

Gothenburg Research Institute

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Sweden's largest Facebook study



AUTHORS

LEIF DENTI

ISAK BARBOPOULOS

IDA NILSSON

LINDA HOLMBERG

MAGDALENA THULIN

MALIN WENDEBLAD

LISA ANDÉN

EMELIE DAVIDSSON

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Gothenburg Research Institute

School of Business, Economics and Law

at University of Gothenburg

P.O. Box 600

SE-405 30 Göteborg

Tel: +46 (0)31-786 54 13

Fax: +46 (0)31-786 56 19

E-post: gri@gri.gu.se

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SWEDEN'S LARGEST FACEBOOK STUDY

POPULÄRVETENSKAPLIG SVENSK SAMMANFATTNING

Internets framväxt har gjort det enklare för människor att få utlopp för sina sociala behov. Facebook är den största webbsidan för socialt nätverkande med sina 845 miljoner medlemmar världen över. I Sverige närmar sig siffran 4,5 miljoner medlemmar. Således är ungefär halva Sveriges population medlemmar i Facebook. För att få ökad förståelse av de konsekvenser som Facebook har på sina svenska användare genomfördes under 2011 Sveriges största Facebook-studie. Vi hade två syften med studien. För det första ville vi förstå vilka användningsområden svenska Facebookanvändare anser är de mest centrala, vad som väljs att skriva om i statusuppdateringar, och bakomliggande orsaker till att uppdatera en status. För det andra ville vi undersöka om Facebook utövar någon slags psykologisk effekt, såsom om intensivt användande av Facebook har ett samband med låg självkänsla och lågt välmående.

Mera specifikt ville vi besvara följande frågeställningar:

1. Vad gör människor på Facebook och vilka användningsområden tenderar att vara viktigare än andra?
2. Hur förmedlar Facebookanvändare sin personlighet genom statusuppdateringar, samt vad väljer de att uppdatera om?
3. Vilka underliggande skäl är anledningen till att man uppdaterar sin status?
4. Vilka psykologiska effekter hör samman med högintensiv användning av Facebook, och då med utgångspunkt i självkänsla och välbefinnande i relation till Facebookanvändning?

Studien baseras på datainsamling på över 1000 personer, i åldrarna 14 till 73 år, från Sverige. Datainsamlingen genomfördes via en webb-baserad enkät mellan juni och september 2011.

Studien visar bland annat:

- + Nästan 85 procent av Facebook-användarna inkluderar Facebook i sin dagliga rutin och de flesta loggar in vanemässigt varje gång de startar datorn.
- + Nästan hälften av Facebook-användarna känner att de får svårt att hänga med utan Facebook och en fjärdedel tror att de skulle må dåligt om de inte loggade in på Facebook under en längre tid.
- + Svenska kvinnor är aktiva på Facebook i genomsnitt 81 min per dag och män omkring 64 min om dagen.

- + 36 procent av kvinnorna spenderar över hälften av varje online-timme på Facebook.
- + Lågutbildade och låginkomsttagare använder Facebook mer än genomsnittet. Inom dessa grupper visar studien att ju mer de använder Facebook desto sämre mår de.
- + Kvinnor som tillbringar mer tid på Facebook är mindre nöjda med sina liv.
- + Facebook-användarna berättar mest på Facebook om stora händelser, positiva företeelser och när man mår bra. Enbart 38 procent uppger att de delar med sig av negativa känslor eller företeelser på Facebook.
- + En tredjedel av männen uppger att de provocerar i statusuppdateringar och kommentarer på Facebook. Det är nästan dubbelt så många som bland kvinnorna.
- + Över två tredjedelar tittar gärna på andras bilder och omkring en fjärdedel besöker profiler som man inte känner eller vänners vänner.

Våra analyser visade att svenska kvinnor spenderar betydligt mer tid på Facebook jämfört med svenska män. Generellt sett användes Facebook för att underhålla sociala relationer, som att hålla kontakt med människor användarna inte träffar så ofta. Facebook är inget forum som väljs för att träffa nya människor, utan det är befintliga relationer som står i fokus. Kvinnor tenderar att vara mer engagerade och aktiva på Facebook än män. Anledningen till att kvinnor ägnar mer tid på Facebook grundar sig troligen i att kvinnor generellt är mer sociala och lägger mer tid på relationer med vänner. Istället för fikastunder, telefonsamtal och mejl har Facebook blivit ytterligare ett verktyg för att engagera sig i sina vänner.

Studien visar också att kvinnor som tillbringar mer tid på Facebook är mindre lyckliga och nöjda med sina liv, medan det bland män inte fanns ett självklart förhållande mellan välbefinnande och Facebook. Det här är troligtvis konsekvensen av att användare på Facebook presenterar sig på sitt mest fördelaktiga sätt och tenderar att sprida positiva nyheter om sig själv. När användarna jämför sina liv med andra kan det leda till uppfattningen att andra har mer framgångsrika karriärer, händelserika liv och trevligare relationer. Det kan leda till ett större missnöje med sitt eget liv.

ABSTRACT

The emergence of the Internet has made it easier for people to socially interact than ever before. Today, the most popular channel is Facebook with over 845 million users world wide. In Sweden, the number of users amount to approximately half of the population. We had two aims with this study. First, we investigate which areas of Facebook usage that Swedish Facebook users consider more important vis-a-vis less important. We were also interested in how users convey their persona through their status updates, including what they status update about, and the underlying reasons for updating one's status. Second, we investigate what psychological effects Facebook may induce. More specifically, we look at the psychological constructs self-esteem and well-being in relation to Facebook usage. We surveyed 1011 Swedish Facebook users with our questionnaires, measuring respondents' Facebook usage patterns, well-being and self-esteem. Our analyses revealed that on average Swedish women spend 81 minutes per day on Facebook, whereas Swedish men are logged on to the site about 64 minutes per day. Generally, Facebook is used for social network maintenance, such as maintaining contact with people one doesn't meet so often. However, Facebook is seldom used for meeting new people.

Another finding is that Facebook users generally tend to update their status about positive events, major events and when they are feeling well, rather than negative events and when they are feeling bad. Women seem to be more engaged and active on Facebook than men, agreeing that a vast number of uses is significantly more important. Furthermore, women tend to write more about their thoughts and feelings, whereas twice as many men state that they provoke others on Facebook. Pertaining to Facebook's psychological effects, the amount of time spent on Facebook had no relationship with self-esteem when controlling for gender, age, education and income. This result runs counter to previous findings. However, women who spend more time on Facebook report feeling less happy and feel less content with their lives. For men, this relationship was not evident. The study teaches that Facebook is used as a tool for affiliating with friends and family, as well as a personal showcase, where users show their positive sides. Herein lies also a danger. When Facebook users compare their own lives with others' seemingly more successful careers and happy relationships, they may feel that their own lives are less successful in comparison.

TABLE OF CONTENTS

INTRODUCTION	8
FACEBOOK TODAY	8
A SOCIAL PERSPECTIVE ON BEING HUMAN	8
AFFILIATION, A BASIC HUMAN NEED	8
THE INTERNET	8
AIMS OF THIS STUDY	8
BEING SOCIAL ON FACEBOOK.....	9
INDIVIDUAL IDENTITY AND SOCIAL COMPARISON	9
SOCIAL COMPARISON ON FACEBOOK.....	9
SELF-PRESENTATION ON FACEBOOK	10
WHEN SOCIAL COMPARISON MAY MISFIRE ON FACEBOOK.....	10
THE EFFECT ON INDIVIDUALS' SELF-ESTEEM AND WELL-BEING	10
RESEARCH QUESTIONS	11
RESEARCH QUESTION 1.....	11
RESEARCH QUESTION 2.....	11
PROCEDURE	12
PARTICIPANTS.....	12
MATERIALS	12
PRESENCE ON FACEBOOK	12
USAGE ON FACEBOOK.....	12
PSYCHOMETRICS.....	13
BACKGROUND INFORMATION	13
METHODS OF ANALYSIS	14
DATA PREPARATION AND SCREENING	14
RESEARCH QUESTION 1.....	14
RESEARCH QUESTION 2.....	14
RESEARCH QUESTION 1: FACEBOOK USAGE	15
HOW MUCH DO PEOPLE USE FACEBOOK?.....	15
GENDER AND FACEBOOK USAGE	16
AGE AND FACEBOOK USAGE	16
WHAT ARE THE MOST IMPORTANT USES OF FACEBOOK?	16
GENDER AND IMPORTANT USES OF FACEBOOK.....	18
AGE AND IMPORTANT USES OF FACEBOOK.....	18
WHAT ARE STATUS UPDATES TYPICALLY ABOUT?.....	20
GENDER AND STATUS UPDATES	21
AGES AND STATUS UPDATES.....	21
WHAT IS THE PURPOSE OF USERS STATUS UPDATES.....	22
GENDER AND PURPOSE OF STATUS UPDATES	22
RESEARCH QUESTION 2: THE INFLUENCE OF FACEBOOK USAGE ON SELF-ESTEEM AND WELL-BEING	23
FACEBOOK USAGE AND SELF-ESTEEM	23
SOCIAL COMPARISON AND SELF-ESTEEM	23
FACEBOOK USAGE AND WELL-BEING.....	23
GENDER DIFFERENCES	23
EDUCATIONAL DIFFERENCES	23
INCOME DIFFERENCES.....	23
WHO USES FACEBOOK THE MOST?	23
SOCIAL COMPARISON AND WELL-BEING	23
DISCUSSION	24
HOW FACEBOOK IS USED	24
FACEBOOK USAGE AND SOCIAL COMPARISON	24
GENDER DIFFERENCES IN FACEBOOK USAGE	25
AGES DIFFERENCES IN FACEBOOK USAGE.....	25
FACEBOOK USAGE AND WELL-BEING.....	26
WHY IS THE RELATIONSHIP SALIENT ONLY FOR WOMEN?	26
WHAT ABOUT THE REVERSE?.....	26
FACEBOOK USAGE AND SELF-ESTEEM	26
WHY IS FACEBOOK USAGE RELATED TO WELL-BEING BUT NOT SELF-ESEEM?	27
CONCLUSIONS	28
LIMITATIONS OF THIS STUDY	28
FUTURE RESEARCH	29
REFERENCES	30
ABOUT THE AUTHORS	31
APPENDIX A – TABLES	32

INTRODUCTION

FACEBOOK TODAY

Social media is becoming a more and more important part of our lives. Today, the most popular channel is Facebook with over 845 million active users. Founded in 2004 by Mark Zuckerberg, Facebook was originally intended as a digital student catalogue, making it easier for students to expand their social network.¹

Facebook has become a personal showcase where users share whatever goes on in their life. The Facebook platform allows users to spread news about themselves and their pictures and films. They can get in touch with old friends, initiate group discussions and even directly interact with companies and public organizations.

In modern society, Facebook has also become a tool for opinion forming and propaganda. There are now numerous examples of people with various interests that have found each other via Facebook and, united, managed to influence the world. Facebook was, for instance, a significant instrument during the recent revolutions in both Tunisia and Egypt, giving activists and viewers the opportunity to communicate, coordinate and document the occurrence.²

Despite its size, Facebook is still expanding rapidly. The number of Swedish users has increased by two million over the past two years, and today almost one in two Swedes are active members. This adds up to a total of 4.5 million Swedish users. 55 percent are male and 45 percent are female. The largest group is 25–34 years old, representing almost one million members.³ However, during the last six months 57–64 year-olds is the group that has grown the most.⁴

A SOCIAL PERSPECTIVE ON BEING HUMAN

Human beings are born social and are constantly socialized through interacting and communicating with others. We pursue to connect with people and without affiliation with others we find it difficult to derive a deeper meaning from our lives.⁵

AFFILIATION, A BASIC HUMAN NEED

Being social beings, we interact with friends, family, colleagues and even strangers. According to Abraham Maslow's well-known hierarchical theory of basic human needs, affiliation is a basic psychological need that emerges the instant the physiological and primary needs are met. We affiliate because of four underlying psychological reasons;

- i. to receive emotional support
- ii. to obtain positive stimuli
- iii. to receive attention
- iv. to compare ourselves to others via a process called social comparison.⁶

Significant research indicates that the need of affiliation is powerful, fundamental and with an extremely pervasive motivation for human beings. Research has also shown that maintaining positive relationships is an important factor for satisfaction with life.⁷

THE INTERNET

The emergence of the Internet has made it easier for people to interact with each other now than ever before. There are fewer barriers for communication today and the boundaries between local and global are gone. Thus, social interaction has increased as a function of greater accessibility to the outside world.⁸ Yet, the current field of research yields relatively few studies that represent the psychological effects of social network use.⁹

AIMS OF THIS STUDY

Since Facebook is the largest social network we believe that it is important to investigate those effects. In this report we aim to answer two questions related to Facebook usage and the corresponding psychological effects. First, we aim to investigate which areas of Facebook usage that are considered more important vis-a-vis less important. We are also interested in how Facebook users convey their persona through their status updates, including what they status update about, and the underlying reasons for updating one's status. Second, we

¹ Phillips, S. (2007). A brief history of Facebook. The Guardian, viewed February 2 2012, <http://www.guardian.co.uk/technology/2007/jul/25/media.newmedia#history-link-box>

² Al-Reufeye, S. (2011). Facebook i revolutionerna - En studie om användningen av Facebook i revolutionerna i Tunisien och Egypten. Karlstad: University of Karlstad

³ Socialbakers (2012). Viewed February 2 2012, <http://www.socialbakers.com/facebook-statistics/sweden>.

⁴ Sundén, S (2011). Facebook Sverige Statistik 2011. Viewed February 5 2012, <http://www.joinsimon.se/facebook-statistik-2011/>

⁵ Nilsson, B. (2006). Samspel i grupp. Lund: Studentlitteratur

⁶ Passer, M., Smith, R., Holt, N., Bremner, A., Sutherland, E., & Vliek, M. (2008). Psychology, the science of mind and behaviour. 1st European ed. London: McGraw Hill Higher Education

⁷ ibid.

⁸ Giddens, A. (2006). Sociology, 5th ed. Politer Press.

⁹ Gosling, S. D. (2011). Manifestations of personality in online social networks: Self-reported Facebook-related behaviors and observable profile information. *Cyberpsychology, Behavior and Social Networking*, 14, 483-487.

aim to investigate what psychological effects Facebook may induce. More specifically, we look at the psychological constructs self-esteem and well being in relation to Facebook usage.

BEING SOCIAL ON FACEBOOK

On Facebook, users can chat, send “pokes” (a feature used to attract the attention from another user, although nobody knows what a “poke” really means), “like” each others pictures and status updates (signified by a thumbs up sign), and publish pictures and status updates. Facebook users can also write on friends walls and send personal messages. Furthermore, users can “check in” to different places depending on where they are located, sending a virtual “I was here” message. Altogether, communication on Facebook between users is more or less transparent and constantly accessible – anyone can contact a user or find out what he or she are doing at any time and vice versa.

Recent research has shown that Facebook users’ main purpose for using Facebook is to be aware of activities in their social network.¹⁰ Another study found that the most prominent habits were status updating, connecting with friends and family, uploading content such as pictures, and “social network surfing” – i.e. virtual people watching¹¹. Thus, bearing in mind Facebook’s high membership, we conclude that Facebook offers a platform that most effectively serves peoples’ fundamental social needs, albeit in a slightly different way compared to offline life.

INDIVIDUAL IDENTITY AND SOCIAL COMPARISON

Some influential theorists even claim that social interaction is so fundamental that we become human beings first when we interact with other people.¹² What we develop in these interactions, among other things, is our individual identity – our sense of ourselves.

Our identity consists of different components. For instance,

self-perception refers to the image we have of ourselves. Self-esteem is the assessment of oneself’s worth, and self-confidence is the extent we believe in our own abilities.

To an extent, other people are our mirrors in which we continuously reflect ourselves. We have a ongoing need of acquiring information about ourselves in order to answer underlying questions about our identity. For example, “Am I a cool person?” (self-perception), “Am I a successful person?” (self-esteem) and “Am I a capable person?” (self-confidence).

To address these questions, we need information about others. To obtain this information, we observe the actions of other people and subsequently assess where we stand on a continuum of skills, abilities, and so forth, compared to others. For instance, let’s say a person runs 100 meters in 13 seconds flat. If this person is a hermit, living all by him- or herself without human contact, it is virtually impossible to know if this is fast or slow, unless the person compares the time to someone else who runs the same distance.

Extending this example, it is clear that in order to gauge where we stand on a multitude of skills, abilities, traits, and so forth, including “coolness”, “success”, and “capability”, we need to constantly compare ourselves to others. According to Suls, Martin and Wheeler, “social comparison consists of comparing oneself with others in order to evaluate or to enhance some aspects of the self”.¹³

SOCIAL COMPARISON ON FACEBOOK

Facebook and other related social networking sites offers an excellent and never before seen arena for this comparison.

First, through these sites, users have access to more people to compare themselves to than ever before in history. The average Facebook user has around 130 friends according to statistics from Facebook in February, 2012.

Second, the depth of information is greater than ever before.

¹⁰ Quan-Haase, A., & Young, A. L. (2010). Uses and gratifications of social media: A comparison of Facebook and instant messaging. *Bulletin of Science Technology & Society*, 30, 350-361.

¹¹ Joinson, A. N. (2008). ‘Looking at’, ‘Looking up’ or ‘Keeping up with’ people? Motives and uses of Facebook. Paper presented at the 2008 proceedings of the twenty-sixth annual SIGCHI conference on human factors in computing systems.

¹² Nilsson, 2006, op. cit.

¹³ Suls, J., Martin, R., & Wheeler, L. (2002). Social comparison: Why, with whom, and with what effect? *Current Directions in Psychological Science*, 11, 159–163, p. 159.

Through pictures, status updates, and personal information Facebook users can infer information about other people such as work, family, marital status, habits, hobbies and vacation preferences. This also allows for drawing crude inferences about more psychological phenomena, such as peoples' happiness and success.

SELF-PRESENTATION ON FACEBOOK

However, the information on Facebook may be biased. People are often interested in presenting themselves in a more positive manner than may be the reality.¹⁴ This happens all the time in the real world. At the work interview, we wish to convey an image of ourselves as being ambitious and hard working, and at the lunch table with our colleagues, we wish to convey an image of having interesting lives when asked the question "what did you do this weekend?".

People do this for a number of reasons. First, we may have conscious or unconscious agendas or goals with the kind of information we present about ourselves. For instance, people who are single and are searching for a partner may wish to convey an image of being funny, smart, interesting, good looking or otherwise "dateable". A person in search of a job or career opportunities may wish to convey an image of being successful, knowledgeable, capable, and so forth. Second, social norms and rules in the social situation may dictate that we simply want to avoid to sound negative or pessimistic, because if we come across as too negative, fewer people may want to interact with us. Third, given that people are engaged in a number of events each day, it is perhaps more likely that an event more "worthy" to report is being reported (e.g. attended the opening of the new/hip restaurant) than events less worthy to report (e.g. ate a sandwich).

It is plausible that these self-presentation biases are present on Facebook.¹⁵ On Facebook, people may choose which parts of their lives to present to others. It is likely, from the reasons explained above, that people choose to present those parts of their lives that are a bit more extravagant, funny, interesting

and so forth, in order to come across as a person that does extravagant, funny and interesting things.¹⁶

WHEN SOCIAL COMPARISON MAY MISFIRE ON FACEBOOK

When the information on Facebook is biased towards the positive end of the positive-negative continuum, i.e. when people are seemingly more extravagant, interesting and successful – the social comparison process may produce adverse effects when individuals' own (moderately interesting, quite mundane) lives are being compared to the lives of their Facebook friends. From this skewed comparison, individuals may falsely infer that they are living less interesting lives, and that they are less successful than what may be the case.

THE EFFECT ON INDIVIDUALS' SELF-ESTEEM AND WELL-BEING

This process of skewed comparison with a biased source of information may in turn impact Facebook users self-esteem and how they feel. To exemplify, people might ask themselves questions such as "Why am I sitting here while my friends are visiting expensive restaurants?", "Why aren't my spouse and I going to New York for a shopping weekend?" – these activities are being reported because it is more interesting to report such activities than mundane everyday events. Thus, Facebook users who engage themselves in social comparison may feel that they are worth less than other people and consequently feel worse when they think that their own lives don't measure up to the seemingly happier lives of their Facebook friends.

14 Goffman, E. (1959). *The presentation of self in everyday life*. New York: Anchor Books.

15 Mehdizadeh, S. (2010). Self-Presentation 2.0: Narcissism and self-esteem on Facebook. *Cyberpsychology, Behavior and Social Networking*, 13, 357–364.

16 Peluchette, J., & Karl, K. (2010). Examining students' intended image on Facebook: "What were they thinking?!" *Journal of Education for Business*, 85, 30–37.

RESEARCH QUESTIONS

In this report, we aim to address two main research questions.

RESEARCH QUESTION 1

First, because of Facebook's overwhelming popularity and day-to-day usage, we wanted to investigate the most important uses of Facebook. Our first research question pertains to how much and for what reasons Facebook is used, both generally and across genders and age groups. More specifically, we looked at how much Swedish Facebook users use Facebook, what users consider to be the most important uses of Facebook, what users usually write status updates about, and the main underlying reasons for writing status updates.

RESEARCH QUESTION 2

For this research question, we wanted to investigate potential relationships between Facebook usage (i.e. time spent on Facebook) and social comparison behavior on self-esteem and subjective well-being. Our expectations were as follows:

First, we expected a negative relationship between Facebook usage and self-esteem and well-being, respectively, in that higher Facebook usage is related to lower self-esteem and well-being.

Second, we expected a negative relationship between social comparison behavior and self-esteem and well-being, respectively, in that more frequent social comparison behavior is related to lower self-esteem and well-being.

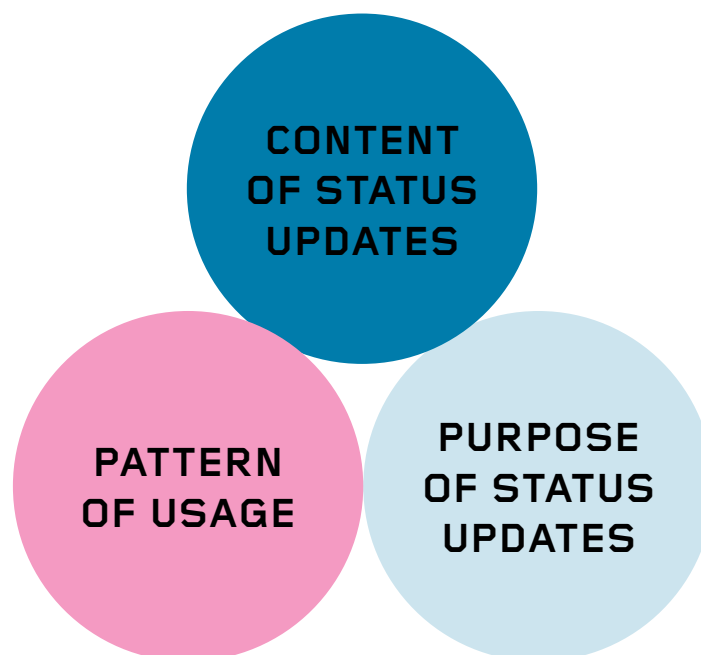


Figure 1. Our first research question.

PROCEDURE

On June 10, 2011 we created an event on the social network site Facebook. Participants were invited from the friend networks of seven members of the research team. The event was used both to keep participants informed of the progression of the survey, and as a link between the participants and the research team. The participants attending the event were also asked to invite their own friends and acquaintances, for example by writing status updates, e-mails, blogs, on twitter, and so on. Finally, when the questionnaire was distributed, the event was used as a distribution channel, and event members were asked to spread the link to the questionnaire to their friends and acquaintances. Everyone who took the questionnaire was also encouraged to spread the questionnaire link to their friends and audiences. This led to a “snowball effect”, where the initial 601 event members grew to over one thousand respondents. The event was active the four weeks prior to the distribution of the questionnaire, as well as during the six weeks that the questionnaire was kept open. We are therefore confident that even casual Facebook users would have had plenty of opportunity to take note of the questionnaire and answer it.

PARTICIPANTS

The sample consisted of 1011 participants. Out of these, 335 were men (33.1 %) and 676 were women (66.9 %). The average age was 32.6 years (men = 33.0 years, women = 32.4 years). Three age groups were created with approximately 33.3% of the participants in each group; 36.2 percent were aged 14–26, 30.6 percent were aged 27–35, and 33.2 percent were 36 years or older. In regard to education, 49.4 percent had Swedish gymnasium degrees or less, 49.5 percent had bachelor's, master's degrees or equivalent, and 1.1 percent had doctoral degrees. 29.3 percent stated that they were students, 70.7 percent that they had part time or full time employment and 7.8 percent that they were unemployed. Some overlap is present in this variable, i.e. a person can be

both a student and a part time worker. On average, participants have had a Facebook account for 3.6 years. The average number of Facebook friends was 312 (men = 343, women = 297).

MATERIALS

The web-based questionnaire had four sections:

- i. Presence on Facebook
- ii. usage of Facebook
- iii. psychometric measures
- iv. background information

PRESENCE ON FACEBOOK

In the first section of the questionnaire, respondents answered questions about their presence on Facebook, including how many Facebook friends they have, how many minutes they spend on Facebook a regular day, how large part of an hour spent on the Internet was spent on Facebook, as well as how many times they log into Facebook on a regular day.

USAGE OF FACEBOOK

In the second section of the questionnaire, respondents answered questions regarding their usage of Facebook. Eight items about habitual Facebook usage were adapted from the Self-Report Habit Index (e.g. “I often begin logging in to Facebook before I realize I do it”)¹⁷. Seventeen items were adapted from two studies on Facebook usage, one study by Joinson¹⁸, and the other by Quan-Haase and Young¹⁹. Examples of items are “Find out what old friends are doing today” and “Write status updates”. The respondents were to rate the importance of each of these uses on a 6-point scale ranging from 0 (Not at all important) to 5 (Very important). Additionally, 8 items were created to assess to what degree the respondents write status updates about different subjects, for example “Everyday events” and “Major events in my life”, these were rated on a 6-grade scale ranging from 0 (Not

17 Verplanken, B., & Orbell, S. (2003). Reflections of past behavior: A self-report index of habit strength. *Journal of Applied Social Psychology*, 33, 1313–1330.

18 Joinson, 2008, op. cit.

19 Quan-Haase & Young, 2010, op. cit.

20 Joseph, S., Linley, P.A., Harwood, J., Lewis, C.A., & McCollam, P. (2004). Rapid assessment of well-being: The Short Depression-Happiness Scale (SDHS). *Psychology and Psychotherapy: Theory, Research and Practice*, 77, 463–478.

21 Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

PROCEDURE

at all) to 5 (In a very high degree). Last, 9 items assessed the purpose of the status updates, rated on a 6-point scale ranging from 0 (Not true at all) to 5 (Completely true). The 8-item and 9-item scales were created based on discussions within the group of authors.

PSYCHOMETRICS

In the third section of the questionnaire, respondents answered six questions about subjective well-being and eight about self-esteem. Well-being was assessed using the Short Depression-Happiness Scale (SDHS; e.g. "The conditions of my life are excellent")²⁰ and self-esteem was assessed using the Rosenberg Self-Esteem Scale (e.g. "I feel that I have a number of good qualities")²¹. Both of these scales were rated on 6-grade scales, ranging from 0 (Not at all true) to 5 (Completely true).

BACKGROUND INFORMATION

Last, background information was assessed, including gender, age, education, income level, marital status, and employment.

METHODS OF ANALYSIS

DATA PREPARATION AND SCREENING

First, we screened the data for cases that could be considered outliers. Four participants were excluded from the sample because they had entered unrealistic figures (e.g. 10^{35}) in the following items: “Roughly how many minutes do you spend on Facebook a normal day?” and “Roughly how many times do you log on to Facebook a normal day?”. For the measures ‘well being’ and ‘self esteem’, we recoded the items that were reverse coded and calculated mean weighted indexes for the measures.

RESEARCH QUESTION 1

To analyze the data for research question 1, we used Pearson’s chi-squared test to assess differences between genders and age groups on various variables that were designed to measure participants;

- i. Facebook usage
- ii. status update content
- iii. underlying purpose for writing status updates.

For this report, we chose to convert all scales to 2-grade nominal scales (e.g. agree vs. disagree). Increments 0–2 were converted to the first value, and increments 3–5 were converted to the second. We judged that the gain in terms of ease of presentation was more important than keeping the original scale (with its higher power) at this point. Detailed results from Pearson’s chi-squared test on the nominal scale are presented in tables 1–4, appendix A.

RESEARCH QUESTION 2

To analyze the data for research question 2, we conducted a series of hierarchical multiple regression analyses. The criterion variables were i. self-esteem and ii. well-being. The predictor variables were i. “Roughly how many minutes do you spend on Facebook a normal day?” and ii. “I usually compare my profile to others, for example how many Facebook friends I have”. Thus, because we had two predictor variables and two criterion variables, we conducted four analyses in total. In each analysis we controlled for i. gender, ii. age, iii. educational differences and iv. differences in annual income.

The analysis strategy was as follows. For each criterion variable, we entered either of the two predictor variables in a first step in the hierarchical multiple regression analysis. In a second step, we entered the control variables. If a relationship between the predictor variable (e.g. Facebook usage) and the criterion variable (e.g. well-being) was significant after controlling for our control variables, we then proceeded to conduct subgroup analyses (gender, age, education, income) to assess where the relationship is present. Detailed results from these analyses are presented in tables 5–9, appendix A.

Means, standard deviations and inter-correlations for the study variables (Facebook usage, social comparison behavior, self-esteem, well-being, gender, age, education, and income) are presented in table 10, appendix A.

RESEARCH QUESTION 1: FACEBOOK USAGE

HOW MUCH DO PEOPLE USE FACEBOOK?

On average, the respondents log on to Facebook 6.1 times a day and spend a total of 75.2 minutes logged in. About one third of the 1011 respondents answered that they spend fifty percent or more of their daily online-time on Facebook (29.2% agreed to this statement).

Facebook is a daily routine for 84 percent of Swedish users. As many as 84.0 percent of the respondents agreed that logging on to Facebook belong to their daily routine, and 69.7 percent agreed that they log on to Facebook every time they start their computer or their web browser. Facebook usage seems to be habitual to a large portion of the respondents. Short of half agreed that they sometimes log on to Facebook when they had intended to do something else (43.3%), 42.2 percent that they sometimes log on to Facebook without thinking about it, and 29.8 percent that they often start to log in to Facebook before they realize that they are doing it. Furthermore, 43.3 percent feel they do not keep up if they do not log on to Facebook for a long time, and 25.8 percent would feel ill at ease if they did not log on to Facebook for a long time.

75.2 MINUTES:
THE AVERAGE TIME SPENT ON FACEBOOK EVERY DAY.

6.1 TIMES:
THE AVERAGE NUMBER OF LOGINS TO FACEBOOK EVERY DAY.

70%
LOG ON TO FACEBOOK EVERY TIME THEY START THEIR COMPUTER.

25.8%
FEEL ILL AT EASE WHEN AWAY FROM FACEBOOK.

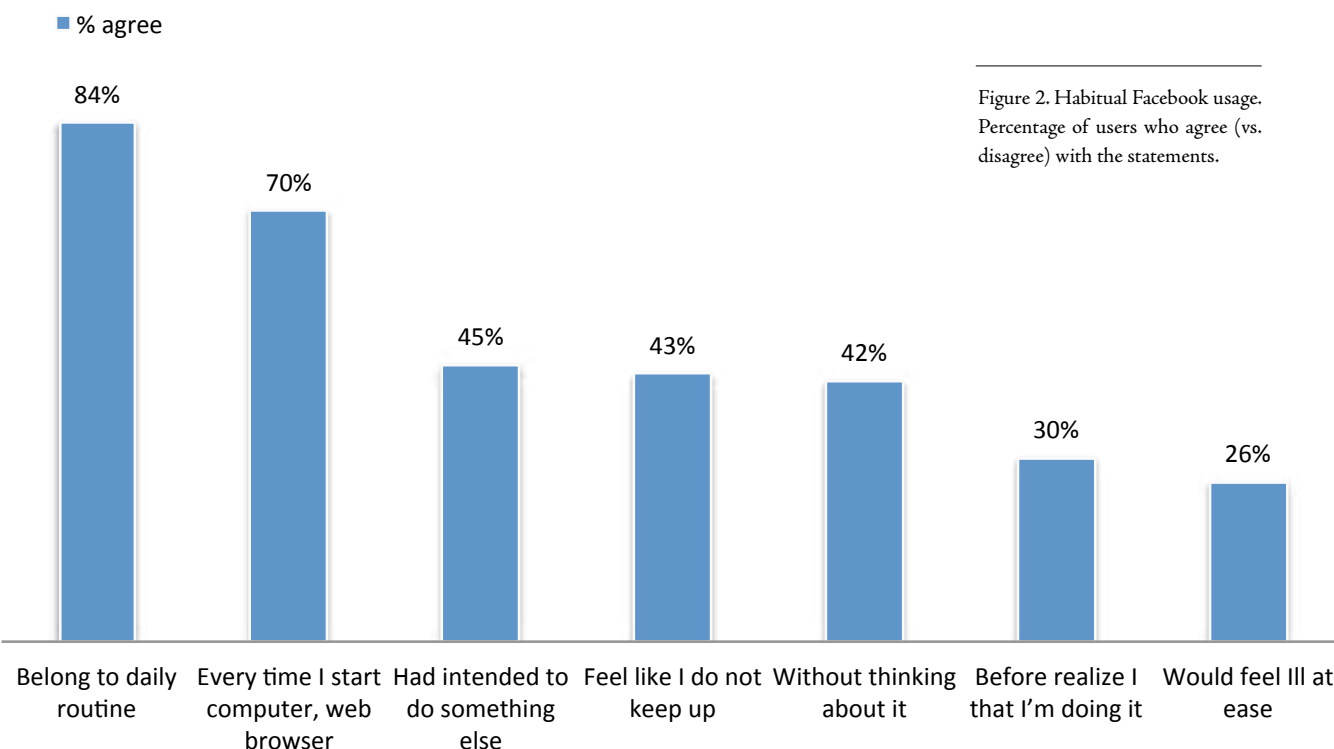


Figure 2. Habitual Facebook usage. Percentage of users who agree (vs. disagree) with the statements.

GENDER AND FACEBOOK USAGE

Although women and men do not differ significantly in the number of times they log on to Facebook each day (6.1 times for women vs. 6.2 times for men) or in their agreement that logging on to Facebook belong to their daily routine (84.8% for women vs. 82.4% for men), females spend 17 more minutes on Facebook than males (81 minutes for women vs. 64 minutes for men). And 35.7 percent of women agree that they spend 50 percent or more of their online-time on Facebook, compared to only 16.1 percent of men.

Facebook usage also seems to be more habitual for women respondents, as more women than men agree that they log on to Facebook every time they start their computer or their web browser (74.6% of women vs. 60.0% of men). Sometimes they log on to Facebook when they had intended to do something else (49.6% vs. 34.9%), sometimes they log on to Facebook without thinking about it (45.3% vs. 33.1%), and that they often start to log in to Facebook before they realize that they are doing it (33.7% vs. 21.8%). More women feel like they would not keep up if they did not log on to Facebook for a long time (51.2% vs. 27.5%) and that this would make them feel ill at ease (30.0% vs. 17.3%). Women and younger age groups seem to be more engaged and active on Facebook than men and older users.

AGE AND FACEBOOK USAGE

The age groups differ in how much they use Facebook. Respondents between ages 14–26 spend 82.5 minutes on average on Facebook, ages 27–35 spend 72.7 minutes, and ages 36–73 spend 69.2 minutes.

Furthermore, 36.0 percent of the youngest age group said they spend 50 percent or more online-time on Facebook, whereas 25.2 percent and 25.7 percent of the middle and oldest age group agreed to this statement respectively. Younger respondents seem to use Facebook in a more habitual manner than older respondents. More members of the younger age group agreed that they log on to Facebook every time they start their computer or their web browser (81.1%; 73.5%; 53.7% for the young, middle and older age group respectively), sometimes log on to Facebook when they had intended to do something else (61.4%; 45.3%; 25.7%), sometimes log on to Facebook without thinking about it (58.4%; 43.4%; 20.3%), and that they often start to log in to Facebook before they realize that they are doing it (49.3%; 30.1%; 14.3%). Younger respondents were also more likely to feel like they would not keep up if they did not log on to

81 MINUTES:

THE TIME SWEDISH WOMEN SPEND ON FACEBOOK EVERY DAY.

64 MINUTES:

THE TIME SWEDISH MEN SPEND ON FACEBOOK EVERY DAY.

1/3

OF WOMEN USERS WOULD FEEL ILL AT EASE IF THEY DID NOT LOG ON TO FACEBOOK FOR A LONG TIME.

YOUNG PEOPLE

SPEND THE MOST TIME ON FACEBOOK. AGES 14–26 SPEND 82.5 MINUTES PER DAY.

Facebook for a long time (47.4%; 44.3%; 37.9%) and that this would make them feel ill at ease (29.9%; 24.9%; 22.1%). A larger proportion of the youngest age group and the middle age group agreed that logging on to Facebook belong to their daily routine, compared to the oldest age group (86.3%; 89.0%; 76.7% of the youngest, middle and oldest age groups respectively). See table 1 in appendix A for an overview of Facebook usage.

WHAT ARE THE MOST IMPORTANT USES OF FACEBOOK?

Most respondents seem to use Facebook to maintain their existing social contacts and networks. A large majority of the respondents agreed that an important use of Facebook is to maintain contact with people one does not meet so often (88.1%), as well as to maintain ones contacts in general (82.5%).

Other social applications of Facebook were also generally agreed upon as important, for example to showing others encouragement (69.1%) and letting other people know they

RESEARCH QUESTION 1: FACEBOOK USAGE

care about them (65.8%). Furthermore, many respondents use Facebook as a way to stay updated on the lives of their friends (old and new). For example, to look at other peoples photos (63.3%), find out what old friends are doing now (62.7%), and visit the profiles of friends (49.6%).

Escapism was generally less agreed upon as an important use of Facebook, as relatively few respondents thought that passing time (55.9%), getting away from things one ought to do (27.0%), as well as getting away from responsibilities and pressure (21.9%) was an important use of Facebook. Getting to know more people (32.5%), and visit profiles of people

one does not know (19.6%), were also less important to a majority of respondents. The least important use of Facebook was to “tag” people in photos (8.2%).

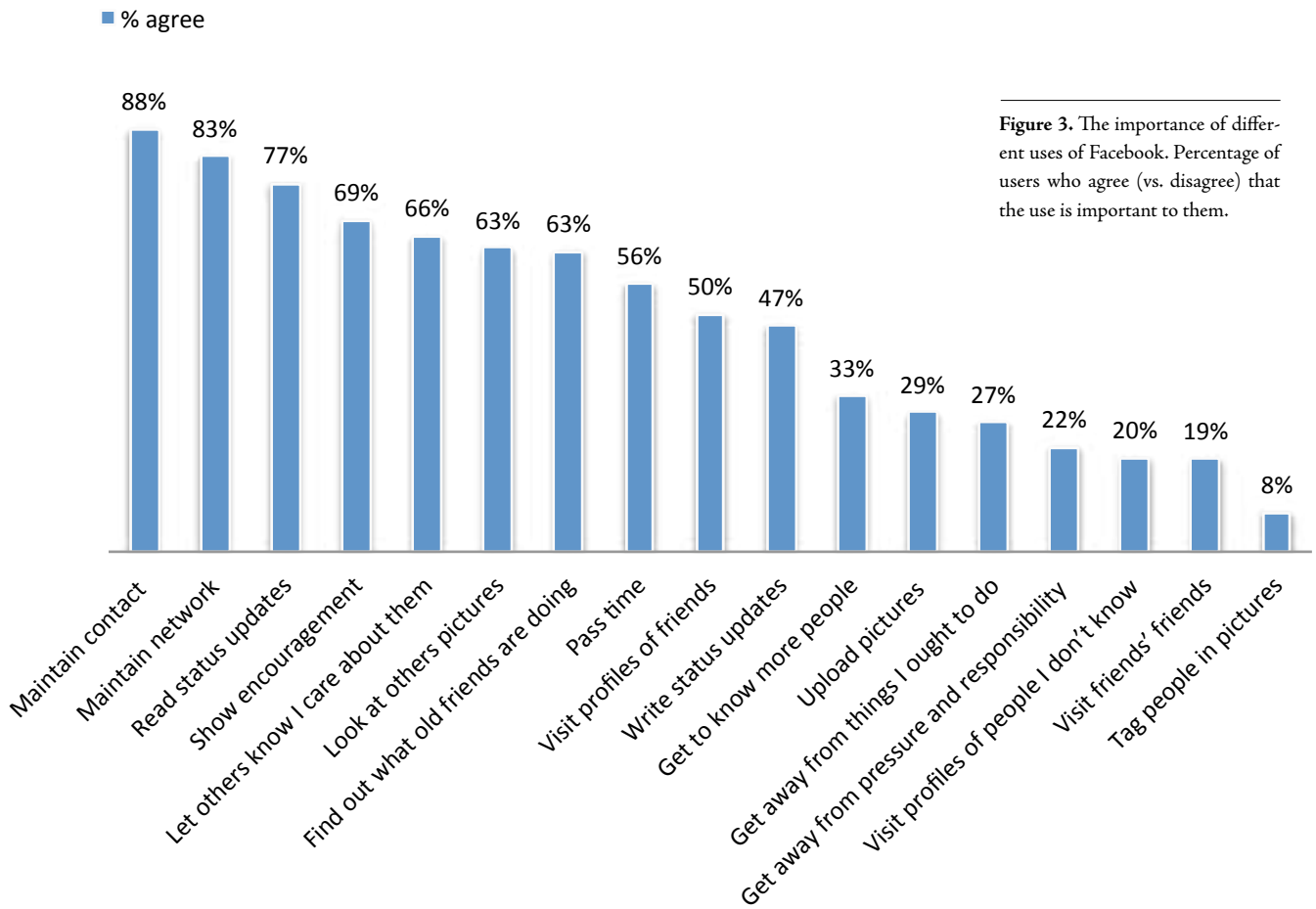


Figure 3. The importance of different uses of Facebook. Percentage of users who agree (vs. disagree) that the use is important to them.

GENDER AND IMPORTANT USES OF FACEBOOK

Men and women differ significantly in regard to what they think are important uses of Facebook. Generally, more women agreed that any given use of Facebook was important when compared to men. Social applications of Facebook were typically more important for women than for men, for example letting other people know they care about them (71.9% vs. 53.4%), visiting the profiles of friends (55.8% vs. 37%), and showing others encouragement (74.6% vs. 58.2%). Men and women did not differ in respect to getting to know more people, visit profiles of people one does not know and “tag” people in photos.

AGE AND IMPORTANT USES OF FACEBOOK

The different age groups were generally in agreement over how important the social applications of Facebook were, for

OLDER
FACEBOOK USERS USE
FACEBOOK TO GET TO KNOW
MORE PEOPLE.

67.1%
OF YOUNG USERS USE
FACEBOOK TO PASS TIME.

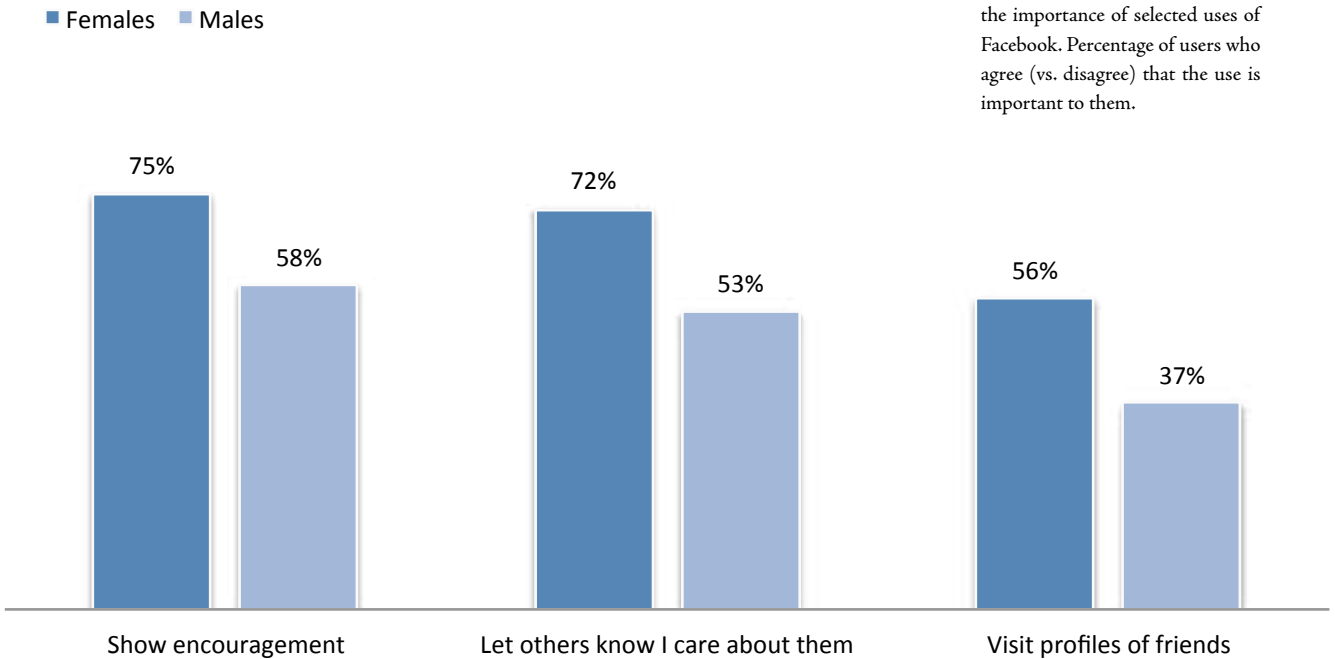


Figure 4. Gender differences in the importance of selected uses of Facebook. Percentage of users who agree (vs. disagree) that the use is important to them.

RESEARCH QUESTION 1: FACEBOOK USAGE

example maintain contact with people one does not meet so often and to maintain ones contacts in general. However, there were some differences, for example, older respondents thought it was more important to use Facebook as a means to getting to know more people, letting others know they care about them, and to show encouragement.

Younger respondents generally thought that passing time and to get away from things one should do was a more important use of Facebook than older respondents did.

They were also more interested in visiting friends profiles and profiles of people one does not know. See table 2 in appendix A for a detailed overview of the important/unimportant uses of Facebook.

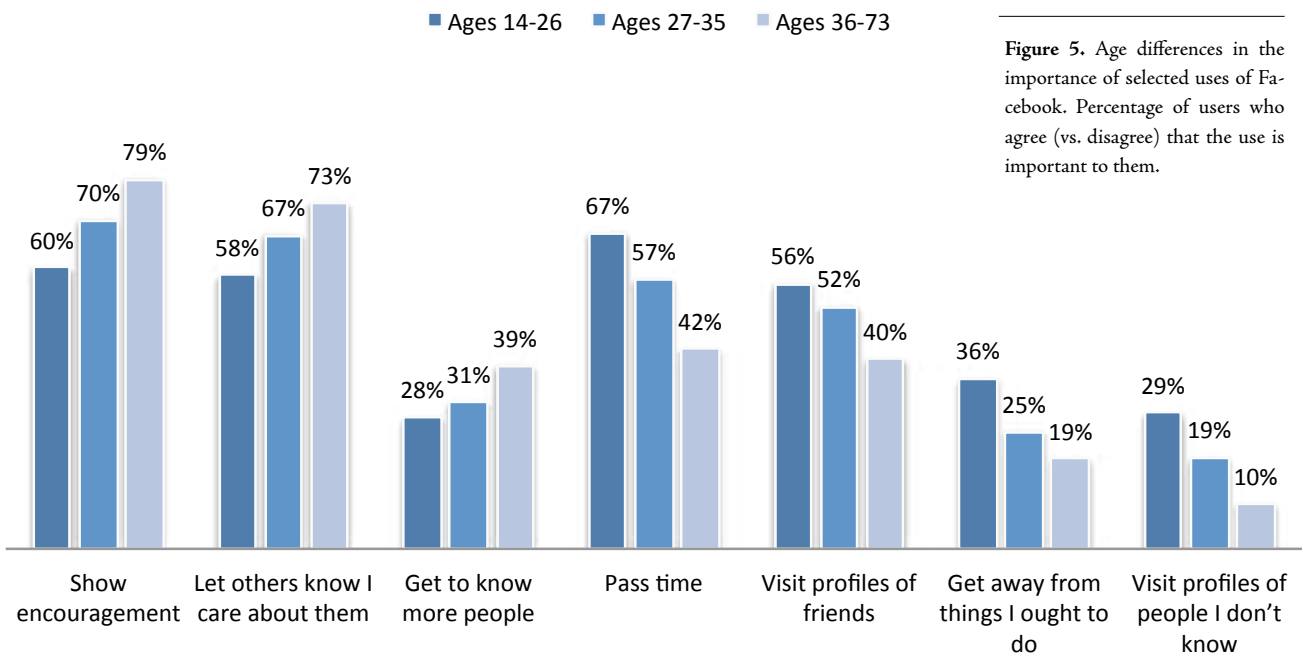


Figure 5. Age differences in the importance of selected uses of Facebook. Percentage of users who agree (vs. disagree) that the use is important to them.

WHAT ARE STATUS UPDATES TYPICALLY ABOUT?

A large majority of respondents answered that their status updates are typically about positive things that has happened to them (77.3%) as well as major events in their lives (68.7%).

Many also write updates about everyday events (65.7%) and about feeling good (51.0%). It was less common to write updates about private/personal events (38.1%), negative things that has happened to them (37.6%), relationships (26.1%) and about feeling bad (15.6%).

77.3%
OF FACEBOOK USERS TYPICALLY WRITE ABOUT POSITIVE THINGS.

37.6%
WRITE ABOUT NEGATIVE THINGS.

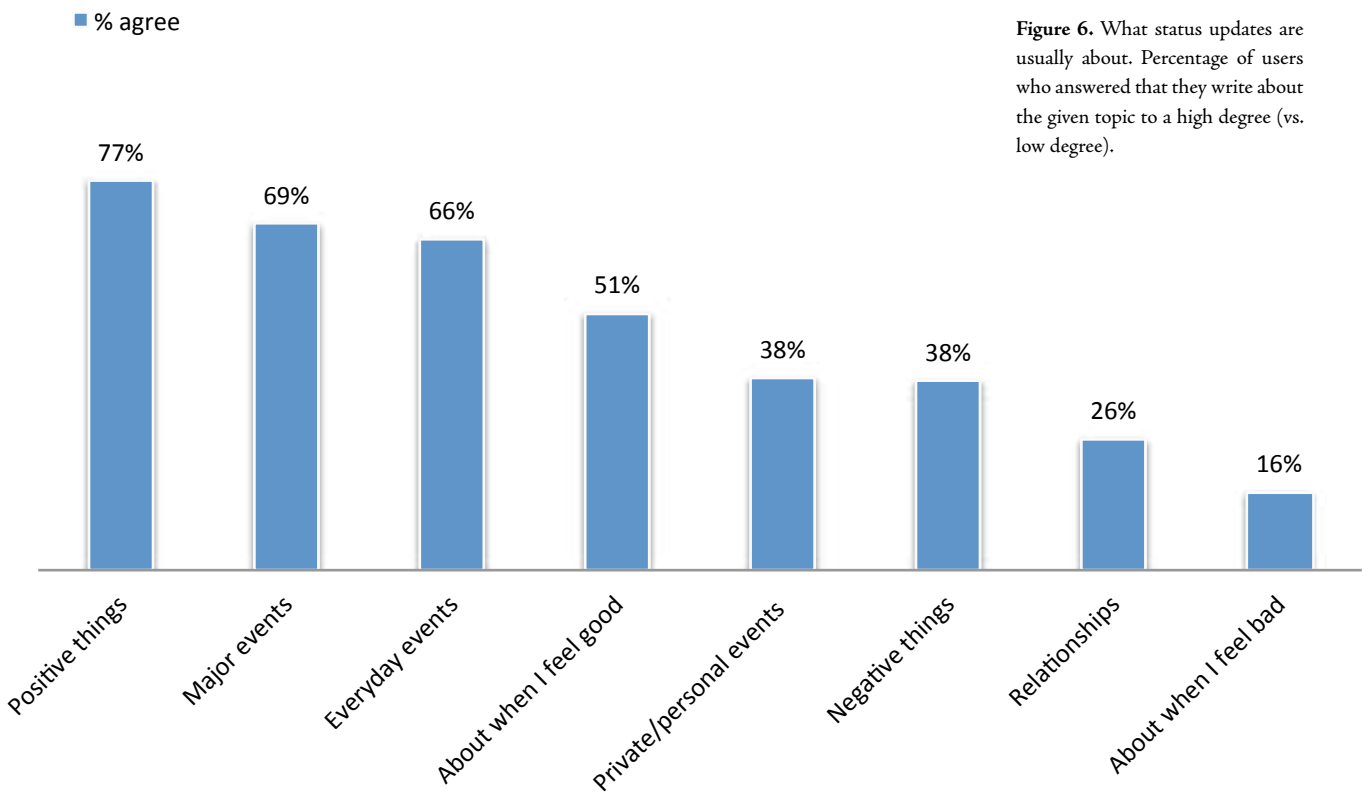


Figure 6. What status updates are usually about. Percentage of users who answered that they write about the given topic to a high degree (vs. low degree).

GENDER AND STATUS UPDATES

Men and women differ in regards to what they typically write about. Women will for example more often write updates about when they are feeling good and relationships, while men and women write about negative things that has happened to them about as often (39.6% for women vs. 33.4% for men). Men did not seem to write more about any given subject than women.

AGE AND STATUS UPDATES

Older respondents more often write about everyday events (62.2%; 61.2%; 73.4% for the youngest, middle and oldest age groups respectively), private/personal events (25.5%; 39.5%; 50.1%) and relationships (20.8%; 26.5%; 31.3%),

and also about when they are feeling bad (11.2%; 18.1%; 17.9%), whereas younger respondents slightly more often write about major life events (69.9%; 72.8%; 63.6%). The age groups did not differ significantly in how often they write about positive and negative things that has happened to them, or about when they are feeling good. See table 3 in appendix A for an overview.

WOMEN WRITE MORE ABOUT FEELINGS AND RELATIONSHIPS.

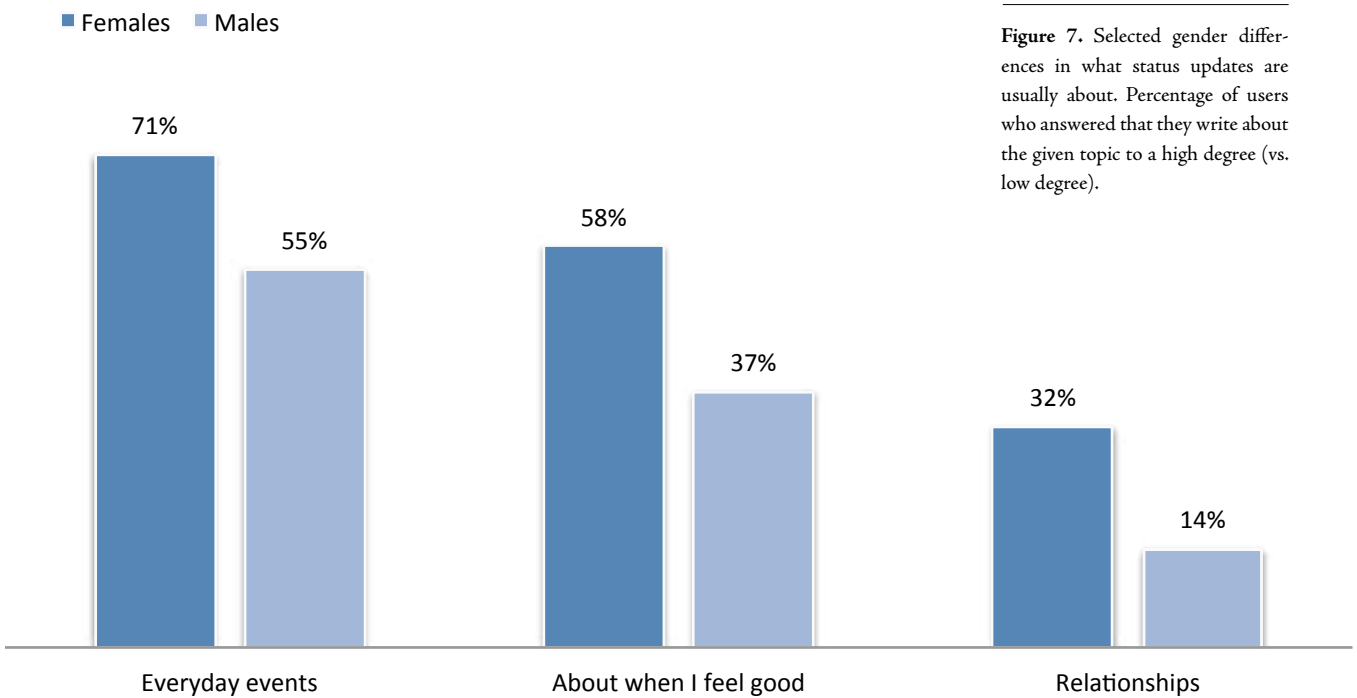


Figure 7. Selected gender differences in what status updates are usually about. Percentage of users who answered that they write about the given topic to a high degree (vs. low degree).

WHAT IS THE PURPOSE OF USERS STATUS UPDATES?

Most respondents answered that the purpose of their status updates was to amuse others, as well as express thoughts, broadcast information and knowledge and express feelings. Fewer answered that the purpose of their status updates was to get attention, acknowledgement, vent, provoke others or brag.

GENDER AND PURPOSE OF STATUS UPDATES.

Whereas women more often wanted to express their thoughts (71.9% of women vs. 65.1% of men) and feelings (55.6% vs. 39.1%), men more often wanted to spread information and knowledge (57.0% of women vs. 65.7% of men) as well as provoke others (21.2% of women vs. 36.7% of men).

Age and purpose of status updates. The age groups were generally in agreement as to the purpose of their status updates, however, there were some differences. Younger respondents were less likely to broadcast information/knowledge (53.4%; 61.8%; 64.8%), provoke others (21.6%; 26.5%; 31.0%) and express thoughts (64.4%; 73.8%; 71.6%). See table 4 in appendix A.

**AMUSING OTHERS:
THE MAIN REASON FOR WRITING STATUS UPDATES.**

1/4
OF SWEDISH USERS BRAG ON FACEBOOK.

WOMEN
WANT TO EXPRESS THEIR THOUGHTS AND FEELINGS MORE.

1/3
OF THE MEN WANT TO PROVOKE ON FACEBOOK. THAT'S TWICE AS MANY COMPARED TO THE WOMEN.

OVER 50%
BROADCAST INFORMATION AND KNOWLEDGE ON FACEBOOK.

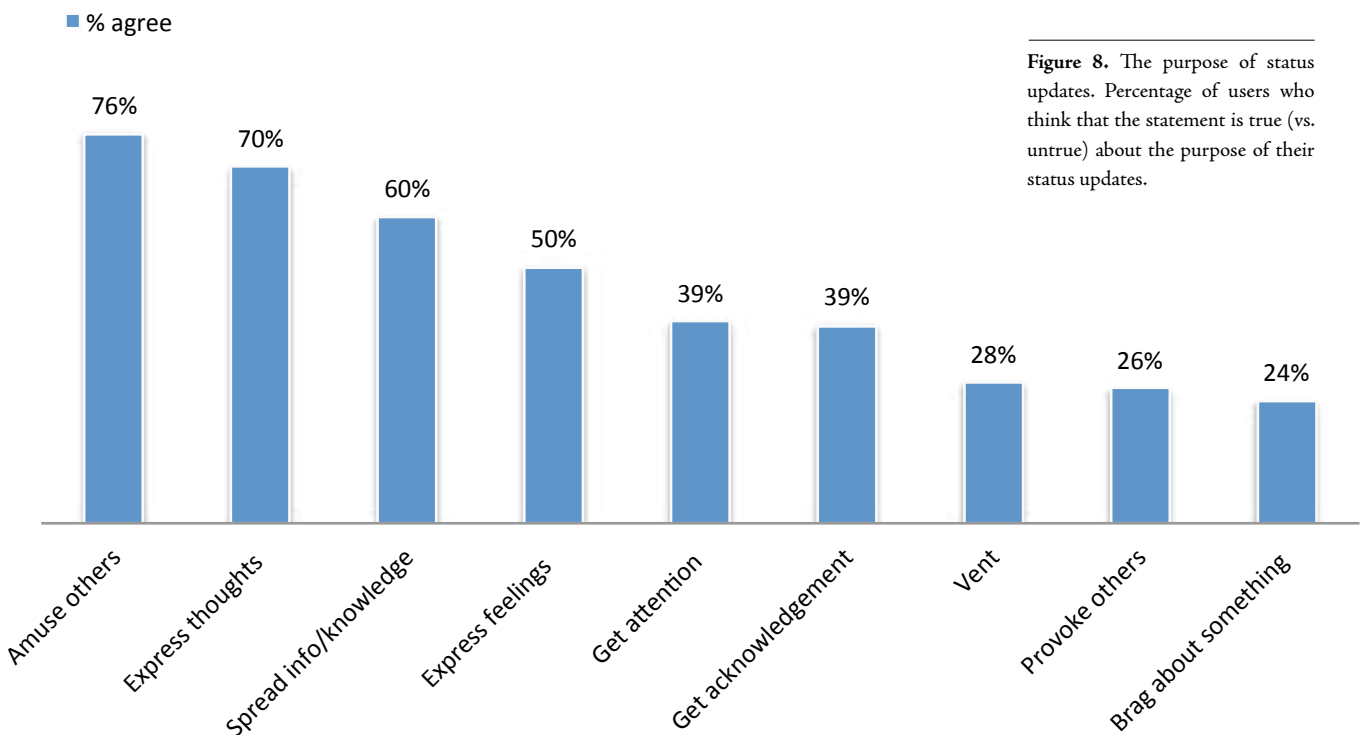


Figure 8. The purpose of status updates. Percentage of users who think that the statement is true (vs. untrue) about the purpose of their status updates.

RESEARCH QUESTION 2

THE INFLUENCE OF FACEBOOK USAGE ON SELF-ESTEEM AND WELL-BEING.

FACEBOOK USAGE AND SELF-ESTEEM

We entered Facebook usage (“Roughly how many minutes do you spend on Facebook a normal day?”) as a predictor on the self-esteem index in a hierarchical multiple regression analysis. Results showed that Facebook usage had a significant negative relationship with self esteem ($b = -.074, p < .05$). In other words, the results indicated that users who spend more time on Facebook have lower self-esteem. However, when we entered the control variables gender, age, education and income, the relationship between Facebook usage and self-esteem was not significant ($b = -.029, p > .369$). See table 5, appendix A.

SOCIAL COMPARISON AND SELF-ESTEEM

Social comparison and self-esteem. In the next regression analysis, we entered the predictor social comparison behavior (“I usually compare my profile to others, for example how many Facebook friends I have”) on the self-esteem index. We found a significant negative relationship with self esteem ($b = -.082, p < .05$). Those who compare themselves more have lower self esteem. Control variables were gender, age, education and income (see table 6, appendix A).

From these analyses we conclude that Facebook usage is not related to self-esteem when controlling for demographic variables, but the amount of social comparison is negatively related.

WOMEN

WHO USE FACEBOOK MORE HAVE LOWER WELL-BEING. NO RELATIONSHIP FOR MEN.

FACEBOOK USAGE AND WELL-BEING

When well-being was the criterion and we entered the predictor Facebook usage, we found a significant negative relationship between Facebook usage and well-being, controlling for gender, age, education and income ($b = -.078, p < .05$). In other words, users who spend more time on Facebook also have lower subjective well being (see table 7, appendix A).

GENDER DIFFERENCES

Further analyses showed that this relationship only holds for women ($b = -.088, p < .05$). For men, this relationship is not significant (see table 8, appendix A).

EDUCATIONAL DIFFERENCES

In regard to education, the negative relationship is present in the group with gymnasial degrees or lower ($b = -.109, p < .05$), whereas the relationship is not significant in the university educated group (see table 8, appendix A).

INCOME DIFFERENCES

The relationship was near significant in the group with the lowest income (0–200.000 SEK / year) ($b = -.100, p = .053$), while it was not significant in the other income groups (see table 8, appendix A).

WHO USES FACEBOOK THE MOST?

The low education – low income groups are the groups that use Facebook the most compared to the high education – high income groups. In our sample, those who reported gymnasial degrees or less (this group includes university students) spent 85 minutes on average, while those with university degrees spent 65.2 minutes on average. Moreover, the low income group (0–200.000 SEK / year) spends 90 minutes per day on average, while the middle income group (200.000 – 350.000 SEK / year) and high income group (350.000 SEK / year) spends 74 and 49 minutes respectively.

Last, women spend 81 minutes each day on Facebook, while men spend 64 minutes.

SOCIAL COMPARISON AND WELL-BEING

In our last analysis, we entered social comparison behavior on well-being and found a significant negative relationship with well-being, controlling for age, gender, education and income ($b = -.111, p < .001$). See table 9, appendix A.

We conclude that Facebook usage is significantly related to well being, when controlling for demographic variables. This relationship is salient for women, groups with low education and low income. Intensity of social comparison behavior is also related to well being. Thus, Facebook users that use Facebook more, and engage in social comparison, also experience less well being.

DISCUSSION

The aim of this study was first to get a better understanding of how Facebook is used, and second what effects Facebook has on its users. Among the main results of the study, we found that the average respondent spends as much as 75.2 minutes on Facebook each day and that a great majority include Facebook in their daily routine (84.0%). Investigation of user patterns suggest that Facebook is primarily used for maintenance of existing social contacts and networks, rather than to meet new people or to pass time. The results also suggest that users may, deliberately or not, attempt to paint a more positive and interesting picture of themselves, as they more often write status updates about positive and major events in their lives, rather than negative, everyday or personal events. We also found several gender and age differences. In general, women and younger users seem to be more engaged and active on Facebook than men and older users.

Previous research has found that time spent on Facebook may result in the perception that others have a better life and are happier than oneself²². Although time spent on Facebook was related to low self-esteem and low well-being in this study, the relationship with time spent on Facebook and self-esteem disappeared when we controlled for gender, age, education and income. The relationship between time spent and well-being was significant for women but not men. Furthermore, users who compare themselves to others show both lower self-esteem and lower subjective well-being. This suggests that for some groups, and for some uses, Facebook usage may potentially lead to low self-esteem and unhappiness. We believe that this highlights the importance of studying Facebook usage, as well as its effects, since it is not only widespread²³, but evidently also habit-forming. Based on these results, there seems to be some risk for addiction to Facebook, especially for some groups.

HOW FACEBOOK IS USED

Pertaining to the first research question, we found that the average user logs on to Facebook several times a day and spends up to the equivalent of a full length movie while logged in. The great majority state that they include Facebook in their daily routine, and most log on habitually every time they turn on their computer/browser. Almost half of

the respondents say that it's getting hard to keep up socially without Facebook, and as many as one quarter believe that they would feel bad if neglecting to log on to Facebook over time. These figures are much higher than we previously expected – and the question of what people actually do on Facebook becomes even more relevant. Most respondents seem to use Facebook to maintain their existing social contacts and networks, as well as stay updated on the lives of their friends. Other uses, for example passing time or getting to know more people, does not seem to be as important. For many respondents, Facebook seems to be a social tool that may challenge more traditional social interactions, such as phone conversations and talking over a coffee. This raises the question of whether Facebook may replace, or perhaps complement, these traditional tools for social upkeep in certain groups, and if so, what consequences this may have. We imagine that there might be both good and bad consequences of over-reliance on Facebook as a social forum. Although it might help people to maintain a much larger social network in general, it may at the same time lead to more shallow social contacts, and less frequent “real world” social interactions. Needless to say, it is important to understand how this affects us, being the social animals that we are²⁴.

FACEBOOK USAGE AND SOCIAL COMPARISON

Our results support the notion that Facebook is a personal showcase, as the respondents seem to primarily share things that are typically positive or important, whereas troubles and bad feelings are much less common. This is in line with previous studies which show that self-presentation biases are present on Facebook²⁵. It is likely that Facebook users select events which they think others will find interesting, in order to come across as persons that do extravagant, funny and interesting things²⁶. Many may for example choose to report expensive restaurant visits or shopping weekends in other countries, whereas less interesting and more mundane events are left unreported. There may be several reasons for this. We may often have conscious or unconscious agendas about how we wish to be perceived. Single people may for example wish to be perceived as funny, smart, interesting, good looking or otherwise “dateable”, whereas a person wanting to fur-

²² Chou, H-T G., & Edge, N. (2012). “They are happier and having better lives than I am”: The impact of using Facebook on perceptions of others’ lives. *Cyberpsychology, Behavior and Social Networking*, 15, 1–5.

²³ Phillips, S. (2007), op. cit.

²⁴ Nilsson, B. (2006), op. cit.

²⁵ Mehdizadeh, S. (2010), op. cit.

²⁶ Peluchette, J., & Karl, K. (2010), op. cit. 27 Suls, J., Martin, R., & Wheeler, L. (2002), op. cit.

ther their career may wish to convey an image of being successful, knowledgeable or capable. Another motive may be the norms which govern social situations. We may attempt to avoid sounding negative or pessimistic, as this may hurt our chances for future social interactions²⁷. Thus, Facebook may be used as a kind of social curriculum vitae, where one is trying to show off ones' positive characteristics.

Facebook makes social comparison easier than ever, as the average user has access to status updates, pictures and personal information from hundreds of people. Given that most people primarily select events and happenings of a positive and interesting nature, regularly reading up on what others are doing and comparing it to one's own activities, may provide a biased picture which show others as much more active, interesting and successful than oneself. We therefore believe that people who tend to compare themselves to others using Facebook, may falsely infer that they are living less interesting lives and that they are less successful than others, which in turn may affect their self-esteem and subjective well-being.

GENDER DIFFERENCES IN FACEBOOK USAGE

Men and women differed in quite many respects pertaining to Facebook usage. The general pattern seems to be that women spend more time on Facebook, use it more habitually, think the different uses are more important, and write more about any given subject in their status updates. These findings were especially true for typical social applications, which apparently, are more important for women than for men. As for the purpose of status updates, women were over-represented in most cases. However, men did agree more than women that the purpose of their status updates was to spread information and knowledge, as well as to provoke others. In fact, as many as one third of men agreed that they provoke deliberately on Facebook compared to one fifth of women. These findings suggest that men and women use Facebook quite differently.

The potential negative effects of Facebook are likely more of a risk to the average woman compared to the average man, due to the fact that women spend more time on Facebook, and also seem to take the usage more seriously. Women seem to rely more on Facebook as a social tool – a way to keep up

with friends and maintain social contacts – and they may therefore also be more vulnerable to effects of social comparison and self-presentation biases. On the contrary, men are likely not as vulnerable, as they spend less time on Facebook, think its uses are less important, and seem to use it less as a social maintenance tool. Men may see Facebook more as a past time among many, than as an important social forum with real world implications.

AGE DIFFERENCES IN FACEBOOK USAGE

The age groups also seemed to differ in their usage of Facebook. On average, users in the youngest age group spend more time on Facebook and do it more habitually than older users. Moreover, different age groups rate different uses of Facebook as more important. To younger users, Facebook seems to be more about passing time, getting away from things one ought to do, as well as visit other people's profiles (e.g. friends, friends of friends, and people one does not know). For older users, some social applications of Facebook seems to be more important, for example getting to know more people, letting others know they care about them and show encouragement. However, users of all ages were in agreement that Facebook is important as a way to maintain contact with other people and to keep up with what they are doing. Pertaining to status updates, older respondents were more likely to write status updates of a more personal character, such as everyday events, personal events, relationships and about feeling bad.

All in all, we believe that these differences may lead to differences in vulnerability to social comparison and self-presentation biases. Since younger users spend more time on Facebook and do so more habitually, they may be more exposed to a biased picture of others, and more likely to compare themselves to it. However, since older users are more likely to write about things of personal and everyday nature, they may perceive the difference between themselves and the biased picture to be much larger than do other users. This also highlights the importance of not only understanding the effects of frequent or habitual Facebook usage, but also of the effects of different uses of Facebook. It is reasonable to expect that it is primarily the way people use Facebook, and not how much they use it, that may affect their self-esteem and subjective well-being. This brings us to our second research question.

²⁷ Suls, J., Martin, R., & Wheeler, L. (2002), op. cit.

FACEBOOK USAGE AND WELL-BEING

We found that Facebook usage is indeed related to a well-being. Those who used Facebook more rated themselves as feeling less happy and content with their lives. When we probed into this relationship further, we could see that it only held for women, the group with the lowest income (i.e. 0–200K SEK annual income), and the group with the lowest education (i.e. Swedish gymnasium degrees). Moreover, we found that those who compared themselves to other Facebook users, i.e. engaged themselves in social comparison, felt less happy. These findings support our argument that social comparison on Facebook may be a risky endeavour for one's well being. We argued that the information we are comparing ourselves to may be skewed, first of all because people generally wish to convey an image of being successful and positive, and second of all because people on Facebook are likely to only report the events that are worthy of reporting. If everyone would report only those events that are worthy of reporting, the end result would be an illusion of people in general being more happy and successful than may be the case. When we then compare our own lives with others' seemingly more successful careers and happy relationships, we may feel that our own lives are less successful in comparison. Our findings are in line with a recent study by Chou and Edge who found that students who spend more time on Facebook were more inclined to perceive others as living happier lives in comparison to one's own life.²⁸

This study extends the current research field in that we surveyed a large sample in all ages and income levels. While for instance, Chou and Edge only surveyed a student sample²⁹, we now know that Facebook usage and well-being does not appear to have a relationship for men, for the well educated, and for the well paid.

WHY IS THE RELATIONSHIP SALIENT ONLY FOR WOMEN?

We found that the negative relationship between Facebook usage and well being only was statistically significant for women. For men, the relationship was not evident. Why may this be the case? A starting point may be found in our other

results. More women than men seem to think that they need Facebook in order to keep up with the lives of their friends and that they would feel bad if they did not log in for a long period of time. Women also seem to think that Facebook is more important as a way to interact and maintain contact with other people. The picture that emerges is that women seem to be more engaged and active on Facebook and seem to think that what happens on Facebook is more important. This is congruent with other findings on gender and sociability. Women are more prone to cherish close relationships and women more than men derive their identities through their close personal relationships with friends and family. Women also spend more time staying connected with people they are close. For instance women write two to four times as many personal letters and make 10 to 20 percent more long distance calls to friends and family.³⁰ This study shows that women use Facebook more than men; 81 minutes per day compared to 64 minutes. The same pattern of usage is also evident for the low income and low education groups, who used Facebook significantly more compared to the high income and high education groups.

WHAT ABOUT THE REVERSE?

As this study is cross-sectional, we cannot exclude the hypothesis that people with low well-being may use Facebook more because they may find positive reinforcement and affection (e.g. encouraging comments) through the interactions with their friends.³¹ As of yet, we don't know which direction the arrow of causality goes, and this needs to be further examined in future research.

FACEBOOK USAGE AND SELF-ESTEEM

For Facebook usage and self-esteem, we did not find any relationship when we controlled for demographic variables such as gender, age, education and income. The relationship was significant before we entered our control variables. Our findings runs counter to other findings^{32 33} who report positive significant relationships between Facebook usage and self-esteem. However, the aforementioned studies only surveyed student samples and consequently did not control for vari-

²⁸ Chou, H-T G., & Edge, N. (2012), op. cit.

²⁹ Ibid.

³⁰ Myers, D.G. (2002). Social psychology. New York: McGraw-Hill.

³¹ Peluchette & Karl, 2010, op. cit.

³² Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. *Cyberpsychology & Behavior*, 9, 584–590.

³³ Mehdizadeh, 2010, op. cit.

ables that are related to age, education and income. Thus, this study contributes to the field of social network research by showing that the relationship between Facebook usage and self-esteem does not exist in a broader population.

We did however find a significant relationship between social comparison behavior and self-esteem, in that those who compare themselves more to other Facebook users also had lower self-esteem.

WHY IS FACEBOOK USAGE RELATED TO WELL-BEING BUT NOT TO SELF-ESTEEM?

This is indeed a valid question. Our initial expectations were that Facebook usage would be negatively related to both self-esteem and well-being. However, Facebook usage is related only to well-being when controlling for demographic variables. The concepts differ from each other in that well-being is a more global measure of one's affect (i.e. feeling happy or sad), whereas self-esteem is an assessment of one's perceived value or worth. It is plausible that well-being and self-esteem are affected by different kinds of information to which Facebook users compare themselves to in the social comparison process. For example, happiness may be more impacted by information about others' happiness, and self-esteem perceptions may be more impacted by information about others' career success, skills, abilities, and so forth. Further, Facebook users may be to some extent aware of the fact that people tend to post information about themselves that may be more worthy to report (e.g. getting a promotion, buying a car).³⁴

It is possible that Facebook users are better in accurately assessing information regarding other peoples career success, skills and abilities, than to accurately assess peoples' inner states, such as happiness. It is simply easier to accurately assess how successful or skillful a person should be compared

to others, than to assess how happy a person should be. To assess happiness in others correctly, Facebook users may need more information than what is presented on Facebook via pictures and status updates.

This notion is supported by the findings by Chou and Edge³⁵, who argue that we often fall victim to the correspondence bias. Because Facebook users often don't have access to a full range of information about a person, they may erroneously infer that if a person is happy on virtually every picture, this person must be a very happy person. Of course, people are seldom constantly happy and it is more likely that our level of happiness rises and falls in cycles during the length of a day or week. The correspondence bias is closely related to the fundamental attribution error – our tendency to ascribe a certain trait (e.g. happiness) to an individuals' personality (happy kind of person), rather than to external circumstances (the party caused the happiness). Thus, on Facebook, it is easy to disregard that nearly all pictures are taken under happy circumstances (parties, vacations, interaction with friends and family) and thus erroneously conclude that other people are more happy than they may be. Interestingly, Chou and Edge found that heavy users of Facebook were even more inclined to believe that others were happier and had better lives. The finding supports the notion that users of Facebook need more information than Facebook pictures/status updates to accurately assess the happiness levels of their peers.

If Facebook users overestimate the happiness of their peers (which seem to be high and consistent), they may fall into the trap of comparing their own happiness (which consists of highs and lows and is constantly fluctuating) and consequently end up feeling less happy.

³⁴ Peluchette & Karl, 2010, op. cit.

³⁵ Chou & Edge, 2012, op. cit.

CONCLUSIONS

The modern and efficient communication tool that Facebook represents has opened up new possibilities for creating and managing a vast network of friends and acquaintances. Yet, users of Facebook should heed a point of caution - treat information on Facebook as you would treat any other source of information on the Internet: with vigilance. Facebook offers a great way for people to create an idealized image of themselves,³⁵ and even if creating an idealized image is not on the agenda, people still tend to report on those events that are more worthy to report compared to mundane and every-day events. In this study, we found that people tend to report positive events and when they feel good, rather than negative events and when they feel down. We also found in this study that the more time people spent on Facebook and the more people compared themselves to other users, the less happy they are.

Although we can't draw conclusions regarding the direction of causality between Facebook usage and well-being at this point, three likely scenarios are likely based on these results. First, it could be that Facebook usage, in itself or combined with certain user groups or usage patterns, leads to an over-exposure of biased information regarding other's well-being and success, which makes one feel less happy and successful in comparison. If this is the case, then this should be expected to have a negative effect on subjective well-being. Second, it could be that those who already are unhappy, for one reason or another, spend more time on Facebook (or use it more for social comparison), whereas people who are happy spend more time doing other things (e.g. spend time doing fun activities with friends and family). If this is the case, then more time spent on Facebook would appear to lead to decreased subjective well-being, whereas it might actually be the other way around: decreased subjective well-being leads to increased Facebook usage. The third scenario, which we believe is the most likely one, is a combination of scenario 1 and 2. Given that people who are unhappy spend more time on Facebook instead of doing other things (as in scenario 2), and given that they on Facebook are over-exposed to biased information regarding other's well-being and success (as in scenario 1), then this may further reduce their subjective well-being. Thus, for unhappy people who use Facebook as a way to compare themselves to others, Facebook usage may

lead to a negative spiral with decreasing well-being as a result. However, it should be carefully noted that we do not believe that this is a problem for the majority of Facebook users, instead, it is likely only a problem for certain groups of users. Nevertheless, due to the widespread and habitual use of Facebook, this potential risk may very well be real for a great deal of people, and should not be underestimated or ignored.

We recommend Facebook users – especially those who spend a lot of time on Facebook or tend to compare themselves to others – to take into consideration the fact that others may often attempt to portray an idealized picture of themselves on Facebook, and that comparing oneself to others' Facebook personas may therefore be misleading. Although Facebook makes it much easier to maintain a large network of friends, it might also be a good idea to be careful not to let Facebook replace real world social interactions, which are likely much deeper and more satisfying than digital interactions. Real world social interactions may also give better or more accurate information about others' happiness and success, leading to less biased social comparisons.

LIMITATIONS OF THIS STUDY

The inferences from this study should be interpreted in the light of its limitations. First and foremost, our sampling strategy was non-random. Although this problem affects inferences about the total Swedish Facebook population, we do however advocate that it is likely that the sample is representative towards most Swedish Facebook users, because of our large and diverse dataset. We draw our inferences from a dataset where all income levels, all educational levels, and ages ranging from 14 to 73 are represented. In short, all relevant social classes are represented in our data. Further, this study is most likely to be more relevant to Swedish Facebook users than previous studies on Facebook users, where American undergraduate students in the majority of cases represent the sample. However, we acknowledge that the problem of representativeness would have been alleviated should we have used a random sampling procedure. This limitation is especially salient for our first research question and in this case the absolute figures (e.g. 25 percent brag on Facebook). The

³⁵ Bergman, S. M., Fearington, M. E., Davenport, S. W., & Bergman, J. Z. (2011). Millennials, narcissism, and social networking: What narcissists do on social networking sites and why. *Personality and Individual Differences*, 50, 706-711.

CONCLUSION

differences between groups that we have found (e.g. women use Facebook significantly more than men) are less likely to be affected by our non-random sampling procedure. For our second research question, the non-random sample is not a major issue because the theoretical inferences about Facebook usage and well-being, and our correlation based analyses do not require random sampling. Still we encourage future researchers to use random sampling strategies in their studies. The second limitation in this study is that we cannot draw inferences about causality in our relationships (e.g. Facebook usage and well being), as the design is cross-sectional. Third, we did not sample non-users of Facebook, but on the other hand we do not make any claims about this group.

FUTURE RESEARCH

Social networks present challenges for researchers in the field because it is a complex and wide-ranging area. Previous research has often focused on student samples,^{36 37 38} but since Facebook and similar social networks at this time are widely used by the general population, we encourage future

research endeavours to sample from this population. We argue that some relationships that may be present in student samples may not hold in the general population (e.g. as was evident in this study, the relationship between Facebook usage and self-esteem) and only using student samples would not advance the field of social network studies.

Moreover, future research ought to involve surveys based on other designs than cross-sectional designs to increase the validity of inferences drawn. Quasi-experimental designs and longitudinal survey designs would introduce the dimension of time, which allows for stronger inferences regarding the causality of relationships.

Our results also showed a remarkable difference between men and women's patterns of using Facebook. A future avenue of research would be to study the reason why these differences exist and the consequences of them. Moreover, a large proportion of respondents agree that Facebook is used to maintain continued contact with friends they rarely meet. An interesting aspect is whether these friendships decrease or increase in intensity and number over time.

³⁶ Bergman et al., 2011, op. cit.

³⁷ Gosling et al., 2011, op. cit.

³⁸ Chou & Edge, 2012, op. cit.

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ABOUT THE AUTHORS

LEIF DENTI

is a doctoral student of Psychology at the University of Gothenburg, Department of Psychology. Aside from studying behavior on Facebook, his main research interest is how project leaders stimulate creativity and innovation in their project teams (Project name: Management for Sweden / Chefskap för Sverige). Leif Denti is also involved in a research project at the School of Business, Economics and Law, University of Gothenburg, studying organizational factors that may influence creative problem solving in project teams. He is also an acclaimed lecturer in the leadership, creativity and innovation fields. Leif Denti holds a licentiate degree of Psychology at the University of Gothenburg.

ISAK BARBOPOULOS

is a doctoral student of Psychology at the University of Gothenburg, Department of Psychology. He does research on consumer motives, and is particularly interested in how individual and situational factors influence how products and services are evaluated and selected. Isak Barbopoulos is currently involved in a multi-disciplinary research project, with researchers from the Department of Psychology at the University of Gothenburg, as well as the School of Business, Economics and Law, at the University of Gothenburg, studying the importance of social and moral signaling for green consumption and policy effectiveness.

IDA NILSSON

works as a communication strategist with the specialty of social media and online PR at Valentin & Byhr in Gothenburg. Ida has worked with social media for more than five years and have helped companies to communicate in the right way in social media channels. A large part of Ida's work is about understanding how the audience acts in the social media environment and why they do it. With a great passion for social medias cause and effect for both individuals and businesses Ida is an active lecturer in the field. Ida also runs the blog Gilla Kommunikation with a focus on PR, communication and social media.

LINDA HOLMBERG

currently studies social psychology at the University of Skövde at a program called "Staff, organization and leadership" (Personal, organisation och ledarskap). It is a Bachelor's degree program ending in June 2013. She decided on a course of study after working for IKEA as a step towards furthering her career within the company.

MAGDALENA THULIN

is a student at the University of Skövde. She studies a bachelor degree within behavioral science with a focus on social psychology.

MALIN WENDEBLAD

27 years old from Sjövik. Studying for a bachelor's degree at the University of Skövde and studying behavioral science with a focus on human resources, organization and leadership.

LISA ANDÉN

21 years old from Stenungsund. Studies behavioral science with a focus on human resource management at the University of Skövde.

EMELIE DAVIDSSON

20 years old from Skövde. Studies behavioral science with a focus on human resource management at the University of Skövde.

APPENDIX A

TABLES

Table 1.

Habitual Facebook usage. Percentage of users who agree (vs. disagree) with the statements, as well as chi-square and significance levels

	All	Gender			Age			
		F	M	χ^2	14-26	27-35	36-73	χ^2
A. Feel like I do not keep up	43.3%	51.2%	27.5%	52.14***	47.4%	44.3%	37.9%	8.42ns
B. Every time I start computer, web browser	69.7%	74.6%	60.0%	22.49***	81.1%	73.5%	53.7%	64.93***
C. Without thinking about it	42.2%	45.3%	33.1%	15.36***	58.4%	43.4%	20.3%	106.79***
D. Had intended to do something else	44.7%	49.6%	34.9%	19.40***	61.4%	45.3%	25.7%	90.18***
E. Before realize I that I'm doing it	29.8%	33.7%	21.8%	17.06***	43.3%	30.1%	14.3%	71.91***
F. Would feel ill at ease	25.8%	30.0%	17.3%	18.91***	29.9%	24.9%	22.1%	5.69ns
G. Belong to daily routine	84.0%	84.8%	82.4%	0.94ns	86.3%	89.0%	76.7%	20.34***

* Chi-square is significant at $p < 0.05$; ** at $p < 0.01$; *** at $p < 0.001$; ns = $p > 0.05$

Table 2.

The importance of different uses of Facebook. Percentage of users who agree (vs. disagree) that the use is important to them, as well as chi-square and significance levels

	All	Gender			Age			
		F	M	χ^2	14-26	27-35	36-73	χ^2
A. Find out what old friends are doing	62.7%	67.2%	53.7%	17.27***	63.0%	60.8%	63.9%	0.67ns
B. Maintain contact with people one does not meet so often	88.1%	90.2%	83.9%	8.65**	86.8%	86.7%	90.7%	3.34ns
C. Get to know more people	32.5%	32.7%	32.2%	0.02ns	27.9%	31.1%	38.8%	9.81**
D. Maintain contacts in general	82.5%	83.4%	80.6%	1.25ns	80.8%	83.8%	83.0%	1.14ns
E. Pass time	55.9%	60.2%	47.2%	15.46***	67.1%	57.3%	42.4%	43.70***
F. Get away from pressure and responsibility	21.9%	24.1%	17.3%	6.06*	23.6%	20.4%	21.5%	1.03ns
G. Get away from things I ought to do	27.0%	30.6%	19.7%	13.55***	36.2%	24.9%	19.1%	26.79***
H. Let others know I care about them	65.8%	71.9%	53.4%	33.91***	58.1%	66.7%	73.4%	18.44***
I. Show encouragement	69.1%	74.6%	58.2%	28.05***	59.7%	69.9%	78.5%	28.99***
J. Look at others' pictures	63.3%	67.2%	55.5%	13.06***	69.9%	68.6%	51.3%	31.14***
K. Tag people in pictures	8.2%	9.0%	6.6%	1.79ns	11.0%	8.4%	5.1%	8.03*
L. Upload pictures	29.0%	33.0%	20.9%	15.92***	27.7%	27.2%	31.6%	1.94ns
M. Visit profiles of friends	49.6%	55.8%	37.0%	31.52***	56.4%	51.5%	40.3%	18.85***
N. Visit profiles of people I don't know	19.6%	19.5%	19.7%	0.00ns	28.8%	19.4%	9.6%	41.05***
O. Visit friends' friends	19.4%	20.1%	17.9%	0.70ns	28.8%	17.2%	11.3%	35.35***
P. Write status updates	47.1%	50.4%	40.3%	9.25**	36.7%	47.6%	57.9%	31.55***
Q. Read status updates	76.9%	81.1%	68.4%	20.33***	75.9%	77.3%	77.3%	0.27ns

* Chi-square is significant at $p < 0.05$; ** at $p < 0.01$; *** at $p < 0.001$; ns = $p > 0.05$

Table 3.

What status updates are usually about. Percentage of users who answered that they write about the given topic to a high degree (vs. low degree), as well as chi-square and significance levels

	All	Gender			Age			
		F	M	χ^2	14-26	27-35	36-73	χ^2
A. Everyday events	65.7%	71.2%	54.6%	27.14***	62.2%	61.2%	73.4%	13.68**
B. Private/personal events	38.1%	40.8%	32.5%	6.53*	25.5%	39.5%	50.1%	45.58***
C. Relationships	26.1%	32.0%	14.3%	36.06***	20.8%	26.5%	31.3%	10.09**
D. Major events	68.7%	71.9%	62.4%	9.42**	69.9%	72.8%	63.6%	6.74*
E. Positive things	77.3%	81.4%	69.0%	19.62***	76.7%	77.0%	77.9%	0.15ns
F. Negative things	37.6%	39.6%	33.4%	3.69ns	34.0%	38.8%	40.3%	3.29ns
G. About when I feel good	51.0%	58.0%	37.0%	39.43***	47.7%	53.4%	52.5%	2.65ns
H. About when I feel bad	15.6%	19.1%	8.7%	18.47***	11.2%	18.1%	17.9%	8.16*

* Chi-square is significant at $p < 0.05$; ** at $p < 0.01$; *** at $p < 0.001$; ns = $p > 0.05$

Table 4.

The purpose of status updates. Percentage of users who think that the statement is true (vs. untrue) about the purpose of their status updates, as well as chi-square and significance levels

	All	Gender			Age			
		F	M	χ^2	14-26	27-35	36-73	χ^2
A. Broadcast info/knowledge	59.8%	57.0%	65.7%	7.09**	53.4%	61.8%	64.8%	10.14**
B. Amuse others	76.2%	76.5%	75.5%	0.11ns	74.0%	76.1%	78.5%	1.98ns
C. Provoke others	26.3%	21.2%	36.7%	27.98***	21.6%	26.5%	31.0%	7.99*
D. Vent	27.5%	27.5%	27.5%	0.00ns	29.0%	28.5%	24.8%	1.83ns
E. Brag about something	23.9%	24.3%	23.3%	0.12ns	23.6%	23.3%	24.5%	0.14ns
F. Get attention	39.4%	40.8%	36.4%	1.83ns	41.1%	39.2%	37.6%	0.90ns
G. Get acknowledgement	38.7%	40.8%	34.3%	3.99*	37.0%	38.8%	40.3%	0.81ns
H. Express thoughts	69.6%	71.9%	65.1%	4.93*	64.4%	73.8%	71.6%	7.92*
I. Express feelings	50.1%	55.6%	39.1%	24.44***	47.9%	53.1%	49.9%	1.78ns

* Chi-square is significant at $p < 0.05$; ** at $p < 0.01$; *** at $p < 0.001$; ns = $p > 0.05$

Table 5.

Hierarchical multiple regression analysis on self-esteem (criterion). In block 1, the predictor is minutes of Facebook usage per day. In block 2, the control variables gender, age, education and income are added.

Independent variables	Self esteem (n = 1011)				
	R^2	$Adj R^2$	$Beta$	t	p
Block 1:	.006	.005			
Facebook usage			-.074	-2.32	.021
Block 2:	.048	.043			
Facebook usage			-.029	-.899	.369
Gender			.002	.070	.944
Age			.032	.845	.398
Income			.125	3.16	.002
Education			.110	3.22	.001

Table 6.

Hierarchical multiple regression analysis on self-esteem (criterion). In block 1, the predictor is amount of social comparison. In block 2, the control variables gender, age, education and income are added.

Independent variables	Self esteem (n = 1011)				
	R^2	$Adj R^2$	$Beta$	t	p
Block 1:	.010	.009			
Social comparison			-.100	3.12	.002
Block 2:	.052	.048			
Social comparison			-.082	-2.51	.012
Gender			-.002	-.051	.960
Age			.018	.480	.631
Income			.120	3.08	.002
Education			.119	3.53	.001

Table 7.

Hierarchical multiple regression analysis on well-being (criterion). In block 1, the predictor is minutes of Facebook usage per day. In block 2, the control variables gender, age, education and income are added.

Independent variables	Well being (n = 1011)				
	R^2	$Adj R^2$	$Beta$	t	p
Block 1:	.011	.010			
Facebook usage			-.103	-3.23	.001
Block 2:	.033	.028			
Facebook usage			-.078	-2.39	.017
Gender			-.010	-.314	.754
Age			.062	1.65	.100
Income			.105	2.66	.008
Education			.002	.072	.943

Table 8.

Subgroup analyses on Facebook usage (predictor) and well-being (criterion).

Subgroup	$Beta$	t	p
<i>Gender</i>			
Men (n = 332)	-.066	-1.19	.235
Women (n = 674)	-.088	-2.19	.029
<i>Education</i>			
Gymnasial degree or lower (n = 492)	-.109	-2.37	.018
University degree (n = 509)	-.050	-1.10	.270
<i>Income</i>			
0-200K SEK / year (n = 391)	-.100	-1.94	.053
200-350K SEK / year (n = 375)	-.087	-1.67	.096
350K+ SEK / year (n = 204)	.087	1.20	.230

Note: In all subgroup analyses we controlled for gender, age, education and income. These are omitted for presentation clarity purposes.

Table 9.

Hierarchical multiple regression analysis on well-being (criterion). In block 1, the predictor is amount of social comparison. In block 2, the control variables gender, age, education and income are added.

Independent variables	Well-being (n = 1011)				
	<i>R</i> ²	<i>Adj R</i> ²	<i>Beta</i>	<i>t</i>	<i>p</i>
Block 1:	.017	.016			
Social comparison			-.131	-4.13	.001
Block 2:	.037	.032			
Social comparison			-.111	-3.44	.001
Gender			-.021	-.646	.519
Age			.041	1.08	.280
Income			.105	2.66	.008
Education			.019	.546	.585

Table 10.

Means, standard deviations, and intercorrelations^a between study variables.

Variable	Mean	SD	1	2	3	4	5	6	7	8
1. Facebook usage (minutes per day)	75.2	77.2	-							
2. Social comparison behavior	.81	1.17	.077*	-						
3. Self-esteem	4.07	.90	-.075*	-.104**	(.91)					
4. Well-being	3.59	.92	-.102**	-.130**	.729**	(.86)				
5. Gender ^b	-	-	.106**	.023	-.013	-.035	-			
6. Age (in years)	32.6	11.0	-.075*	-.162**	.124**	.121**	-.029	-		
7. Education ^c	5.19	1.13	-.173**	.009	.171**	.073*	-.008	.231**	-	
8. Income (annual) ^d	5.07	2.65	-.18**	-.134**	.184**	.150**	.125**	.533**	.360**	-

^a $n = 1011$, for variable 8, $n = 970$. Cronbach's coefficient alphas are given on the diagonal, where relevant.

^b Gender was coded as follows: 1 = "male", 2 = "female".

^c Education was coded as follows: 1 = "No elementary school", 2 = "Elementary school", 3 = Student at a gymnasium, 4 = "Degree from gymnasium", 5 = "Student at a university", 6 = "Degree from a university", 7 = "Doctoral student", 8 = PhD degree

^d Income (annual) was coded as follows: 1 = "0-50 KSEK", 2 = "50-100 KSEK", 3 = "100-150 KSEK", 4 = "150-200 KSEK", 5 = "200-250 KSEK", 6 = "250-300 KSEK", 7 = "300-350 KSEK", 8 = "350-400 KSEK", 9 = "400 KSEK and above".

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).