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Configurations of Using Social Networking Sites and Perceived Online Social Capital Among Adults With and Without Disabilities

Abstract: Drawing on nationally representative survey 2014 data, this article examines the implications of social networking sites (SNS) use and the relationship with perceived online social capital among Lithuanian adults with and without disabilities. By contributing to the wide academic discussion on the value of online and social networks for people with disabilities, this research shows that intensive participation on SNS (as Facebook) presupposes stronger affective and evaluative dimensions of social capital. This relatively strong affective and evaluative social capital perception is more characteristic of the persons with disabilities (both with physical and sensory disabilities) than the persons without disabilities. The research data also shows that adults with physical disabilities mainly benefit from SNS as a bridging capital resource thanks to its various practical benefits, established connections and contacts, and participation according to one's interests by bypassing the limitations posed by the physical environment. These results add to the positive, optimistic information technology and disability studies discourse which argues that the use of social networking sites is of higher value to the persons with disabilities than the persons without disabilities.

Keywords: social networking sites; online social capital; persons with disabilities; nationally representative survey.

Introduction

As contemporary information society becomes increasingly dependent on new Internet communication technologies (ITCs), social networking sites (SNS) invade the daily social practices of an ordinary person. Consequently, those that cannot join them due to social, economic, educational or technical limitations are, in effect, faced with the new form of exclusion (Ellis and Kent 2011). People with various disabilities (impaired physical mobility or sensory disorders) experience in their daily real-life situations not only constraints on their social involvement but also on their ability to use ICTs (lack of Internet accessibility, assistive technologies or incompatibility thereof, other issues). These constraints put them at risk of not only social but also digital exclusion. In this difficult social situation, most persons with disabilities find that the Internet emerges as “the technology with which real life, the offline world, can be enhanced, revitalized or even radically changed” (Ester and Vinken 2003: 669). Internet communication provides a unique possibility to transmit information and create networks between various groups of geographically unrelated people (Pasek, More & Romer 2009); therefore, growing social networking sites may become

a space where persons with disabilities could, at least to some extent, compensate for their limited social involvement in real life.

The Convention on the Rights of Persons with Disabilities, adopted by United Nations General Assembly, emphasises the following social issue of persons with disabilities relevant in today's society: "Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others"(United Nations, Article 1, 2007). Articles 4 and 9 of the Convention promote the availability and use of new technologies enabling persons with disabilities to live independently and participate fully in all aspects of life (United Nations 2007).

Technical features of social networking sites create an environment which stimulates the development of online communities (Carminati, Ferrari & Viviani 2013) and help their members to build their social capital which "refers to network ties of goodwill, mutual support, shared language, shared norms, social trust, and a sense of mutual obligation that people can derive value from" (Huysman and Wulf 2004: 1). Measuring social capital accumulated on social networking sites essentially, in the broad sense, means examining potential Internet effects at user level (Pasek at al. 2009). Therefore, measurements of online social capital are extremely important for examining the relationship between persons with disabilities and online networks as a virtual social world.

Although there have been many SNS and online social capital studies done over the last decade, studies which show the participation of persons with disabilities in SNS-related activities are quite rare. Usually such studies focus on online disability communities; however, a few of them focus on the involvement of the persons with disabilities in broader, non-target virtual spaces, i.e. popular social networks, such as Facebook, LinkedIn or other social media platforms (Baker, Bricout, Moon, Coughlan & Pater 2013).

Moreover, a review of previous online network and social capital studies shows an increasingly common call for more varied SNS research populations (sample targets), i.e. going beyond university and college students which is the dominant target group in such studies (Steinfeld, Ellison, Lampe, & Vitak 2012; Zhang and Leung 2014). Moreover, Dobransky & Hargittai (2006) argue that in analysing ICTs use by persons with disabilities, we should not group people with different disabilities into a single disability category due to their potentially different relationship with ICTs.

This article introduces a study on the use of SNS by people with disabilities and the configurations of perceived social capital related thereto. In order to highlight the peculiarities of the involvement of the persons with disabilities in SNS, the following mixed SNS user groups were selected: Lithuanian residents with physical, sensory disabilities (visual impairments and hearing impairments) and Lithuanian residents without disabilities. For this purpose we identified the following research questions:

- RQ1: Is social networking activity different between SNS users with physical, sensory disabilities and without disabilities, and how?
- RQ2: What is the relationship between SNS user activity in the social networking sites and different social capital dimensions (bridging, bonding, affective/ evaluative)?

RQ3: How is perceived social capital—bridging, bonding, affective/evaluative—on SNS different between SNS users with physical, sensory disabilities and users without disabilities?

Theoretical Background and Research Hypotheses

Social Networking Sites

Social networking sites have become one of the most popular forms of online communication. Participation in these networks becomes increasingly interlinked with people's daily social lives as another form of contacting and networking. Although popular SNS are successful commercial products, they have opened up new research possibilities for social scientists, and their introduction has overcome some of the challenges associated with using web data for research into connected social behaviour (Ackland 2013).

Boyd and Ellison (2007) defines social networking sites

as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system (p. 211).

This definition most accurately defines the essence and principles of SNS. However, Ellison and Boyd (2013) emphasise that it is not a stable but rather a “rapidly moving phenomenon” due to constant technological evolution, such as the already apparently changing trend of SNS becoming “more media-centric and less profile-centric” (p. 159). Surely, regardless of the undergoing technological changes, communication and information sharing remain key activities which lure people in to joining SNS and, in a way, into feeling the social life pulse of its members.

Since social networking sites create a unique opportunity to share information and build relationships between large physically separated individual groups and even become potential online communities (Guo, Bricout, and Huang 2005; Pasek et al. 2009), they can be especially useful to people with physical mobility and sensory communication limitations, as they can help to establish constant relations based on mutual help, emotional support and useful information sharing.

Online communication as a key feature of SNS is most valuable for the reason that it “increases one's social capital, leading to both individual and collective benefits, by generating and maintaining access to more diverse resources and bridging and bonding relationships with others” (Rice and Fuller 20013: 362). Therefore, we can now talk about social capital which, in the face of information communication technology (ICT), acquires new forms of online manifestation and thus has been gaining attention from social scientists over the last decades.

Online Social Capital

This study uses Putnam's (2000) theoretical social capital (SC) concept, which identifies the key characteristics of social life—social networks, norms of reciprocity and trustwor-

thiness—as the core of social capital. These social life characteristics are formed by relationships among individuals which vary in their formality/informality, closeness/distance, relationship strength/weakness and other criteria. As a result, in the face of such variety of relationships, Putnam (2000) identified bridging and bonding social capital. According to him, bridging social capital appears among weak-tied people from different social layers and situations who can share useful information or new perspectives with each other, but usually cannot provide emotional support. Vice versa, bonding social capital appears between people of a similar social status and close social circle, and includes various forms of social help and support, arising from strong, close social relationships, such as family members or close friends.

Since social capital is a complex concept containing several dimensions, social networking studies usually use these two bonding and bridging online social capital dimensions as identified by Putnam (Steinfeld *et al.* 2012), which are usually measured by Williams's (2006) Internet Social Capital Scales (ISCS). Pinho (2013), by comparing SNS to virtual communities, argues that the measurement of social capital on SNS requires us to take into account social identity which, according to Dholakia, Bagozzi & Pearo (2004), is related to “the main features of the individual's identification with the community in the sense that the member views himself as a member of that community” (Pinho 2013: 222). Based on this, he created a multi-item instrument for measuring online social capital (e-SOCAPIT), adding to Williams's (2006) ISCS scales measuring social identity dimension of social capital, which includes three components: cognitive, affective and evaluative. The cognitive dimension is presented as a self-categorisation process of the SNS community members, affective dimension implies a sense of emotional involvement with the SNS community, and evaluative dimension refers to the evaluation of self-worth on the basis of belonging to a virtual group or network.

Moreover, it is suggested that although social capital is a phenomenon on both individual and collective levels, when studying configurations of using social networking sites online, SC discovered from the perspective of the conceived profit for the individuals as Lin (1999) suggests: “the focal points for analysis in this perspective are (1) how individuals invest in social relations, and (2) how individuals capture the embedded resources in the relations to generate a return” (p. 32). Then perceived online social capital indicates that an individual's participation on SNS as conceived of social benefits and self-investment in virtual networked relations.

Online Social Capital Measurements on Social Networking Sites

Communication on social networking sites is emerging as a new, additional form of social relations and interactions rather than a replacement for other direct or indirect forms of communication (Steinfeld, DiMicco, Ellison & Lampe 2009; Subrahmanyam, Reich, Waechter & Espinoza 2008; Burke, Marlow, Lento 2010; Ellison, Lampe, Steinfeld and Vitak 2010; Steinfeld *et al.* 2012).

Hence, the use of the Internet as a communication tool also allows us to maintain offline social capital, thus expanding the social network and building this capital in the form of bonding and bridging relations in the virtual world (Vergeer & Pelzer 2009; Trepte,

Reinecke & Juechems 2012; Amichai-Hamburger 2013; Hooghe and Oser 2015). People increase their social capital, especially the bridging one, by consciously or unconsciously using online social networks as a tool to maintain social relations and search for information or new contacts (Shih 2010; Hofer and Aubert 2013, Ellison, Gray, Lampe and Fiore 2014). The above studies mostly looked for relationships between SC and the intensity, the frequency of the use of the networks, the number of network users, users' self-esteem, psychological well-being, etc.; however, there have been few studies on how the use of SNS and certain activity on them is related to various perceived SC dimensions.

This study raises the hypothesis (H1) that different social networking sites' activity results in different configurations of perceived social capital dimensions.

Internet and Social Networking Sites Use Among People with Disabilities

So far scientists have failed to agree on the benefits of Internet and SNS for people with disabilities. There are enthusiastic and sceptical discourses of information and communication technologies benefits for the persons with disabilities. A review of previous studies by Ellison et al. (2007) suggests that after the emergence of the Internet and other information technologies, there has been a huge boom in enthusiastic discourse, indicating that social networking sites reduce interaction and communication barriers and are especially useful to people who, due to various reasons, find it difficult to build and maintain both weak and strong social relations. Usually, such research subjects are people with disabilities or other disorders or diseases. Hence, social networking sites are an excellent environment for online social interactions, which can be used by such people as a way to increase their social participation by avoiding prejudice, maintaining a sense of community, mutual support, friendship and broader social relations, which increases social capital (Grimaldi and Goette 1999; Huang and Guo 2005; Shpigelman, Weiss & Reiter 2009). SNS allow us to widely communicate with various people all over the world and find those who are in a similar physical state by surpassing the obstacles posed by the physical environment infrastructure, geographical distances (Guo et al. 2005), obstacles arising during direct verbal communication due to specific sensomotoric or cognitive abilities (Seymour and Lupton 2004); therefore, SNS is an excellent platform to build one's own online communities. Many authors of recent works (Jaeger, Xie 2009; Bricout, Baker 2010; Forman, Baker, Pater, Smith 2011; Gage 2013) also talk about positive life changes for people with disabilities or health issues brought by communication possibilities via SNS.

However, the sceptical discourse on ICTs benefits for the persons with disabilities argues that social networking communities cannot help to reduce the issue of social involvement of the persons with disabilities. On one hand, the Internet gives people with disabilities a huge potential to increase their social integration; however, on the other, it also hinders equal communication "due to inaccessible design and implementation of websites and other technologies, incompatibility with assistive technologies, and widely used exemptions to the laws" (Jaeger 2012: 7). If persons with disabilities encounter obstacles with surfing, reading of digital information and other uses of ICTs, because it are designed for people without impairments and it seemed to construct new forms of disabling barriers (Dobransky & Hargittai 2006; Macdonald and Clayton 2013). In such case, the presentation of the In-

Internet as an emancipating tool for the persons with disabilities only becomes another myth about disabilities and Internet technologies which, supposedly, create an accessible virtual environment without any limitations (Goggin & Newell 2003). Oliver, Barnes, Thomas (2001) and Harris (2010) also believe that Internet access is far from being a solution for digital and social exclusion. Therefore, more studies are needed to measure the benefits provided by the use of the Internet (especially, social networking sites) by the persons with disabilities to increase social activity and maintain and build social capital.

As a counter-argument to the sceptical discourse, we raise the hypothesis (H2), that participation in social networking sites nevertheless creates higher added value for the persons with disabilities rather than the persons without disabilities.

Methods

Sample

A national survey was conducted by Baltic Surveys Ltd with specially trained interviewers using a face-to-face method in June–July and November, 2014. The sample consisted of 600 respondents: 300 Lithuanian adults with disabilities aged 18 years and older ($M = 37$, $SD = 13.5$), divided into sections of 53 people with blindness or visual impairment, 62 people with deafness or a hearing impairment and 185 people with physical disabilities; moreover, for comparison purposes, an Omnibus survey was conducted to interview 300 Lithuanian residents without disabilities aged 18 years and older ($M = 40.09$, $SD = 14.03$). These individuals were randomly chosen from among all people with and without disabilities from different cities in Lithuania. The sample is sufficient to ensure data representativeness, as the Lithuanian population consists of around 3 million people. The Social Report (2013–2014) of Ministry of Social Security and Labour shows that at the beginning of 2014, disability benefits were paid to 253,700 residents of Lithuania. Besides, we would also like to point out that according to Eurostat (2014) data for 2014, individuals in Lithuania regularly using the Internet (aged 16 to 74) comprised 69 percent; therefore, we decided to conduct a survey among people with disabilities who have Internet access and use SNS. Respondent distribution by gender was 164 men and 136 women with disabilities and 117 men and 183 women without disabilities.

Measures

Frequency and Content of Activities on Social Networking Sites

The scale for measuring activity on SNS developed by Burke et al., (2010) and was adapted to measure the frequency and content of activities on SNS in this study. A total of 20 items were used (Cronbach's $\alpha = 0.947$) (Items are written in Figure 1). Respondents were asked to report their frequency of use for the following 20 statements based on activities from the SNS. The statements were separated into four subscales based on different types of activities: (1) content production (Cronbach's $\alpha = 0.853$), content consumption (Cronbach's $\alpha = 0.826$), directed communication (Cronbach's $\alpha = 0.884$), passive commu-

nication (Cronbach's $\alpha = 0.856$). Response options were daily (= 6), a few times a week (= 5), once a week (= 4), once a month (= 3), rarer than once a month (= 2), and never (= 1).

Perceived Online Social Capital

The original Internet Social Capital Scales (ISCS), developed and validated by Williams (2006) were used to measure perceived bonding and bridging social capital. In order to further expand the concept and interpretations of online social capital, it was used Pinho's (2013) e-Socapit scale, which had been designed to improve the online social capital measurement tool created by Williams (2006). Pinho (2013) suggested adding cognitive, affective and evaluative dimensions to Williams's online social capital battery. It should be noted that the research also tried to include all three additional SC dimensions; however, it turned out that the cognitive dimension is not recognized or understood in a Lithuanian context. Before the research, an interpretive validation of the questionnaire was performed with the potential respondents, which led to the rejection of the items of cognitive social capital dimension as not relevant to the cultural understanding. The validity and reliability of the statements of affective and evaluative social capital dimensions are shown in Table 2.

Evaluation of the Usefulness of Social Networking Sites

In order to measure respondents' evaluations of the usefulness of SNS for purposes of online social participation, a simple scale was used that ranged from 1 (non-useful) to 10 (very useful). The question of the scale was "To what extent does participation on online social networking activities help you to be more socially active?." The mean total scores of the evaluations was calculated and used as an additional dependent variable.

Independent Variables

The survey used various demographic indicators as independent variables; however, due to the scope of the research, they were put aside for future analyses and this study only used the following independent variables—existence/non-existence of disability and disability forms (sensory and physical disabilities).

Statistical Analysis

Data were recorded and analysed in the Statistical Package for Social Sciences (IBM SPSS Statistics) version 21.0. Since parametric tests could not be applied to the acquired research methods due to abnormal data distribution, the data was analysed using the Kruskal-Wallis test, Mahn-Whitney U test, Chi-square test, and Cluster analysis.

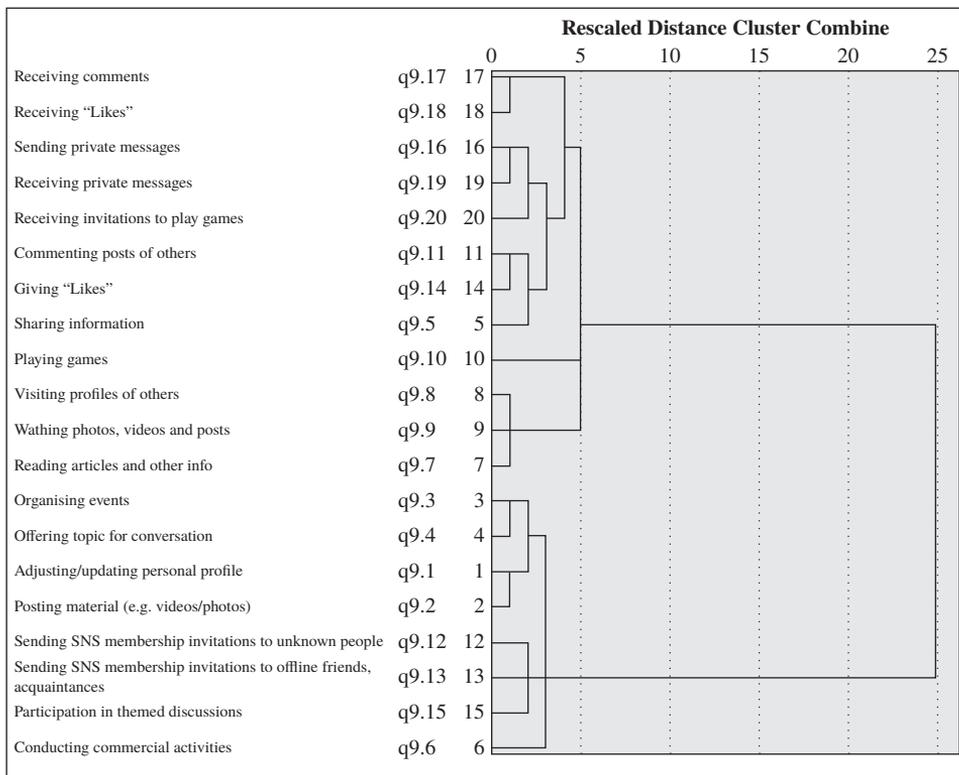
Results

Classification of Activities on Social Networking Sites

In order to answer the research questions—is social network activity different between SNS users with physical disabilities, sensory disabilities and without disabilities, and what is the relationship between SNS user activity on networking sites and different social capital dimensions (bridging, bonding, affective/evaluative)—a cluster analysis was first used as an

exploratory technique to re-classify activities on social networking sites by their conceptual similarity instead of using the SNS classification method offered by Burke et al. (2010). The cluster analysis of the 20 items of the SNS activity scale was performed in an unsupervised way using a hierarchic polythetic agglomerative method. We used Ward’s method for dendrogram (Figure 1) classification, using single or squared Euclidean distance measures. This method focuses on the identification of the strongest relationships between cluster elements. Thus, according to the most significant relationships between cluster units provided in the dendrogram (Figure 1), 6 types of activities on SNS were identified, forming the basis for the creation of new SNS activity subscales. Only two SNS activities (“Conducting commercial activities” [6] and “Playing games” [10]) were excluded from the new SNS activity types as being too remote from the other 6 cluster elements. Subscale homogeneity was verified using Cronbach’s alpha coefficient (Table 1).

Figure 1
Dendrogram of Cluster Analysis of Activities on SNS



The six SNS activity types were then passed through another cluster analysis by case in order to determine SNS user groups according to what they do and how actively they participate on social networking sites. The activities were split into three clusters which best highlighted the differences between the clusters and the similarity of the elements

within them. As a result, three SNS user groups were obtained, characterized by a different intensity of SNS use: (1) occasionally active users—users who only occasionally go on SNS (around 1–2 times per month) and even less frequently leave any traces of activity on them (around once a month), (2) moderately active users—users who visit SNS 1–2 times per week and are more involved in invisible consumer activities (reading, viewing of photos, videos, profiles of other users) as well as communication by private messages rather than active, productive networking, (3) intensively active users—visit SNS on a daily basis and tend to actively maintain close friendships and take part in general discussions as well as look for new contacts on the site.

Table 1
Types of Activities on SNS and Three Clusters of SNS Users

Types of activities on SNS	M	SD	Scale's Crom- bach's alfa	Three clusters of SNS users by frequency of activities (M)		
				The occa- sionally active users (N = 258)	The moderately active users (N = 187)	The intensively active users (N = 135)
Productive visible activity	2.38	1.03	0.866	1.85	2.29	3.60
Consumer invisible activity	4.32	1.23	0.895	3.35	4.77	5.60
Active visible communication	3.62	1.43	0.873	2.44	4.17	5.33
Passive visible communication	3.37	1.41	0.935	2.29	3.66	5.09
Seeking visible communication	2.60	1.16	0.803	1.93	2.68	3.76
Private invisible communication	3.81	1.39	0.869	2.68	4.37	5.33

Validation of Scales for the Measurement of Different Dimensions of Social Capital on SNS (bonding, bridging and affective/evaluative)

We used confirmatory factor analysis (CFA) with Varimax rotation in order to validate the scales for the measurement of social capital dimensions on SNS. Bonding (KMO = 0.863, $\alpha = 0.76$) and bridging (KMO = 0.915, $\alpha = 0.90$) capital dimensions were measured using original and validated Internet Social Capital Scales (ISCS) by Williams (2006). The affective and evaluative dimensions of perceived online social capital as a part of the e-SOCAPIT scale developed by Pinho (2013) were also validated using .CFA and showed in Table 2.

The Relationship Between the Three Clusters of SNS Users and the Three Dimensions of Social Capital on SNS (bonding, bridging, affective/evaluative)

Due to abnormal data distribution, a non-parametric Kruskal-Wallis test was used in order to compare perceived social capital dimensions between the three SNS user groups. The test showed that there is a statistically significant difference amongst perceived bonding capital (K-W test, $\chi^2 = 74.72$, $df = 2$, $p < 0.05$), perceived bridging capital (K-W test, $\chi^2 = 32.73$, $df = 2$, $p = 0.000$), and perceived affective/evaluative capital (K-W test, $\chi^2 = 93.75$, $df = 2$, $p < 0.05$). Figure 2 shows the different averages of perceived social capital dimensions in the three SNS user groups.

Table 2

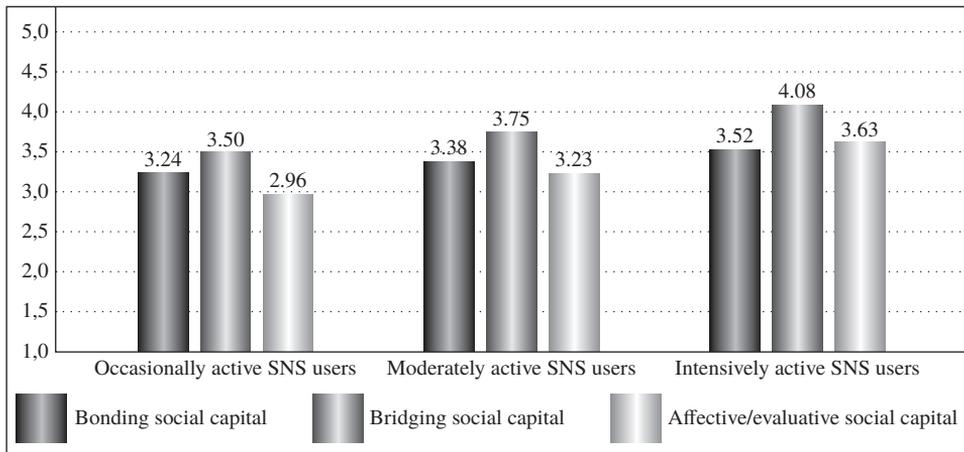
Factor Loadings, Means, and Standard Deviations of Indicators of Affective/Evaluation Dimension of Social Capital

Items	Factors		Mean	SD
Evaluative dimension of social capital				
I am a valuable member of the SNS community	.87		3.22	.81
I am an important member of the SNS community	.83		3.19	.83
I can impress other members of the SNS community	.72		2.96	.89
Affective dimension of social capital				
I believe that I am one of the SNS community members	.85		3.48	.85
I am strongly attached to the SNS community	.79		3.18	.89
I have sense of strong belonging to this community	.76		3.07	.94
Variance explained (%)	41.26	39.49		
KMO	.71	.72		
Cronbach's α	.88	.87		

Note: Evaluative and affective dimensions of SC were separated in two different factors as it were created by C. J. Pinho (2013).

Figure 2

Relationship Between the Three Clusters of SNS Users and Three Dimensions of Social Capital on SNS (bonding, bridging, affective/evaluative)



The test results showed that affective/evaluative capital is most pronounced amongst active SNS users, as compared to the less active SNS groups in which this form of capital is valued to a lesser extent than bonding and bridging dimensions of social capital. In all three SNS user groups, bridging capital is a clearly dominant form of capital and shows a statistically significant difference to the other capital dimensions. This difference and domination of bridging capital can be explained by the fact that weak, non-emotional relationships, which are the basis for bridging capital, are easier to establish, while “bonding

social capital originates from strong ties, individuals need to invest more time and effort developing relational closeness, which requires more interactions” (Rui et al. 2014: 14). In order for the affective/evaluative capital dimension to prevail, it also requires intense communication as well as constantly and frequently keeping in touch with other members of the network. Since bridging capital clearly stands out from the other two forms of capital, we decided to compare the differences between bonding and affective/evaluative social capital dimensions. For this purpose, the Wilcoxon test was used, which showed statistically significant differences between perceived bonding and affective/evaluative capital forms in all three SNS user clusters (Table 3).

Table 3

**Relationship Between Affective/Evaluative Dimension of SC and Bonding Social Capital
Among Three Clusters of SNS Users**

Three clusters of SNS users	Affective/evaluative capital dimension—bonding social capital					Wilcoxon test	
	Negative ranks		Positive ranks		Ties	Z	P
	N	Mean Rank	N	Mean Rank	N		
The occasionally active SNS users (N = 258)	151 ^a	137.99	87 ^b	87.41	23 ^c	-6.222	0.000
The moderately active SNS users (N = 187)	96 ^a	96.07	75 ^b	73.11	15 ^c	-2.885	0.000
The intensively active SNS users (N = 135)	53 ^a	59.98	75 ^b	67.69	6 ^c	-2.257	0.000

^a Affective/evaluative capital dimension < bonding social capital.

^b Affective/evaluative capital dimension > bonding social capital.

^c Affective/evaluative capital dimension = bonding social capital.

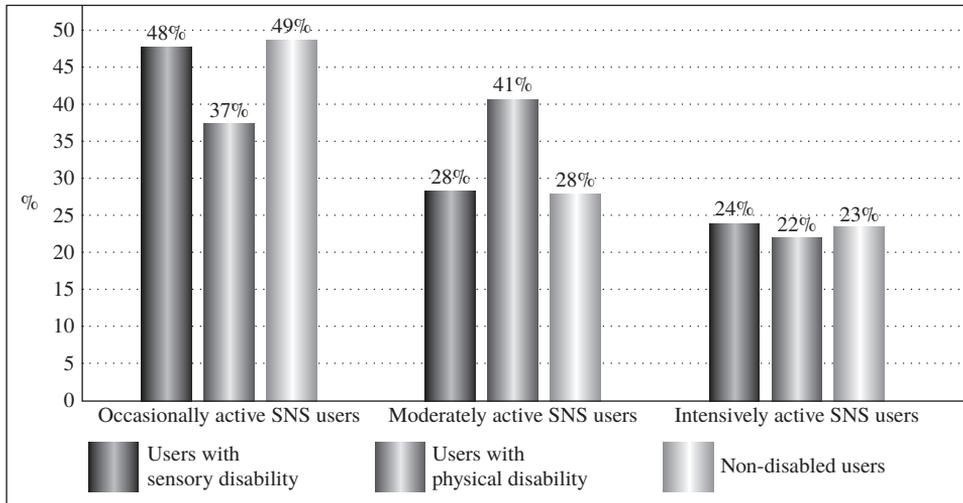
Table 3 shows that the weight of perceived affective/evaluative capital is largest only among intensively active SNS users, and lowest among occasionally active SNS users. We can conclude that active participation on SNS is positively related to the perceived affective/evaluative dimension of social capital. Moderately active SNS users are characterized by the lowest fluctuations amongst the different dimensions of perceived social capital. The results support our hypothesis (H1) that different levels of activity on social networking sites results in different configurations of social capital dimensions.

**Partition of SNS Users With Physical Disabilities, Sensory Disabilities
and Without Disabilities Among Three Clusters of SNS Users**

A Chi-squared test was used to determine whether the relationship among the three identified SNS user clusters and respondents with physical disabilities, sensory disabilities and without disabilities was statistically significant. The test showed a weak statistically significant relationship ($\chi^2 = 9.80$, $df = 7$, $p = 0.044$; Cramer's $V = 0.092$). Percentage distribution of respondents by disability in the three SNS user clusters is shown graphically (Figure 3). Among rare users of SNS, both respondents with sensory disabilities and without disabilities are equally distributed. Medium SNS users are dominated by respondents with move-

Figure 3

Respondents with Physical Disability, Sensory Disability and without Disabilities Partition Among Three Clusters of SNS Users



ment restricting disabilities. Most active SNS users are more or less evenly distributed between those with movement disabilities, sensory disabilities and without disabilities.

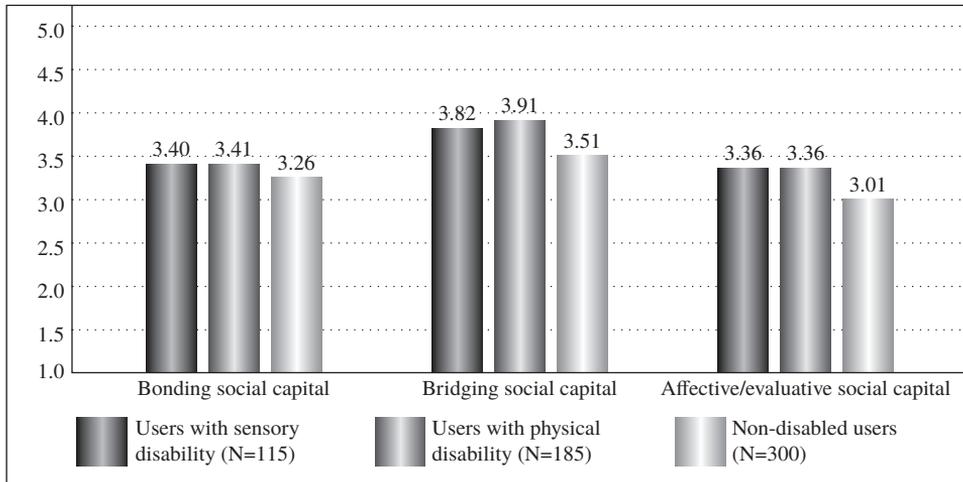
The Relationship Between the Three Dimensions of Social Capital Among SNS Users With Physical Disabilities, Sensory Disabilities and Without Disabilities

In all three forms of social capital, the Kruskal-Wallis test showed statistically significant differences between respondents with movement restricting disabilities, sensory disabilities and without disabilities: bonding capital (K-W test, $\chi^2 = 11.83$, $df = 2$, $p = 0.003$), bridging capital (K-W test, $\chi^2 = 58.32$, $df = 2$, $p = 0.000$), affective/evaluative capital (K-W test, $\chi^2 = 30.44$, $df = 2$, $p = 0.000$). The test results in Figure 4 show that SNS users with both physical and sensory disabilities almost equally value all three social capital dimensions, while those without any disability value all three capitals less than those with disabilities. Bridging capital is the most valued among respondents with movement restricting disabilities, while affective/evaluative capital is the least valued among the persons without disabilities. Therefore, the persons with disabilities have a stronger emotional connection and association with SNS as a virtual community as compared to the persons without disabilities.

The Mann-Whitney U test was used to evaluate whether there is a statistically significant difference between the three social capital dimensions in social networks between SNS users with physical disabilities and without disabilities and between SNS users with sensory disabilities and without disabilities. The Mann-Whitney U test showed that when comparing SNS users with sensory disabilities and without disabilities, there are statistically significant differences among all three social capital dimensions: bonding capital ($U = 14642.0$, $Z = -2.569$, $p = 0.010$), bridging capital ($U = 12213.5$, $Z = -4.808$,

Figure 4

Relationship Between the Three Dimensions of Social Capital Among SNS Users With Physical Disability, Sensory Disability and Without Disabilities



$p=0.000$), affective/evaluative capital ($U = 12481.5$, $Z = -4.429$; $p = 0.000$). The test also showed statistically significant differences between SNS users with physical disabilities and without any disabilities in all three forms of SNS social capital: bonding capital ($U = 23329.5$, $Z = -2.987$, $p = 0.003$), bridging capital ($U = 17274.0$, $Z = -7.140$, $p = 0.000$), affective/evaluative capital ($U = 21028.0$, $Z = -4.534$, $p = 0.000$). Therefore, persons with disabilities-SNS users are more aware of the value created by the use of SNS in all social capital dimensions, as compared to the persons without disabilities.

Evaluation of the Usefulness of Social Activity on SNS Among Users With Physical Disabilities, Sensory Disabilities and Without Disabilities

The Kruskal-Wallis test showed a statistically significant difference of valuations among the three respondent groups with physical disabilities, sensory disabilities and without disabilities (K-W test, $\chi^2 = 21.45$, $df = 2$, $p = 0.000$). SNS usefulness for improving social activity is most valued by those with a movement restricting disability (7.16 from 10 point) and least valued by the persons without disabilities (6,3 from 10 point). It confirms previous measurements and the hypothesis (**H2**) that participation in social networking sites creates higher added value for the persons with disabilities than the persons without disabilities.

Discussion

This article adds to the wide political and academic discussion on the value of online and social networks for the persons with disabilities. First and foremost, the research results have shown that active participation on social networking sites leads to greater awareness

of social capital. However, we did not want to confine ourselves to the trivial causal explanation that more active participation on SNS is related to greater perceived social capital. Therefore, the research tried to identify social capital dimensions resulting from different levels of activity on SNS. Moreover, the research also tried to find out the differences in activity levels between SNS users with physical disabilities, sensory disabilities and without disabilities, as well as how these groups perceive different social capital dimensions. It was found that intense participation on SNS leads to stronger affective/evaluative dimension of capital, which is more characteristic of the persons with disabilities (both with physical and sensory disabilities) than the persons without disabilities. It should be noted that this perceived affective/evaluative dimension of social capital explicitly expresses the values set out by the UN Convention on the Rights of Persons with Disabilities (2007), such as dignity, autonomy and valuable participation in community life. The research shows that participation on SNS is most relevant for the persons with disabilities because of this aspect related to the realisation of values, sense of community and human rights. The research results are consistent with Obst & Stafurik (2010) and Shpigelman and Gill (2014) results which indicated that participation in SNSs is really valuable to promote persons with disabilities sense of belonging to the community and to build social supportive networks for receiving moral support and personal advice, especially through participating in disability-specific online communities. Moreover, after studying virtual forums as virtual communities, Shoham & Heber (2012) concluded that these communities have a positive influence on their members who are hard-of-hearing and deaf; they serve as meeting places and facilitate information exchange and support.

The research data shows that people with physical disabilities are those who benefit most from SNS. Perhaps because of their limited mobility, they perceive SNS mostly as a bridging capital resource. Bridging capital brings them various practical benefits thanks to established connections, contacts, participation according to their interests by avoiding the obstacles posed by the physical environment as well as geographical distances (Guo *et al.* 2005). One could argue that for the persons with physical disabilities, social networking “facilitates collective action by: a) creating large, dense networks of relatively weak social ties, and b) through the use of computer-mediated communication as an organizing tool” (Hampton 2003: 418). It also explains the research results, which show that persons with physical disabilities social networkers value SNS more as a tool helping them be more socially active than SNS users with sensory disabilities and without disabilities.

SNS users with sensory disabilities are mostly (48%) characterized by occasional networking (1–2 times per month), just like SNS users without disabilities (49%). This could be explained by the fact that the majority of these respondents (78%) have a moderate hearing or visual disability, meaning that perhaps they experience less social participation constraints than those with a physical disability or in a wheelchair. Nevertheless, both SNS users with sensory and physical disabilities perceive social capital dimensions equally and significantly more than the persons without disabilities. In agreement with the conclusions of Tsaousides, Matsuzawa & Lebowitz (2011), we can argue that social networking sites are increasingly important in creating and maintaining social networks among people with traumatic brain injury as well as with other impairments and disabilities. Finally, we hope that the results of this research contribute to the positive IT and disability discourse by ar-

guing that SNS creates added value for the persons with disabilities which was measured by perceived bonding, bridging and affective/evaluation dimensions of social capital.

Limitations and Future Directions

We hereby provide several suggestions for the limitations of the study which open up possibilities for further research in the area. First of all, the analysis of the data did not include such demographic variables as large cities, smaller cities and remote areas, living circumstances (living alone or with family), employment, education, and other factors which can potentially affect SNS use and perceived social capital. Future studies could also look into relationships between motives for SNS use and perceived social capital; relationships between offline social participation restriction and users' with disabilities activity on SNS. The sample for this research consisted of 78 percent of people with moderate disabilities. The sample could be expanded and an additional survey of respondents with complex disabilities could be performed by differentiating respondents according to their ability to independently use ICTs equipment without the help of others or assistive technologies. Finally, the sample data could be divided into people with hearing disabilities and visual disabilities and include respondents with other forms of disability, such as developmental or psychosocial disabilities with important community aspects or a clear issue of stigma.

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