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Sharing Hyperlinks on Facebook. Determinants of Receiving Feedback[1]

ABSTRACT
In 2010 Facebook's users shared, on average, one million links every 20 minutes. This ecosystem of information sharing plays an important social role: it builds and reaffirms social position of engaged individuals. The aim of this article is to study which factors contribute to the amount of feedback received by a particular user. An analysis of 1063 user profiles who shared the same link with their friends is performed (the link pointed at a hit music video). The study shows that older users, women, users with smaller number of friends, less active ones, the ones with smaller "cultural competencies", users less prone to add a comment to a link, and—most of all—the ones who have received less feedback in the past are predestined to receive less social response to their actions.

Studies of the motivations to use internet community services indicate that such activity mainly serves to meet two basic needs: the need for self-presentation and the need of affiliation[2]. One of the most popular forms of activity is sharing with one's friends the hyperlinks to other web pages (also referred to as links further in the paper). As demonstrated by K. Baek et al., the need of self-presentation is met because sharing content with other users allows one to manifest their interests, views, and tastes[3]. At the same time, the user who receives clicks on "like" and comments from her friends may—at least partially—fulfil the need of affiliation.

The aim of this paper was to examine which factors may influence the fact that some users receive more feedback, and thus may satisfy their need of affiliation using Facebook.com to a greater extent than others. To eliminate the influence of various types of

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[2] A. Nadkami, S.G. Hofmann, *Why do people use Facebook?*, "Personality and Individual Differences" Vol. 52 (2012), No. 3, p. 243–249.
[3] K. Baek, A. Holton, D. Harp, C. Yaschur, *The links that bind: Uncovering novel motivations for linking on Facebook*, "Computers in Human Behavior" Vol. 27 (2011), No. 6, p. 2243–2248.

content shared by users, a link was singled out, which was shared most often in a sample of 23,578 users of the service. This link, pointing to a music video found at YouTube.com, was shared by 1,063 members of the original sample[4]. The performed analysis focused on determining the factors which could influence the uneven distribution of feedback received by individual users.

The study used only data which could be gathered from Facebook.com. One dependent variable was constructed, the *Level of Received Feedback* (LRF), indicating how many friends clicked the "like" button or added a reply to the link posted in the service by a given user.

Using secondary data influenced the choice of variables and narrowed the available scope of research questions. The data shared by the users allowed to ask about the relationships between gender, age, and LRF. The information about current residence enabled the question about the relationship between the population of locality and LRF. Since the link identified as the most popular pointed at a music video, it was also possible to ask the question how the dynamics of becoming a musical hit was related to LRF.

Subsequent research questions were associated with variables typical of the studied environment, i.e. Facebook.com. The following independent variables were distinguished: *Number of user's friends*, *Level of Facebook.com-related skills*, *Cultural competency level*, *Average daily activity*, *Average level of received feedback per link* (before the publication of the link defined as the most popular here), as well as *Author's comments*. These variables are discussed in more detail in the Methodology section of this paper.

The variables of *Age*, *Gender*, *Population of locality*, and *Average daily activity* were treated in an exploratory fashion, without trying to determine the direction of relationships between them and the LRF variable. In the case of the variable *Publication of the link during peak popularity period* it was assumed that in the period when the link was shared most frequently—and thus when it was most popular—the average values of the LRF variable were higher than in other period. Similarly in the case of the *Author's comments* variable it was assumed that a commentary attached to the link would encourage friends to interact and therefore would positively correlate with the LRF variable.

In regard to other variables, they were assumed to be specific indicators of the levels of cultural and social capital of an individual. It was also assumed that individuals of higher

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[4] The sample of 23,578 users is also further referred to as Sample I, while the set of 1,063 intentionally selected users is named Sample II.

level of social capital[5] would receive more feedback, since the individuals with lower levels of this capital would more often interact with them—by using the "like" button and replying with a comment—in order to gain access to resources involved in establishing this kind of relationships (popularity, prestige, social respect)[6]. Therefore, a positive direction of the relationship was expected: the higher the values of such variables as *Number of friends*, *Level of Facebook.com-related skills*, *Cultural competency level*, *Average daily activity*, and *Average level of received feedback per link*, the higher the value of the LRF variable.

Methodology

Facebook.com enables third parties—and therefore also researchers—to create applications using the collected data. Every user of the service can grant to an external application—created by any individual, company, or institution—the rights to access her own data and the data of her friends. This is how the games are made, which can detect by themselves if the user has friends who play them and what their scores are; applications recommending music, movies, or places to visit based on the data regarding cultural and tourism activity of friends; applications providing extra functionalities which Facebook does not have (such as a "dislike" button or the detector of people who deleted the user from the list of friends); applications analyzing users' activity, etc. Facebook.com serves as the intermediary in the transaction of exchanging data for a service (i.e., the ability to use the application) between the user and the author of the application and guarantees that the latter can only access the data to which it is entitled, and only the data which the users agreed to share with third party applications in their privacy settings. In the case of the application developed to carry out this research, the Application Programming Interface (API) called Graph API was used[7].

Independent variables

Gender. The gender of the participants was determined on the basis of users' profile data. Users are not requiring to disclose their gender, therefore the value of this variable can be unspecified. While there were 306 such people in Sample I, not a single one of them found

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[5] The concept of social capital originating from Pierre Bourdieu is adopted here, where social capital is an attribute of an individual and not the community; thus, social capital is an—actual or potential—individual resource associated with the membership of a group providing support, reliability, or recognition. Cf. P. Bourdieu, *The forms of capital*, in: *Handbook of Theory and Research for the Sociology of Education*, ed. by J.G. Richardson, New York 1986, p. 241–258.

[6] N. Lin, *Social Capital: A Theory of Social Structure and Action*, New York 2002.

[7] Cf.: Facebook Inc., *Graph API*, https://developers.facebook.com/docs/reference/api/ [accessed: 20 Jul 2013].

her way to Sample II. It is worth to mention that while women made up 48.8 % of Sample I, their proportion in Sample II equalled 66.1 %.

Age. The age of the users was determined on the basis of their birthdates found in their profile data. Out of 23,578 users, 10,526 (44.64 %) did not disclose the year of birth. The average age was 30.24 years (SD = 9.08) in Sample I and 28.57 years (SD = 6.42) in Sample II. The minimum and maximum values of this variable were 18 and 72 years, respectively. It is also worth to note that only one person who declared the age of 75 was found in Sample II. The second oldest person declared 61, and the third 58 years. Only 5 % of people in Sample II were 40 years old or older (compared to 11% of users aged 40+ years in Sample I).

Population of locality. Ordinal variable taking one of 8 possible values: 1. – a city with the population of 500,000 or more inhabitants; 2. – a city with the population between 400,000 and 499,999 inhabitants; 3. – a city with the population between 300,000 and 399,999 inhabitants; 4. – a city with the population between 200,000 and 299,999 inhabitants; 5. – a city with a population between 100,000 and 199,999 inhabitants; 6. – a town with the population of less than 100,000 inhabitants; 7. – a village. The eighth possible value corresponds to the lack of data: either the locality was not specified by the user, or could not be identified (which is e.g. the case of localities outside the territory of Poland). For Sample II, the size of locality was identified for 650 (61.15 %) users. The three main categories in this number are: 1. (42.8 %), 4. (22.6 %), and 6. (14.6 %).

Number of friends. The employed API does not allow to obtain the number of user's friends. However, this number can be estimated based on the user's activity feed, which contains the information about adding users to the friends list, among other things. It should be remembered, however, that a user can limit the access to her activity feed (1,277 people– 5.4 % of Sample I did so). Moreover, due to the lack of information on breaking relationships, this number may be overestimated. The largest possible number of friends at Facebook is 4,999 people, while the gathered data indicate that one of the users had 6,174 friends. It means this number was overstated by 1,175 at least. This, however, is an extreme example. Three quarters of the users in Sample I have less than 300 friends, and only 3% of this sample has more than 1000.

Level of Facebook.com-related skills (or *FB skills* in short). This variable was estimated based on the variety of actions taken by a user within the service. Thirty types of activity were distinguished (liking, replying, sharing content, creating and participating in events, pinning offers, playing games, using applications, editing profile fields, inviting, evaluating photos, subscribing, recommending, indicating family members, etc.). The variable

is a kind of index, where performing a given activity at least once increases the index value by 1 point. The theoretical minimum is 0 (for a user who just created an account or disabled the access to her activity feed in her profile), while the maximum is 30. Sample II contained 76 users (7.1 %) with the value of 0. The number of activity types for the first quartile was 10, 14 for the second, and 17 for the third.

Level of cultural competencies (*Cultural competencies* in short). This variable was estimated based on the variety of fan pages liked by the user of Facebook.com. "Liking" a page means that the newest—but not necessarily all—entries published on that page will appear in the user's news feed. Each page is assigned a category chosen by its creator.

The exhaustive list of categories in the number of studied users equals 206, therefore the index of *Cultural competencies* takes values between 0 and 206. The value of 0 means that the user either does not "like" any Facebook.com page or had made it impossible to download these data through her privacy settings. There were 59 such users (5.6 %) in Sample II. The first, second, and third quartiles contained 26, 44, and 66 different page categories, respectively. The maximum value assumed by this variable was 159 categories. The index of *Cultural competencies*, just like the *FB skills* index, only measures the range of competencies or skills of the user but does not say anything about its intensity. For instance, a user who "likes" several hundred "Sport" category pages but does not like pages from other categories will have the index value of 1, while the user who likes only two pages—e.g. one in each of the "Sport" and "Society & Culture Website" categories—will get the index value of 2.

Average daily activity. This variable is calculated based on the user's activity feed. The date of the first and last activities is used to calculate the number of days the user has an account in the service. Subsequently all the activities are counted, and the average is calculated based on these two values. This value may equal 0 if the user did not allow viewing her feed (there 80 such cases in Sample II, or 7.5 %) or any high number which only depends on the user's activity. The average for the first quartile was 0.69 activities per day, 1.22 for the second, and 2.28 activities per day for the third. The most active user took on average 29.17 actions daily (in the period of 139 days). It should be remembered that the activity feed in the service does not encompass all actions. For instance, it does not take into account private messages or chats at all.

Average level of received feedback per link. This variable shows how many people on average clicked the "like" button and replied to the links shared by a given user. Auto likes and auto replies were not taken into account. Moreover, only these hyperlinks were counted which were published earlier than the link identified as the most popular. The lowest possible

value of this variable is 0, which may mean that one of two events took place. The first is that a user who shared links with other users before, has never received any feedback in the form of a click on "like" or a reply. The second is that the user may have never used the ability to share hyperlinks with her friends. However, neither of these two alternatives took place in Sample II. The value of this variable for the user with the lowest average was 0.06325 feedbacks per shared link (a total of 21 likes and replies compared to 332 published links). On the other hand, the maximum average number of feedbacks per link was 12.30, with 931 published links. The average equalled 0.74 for the first quartile, 1.15 for the second, and 1.65 for the third.

Publication of the link during peak popularity period. A binary variable. The studied link was published by 1063 users in 672 days. Half of the users (50.2 %) shared the link between 146 and 226 days after the first publication of this hyperlink. Therefore, 50.2 % cases of publication of the hyperlink under investigation correspond to 11.90 % of the time of study. To sum up, the period from day 146 to day 226 after the first publication of the link is considered its peak popularity period.

Author's comment. A binary variable. Users who share a hyperlink have the opportunity to attach a commentary. If the comment field contained only the hyperlink, it was not considered a commentary. Owing to this, only the actual commentaries added by the users were taken into account. Such commentaries were added by 552 users (21.9 %). They usually advertised the published link: "great lyrics, superb clip and beautiful song", "it's an earworm!", "that's really awesome".

The dependent variable

Level of Received Feedback (LRF). It equals the sum of "like" clicks and the number of people who wrote a reply under the post containing the hyperlink. Neither autoreplies nor autolikes of one's own post were counted. If the same person—other than the author of the post—clicked on "like" and wrote a reply, she was counted twice. For example, if five people—including the author of the post—clicked to "like" it, and 3 different people—without the author of the post—wrote a total of 10 replies under it, the value of the *Feedback* variable amounted to 7 (4 clicks on "like" and 3 commentators). In 85 cases (8 %), users received no feedback at all. This value equalled 2 for the first quartile, 4 for the second, and 7 for the third. The maximum value reached by this variable was 61.

Selection of the sample

In order to gather the data, an open application working in the Facebook.com environment was developed. Every user who launched this application was rewarded with a report on her own and her friends' activity in the service. As is known, there are no methods allowing to effectively reach every user of the internet[8], or every Facebook.com user, which makes it difficult or even impossible to carry out research on representative samples. The sample selection method used in this study bears the features of the snowball method. First, it was assumed that the ability to use an application to generate a report on one's friends' activity will cause the information about the application to be spread voluntarily, which would increase the number of its users. This effect was achieved, at the cost of losing control of the recruitment process. Second, following the logic of functioning of social applications, each user shared not only her own data but also the data her friends allowed to be shared with applications launched by third parties. The result was, in turn, that the scope of gathered data was broader than it would be if the traditional form of the snowball method was used, since a single respondent provided her own data and the data of her friends (at least to the extent to which they agreed to share them using their privacy settings). Simultaneously, it means that the risk of sample bias has to be seen differently. The trend to recruit people similar to the recruiter becomes less significant, while what gains significance—due to a broader scale—is the sample bias due to the similarity to people one has among her friends in the service. For instance, a person who has 2,000 friends (let us assume that 1,500 people from this pool enabled the gathering of data used in this study in their privacy settings), who are similar to one another in some respect (like age of locality of residence), may significantly influence the shape of the sample.

The data which constitute the basis of the below analyses were gathered in the period from January to the end of May 2013. Until that time, 127 people used the application, which allowed the gathering of data shared by a total of 23,578 people. This number does not take into consideration people below 18 years of age, who were excluded from the study.

From among 23,578 users, 1,063 were included in the research. First, all those who never published any link in the service or blocked the access to these data in the service were excluded. There were 1,289 such users (18.2 %) in the sample of 23,578 people. Second, the users who declared to be more than 75 years old were excluded; there were 118 (0.5 %) of them. In this case, it was based on contextual knowledge: some users provide a false year of

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[8] D. Batorski, M. Olcoń–Kubicka, *Prowadzenie badań przez Internet – podstawowe zagadnienia metodologiczne* [Carrying out research via the Internet – basic methodological issues], "Studia Socjologiczne" [Sociological studies] Vol. 182 (2006), No. 3, p. 99–132.

birth, much overstating it. Third, all persons who did not meet the key criterion were excluded, that is, those who did not share the hyperlink which was identified as the most often published among all the users considered in the study. Table 1 presents the comparison of the basic characteristics of the users in the samples of 23,578 and 1,063 people. It is worth to remark here that this study concerns mostly Polish users of the service. Out of 1,063 people, 884 (83.2 %) use Facebook.com in Polish.

Table 1. Comparison of selected characteristics of the users in the samples of 23,578 users (Sample I) and 1,063 users (Sample II)

Variable	Measure	Sample I	Sample II
Age	**Mean**	30.24	28.57
	SD	9.08	6.42
	N	13,052	614
Gender	**% of women**	48,8	66,1
	N	23,578	1,063
Locality	**Mode**	a city with the population of 500,000 or more	a city with the population of 500,000 or more
	Median	a city with the population of 200,000–299,000	a city with the population of 300,000–399,000
	Minimum	a village	a village
Number of friends	**Mean**	285.84	267.77
	SD	451.66	324.53
	N	20,387	888
Using the service in Polish	**% of users**	80.2 %	83.2 %
	N	18,918	884

SD – standard deviation; N – size of the sample
Source: author's own work.

The sizes of samples are not identical for all variables, since users adopted various strategies of sharing information. For instance, 1,063 members of Sample II disclosed their gender, while only 614 of them declared their age. The visual comparison of the distributions by the age of users, population of locality, and number of friends is shown in Chart 1.
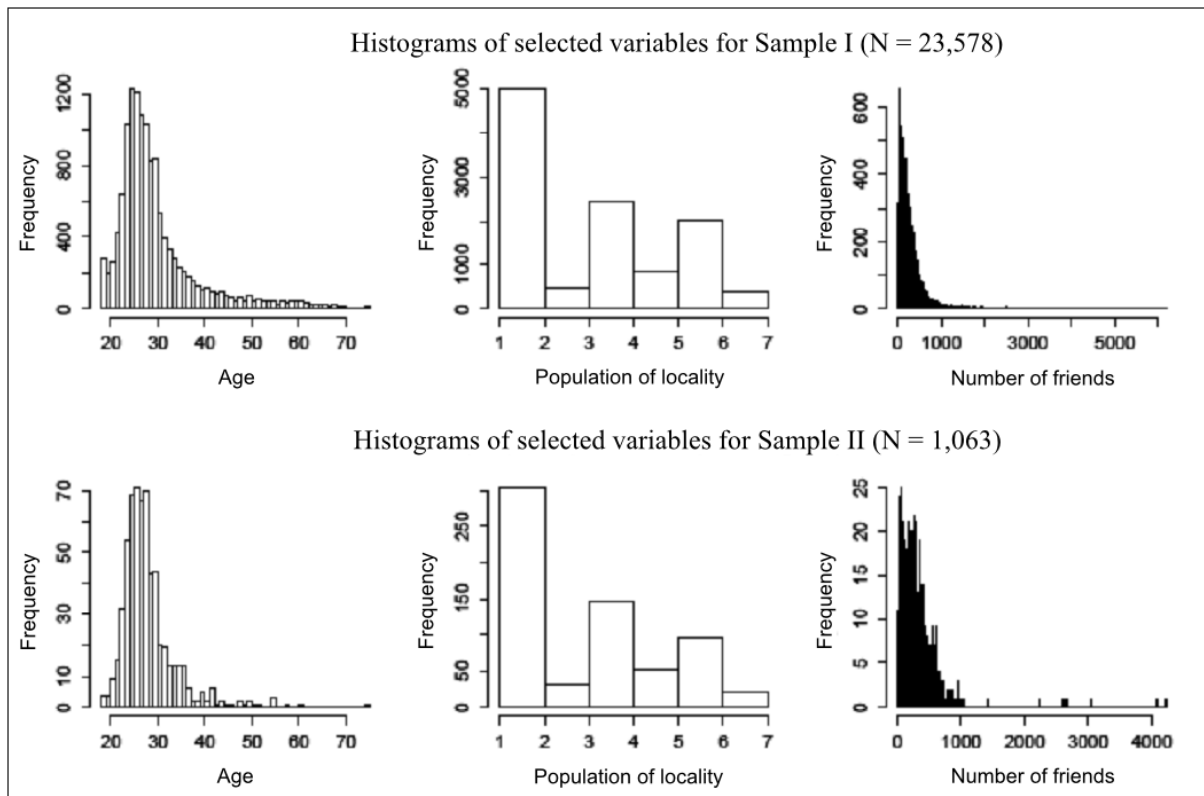
Chart 1. Comparison of distributions by age, locality, and number of friends in Samples I and II

The issues of privacy

The application in question uses Graph API, one of the programming interfaces of Facebook.com. Using the official interface guarantees the users full control over sharing their data through privacy settings and authorization procedures. Therefore, all data were collected according to the rights granted to the application and in compliance with the users' privacy settings. Moreover, the user can request at any time to delete their previously shared data. The rules of the application informed that the data are gathered for scientific purposes and would not be used commercially or in any other way.

As has already been mentioned, each user of the application in question shared at the same time information about her friends. However, this was only the information the user's friends had agreed to share with applications used by their friends in their privacy settings. While therefore the majority of individuals participating in the study did not personally agree to participate, all of them had accepted the terms of the service, which on one hand allows sharing of specific data of its users and, on the other hand, guarantees the ability to essentially opt out of sharing data in this way by changing one's privacy settings. It is assumed, therefore, that the consent to share data by accepting the rules combined with not changing

one's privacy settings so as to prevent access to data is tantamount to the consent to use data in research[9].

Moreover, the collected data were subjected to a range of anonymization procedures. Identification numbers were encrypted using one-way algorithm (which means that the backward conversion algorithm, restoring the original coded value, does not exist). The names of all users were shortened to two initial letters, middle names were deleted. Such information as biographical notes, links to home pages, phone numbers, e-mail addresses, and other details allowing to clearly identify the user were irretrievably deleted from the users' profiles. The collected data were also anonymized with regard to information shared by the Graph API (for instance, numbers of objects such as users' comments were deleted). As a result, it would require extreme effort to be able to identify a selected user on the basis of collected data.

Results

In the sample of 23,578 users, 1,908,896 unique links were identified, which were shared 3,412,332 times altogether. The most frequently shared link was the music video, the full name of which is: "Gotye – Somebody That I Used To Know (feat. Kimbra) – official video"[10]. The view counter on YouTube.com shows that it was watched by more than 400 million users. The link was shared by 1,063 people from the studied sample and received a total of 5,121 "likes" and 2,716 replies. The second most popular link—interestingly, a remix of the same song—was shared by 553 people. Thus the difference between the two is significant. Table 2 presents the matrix of correlations between the independent variables (1–10) and the dependent variable (11). The relationships between the variables were also visualized in Chart 2.

As can be seen, most of the correlations between the independent variables and the dependent variable are weak. Older users received less feedback than younger ones ($r = -0.103$; $p < 0.05$). It is worth to notice, however, that the average LRF dropped significantly only for the users aged 50+ years: the mean LRF was 5.93 (SD = 1.78; N = 434) for users aged 20–29 years, 5.98 (SD = 7.74; N = 145) for users aged 30–39 years, 5.28 (SD = 6.29; N = 21) for users aged 40–49 years, and 1.70 (SD = 2.26; N = 10) for users aged 50 years and older. It does not mean, however, that older people receive less feedback in general. In

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[9] Regarding the ethical issues of carrying out research in the Internet, cf.: P. Siuda, *Prowadzenie badań w Internecie – podstawowe problemy etyczne* [Carrying out research in the Internet – fundamental ethical issues], "Ruch Prawniczy, Ekonomiczny i Socjologiczny" [Legal, Economic, and Sociological Movement] LXXII (2010), No. 4, p. 187–202.

[10] *Gotye – Somebody That I Used To Know (feat. Kimbra) – official video*, http://www.youtube.com/watch?v=8UVNT4wvIGY [accessed: 20 Jul 2013].

Sample I, the average feedback level per shared link showed the following distribution: the average was 0.9 (SD = 1.49; N = 7,913) for users aged 20–29 years, 0.81 (SD = 1.26; N = 3,307) for users aged 30–39 years, 1.07 (SD = 2.92; N = 798) for users aged 40–49 years, 0.91 (SD = 3.07; N = 451) for users aged 50–59 years, and 0.96 (SD = 2.00; N = 300) for users aged 60 years and older. As can be seen, when one considers the whole of the users' activity, there are no significant differences in the average level of feedback received under shared links. It only becomes visible when a specific link is discussed, in this case pointing out at a musical hit.

Table 2. Correlation matrix

Name and number of the variable and metrics		Number of the variable									
		1	2	3†	4	5	6	7	8	9	10
Age (1)	r										
	N										
Gender (2)	r	−.148**									
	N	614									
Population of locality (3)	r	−.126*	−.032								
	N	412	650								
Number of friends (4)	r	−.063	−.095**	−.045							
	N	531	888	560							
FB skills (5)	r	.023	−.132**	−.095*	.611**						
	N	569	987	601	888						
Cultural competencies (6)	r	.035	−.119**	−.154**	.143**	.275**					
	N	603	1004	635	851	929					
Average daily activity (7)	r	.184**	−.124**	.034	.147**	.074*	.447**				
	N	614	1063	650	888	987	1004				
Average level of received feedback per link (8)	r	−.090*	−.006	−.097*	.201**	−.063*	.110**	.172**			
	N	614	1063	650	888	987	1004	1063			
Publication of link during its peak popularity (9)	r	−.055	−.013	.072	.099**	.020	−.088**	−.045	.029		
	N	614	1063	650	888	987	1004	1063	1063		
Author's comment (10)	r	−.058	.040	−.050	.048	.029	.114**	.092**	.155**	−.035	
	N	614	1063	650	888	987	1004	1063	1063	1063	
LRF (11)	r	−.103*	−.107**	.054	.191**	.020	.155**	.135**	.585**	.153**	.197**
	N	614	1063	650	888	987	1004	1063	1063	1063	1063

† – values in this column were calculated as Spearman's rho correlation coefficients
r – Pearson's r r_s – Spearman's rho   * – $p < 0.05$ ** – $p < 0.01$
Source: author's own work.

Women received less feedback than men (r = −0.107; $p < 0.01$). The reason is obvious, as women have less friends than men (r = −0.095; $p < 0.01$), a lower level of *Cultural competencies* (r = −0.119; $p < 0.01$), and are less active in the service (r = −0.124; $p < 0.01$), while these three variables show positive correlation with the LRF variable. Therefore, it can be assumed that the differences between men and women in the level of received feedback result from different patterns of using the service.
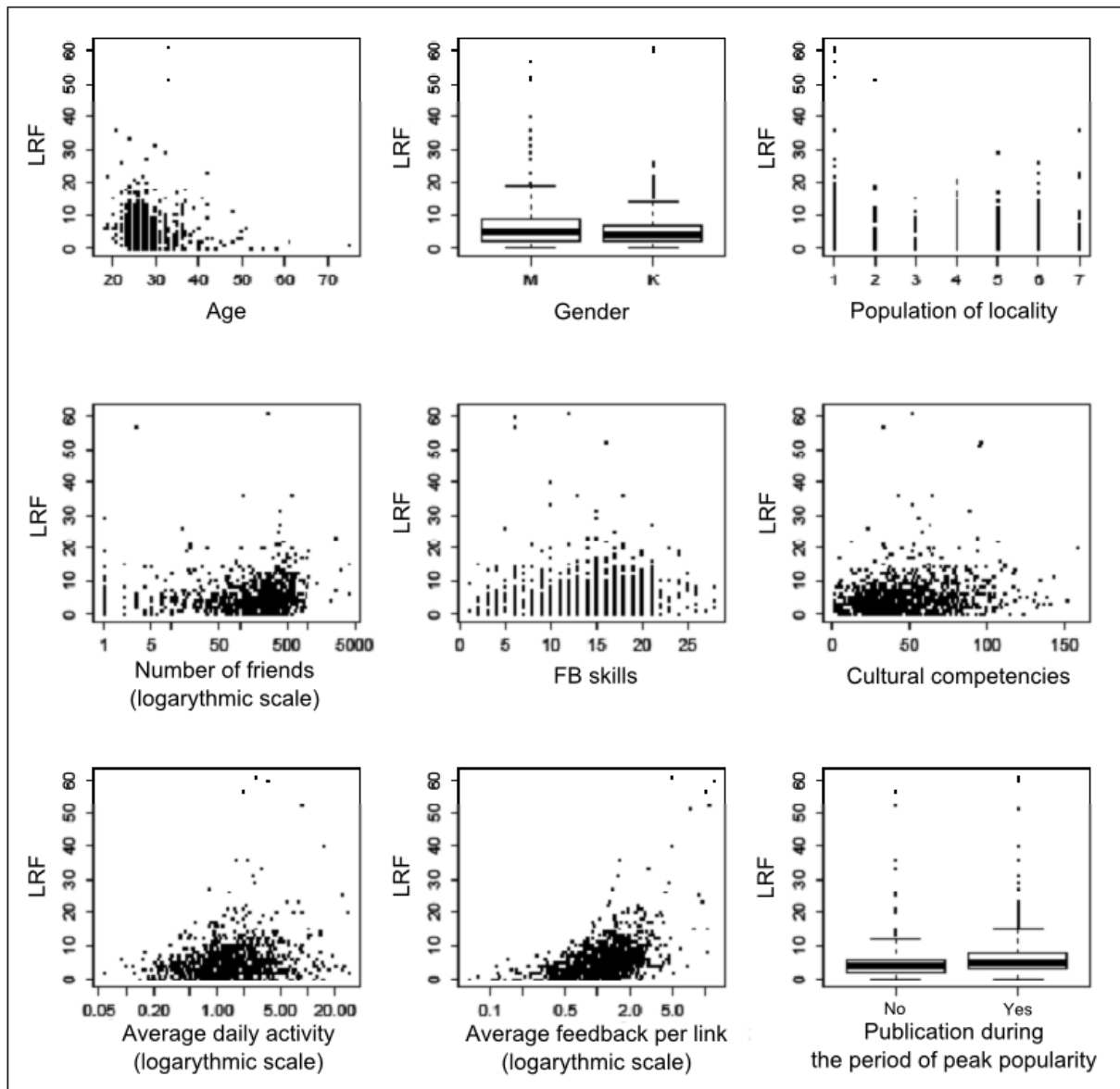
Chart 2. Scatter plots and box charts for the independent variables and the dependent variable

The *Population of locality* variable did not show any statistically significant correlation with the LRF variable (r_s = 0.054; p = 0.168). It is worth to point out, however, that the outliers were present mostly in the cities of more than 400,000 inhabitants. Thus, while the geographical distribution en masse of the average feedback level is generally equal, the cases of increased social response involve individuals who declare living in larger cities. It should be noted that the *Population of locality* variable does not present a statistically significant correlation with the *Number of friends* variable (r_s = –0.045; p = 0.292). It means that there is no such relation that people living in large cities have more friends than those from smaller ones and villages.

The *Number of friends* variable shows a weak positive correlation with the LRF variable (r = 0.191; p <0.01). The obvious interpretation of this relationship says that the more friends an individual has the greater the likelihood of receiving feedback. The *FB skills* variable, in spite of a relatively strong correlation with the *Number of friends* variable (r = 0.611; p <0.01), does not show a statistically significant correlation with the LRF variable (r = 0.020; p = 0.526). It can be assumed that in the case of many people using multiple functions of Facebook (and thus getting high scores on the *FB skills* index) the activity associated with using these other functions is visible more often. Therefore, even though they have a large number of friends, the visibility of links they publish may be lower.

The *Cultural competencies* and *Average daily activity* variables show week correlation with the LRF variable (respectively, r = 0.155; p <0.01 and r = 0.135; p < 0.01), and moderate correlation between each other (r = 0.447; p < 0.01). The mutual correlation between these variables is fairly obvious. A high value of the *Cultural competencies* variable tells that the user "likes" many pages functioning within the service, which in turn means that she receives more varied information, which may contribute to increased activity. This activity may then indirectly influence the user's visibility calculated by the EdgeRank algorithm, and thus cause the increase of the LRF variable.

Providing additional commentary to the published link also improves the chance of receiving feedback (r = 0.197; p < 0.01). The users who previously received more feedback were particularly eager to post comments (r = 0.155; p < 0.01). Therefore, it may be hypothesized that these people who had been socially accepted in the past are more willing to express their opinions. Obviously, the opposite interpretation is possible as well: these people who were more willing to express their opinion received more feedback and more often.

The strongest correlation between independent variables and the dependent variable (i.e. LRF) relates to the *Average level of received feedback per link* (r = 0.585; p < 0.01). Thus the level of received feedback for a given user is most easy to predict on the basis of the data about the feedback she had received in the past. This should not be surprising. An individual having a large amount of social capital will regularly receive more feedback, regardless of the content referred by the hyperlinks that person posts. It has to be stressed, however, that having received feedback in the past also improves the visibility of the posts of a given user in the future. This is the result of the principles of the EdgeRank algorithm, which is responsible for filtering the content within Facebook.com[11]. This algorithm leads to the Matthew effect: the

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[11] Cf.: T. Bucher, "Want to be on the top? Algorithmic power and the threat of invisibility on Facebook", *New Media & Society* Vol. 14 (2012), No. 7, p. 1164–1180; D. Taylor, "Everything you need to know about

actions of the users who receive more feedback will be more visible to their friends than the activities of users less often rewarded with social response. Therefore, they will have the opportunity to amass even more feedback resources. The results are conducive of justifying the Social Enhancement hypothesis ("the rich get richer"), which assumes that the Internet and such tools as community services particularly favour these individuals who contribute their cultural and social capital and multiply it[12].

Paradoxically, these studies may also confirm the opposite hypothesis, known as the Hypothesis of Social Compensation. It assumes that the Internet may serve as a compensatory tool for socially handicapped individuals[13]. As is shown in other studies carried out by the author, one of the strategies to gain feedback by individuals of low social capital level is publishing links to the content which is popular or fashionable at the moment.[14] In other words, an excluded person who wants to join the social life—at least that social life which takes place within Facebook.com—must adopt the strategy of reproducing the mainstream. An example of such behaviour is publishing a hyperlink to a worldwide musical hit, such as the link discussed in this paper, especially when it is done during its peak popularity, as it is easier to receive feedback ($r = 0.153$; $p < 0.01$). Out of 1,063 users, only 85 (8 %) did not receive any feedback. Yet the disproportion is still present: the "rich" obtain much more social rewards for joining the same activities as the "socially poorer".

Conclusion

In 2010, users of Facebook.com published a million of links every 20 minutes on average[15], thus creating an ecosystem of exchanging information, which simultaneously fulfilled an important social role of establishing and confirming the social position of individuals involved in its functioning. Therefore, it has to be assumed that it has an impact on the mental

Facebook's EdgeRank", *The Next Web*, 9 May 2011, http://thenextweb.com/socialmedia/2011/05/09/everything-you-need-toknow-about-facebooks-edgerank/ [accessed: 20 July 2013].
[12] J. Zywica, J. Danowski, *The faces of Facebookers: Investigating social enhancement and social compensation hypotheses; predicting Facebook™ and offline popularity from sociability and self-esteem, and mapping the meanings of popularity with semantic networks*, "Journal of Computer-Mediated Communication" Vol. 14 (2008), No. 1, p. 1–34.
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[14] W. Walczak, *Crowdsourcing the Mainstream. An Analysis of the Most Frequently Posted Links on Facebook*, "Central European Journal of Communication" Vol. 7 (2014), No. 1 (12) [in print].
[15] Democrarcy UK, *A Snapshot of Facebook in 2010*, https://www.facebook.com/notes/democracy-uk-on-facebook/a-snapshot-of-facebook-in-2010/172769082761603 [accessed: 20 July 2013].

condition of users[16]. The structure of this environment, however, associated with the visibility of individual messages being managed by the EdgeRank algorithm, is not neutral. It contributes to the Matthew effect: the users who have more social and cultural capital can translate their greater initial social contribution into a higher visibility among their friends and thus strengthen their social position. Therefore, the publication of links to the same content by individuals of different social capital levels (and different visibility of activities undertaken in the service) will yield different results.

Even though in the case of the hyperlink discussed here young users received more feedback, it is worth to mention that after taking into account all the links (almost 2 million links shared almost 3.5 million times) the average LRF did not stratify users by age. It means that the environment of Facebook.com allows older people to reap comparable benefits in fulfilling the need of affiliation, at least in the area of sharing links.

Women and men adopt separate strategies of using the service. Men more often undertake activities visible to the public (it is possible that women more often take advantage of the private services of the portal, such as sending messages or chatting, yet it is not possible to test that hypothesis in the scope of this study); they also have more friends, so their activities reach a greater number of recipients. They also more extensively use fan pages, which may be the sources of interesting links, subsequently shared with their friends.

The study has shown that the population of locality does not influence the ability to realize one's need of affiliation within Facebook.com. The few outliers are the only exception. Whereas the locality of residence makes no difference for the vast majority of normal users, the small subset of individuals who reap the greatest benefits, lives in the largest localities.

People who provide additional comments to the links they publish receive feedback more often. Thus, the readiness to express one's opinions improves the probability that the user will satisfy both her need of self-presentation and the need of affiliation. It can also be assumed that positive feedback increases the likelihood of expressing one's opinion in the future.

The strongest predictor of LRF, however, was the variable indicating the level of feedback received by the user in the past. So, while providing a comment to a link or sharing it during its peak popularity period increases the probability of receiving feedback, what still remains the key factor is the individual's social capital—strengthened by the EdgeRank

[16] M. Burke, C. Marlow, T. Lento, *Social network activity and social well-being*, in: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, ACM (2010), p. 1909–1912.

algorithm—reflected by the regular reception of feedback, regardless of the shared link. Should one assume that this capital has its origins in the offline world, it can be said that—in spite of a certain emancipatory potential—community portals serve most of all to reproduce the social structure. The role of community services in reproducing this structure—and, in consequence, their possible role in social change—merits further research.