to stop using it. *PLOS ONE*, 13(12), e0207101. https://doi.org/10.1371/journal.pone.0207101

Coyle, D., & Li, W. (2021). The Data Economy: Market Size and Global Trade. *ESCoE Discussion Paper*.

European Commission. (2016). [Report]. Retrieved May 16, 2022, from https://ec.europa.eu/information_society/newsroom/image/document/2016-48/17_october_high_level_conference_report_final_40080.pdf

Harvard Business Review. (2017). [Article]. Retrieved May 8, 2022, from https://hbr.org/2017/03/whats-the-value-of-a-like

Hebák, P., et al. (2007). *Vícerozměrné statistické metody 3 (2nd ed.)*. Informatorium.

Lammi, M., & Pantzar, M. (2019). The data economy: How technological change has altered the role of the citizen-consumer. *Technology in Society*, 101157. https://doi.org/10.1016/j.techsoc.2019.101157

Laor, T. (2022). "My social network: Group differences in frequency of use, active use, and interactive use on Facebook, Instagram and Twitter." *Technology in Society,* 68, 101922.

Mackson, S. B., Brochu, P. M., & Schneider, B. A. (2019). Instagram: Friend or foe? The application's association with psychological well-being. *New Media & Society*, 1461444819840021. https://doi.org/10.1177/1461444819840021

McFadden, D. (1973). Conditional logit analysis of qualitative choice behavior. In P. Zarembka (Ed.), *Frontiers in Econometrics* (pp. 105-42). Academic Press.

Margherio, L., et al. (1999). *The Emerging Digital Economy. Department of Commerce.* http://www.esa.doc.gov/sites/default/files/emergingdig_0.pdf

Molina, A., Gómez, M., Lyon, A., Aranda, E., & Loibl, W. (2020). What content to post? Evaluating the effectiveness of Facebook communications in destinations. *Journal of Destination Marketing & Management*, 18, 100498. https://doi.org/10.1016/j.jdmm.2020.1004

Nadkarni, A., & Hofmann, S. G. (2012). Why do people use Facebook? *Personality and Individual Differences*, 52(3), 243–249. https://doi.org/10.1016/j.paid.2011.11.007

OECD. (2002). [Glossary entry]. Retrieved May 8, 2022, from https://stats.oecd.org/glossary/detail.asp?ID=3176

Seabrook, E. M., Kern, M. L., & Rickard, N. S. (2016). Social networking sites, depression, and anxiety: a systematic review. *JMIR mental health*, 3(4), e5842.

Shane-Simpson, C., Manago, A., Gaggi, N., & Gillespie-Lynch, K. (2018). Why do college students prefer Facebook, Twitter, or Instagram? Site affordances, tensions between privacy and self-expression, and implications for social capital. *Computers in Human Behavior*, 86, 276–288. https://doi.org/10.1016/j.chb.2018.04.041

Schwarz, G. (1978). Estimating the dimension of a model. *The Annals of Statistics*, 6, 461-464.

Stankovičová, I., & Vojtková, M. (2007). *Viacrozmerné štatistické metódy s aplikáciami*. Iura Edition.

Sunstein, C. R. (2020). Valuing Facebook. *Behavioural Public Policy*, *4*(3), 370-381.

Tapscott, D. (1996). *The Digital Economy: Promise and Peril in the Age of Networked Intelligence.* McGraw-Hill.

Thaler, R. (1980). Toward a positive theory of consumer choice. *Journal of economic behavior & organization*, *1*(1), 39-60.

Van Uytsel, S. (2021). The Digital Economy and Asian Competition Law: An Introduction. In *The Digital Economy and Competition Law in Asia*. Springer.