Happy Online and in Real Life too?
How Social Media Interactions Affect Real Life Well-being of Students in the U.S. and Germany

Anne Suphan
Hohenheim University
Wollgrasweg 23
70599 Stuttgart, Germany
0049 711 459-23418
anne.suphan@uni-hohenheim.de

Bozena Mierzejewska
Fordham University
113 W 60th Street
New York, NY 10023
001 917 819 9563
bmierzejewska@fordham.edu

ABSTRACT
Research examining the impact of social media use on the well-being of digital natives has resulted in a myriad of opposing outcomes indicating both positive and negative effects. In this paper we examine whether there is a boundary between online and offline interpersonal sphere in the cohort of student digital natives and how does it differ between German student populations and U.S.. From data collected in 2013 and 2014 we find that involvement in Social Networking Sites (SNS) results more in positive emotional outcomes than in negative ones. Secondly, we conclude that there is no significant impact of SNS interactions on real life activities. We explain this striking result by focusing on separation of communication activities in online and offline life contexts. We also report on differences between U.S. and German students. The results of our study show that German students tend to separate between online and offline sphere more strongly.

Categories and Subject Descriptors
Collaborative and Social Computing – Social Media.

Keywords
Social media, online involvement, well-being, perception of exclusion.

1. INTRODUCTION
Being online is part of the everyday life for most of the young adults who have grown up with the Internet. This cohort, the so-called digital natives [15], uses social media driven by different motives [13]. Previous studies have identified the following as possible motives for social media use: entertainment [33], reinforcement of emotional and positive experiences [40], control of communication situations (cognitive motives) [37], search for information [29], motives of escapism [37], to satisfy habitual needs [40], need to communicate with others (social motives) [29], desire to maintain or built social relationships [37] or finally, to be part of a virtual community [34]. Based on these motives, studies finding a positive effect of social media use, report that it can increase users social capital [5], social support [1,23], social inclusion [14,18,42] and general emotional benefits for one´s mental health [9,12]. However, studies consistently report on the negative effects of involvement in social networking sites (SNS), which contribute to social isolation [27,28], negative well-being like depression and loneliness [24,39] as well as envy [21] and jealousy [38]. These contrasting effects of social media use can be attributed to how social media are used: as a passive monitoring of shared information [21] or as active sharing and participation. Despite the fact that studies indicate opposing outcomes of social media effects, it is still unclear to what extent they influence real life. Does involvement in social media also affect real life (face-to-face) social activities? Do social media group members feel more included in society in general due to their role in online communities? Is it possible to be happy and connected online while feeling depressed and lonely offline? The main question we address in this study is whether there is still a boundary between interpersonal online and offline spheres in the cohort of digital natives. In order to get an in-depth view of cultural differences we ask if there is a difference between digital natives in Germany and the United States of America.

2. THEORETICAL BACKGROUND
Spending time on social networking sites (SNS) like Facebook appears to be satisfy various needs and consumes lot of young adults time. In 2007, it was reported that a digital native in the U.S. spent an average of 15,54 hours a week online [15]. Since that report the increased use of mobile devices has contributed to a further increase of time spent on SNSs. Park et al. suggested that there is a difference between the type of gratification received from SNS such as socializing, entertainment, self-status seeking, and information [30]. Regardless of what exactly users do on social networking sites, they are interacting (in a passive or active way), which results in emotional outcomes. A prior explorative study by Krasnova et al. [21] showed, that 43.8% of respondents mentioned at least one positive (e.g. joyful) and 36.9% at least one negative emotional outcome (e.g. bored, angry) after their most recent Facebook use. Thus, we hypothesize that:

H1: Being involved in SNS results in positive and negative emotional outcomes.

Since being online becomes part of everyday life [12,38], positive emotions like satisfaction, joy or fun increase. Conversely, negative emotions like jealousy, frustration or sadness decrease general well-being status. Since emotional outcomes of SNS usage is one of several factors of an individuals' subjective well-being in general, we assume:

H2: Emotional outcomes of SNS use influence general subjective well-being.

One of the main motivations to use SNS is to maintain contacts [37]. The literature about effects of SNS usage on personal interactions in real life shows conflicting results. While some studies point out the negative effects such as reduced frequency of real life activities [27,28], others come to the conclusion that there is no impact on face-to-face social life activities since online interactions are similar to offline acquaintance [19]. However, a number of studies describe positive influences of SNS involvement on real life social activities [11,16,22].

Following the argument that SNS activities cultivate current relationships and additionally provide channel of communication to organize offline activities (visit friends, talk directly with them) [11,16,22,36,42], we assume:

H3: Involvement in SNS increases the frequency of real life activities.

The involvement in online groups affects the general perception of inclusion/exclusion in society. Literature has shown that online groups are a method of civic engagement which could benefit social and political capital [14,18,42]. These online groups provide opportunities for participation and thereby inclusion into real life society [7,32]. In contrast, studies have identified that dedication made in online group involvement is often linked to addictive online behaviour. In turn, this behaviour increases feelings of loneliness, isolation and exclusion [26,36,43]. As we incorporate the relationship between involvement in SNS and isolation following the pessimistic perspective, we propose:

H4: Involvement in SNS increases an individuals' perception of exclusion.

Besides online (group) interactions, real life activities are important social resources and thus important components of an individuals' perception of inclusion into society [6]. In contrast to online involvement, we assume that real life interaction decreases feelings of exclusion. Thereby following Bude et al. [6], we propose that:

H5: Real life activities decrease an individuals' perception of exclusion.

Social resources are important components of an individuals' well-being. Since interactions in both real life [10,41] and online [1,23] benefit social resources, we hypothesize:

H6: Real life activities influence general subjective well-being.

H7: Involvement in SNS influence general subjective well-being.

The perception of exclusion is not only a societal issue that refers to an individuals' position within society. It is also a component of subjective well-being [6], which leads to our hypothesis H8:

H8: Individuals' perception of exclusion influences general well-being.

Using SNS is affected by cultural differences [17]. These differences predominantly refer to how posting intimate or sensitive information on SNS differ between American and German students. Based on these differences in user behaviour, we assume that cultural differences affect all aspects of online behaviour as well as all related relationships.

H9: All effects connected with involvement in SNS groups and emotional outcomes resulting from SNS use differ between U.S. and German students.

3. DATA & MEASUREMENT

In order to test the developed hypothesis, 658 under-graduate and graduate students from large universities in urban areas in the United States of America and in Germany participated in an online questionnaire. Data from U.S. students was collected in October and November 2013, data from German students was collected in December 2104.

3.1 Measures

Operationalization of the latent constructs of hypotheses used existing scales. The influence and value placed on group membership reflects the perception of an individuals' involvement in a group. Thus, the involvement in a social media group was measured by adopting collective membership self-esteem [2]. Students were asked to rate their agreement of four items, which contained the name of their most frequently used social network (e.g. "I am proud of my friends on FACEBOOK") based on a 5-point Likert-scale. Emotional outcomes of social media use are defined as the feelings a user had after the usage. Based on qualitative interviews, Krasnova et al. [21] identified 14 emotional outcomes the use of Facebook can produce. We have included the most frequent categories into our questionnaire: four positive emotional states (e.g. joyful, informed, satisfied, excited) and with three negative emotions (e.g. frustrated, angry, envious). Emotional outcomes of social media usage need to be treated as two separated constructs: positive and negative. Involvement in real social life can be defined as the participation in real social life activities [16]. Social life activities consist of communication with family, close friends or acquaintances. Communication can occur by using variety of technologies, like cellphones, or Internet. Chats, short massages, telephone calls or emails serve to maintain relationships. Howard et al. [16] suggested measuring the involvement in real social life by the frequency of communication with friends and family offline, via telephone and online. Following Bude and Lantermann [6], we used four items to measure an individuals' perception of being excluded. We define the general subjective well-being as the individual state of mental health which is a sum of positive and negative emotions as well as evaluation of individuals' life satisfaction. Following the short form of the Mental Health Inventory [3] and the PANAS scale [41], anxiety, general positive and negative effects and depression were selected to measure general well-being in real life. Evaluating both positive and negative well-being entails that both constructs be included separately into the model. Further, the questionnaire asked participants about their Internet use experience and usage frequency of various Internet applications based on the item set of Utz et al. [38]. Due to the fact that involvement in online activities is referring to social media sites, our questionnaire also addressed the presence or absence of a social media account and the name of the most frequently used social media network. Furthermore, the questionnaire included socio-demographics for sample description.

Two experts in the field of communication and sociology evaluated the initial items concerning relevance and validity. The questionnaire was tested by 10 students within a pre-test study to ensure comprehensiveness and proper functioning of the online survey. Although all of the scales have been used in previous

studies, we conducted principal component analysis to ensure internal consistency. The final item set is shown in Appendix A.

3.2 Sample Description

Within the overall sample, men are slightly overrepresented (49%). Most participants (64%) were between 20 and 22 years old, which is typical for university students in the U.S. and in Germany. The demographics represent the focus of our study on digital natives. The majority (62%) were born in the United States of America. Only 7% of the students held a Bachelor's, Master's or Doctoral degree. Thus, undergraduates are highly overrepresented in this sample (85%). U.S. students are also highly overrepresented within our sample (75%). The overall sample composition is summarized in Table 1.

With regards to the use of Internet use most students (73%) stated to use the Internet for more the 4 years. This is a quite typical result for those generations born after 1980, the so-called "digital natives" and implies that they are Internet affine and literate. Therefore, the daily use of the Internet by 75% of our respondents is not surprising and typical as well. This usage can be characterised as passive since it mainly included reading and consuming rather than contributing new content. Within our sample 94% of respondents have a social media account, mainly on Facebook (57%), Twitter (17%), and Instagram (12%). Profile of the Internet use of all respondents is summarized in Table 2. 20 participants without a social media account were excluded from our sample.

Table 1. Profile of Respondents

Measure	Items	n	%
Gender	female	284	43.2
	male	323	49.1
	missing	51	7.8
Age	< 20 years	1	0.2
	20-22 years	423	64.2
	23-25 years	95	14.4
	> 25 years	95	14.4
	missing	44	6.7
Country of Birth	U.S.	402	61.9
	Germany	120	18.3
	China	39	6.2
	Europe	17	3.1
	India	5	0.8
	Others	26	4,7
	missing	49	7.5
Education	Grammar school	3	0.5
	High school	252	38.3
	Vocational school	4	0.6
	Some college	299	45.4
	Bachelor's degree	38	5.8
	Master's degree	7	1.1
	Doctoral degree	1	0.2
	missing	54	8.2
Country of University	U.S.	490	74.5
	Germany	168	25.5
Total		*658*	*100*

Table 2. Internet usage of Respondents

Measure	Items	n	Percentage
Internet experience	one year	2	0.3
	2 years	8	1.2
	3 years	87	13.2
	4 years	36	5.5
	> 4 years	479	72.8
	missing	46	6.9
Sending private messages (e.g. emails)	daily	420	63.8
	2- 3 times a week	101	15.3
	once a week	44	6.7
	2- 3 times per month	29	4.4
	once a month	29	4.4
	never	12	1.8
	missing	23	3.5
Reading news sites, blog entries or status updates	daily	487	74.0
	2- 3 times a week	85	12.9
	once a week	37	5.6
	2- 3 times per month	10	1.5
	once a month	3	0.5
	never	6	0.9
	missing	30	4.6
Contributing to blogs and other social media sites	daily	234	35.6
	2- 3 times a week	104	15.8
	once a week	75	11.4
	2- 3 times per month	64	9.7
	once a month	48	7.3
	never	80	12.2
	missing	53	8.0
Listening to music or viewing photographs or videos online?	daily	494	75.1
	2- 3 times a week	80	12.2
	once a week	26	4.0
	2- 3 times per month	16	2.4
	once a month	11	1.7
	never	6	0.9
	missing	25	3,8
Posting photographs, videos or music on social media site	daily	114	17.3
	2- 3 times a week	85	12.9
	once a week	70	10.6
	2- 3 times per month	108	16.4
	once a month	93	14.1
	never	132	20.1
	missing	56	8.6
Social media account	Yes	618	93.9
	No	20	3.0
	Missing	20	3.1
Most frequently used social media application	Facebook	372	56.5
	Twitter	111	16.9
	Instagram	81	12.3
	Tumblr	10	1.5
	Linkedin	8	1.2
	WeChat	6	0.9
	Others	25	3.8
	Missing	45	6.8
Total		*658*	*100*

3.3 Data Analysis

To test H1-H8 we conducted a structural equation modelling (SEM): We conducted an exploratory factor analysis to ensure convergent and discriminant validity by using principal component analysis and application of a Varimax rotation. The results (shown in Appendix A) show acceptable factor loadings and no cross-loadings between the several factor items. On the construct level, we used Cronbach's alpha (α), composite reliability (C.R.), and the average variance extracted (AVE) to assess the internal consistency of the scale. Discriminant validity can be assumed if squared multiple correlations with any other construct are below the constructs' AVE and is satisfied by all constructs, expected between involvement in a social media sites and positive emotional outcomes of social media usage. All measures show acceptable values of reliability.

To test H9 we conducted the procedure of a three-step multiple group analysis [4,8,25,35]. The overall sample was divided into two subsamples: U.S. students and German students. We tested the model for configural, metric and scalar invariances to ensure that comparison is valid. All model fit measures showed acceptable values (Appendix B). Thus, means as well as standardized loadings can be compared between the subsamples. To test if differences between standardized loading are significant we calculated the Paternoster et al. [31] z-value.

Using Mplus 6, we run structural equation modelling and multiple group analysis with Maximum-Likelihood estimation to test the significance of the developed hypothesis model.

4. RESULTS

Figure 1 shows the estimated standardized loadings within the model as well as the particular significant latent variance explained.

Results show that the involvement in a social media group is a significant and strong predictor for positive emotional outcomes of social media usage (β=0.724, p<0.001). Negative emotional outcomes are less influenced by an individuals' involvement in social media sites on a significant level (β=0.168, p<0.001). Therefore we can accept H1. With regards to H2, on one hand positive emotional outcomes do not influence positive nor negative components of subjective well-being significantly. But in contrast, negative emotional outcomes of social media use raises individuals' negative well-being in general (β=0.189 p<0.001). Negative emotions as a consequence of social media use are estimated to significantly reduce the positive general well-being (β=0.124, p<0.01). Furthermore, we have to reject H3, because there is no estimated significant influence between involvement in social media networking sites and real social life activities. H4 (β=0.179, p<0.001) and H5 (β=-0.232 p<0.001) are supported. The results suggest that an individuals' perception of exclusion is positively enhanced by involvement in a social media sites and reduced by real social life activities. The positive well-being status in real life is significantly affected by real life social activities (β=-0.375, p<0.001) but not the negative well-being (p>0.01). Both, positive (β=0.206, p<0.01) and negative (β=0.186, p< 0.05) subjective well-being are influenced by the involvement in SNS although on a 99% or 95% significance level. Thus, H7 can also be accepted. Moreover, H8 can be accepted because individuals' perception of exclusion reduced the positive well-being on the one side (β=-0.236, p< 0.001) and increases negative states of mental health on the other side (β=-0.523, p<0.001). Within the model, a significant portion of the variance on positive emotional outcomes of social media use (R^2=0.524), general feelings of exclusion (R^2=0.094) and the general well-being status (positive: R^2=0.284, negative: R^2=0.294) were explained by the suggested relationships. Due to the complexity of the constructs and insignificance of relationships, the values of explained variance on negative emotional outcomes of social media usage (p>0.01) and involvement in real life social activities are insignificant and very small. As observed in Table 3, all model fit measures show acceptable values.

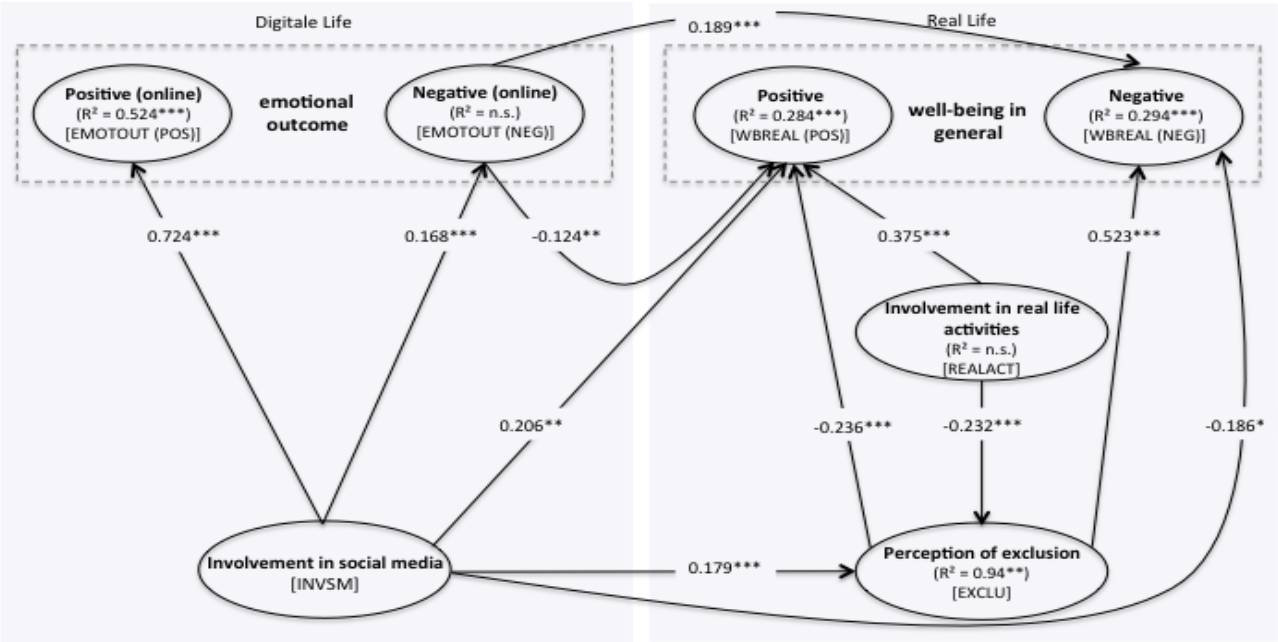

Figure 1: Results for H1-H7

(Standardized loadings and latent variance explained)

Table 3. Model fit

Value (Chi-squared)	1325.984
Degrees of Freedom (df)	542
P-Value	0.0000
Chi-squared/ df	2.45
RMSEA	0.050
CFI	0.915
TLI	0.906
SRMR	0.066

The differences concerning the proposed hypothesis between U.S. students and German students are reported in Table 4. Both, the positive and the negative emotional outcomes influences by involvement in SNS differ: while the effect on positive emotions is significantly stronger for U.S. ($z=-0.009$, $p<0.001$), the effect on negative emotions is significant for German students only ($\beta=0.298$, $p<0.01$). In addition, differences exist with regard to H2: The positive subjective well-being is significantly affected by positive and negative emotional outcomes of SNS group interactions for U.S. students but insignificant for German students ($p>0.05$). Also, negative subjective well-being is significantly influenced by negative emotional outcomes within the U.S. subsample only. Even the dependence of perceived exclusion from the individual's involvement in SNS (H4) as well as from real life involvement (H5) is only significant for U.S. students. Differences between U.S. students and German students concerning H3, H6 and H8 are not significant.

Table 4. Group differences (H1-H7)

Relationship		**U.S. students**	**German students**	**Δ Sign. (z-value)**
H1	INVSM → EMOTOUT (POS)	0.735***	0.674***	Δ sign. (z= -0.009)
	INVSM → EMOTOUT (NEG)	n.s.	0.298**	Δ sign.
H2	EMOTOU (POS) → WBREAL (POS)	0.158**	n.s.	Δ sign.
	EMOTOU (NEG) → WBREAL (POS)	0.134*	n.s.	Δ sign.
	EMOTOU (NEG) → WBREAL (NEG)	0.241***	n.s.	Δ sign.
H3	INVSM → REALACT	n.s.	n.s.	n.s.
H4	INVSM → EXCLU	0.101*	n.s.	Δ sign.
H5	REALACT → EXCLU	0.218**	n.s.	Δ sign.
H6	REALACT → WBREAL (POS)	0.401***	0.291***	n.s. (z= -0026)
H8	EXCLU → WBREAL (POS)	-0.233***	-0.484***	n.s. (z= 0.0500)
	EXCLU → WBREAL (NEG)	0.551***	0.464***	n.s. (z= 0.0003)

Table 5. Group differences (Means)

Intercept/ Means	**U.S. students**	**German students**
Δ INVSM	-	-1.181***
Δ EMOTOUT (POS)	-	0.346*
Δ EMOTOUT (NEG)	-	n.s
Δ REALACT	-	1.048***
Δ EXCLU	-	-1.051***
Δ WBREAL (POS)	-	-1.046***
Δ WBREAL (NEG)	-	n.s.

Furthermore, the results of the multiple group analysis show that there are significant differences within the valuation of the constructs (Table 5): Concerning the online sphere German students are less involved in SNS ($\Delta=-1.181$, $p<0.001$) and perceive less positive emotional outcome online ($\Delta=0.0346$, $p<0.05$). In the offline sphere they are more involved in real social life activities ($\Delta=1.048$, $p<0.001$) and feel general less excluded ($\Delta=-1.051$, $p<0.001$). Nevertheless, their positive well-being status is lower.

5. DISCUSSION & LIMITATIONS

This study set out with the aim of contributing to the discussion of the positive and negative effects of involvement in social media groups and how this affects an individuals´ real life. The most interesting finding was that individuals' involvement in social media sites have a stronger effect on positive emotional outcome than the negative one. A second interesting finding is regarding the influence of online involvement on general subjective well-being: the overall indirect effect on positive well-being is stronger than on negative aspects. However, only negative emotional outcomes of being online influence directly the general well-being: positive elements are decreased and negative are increased by negative emotional outcomes. Involvement in SNS increases the perception of societal exclusion. Therefore the negative well-being is directly influenced by the involvement in SNS. But the indirect effect, moderated by the perception of exclusion, is much stronger. These results indicate that not only SNS involvement and negative emotions after using social media like frustration or envy can cause the negative effects on well-being. Negative consequences are stronger caused by individuals' position within society. Nevertheless, we can summarize that indirect negative effect is significantly stronger than the positive one.

Another striking result that emerges from our data is that participating in social media does not significantly influence social life activities. Thus, the rejection of H3 indicates that still digital natives (in our case students) separate between the communication within online contacts and the interaction with real life contacts. In other words, they do not transfer interactions form their online sphere to real life. Nevertheless, social life activities can reduce ones' perception of exclusion, and with that, decrease the negative consequences of social media group involvement.

The results regarding the differences between German and U.S. students fit into a large body of literature referring to cultural difference in SNS usage. For German students, SNS have no effect on general well-being. In other words, there is a stronger separation between online and offline life. In general SNS contacts are less important for them. This result can be explained with results from Karl et al. [17] and Krasnova et al. [20] who pointed out that due to privacy concerns German students tend to avoid or at least reduce sharing intimate or personal information on SNS. It in turn reduces the general quality and importance of SNS involvement.

A limitation of this study is the overrepresentation of student population in this sample, which means results cannot be generalized to the whole population of digital natives. Further studies need to verify the results with a more representative structured sample of digital natives. Moreover, comparisons of cultural difference between societies with differences in social values and norms and general online communication behavior would be helpful for further in-depth discussions on how the process of increasingly consolidation of online and offline spheres occurs.

6. REFERENCES

[1] Bargh, J.A. and Mckenna KYA. 2004. The Internet and social life. *Annual Review of Psychology* 55, 573–590.

[2] Barker, V. 2012. A generational comparison of social networking sites: The influence of age and social identity. *The International Journal of Aging and Human Development* 74,2, 163–187.

[3] Berwick, D.M., Murphy, J.M., Goldman, P.A., Ware, J.E., Barsky AJ and Weinstein MC (1991) Performance of a five-item mental health screening test. *Medical Care* 29, 2, 169–176.

[4] Bollen, K.A. 2014. *Structural Equations with Latent Variables*. New York: John Wiley & Sons.

[5] Brandtzaeg, P.B. 2012. Social Networking Sites: Their users and social implications –a longitudinal study. *Journal of Computer-Mediated Communication* 17, 4, 467–488.

[6] Bude, H. and Lantermann, E.D. 2006. Soziale Exklusion und exklusionsempfinden. *Kölner Zeitschrift Für Soziologie Und Sozialpsychologie* 58, 2, 233–252.

[7] Burke, M., Marlow, C., and Lento, T. 2010. Social network activity and social well-being. In *Proceedings of the 28th international conference on Human factors in computing systems*. CHI '10. ACM Press, New York, 1909–1912,

[8] Byrne, B., Shavelson, R., and Muthén, B. 1989. Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin* 105, 3, 456–466.

[9] Cotten, S.R., Ford, G., Ford, S., and Hale, T.M. 2012. Internet use and depression among older adults. *Computers in Human Behavior* 28, 2, 496–499.

[10] Diener, E., Emmons, R.A., Larsen, R.J., and Griffin, S. 1985. The satisfaction with life scale. *Journal of Personality Assessment* 49, 1, 71–75.

[11] DiMaggio, P., Hargittai, E., Neuman, W.R., and Robinson, J.P. 2001. Social implications of the Internet. *Annual Review of Sociology* 27, 307–336.

[12] Ellison, N.B., Steinfield, C., and Lampe, C. 2007. The benefits of Facebook "Friends": Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication* 12, 4, 1143–1168.

[13] Garcia Jimenez, A., Lopez-Ayala-Lopez, M., and Gaona-Pisionero, C. 2012. A vision of uses and gratifications applied to the study of Internet use by adolescents. *Comunicacion Y Sociedad* 25, 2. 231–254.

[14] Gross, E.F., Juvonen, J., and Gable, S.L. 2002. Internet use and well-being in adolescence. *Journal of Social Issues* 58, 75–90.

[15] Hargittai, E. 2010. Digital na(t)ives? Variation in Internet skills and uses among members of the "Net Generation". *Sociological Inquiry* 80, 1, 92-113.

[16] Howard, P.E.N., Rainie, L., and Jones, S. 2001. Days and nights on the Internet: The impact of a diffusing technology. *The American Behavioral Scientist* 45, 383–404.

[17] Karl, K., Peluchette, J., and Schlaegel, C. 2010. Who's posting Facebook faux pas? A cross-cultural examination of personality differences. *International Journal of Selection and Assessment* 18, 2, 174-186.

[18] Katz, J.E., Rice, R.E., and Aspden, P. 2001. The Internet, 1995-2000: Access, civic involvement, and social interaction. *The American Behavioral Scientist* 45, 3, 405–419.

[19] Koku, E., Nazer, N., and Wellman, B. 2001. Netting scholars: Online and offline. *The American Behavioral Scientist* 44, 10, 1752–1774.

[20] Krasnova, H., and Veltri, N.F. 2011. Behind the curtains of privacy calculus on social networking sites: the study of Germany and the USA. In *10th international conference on Wirtschaftsinformatik* (Zurich, Switzerland) 891-900.

[21] Krasnova, H., Wenninger, H., Widjaja, T., and Buxmann, P. 2013. Envy on Facebook: A hidden threat to users' life satisfaction? In *11th International Conference on Wirtschaftsinformatik*, 1–16.

[22] Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V., and Crawford, A. 2002. Internet paradox revisited. *Journal of Social Issues* 58,1, 49-74.

[23] McKenna, A. 2011. *A Human Right to Participate in the Information Society*. New York: Hampton Press.

[24] Morgan, C. and Cotton, S.R. 2003. The relationship between Internet activities and depressive symptoms in a sample of college freshmen. *CyberPsychology & Behavior* 6, 2, 133–142.

[25] Mullen, M. 1995. Diagnosing measurement equivalence in crossnational research. *Journal of International Business Studies* 26,3, 573–596.

[26] Nalwa, K. 2003. Internet addiction in students: a cause of concern. *CyberPsychology & Behavior* 6,6, 653–656.

[27] Nie, N.H. 2001. Sociability, interpersonal relations, and the Internet: Reconciling conflicting findings. *The American Behavioral Scientist* 45, 3, 420–435.

[28] Nie, N.H. and Erbring, L. 2002. Internet and society: A preliminary report. *IT & Soc*iety 1,1, 275–283.

[29] Papacharissi, Z., and Rubin, A.M. 2000. Predictors of Internet Use. *Journal of Broadcasting & Electronic Media 44*,2, 175–196.

[30] Park, N., Kee, K., and Valenzuela, S .2009. Being immersed in social networking environment: Facebook groups, uses and gratifications, and social outcomes. *CyberPsychology & Behavior* 12, 6, 729–733.

[31] Paternoster, R., Brame, R., Mazerolle, P., and Piquero, A. 1998. Using the correct statistical test for the equality of regression coefficients. *Criminology* 36(4): 859–866.

[32] Robinson, J.P., Kestnbaum, M., Neustadtl, A., and Alvarez, A. 2000. Mass media use and social life among Internet users. *Social Science Computer R*eview 18, 4, 490–501.

[33] Shao, G .2009. Understanding the appeal of user-generated media: a uses and gratification perspective. *Internet Research* 19,1, 7–25.

[34] Song, I., Larose, R., Eastin, M.S., and Lin, C.A. 2004. Internet gratifications and Internet addiction: On the uses and abuses of new media. *CyberPsychology & Behavio*r 7, 4, 384–394.

[35] Steenkamp, J.B.E.M., and Baumgartner, H. 2000. On the use of structural equation models for marketing modeling. *International Journal of Research in Marketing* 17, 2-3, 195–202.

[36] Suphan, A., Feuls, M., and Fieseler, C. 2012. Social media's potential in improving the mental well-being of the unemployed. In *Exploring the Abyss of Inequalities* pp. 10-28. Berlin: Springer.

[37] Svennevig, M. 2000. Needs, not needs: researching technological change. *International Journal of Advertising 19*, 5, 645–663.

[38] Utz, S., and Beukeboom, C.J. 2011. The role of social network sites in romantic relationships: Effects on jealousy and relationship happiness. *Journal of Computer-Mediated Communication* 16, 4, 511–527.

[39] Van den Eijnden, R.J., Meerkerk, G.J., Vermulst, A.A., Spijkerman, R., and Engels, R.C. 2008. Online communication, compulsive Internet use, and psychosocial well-being among adolescents: A longitudinal study. *Developmental Psychology* 44, 3, 655–665.

[40] Wang, Z., Tchernev, J.M., and Solloway, T. 2012. A dynamic longitudinal examination of social media use, needs, and gratifications among college students. *Computers in Human Behavior 28*, 5, 1829–1839.

[41] Watson, D., Clark, L.A., and Tellegen, A. 1988. Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology* 54, 6, 1063–1070.

[42] Wellman, B. 2001. Physical place and cyberplace: The rise of personalized networking. *International Journal of Urban and Regional Research* 25, 2, 227–252.

[43] Whang, L.S.M., Lee, S., and Chang, G. 2003. Internet over-users' psychological profiles: a behavior sampling analysis on Internet addiction. *Cyberpsychology & Behavior* 6, 2, 143–150.

Appendix A

Construct	Items	Component						
		1	2	3	4	5	6	7
Involvement in social media [INVSM]	I feel comfortable when I am using *Name of social networking side*.	0.669						
	I can be myself when I am using *Name of social networking side.*	0.636						
	I feel appreciated by other users of *Name of social networking side.*	0.713						
	I don't feel lonely when I am using *Name of social networking side.*	0.657						
	Sometimes I can't stop using *Name of social networking side.*	0.509						
	I am proud of my friends in *Name of social networking side.*	0.796						
	It feels good to have these friends in *Name of social networking side.*	0.811						
	I can find support in *Name of social networking side.*	0.740						
	Name of social networking side is important to me.	0.730						
Positive emotional outcome online [EMOTOUT (POS)]	Please think about your use of *Name of the social networking side.* What did you feel afterwards? How likely were you to experience the following emotions?							
	joyful/fun		0.764					
	informed		0.529					
	satisfied		0.803					
	excited		0.765					
Negative emotional Outcome online [EMOTOUT (NEG)]	frustrated			0.848				
	angry			0.721				
	envious			0.504				
Involvement in real life activities [REALACT]	How often did you visit a friend or an acquaintance during the last week?				0.660			
	How often did you talk to a friend or an acquaintance on the phone during the last week?				0.500			
	How many hours do you usually go out with friends each week?				0.546			
Positive well-being in general [WBREAL (POS)]	How much of the time, during the last month have you .... ?							
	been excited					0.767		
	been happy					0.838		
	been enthusiastic					0.686		
	been joyful					0.793		
	felt calm and peaceful					0.550		
Negative well-being In general [WBREAL (NEG)]	How much of the time, during the last month have you .... ?							
	been sad						0.814	
	been upset						0.665	
	been unhappy						0.770	
	been distress						0.554	
	been depressed						0.827	
	felt downhearted and blue						0.806	
	felt so down in the dumps that nothing could cheer you up						0.677	
Perception of exclusion [EXCLU]	Sometimes, I am afraid of falling behind.							0.578
	Sometimes, I feel like other people have already given up on me.							0.755
	Sometimes, I feel like I do not belong to society.							0.761
	Sometimes, I feel useless.							0.854

Appendix B

Model (Constraints)	**M1 (**unconstrained)	**M2 (**Factor loading)	**M3 (**Intercepts)	**Criterion**
Value (Chi-squared)	1915.105	2398.682	2398.682	-
Degrees of Freedom (df)	1084	1140	1140	-
P-Value	0.0000	0.0000	0.0000	-
Chi-squared/ df	1.77	2.10	2.10	≤ 3
RMSEA	0.051	0.061	0.061	< 0.065
CFI	0.910	0.863	0.863	≥ 0.85
TLI	0.901	0.857	0.857	≥ 0.85