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Consequences of Internet (mis)use

- views among university students and social workers

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ABSTRACT

The purpose of this thesis was to explore views on consequences of Internet use among young people sampled at a Swedish university. Both quantitative and qualitative research designs were used. The quantitative data were gathered by a quantitative survey conducted among 50 university students at the University of Gävle. To broaden the picture, face-to-face interviews were conducted with two social workers (from Sweden and Russia). In order to analyze and interpret the data collected, Bronfenbrenner's bioecological model of human development and learning theory were applied. Symptoms of Internet addiction proposed by Young (1998a) were used to examine whether the data collected demonstrated presence of Internet addiction among sampled university students. The results indicated that the majority of respondents had an excessive use of Internet, however, the female participants and different aspects of their everyday life seemed to be more influenced by Internet use compared to the male respondents. Another conclusion is that the field of social work has to increase the knowledge and competence in diagnosing the symptoms of excessive Internet use. Internet related disorders are problems of increased proportion and mental health counsellors need to be prepared to meet a growing demand in the area of social work.

Key words: Internet use, Internet misuse, Internet addiction, influence of Internet use, risks and consequences of Internet use, young people, university students, students, social work problem

PREAMBLE

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TABLE OF CONTENTS

..... 1
1. INTRODUCTION 6
1.1. Connection to social work 7
1.2. Population of social workers' concern? 8
1.3. The aim 10
1.4. The research questions 10
1.5. Essay disposition 10
2. EXPLANATION OF CONCEPTS 11
2.1. Phenomenon of Internet Addiction - terminology 11
2.2. What is the definition of IA? 11
3. PREVIOUS RESEARCH 13
3.1. The rise of a new research domain in the 1990s 13
3.2. Reasons for Internet use 13
3.3. The cause or/and the effect? 14
3.4. Risk factors (predictors) associated with IA 15
3.4.1. Sociodemographic variables 15
3.4.2. Psychosocial variables 15
3.4.3. Comorbid symptoms 16
3.4.4. Internet use variables 17
3.5. Consequences resulting from problematic Internet use 17
3.6. Gender difference among Internet addicts 19
4. THEORETICAL PERSPECTIVES 20
4.1. Theoretical framework 20
4.2. Theories chosen for the study 20
4.2.1. Bronfenbrenner's bioecological model of human development 20
4.2.3. Learning theory 21
5. METHODOLOGY 24
5.1. Research design 24
5.2. Mode of procedure 25
5.2.1. The choice of literature 25
5.2.2. Selection of persons to receive questionnaires and to be interviewed 26
5.2.3. Description of the investigation process 26
5.3. Tools of analysis and presentation of the results 29
5.4. Essay credibility 32

5.4.1. Validity 32
5.4.2. Reliability 33
5.4.3. Generalizability 33
5.5. Ethical standpoints 34
5.6. Some limitations of the study 34
6. RESULTS 36
6.1. General framework of the data presentation 36
6.2. Statistical analysis 36
6.3. Quantitative results 37
6.3.1. Background information about the sampled people 37
6.3.2. Presentation and analysis of the results in relation to previous studies 37
6.4. Qualitative results (the views of two social workers) 50
6.4.1. Themes 50
7. ANALYSIS OF RESULTS BASED ON THEORIES 58
7.1. Analysis of questionnaires 58
7.2. Analysis of interviews 60
7.3. Summary 62
8. DISCUSSION 64
8.1. Main results in response to the research questions asked 64
8.1.1. Gender difference of the results in the view of IA symptoms 64
8.2. Have the aim formulated for the study been fulfilled? 67
8.3. The importance of the findings for social work 67
8.4. Critical review 68
8.5. Problematizing analysis of chosen theories 69
8.6. Suggestions for continued research 69
8.7. Conclusion 71
REFFERENCE LIST 72
Appendix I. Questionnaire 86
Appendix II. Interview guide 90
Appendix III. Example №1 of statistical test (executed in IBM SPSS Statistics 22) 91
Appendix IV. Example №2 of statistical test (executed in IBM SPSS Statistics 22) 93
Appendix V. Examples of statistical analysis by applying regression analysis (executed in Microsoft Office Excel 2003) 96

1. INTRODUCTION

Worldwide a large and increasing number of people are using Internet[1]. It has become an integral part of our everyday life. Figures extracted in 2013 from World Development Indicators Database[2] show that access to Internet has grown from an estimated ten million people in 1993, to almost 40 million in 1995, to 670 million in 2002, to 2.45 billion users in 2011 and to over 2.7 billion people in 2013. According to statistics presented by International Telecommunication Union (ITU, 2013), 39% of the world's population spends time online.

In line with the increased access to Internet and the increased array of online activities, the potential negative consequences (e.g., productivity; cognitive, behavioural, and affective functioning) associated with excessive Internet use have grown as well. The popularity of Internet has also led to the emergence of clinical cases indicating abuse symptoms. The research on excessive or problematic Internet use has also grown with a considerable contribution from researchers in Korea and China where problematic Internet use has become identified as a significant public health threat and both countries support education, research and treatment (Breslau et al., 2015). In the United States, despite a growing body of research and treatment, there has been no formal governmental response to the issue of problematic Internet use (Cash et al., 2012).

Research (Sato, 2006) found that problematic Internet use influences communication and interpersonal behaviour of the users as well and researchers have sought to get an understanding of this impact especially among adolescents and students, who seem to be a prominent group of Internet users[3].

For almost two decades ago research areas started to focus on Internet users who become strongly attached to online chat rooms, interactive games, gambling, adult entertainment, constant messaging and online purchasing and whose life became uncontrollable because of Internet use (see Ferris, 2001;

[1] In accordance with statistics presented by International Telecommunication Union (2013), globally, 37% of all women are online, compared with 41% of all men. This corresponds to 1.3 billion women and 1.5 billion men. The developing world is home to about 826 million female Internet users and 980 million male Internet users. The developed world is home to about 475 million female Internet users and 483 million male Internet users.

[2] World Development Indicators Database (WDI), World Bank, http://databank.worldbank.org/ddp/home.do

[3] Figures presented by ITU (2011) show that 45% of the world's Internet users are below the age of 25. In developing countries 30% of the population under the age of 25 are using Internet, compared to 23% of the population over 25 years old. In developed countries figures are the opposite: 77% of people under the age of 25 uses Internet, compared to 71% of those who are over 25 years old.

Greenfield, 1999; Hansen, 2002; Morahan-Martin & Schumacher, 2000; Young, 1998a). Some researchers (see Armstrong et al., 2000; Yellowlees & Marks, 2007) consider that research about the effects of Internet is limited and of poor quality. They claim there are poorly defined concepts, and with a few cases applying control groups and randomization, it needs to be qualitatively and quantitatively improved. However "there is no doubt that some Internet users develop problematic behaviour" (Yellowlees & Marks, 2007, p.1452).

1.1. Connection to social work

In the middle of the 90s Internet was seen as a fundamental medium causing a shift in the way people communicate, entertain, live and exchange information (Greenfield, 1999). "Internet is a very new technology, and we are just starting to understand the psychosocial implications of this new medium" (ibid, p.207). Nowadays Internet along with advertising and television is present in people's life almost all the time. Through the innovative use of emerging technologies (Internet, social media, and mobile phones) changes are taking place in the world (Biagi, 2006). Already in the late 90s some authors pointed at the potential problems with excessive use of technological equipment, as TV, video games, computers, and Internet (see Griffiths, 1996; Griffiths & Wood, 2000; Scherer, 1997; Young, 1999). Biagi (2006) also claimed that the mass media are key institutions in our society and that they actively affect our culture, beliefs, interests and behaviour. With such influence, Internet can be seen as a powerful medium to initiate social change, which can be both positive and negative. But Internet as many other medium of the mass media has different features. On the one hand, such online activities as surfing, shopping, gambling, interactive gaming can be seen as social, amusing, cognitive, educational mean of spare time. Internet also offers opportunities to communicate with people from all over the world without any limit. But on the other hand, Internet's attraction may be seen as the most powerful distraction from real-time living[4]. Some studies show evidence of problematic or excessive Internet use by indicating that considerable social, mental, occupational, academic and financial distress can happen if time spent online exceeds from 20 to 25 hours per week (see Brenner, 1997; Chou & Hsiao, 2000; Shapira et al., 2000). Thus, mismanagement (excessive use) of Internet may lead to problems influencing users' daily functioning (Ponomarev, 2010). Such issues are

[4] According to Ponomarev (2010), some people got so carried away by a virtual space that they began to prefer Internet the reality, spending in front of the computer over 18 hours per day. Furthermore, a sudden failure (refusal) from Internet makes such people anxious and emotionally excited.

becoming social issues which will need attention of social workers so that negative influence of Internet use does not continue or deteriorate.

1.2. Population of social workers' concern?

Figures presented earlier by International Telecommunication Union (2011) demonstrate that young people tend to be more online than older people, in both developed and developing countries. The use of Internet at schools and colleges has dramatically increased within recent decades. According to Chou et al. (2005) cases of over-involvement with Internet were observed on different campuses in Taiwan despite the fact that primary academic use of Internet is intended for learning and research. Furthermore, Young (2004) claimed that Internet technologies and activities are progressing rapidly and resulting in over-use of Internet and maladaptive Internet behaviour and can be referred to as "Internet addiction". College counsellors argue that students are the most at-risk population to develop such type of addiction (ibid). Griffiths and Wood (2000) also suggested that Internet can be seen an intensified medium for the appearance of various addictions in students due to its easy availability. So the way how some people come to utilize Internet with its negative effects has generated a stir among the mental health community by considerations and arguments about Internet addiction (IA) as a new phenomenon (see Reuckiy, 2010; Young, 2004).

From the different studies conducted it can be concluded that IA is really a global phenomenon and problems related to IA have been taken into consideration in many countries around the world (Teplenin, 2004). For example, the studies conducted by Davydov (2007), Park, Kim and Cho (2008) stated that in recent years most of the research on IA has been done in South Korea, where 1,2 million people are considered to be at risk. Studies conducted in China and South Korea proved that IA is a common problem and their top health concern, however there are few studies concerning its treatment (Moll, 2012). A questionnaire survey conducted by Kyunghee et al. (2006) was dedicated to IA among Korean young people and its relation to depression and suicidal ideation. They presented that among 1573 high school students 1.6% of them fit the criteria for IA, while another 38% were at risk for addiction development. In Finland, young people with IA provide respite from participation in the army (Teplenin, 2004). This study showed that in in 2003 9% of 26.500 recruits were sent home due to Internet-dependence illness (ibid).

Several studies describe that some groups might form an increased risk in developing IA. They show that, for example lonely people (Nalwa & Anand, 2003), students, and adolescence (see Attanasio, 2008; Hall & Parsons, 2001) are the highest risk group for developing problematic Internet use since these groups have a lot of free time, and often have easy access to Internet. Furthermore, Lin and Tsai (2002) found that students who scored highly on measures of disinhibition[5], which in turn may result in problems in their interpersonal relationships, showed social and financial problems as a result of IA. Students who use Internet excessively are also likely to favour online activities over sleep (Anderson, 2001). David et al. (2012) highlighted a possible influence of Internet sites or web forums which promote or are dedicated to suicide in young people. According to Davies (2008) "people searching Internet for information about suicide methods are most likely to come across sites that encourage suicide rather than sites offering help and support". So, it is possible to conclude that the negative effects related to excessive Internet use has been recognized by the academic world. And as shown with the introduction of the concept of IA, it has become an increasing field of interest within the public health- and social work science. However, as described in the following chapter, from the review of previous research review it can be concluded that considerably little is written about intervention methods as well as methodology of treatment of negative effects, especially among adolescents and college students. Because the younger generation comprises a risk group in demonstrating excessive Internet use, it can be seen as a significant area to pay attention by both the publicity and social work personnel.

Misuse of Internet use is a new phenomenon which social workers practitioners can be unaware about and consequently unprepared to treat and possibly prevent. Sato (2006, p.279) claimed that "some practitioners are unfamiliar with Internet, making its seductive powers difficult to understand /…/and recognize the legitimacy of the disorder". Thus, the results are expected to contribute to the area of social work by highlighting the impacts of excessive Internet use. In other words, that social work practitioners as well as university/college counselors are capable of diagnosing the symptoms and able to provide further assistance in case problems associated with excessive Internet use. The results are also intending to implicate a demand for further research r regarding the controversial characteristics of Internet use, particularly amongst young people.

[5] According to Jordan et al. (2002, p.103) disinhibition is a lack of restraint manifested in disregard for social norms, impulsivity.

1.3. The aim

The aim of this study is to investigate how university students and social workers might perceive the consequences of Internet use on students' everyday life.

1.4. The research questions

- How do the sampled university students perceive the consequence of Internet use on different aspects of their life, e.g., academic performance, relationship with family/friends, social interactions and social engagement, psychological well-being?
- How do the interviewed social workers look upon university students' Internet use?

1.5. Essay disposition

Chapter 1 consists of the aim of study, the research questions and the relevance of studied topic for social work profession. Chapter 2 takes you as reader to the presentation of main concepts of IA. In chapter 3 various topics on Internet and its potential for abuse are reviewed by examining the findings of previous studies. Chapter 4 describes theories which were chosen to give an explicit explanation for the findings of study. Chapter 5 describes the research process as a whole: from the initial literature review and the methods and sampling chosen to fulfill the aim (formulated in chapter 1) to the process of data collection and how results were analyzed; furthermore, aspects of credibility of the study and ethics are also covered. Chapter 6 presents the empirically received data and empirical analysis of the results. Analysis of the results in relation to theories is presented in Chapter 7. Chapter 8 summarizes all important aspect of the study.

2. EXPLANATION OF CONCEPTS

2.1. Phenomenon of Internet Addiction - terminology

The reviewed literature indicated that various definitions have been used to name phenomenon of IA. Some scientists classify specific Internet-related behaviour as "*Internet addiction*" (see Chou & Hsiao, 2000; Mitchell, 2000; Shapira et al., 2000; Young, 1998a); whereas others refer to "*Internet addiction disorder*" (Goldberg, 1996); "*Internet dependence*" (Scherer, 1997); "*pathological Internet use*" (see Davis, 2001; Morahan-Martin & Schumacher, 2000); "*computer addiction*" (Shotton, 1991), "*compulsive computer use*" (see Black, Belsare, & Schlosser,1999); "*problematic Internet use*" (PIU) (see Davis, Flett, & Blesser, 2002; Young, 1999), "*technological addictions*" (Griffiths, 1996, 1998); "*virtual addiction*" (Greenfield, 1999) or "*Internet behaviour dependence*" (Hall & Parsons, 2001). In this thesis the term "Internet addiction" (IA) or "Excessive Internet use" (EIU) was applied in order to avoid any ambiguity in the text.

2.2. What is the definition of IA?

In order to understand the problem of IA from a clinical perspective, it is necessary to have a workable model. From the literature reviewed, it is highlighted that this 'task' is controversial as up to date no clear definition of IA as well as no 'gold' standards for its diagnosis, classification and assessment exist (see Moreno et al., 2011; Ko et al., 2012; Kuss et al., 2014). However, the criteria which have been applied in research often follow similar principles. Thus, for example, Internet Addiction Test (IAT) presented by Young (1998b, 1999) and adjusted by Rasmussen (2000), is acknowledged in empirical research papers and one of the most relevant to assess IA. It requires that at least five symptoms (which must cause the individual impairment and distress) to be met over a 6-month period for qualifying a user to be an addict. The symptoms are:

- preoccupation with Internet;
- tolerance (increased amount of time spent online to achieve satisfaction);
- impaired control (repeated or unsuccessful attempts to control, reduce, or stop Internet use);
- preference for online communication;
- withdrawal (feelings of restlessness, depression, anxiety, irritation, or acute changes in functioning) when a person is unable to go online;

- time management (when a person stays online longer than originally intended or stays online for very long periods of time while neglecting social responsibilities/ alternative recreational activities);
- negative life consequences or as Young (1998a) also called “environmental distress” (cases when a person jeopardized or risked the loss of a significant relationship, job, educational or career opportunities);
- deception around time spent online (cases when person lied to family members, therapists, or other to conceal the extent of involvement on Internet);
- mood modification through Internet use (cases when person might use Internet as a way of escaping from problems or of relieving a dysphoric mood, such as feelings of helplessness, anxiety, guild, depression)

Furthermore, epidemiological IA research papers vary a lot on how much time an "addicted" Internet user spends online. According to Chou and Hsiao (2000), Davis et al. (1999), Kraut et al. (1998) and Young (1998a), people spending 8 to 40 hours per week online are seen as Internet-addicted; non-addicted spend between 2,5 to 5 hours per week on Internet. Addicted people spend most of the time online participating in social activities such as chat rooms, forums and other social media (Hall & Parsons, 2001). Non-addicts spend the majority of their time online on web-browsing and email correspondence (see Hall & Parsons, 2001; Whang et al., 2003).

3. PREVIOUS RESEARCH

In this chapter a review of previous research on factors associated with IA and consequences of EIU is presented.

3.1. The rise of a new research domain in the 1990s

The presence of addictive behaviour among Internet users has attracted attention of the public and clinicians since the early 90s. Young (1996) emerged as a pioneer of early empirical research into IA. In 1998 she presented results from an exploratory survey comprising 496 Internet users, 396 of them met five of eight IA symptoms and were classified as addicted to Internet. Since the concept of addictive Internet use had not been empirically studied by that time, the goal of her case study was shed light upon an emerging mental health problem, particularly to explore whether Internet use could be considered addictive and to find out the extent of problems caused by it. In order to diagnose IA as a compulsive disorder Young applied in her (1998a) study an adapted version of criteria for pathological gambling defined by the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). Young observed that females were looking for close relationships, romantic affairs and preferred to stay anonymous in online communication. Virtual interaction gave them a sense of belonging and possibility to share their feelings and emotions. On the other hand, males according to her observations, tended to look for dominant activities on Internet (e.g., interactive games with a content of violence, power, and control), they also tended to explore sexual fantasies online (cited in Chou et al., 2005, p.371). Furthermore, in Young's study (1998a), participants reported that EIU created academic, social, psychological, family, occupational troubles similar to those which associated with other addictions. The main problem was time 'deformation', which led to some physical complaints (disrupted sleep patterns and fatigue).

Empirical research into the area of IA has significantly increased since Young's initial effort to shed a light upon this emerging mental health problem.

3.2. Reasons for Internet use

What can 'drive' young people, particularly university students, to use Internet? Papacharissi and Rubin (2000) examined Internet use from a uses-and-gratifications perspective. By analyses they identified five motives for Internet use and multivariate ties among the predictors and motives. The motives were: interpersonal utility, fill/pass time, information seeking, convenience, entertainment

(ibid). Further, Nadkarni and Hofmann (2012) reviewed studies about psychological factors contributing to use of the most popular Internet-based social networking site, Facebook. They proposed a model which suggests that Facebook use is motivated by two primary needs: to belong and for self-presentation (ibid). Leung (2014, p.425) mentioned also various motivations, such as "information exchange, conversation and socializing, entertainment, escape and diversion, reassurance, and fashion" and continued that with these motivations it is not surprisingly that young people lose control of time spending online which can result in IA. Furthermore, based on literature reviewed, it still remains unclear what people being online get addicted to. Reviews conducted by Kuss and Griffiths (2011, 2012) suggested that certain behaviours on Internet might be more problematic than others. It was indicated that the engagement in specific behaviours on Internet may lead to symptoms associated with addiction, such as online gaming and online social networking.

3.3. The cause or/and the effect?

In accordance with Starcevic (2010) as well as Cash et al. (2012) many researchers and clinicians noticed that a number of psychological/mental disorders co-occur with IA. There was even a debate about what came first, IA or the co-occurring disorders (Kratzer & Hegerl, 2008). For example, according to Ebeling-Witte et al. (2007) IA can occur from such interpersonal troubles as introversion or other social communication problems. In its turn, poor communication skills can result in low self-esteem, feeling of isolation and other problems in life (e.g., difficulties when working in groups or making public presentations) (Young, 2015). Morahan-Martin and Schumacher (2003) examined whether lonely people access Internet to improve their psychological well-being. The researchers proposed that the relationship between loneliness and Internet may be bi-directional. In their (2003) study, they suggested that lonely users spend time online to relieve loneliness, social inhibitions, distress and negative affect, as well as to relax and pass time. The other proposition was that lonely people are more likely to use Internet excessively because it creates a particular social environment for them to be able to interact with others. Indeed it is unclear whether, for example, depression, loneliness, or low self-esteem makes people avoid human interaction and triggers them to communicate by means of electronic devices. Maybe people become depressed or lonely as a result of poor face-to-face contact? Maybe people with specific personality traits and preferences are driven to use Internet excessively, and the addiction results in intensifying the personality traits and preferences. In fact it can be like a vicious cycle. It is important to highlight that up till now, it is unclear what the actual relationship between Internet use and the psychological well-being of user is,

and whether IA results in social and psychological issues associated with it, or whether those issues make an individual vulnerable to IA.

3.4. Risk factors (predictors) associated with IA

In accordance with Young (2015) cited in Reuter & Montag (2015, p.6) as Internet addiction has gained credibility, "more studies focused on risk factors associated with the development of the disorder". Young (2015) as well as Breslau et al. (2015) suggested that predictors of IA can be associated with three groups of risk factors*: social, psychological and biological*. On the other hand, Kuss et al. (2014) who reviewed the existing 68 epidemiological studies of IA, outlined another categorization. They revealed that among adolescents and adults (college/university students) IA is associated with a number of *sociodemographic* (e.g., higher family income levels, gender, being migrant or abandoned) and *psychosocial factors* (e.g., Internet use for mood regulation, low life satisfaction, low well-being, low self-esteem, stress, low academic achievements, loneliness, lack of confidants, family conflicts, preference for online social interaction), as well as *comorbid mental health conditions* (e.g., alcohol and substance abuse, depression, social phobia, schizophrenia, anxiety, ADHD[6]) and *Internet use variables* (e.g., frequency and length of Internet use, Internet access at home, age of first exposure to Internet) (ibid). Findings from some studies related to these variables are presented below for the further review.

3.4.1. Sociodemographic variables

Some studies found that in young adults (college/university students) IA can be, for example, associated with male gender (see Bakken et al., 2009; Canan et al., 2012; Huang et al., 2009; Morrison & Gore, 2010; Tsai et al, 2009), Asian ethnicity (Yates et al., 2012), city residence (Ni et al., 2009), financial problems, university educational level (Bakken et al., 2009) as well as being single (Demetrovics et al., 2008).

3.4.2. Psychosocial variables

Cotten and colleagues (2011) examined whether Internet use, including using Internet for health purposes, can be associated with psychological life stressors (e.g., family conflict and dissatisfaction). They came to a conclusion that Internet use is not necessarily positively associated with psychological distress. The influence depends on the type of online activities and amount of time spent on Internet

[6] ADHD - attention deficit hyperactivity disorder

(ibid). Results presented by Caplan (2010) show that such psychosocial factors as preference for online social interaction and Internet use for mood modification (e.g., overcoming of loneliness, social anxiety, social skills deficit) predict compulsive Internet use and a cognitive preoccupation with Internet. Further, Oktan (2011) found that combined emotional management skills such as showing emotions, verbal expression of emotions, controlling negative physical reactions and anger management, are negatively associated with IA among Turkish college students.

Some studies (see Tsai et al, 2009; Yates et al., 2012) focused on missing social connection that some Internet users have in real life context. This low social support in part causes users to turn to virtual relationships and maintain online communication. Other social variables, such as low satisfaction and poor academic achievements (see Huang et al., 2009; Lin et al., 2011), homesickness (Ni et al., 2009), lack of family love and support (Huang et al., 2009), low actual social support directly and indirectly mediated through depressive symptoms (Yeh et al., 2008) were also associated with IA. Other researchers (see Hardie & Tee, 2007; Morahan-Martin, 1999; Whang et al., 2003) suggested that social relationships play an active role in the development of IA and, thus, loneliness can be associated as a risk factor for IA. Furthermore, such psychological variables as impulsivity (see Lin et al., 2011; Yen et al., 2009a); low agreeableness (Kuss et al., 2013); low self-concept (Yates et al., 2012), fun seeking (Yen et al., 2009b) and negative emotion avoidance (Beutel et al., 2011) were found to be associated with IA. According to Tsai et al. (2009) a habit of skipping breakfast was also statistically associated with EIU.

3.4.3. Comorbid symptoms

IA found to be associated with a variety of psychiatric disorders. Information about such coexisting psychiatric disorders is essential in order to understand the mechanism of IA (Ko et al., 2012). Thus for example, results (Lin et al., 2014) indicated that IA was associated with problematic alcohol use; the psychosocial proneness of problem behaviours was associated with IA as well as problematic alcohol use in adult adolescents. Same conclusions were indicated by Yen and colleagues (2009b). Other scientists (see Huang et al., 2009; Lin et al., 2011; Morrison & Gore, 2010; Ni et al., 2009; Whang et al., 2003; Yeh et al., 2008) found that such comorbid symptom as depression can also result in IA. Problematic Internet usage may involve distractibility and difficulty focusing on study/work activities – symptoms that are typical for ADHD. Thus, it is no surprise that some studies (see Ko et al., 2012; Yen et al., 2009a) found association between IA and ADHD. Social anxiety (see Bakken et

al., 2009; Ni et al., 2009), sleeping disorders (Bakken et al., 2009), hostility and harmful alcohol use (Yen et al., 2009b, 2011), dissociative experiences and depersonalisation (see Beutel et al., 2011; Canan et al., 2012) were another factors associated with IA.

3.4.4. Internet use variables

Results (see Bakken et al., 2009; Bener et al., 2011; Bergmark, 2011; Beutel et al., 2011; Kheirkhah et al., 2010; Lin et al., 2011) indicated that frequency and amount of time spend online can be associated with IA. Based on other studies (see Carbonell, 2012; Kheirkhah et al., 2010; Kuss et al., 2013; Morrison & Gore, 2010; Siomos et al., 2012) Internet applications and online social applications were also found to be a criterion of identifying IA due to the fact that the condition is socially motivated. Chat rooms, interactive games, instant messaging, social media, eBay were considered to be the most 'addictive' applications. Furthermore, according to Lin et al. (2008, 2011) positive outcome expectancy from Intern use was also linked to the development of IA.

3.5. Consequences resulting from problematic Internet use

IA is characterized by excessive or poorly controlled preoccupations or behaviours regarding Internet use. The consequences of IA are becoming apparent after months of problematic or excessive Internet use and can lead to impairment or distress in different aspects of individual's life. The consequences are also broad and potentially serious because they can be life altering. From the revealed negative consequences (Kuss et al., 2013; Syed Shah et al. 2014), it appears that IA can have a variety of detrimental consequences for youngsters that may require professional intervention.

Results (see Akhter, 2013; Derbyshire et al., 2013; Iskender & Akin, 2010; Leung & Lee, 2012; Panayides & Walker, 2012) indicated that IA significantly negatively correlated with academic performance of students. Results (Young, 1998a) also indicate that Internet use had interfered with users' professional performance or their social life. Others (Lam et al., 2009) described skipping sleep, ignoring family responsibilities, and showing up late for work. Austin and Totaro (2011) found that absenteeism[7] and presenteeism[8] can also be associated as a negative outcome of excessive time devoted to Internet use.

[7] Absenteeism is a practice of regularly staying away from work or school without good reason
[8] Presenteeism is a practice of being present at work or school but not performing at full capacity

Furthermore, studies (see Kuss et al., 2014; Petersen et al., 2009; Weinstein & Lejoyeux, 2010; Young, 2004) identified a variety of unfavourable psychiatric, functional, psychosocial, and health consequences associated with IA. Functional consequences include self-reported problems with time management, motivation, finances, and decreased job/study achievements. Psychosocial consequences of IA include increased social withdrawal, interpersonal relationship problems, and mood regulation difficulties (see Kerkhof et al., 2011; Kraut et al., 1998; Kuss et al., 2014; Lin et al., 2011). According to Murali and George (2007), Internet addicts experience such health problems as fatigue related to sleep deprivation, backache from many hours sitting, and carpal and radial tunnel syndromes. Individuals who suffer from IA are also confronted with such health issues as overweight and obesity due to lack of physical activity and sleep disorders (see Lam, 2014; Vandelanotte et al., 2009), mental health problems, including depressive symptoms, somatic and social anxiety, ADHD (see Dong et al., 2011; Ko et al., 2012; Yen et al., 2009a), impulsivity and sensation-seeking (see Lee et al., 2012; Treuer et al.; Yen et al., 2009b); behavioural problems, including substance misuse, self-injurious behaviour, and suicidal ideation and attempts (Sun et al., 2012).

There is also evidence of increased aggressiveness associated with excessive use of different online applications (see Ivory & Kalyanaraman, 2007; Saleem et al, 2012) and growth in sexually transmitted infections among those who use Internet to find new sexual partners (Kubicek et al., 2011). Youngsters can also encounter with such negative outcomes as disclosure of private information (Finkelhor et al, 2000), consuming pornographic or violent material (Sabina et al., 2008), being targeted for Internet harassment (Kiriakidis & Kavoura, 2010), being cyber-bulled (Erdur-Baker, 2010), sexually solicited (Baumgartner et al., 2010), and having Internet addiction (Young, 1998b).

Correlation between depression and IA was also observed in Turkish high school students (Üneri & Tanidir, 2011). Another study where college students were a target group was conducted by Morahan-Martin and Schumacher (2000). It was revealed that 8% of 277 respondents were excessive in their Internet use and that resulted in their loneliness, personal problems, withdrawal symptoms, distress, and mood altering. It was also observed that these pathological users experience loneliness to a greater degree than non-pathological (ibid). Recent study conducted by Li and colleagues (2015) indicates that among the respondents (university students) sleep deprivation, academic under-achievement, failure to exercise and to engage in face-to-face social activities, negative affective states, and decreased ability to concentrate were frequently reported consequences of EIU. Regression analysis

conducted by Rashid et al. (2014) showed significant effect of IA on anxiety level among university students.

3.6. Gender difference among Internet addicts

According to Kuss et al. (2014) there is a gender differences in Internet use. They reviewed 68 studies published since the millennium and that are related to excessive Internet use among college and university students. Single male adult of Asian descent, disproportionately young, with unsatisfactory financial situation and university level education found to have increased odds of IA. Researchers suggest that such link between male gender and IA may be mediated by other variables, such as the type of online application used (ibid). For instance, according to Chou et al. (2005), males have preferences for online activities that are more frequently dysfunctional (e.g., online games and online sex). Other results (Morahan-Martin & Schumacher, 2000) also indicated that among pathological users there were more males than females (12% vs 3%) who used Internet to meet new people for emotional support and to talk with like-minded others, while males played online games and were interested in technological sites, but they were likely to be lonely and socially disinhibited online. In addition, the higher prevalence for IA among males can be mediated by individual differences in personality traits such as low self-control, impulsivity and sensation seeking (see Billieux et al., 2012 cited in Kuss et al., 20104). However, as Breslau et al. (2015) concluded, different types of IA and its prevalence can be associated with a combination of different characteristics of Internet users (e.g., gender, age, sociodemographic or sociocultural factor, outcome expectancy) as well as with sample and measurement instrument.

4. THEORETICAL PERSPECTIVES

The aim of this chapter is to describe theories which were chosen to explain the findings.

4.1. Theoretical framework

In accordance with a categorization of research projects' purposes which is proposed by Robson (2011), the aim can be seen as both explorative and descriptive. When it comes to research questions, they also fall into "descriptive" category according to Knight's rating (2002, p.9f).

4.2. Theories chosen for the study

4.2.1. Bronfenbrenner's bioecological model of human development

Bronfenbrenner's theory of human development is a theory that was, until Bronfenbrenner died in 2005, in a continuous state of development. The essence of this theory became the Process–Person–Context–Time (PPCT) model. According to this model, human development can literally be seen as a particular form of reciprocal interactions between person and environment which operate and is influenced over time. Such long-lasting and relatively regularly-occurring interactions that are essential for the individual's development are defined as proximal processes (PP) (Bronfenbrenner & Morris, 1998). At the heart of the latest PPCT model, PP were defined by Bronfenbrenner (2001) as "primary mechanisms" in the development of a person. Furthermore, researcher claimed that PP and the development of person are determined by person's activity.

PP are distinguished in terms of two major kinds of **developmental outcomes** which PP produce, they are **competence** and **dysfunction**. The notion **competence** is defined by Bronfenbrenner and Evans (2000) as "the demonstrated acquisition and further development of knowledge, skill, or ability to conduct and direct one's behavior across situations and developmental domains. The outcome can occur in any domain - intellectual, physical, motivational, socio-emotional, or artistic – either by itself or in combination with one or more other spheres of activity" (cited in Kejerfors, 2007, p.25). The notion **dysfunction** refers to manifestation of difficulties on the part of the developing person in maintaining control and behaviour across situations (Bronfenbrenner & Morris (1998) cited in Damon & Lerner (2006, p.803)). Examples of steady patterns of proximal processes which produce competence or dysfunction were revealed by Bronfenbrenner and Morris (1998), Bronfenbrenner (2001) in the following activities: playing with a child, child-child and parent-child activities, group

or solitary play, reading, learning new skills, working with hobbies, athletic activates, making plans, problem solving, acquiring new knowledge. To put it differently, proximal processes can be characterized as what occurs over the course of daily activities between developing individuals and people, objects, tools, symbols in his or her immediate environment.

Since the aim is to explore how people can perceive their interaction with Internet and what is its influence on different life courses, Bronfenbrenner's bioecological model of human development can be seen of significant importance for understating the studied subject. In the view of a bioecological perspective, young persons' interaction with Internet can probably be seen as a proximal process. An assumption was made that the empirically received data would reveal some "changes" or as Bronfenbrenner also referred "development" in behavioural and communicative patterns of the respondents (i.e. from the time questioned people started to use Internet until the moment of participation in questionnaire survey). **The changes** (development) could be related to Internet use and, according to Bronfenbrenner, be either **beneficial** for the individual or **injurious**. In other words, if Internet is seen as a proximal process, it is possible to explore whether outcomes resulted from Internet use could be characterized as changes which cause **dysfunction** (e.g., disturbances of occupational/family functioning, impairment of academic performance, impact on communication and interpersonal behaviour, psychological problems, psychological well-being, money lose, depression, stress, subjective escape from problematic situations, which need actual solution) or **competence** (e.g., long-lasting support of significant relationships, profound knowledge in the subject of interest, popularity among peers, extended social contacts without any geographical boundaries; availability of opportunities to satisfy the need for belongingness).

4.2.3. Learning theory

Learning theory is a theoretical perspective in one of the dominant schools of thoughts in psychology, namely cognitive-behavioural school (Shek et al., 2014). In accordance with the cognitive-behavioural approach it is assumed that: 1) people are logical beings who make choices which are beneficial and make the most sense to them; 2) environmental events generate and influence human behaviour through the process of learning. The cognitive-behavioural approach underlines that there are two different behaviours: unconditioned and conditioned. An unconditioned stimulus produces unconditioned response, for example "people's eyes water in a high wind, they [people] salivate when given food" (Payne, 2005, p.123), simply speaking unconditioned behaviours happen naturally. As to

conditioned behaviour, Payne (2005) stated that this type of behaviour people may train, learn and get conditioned stimulus for. Thus, when an individual has learned a response to a stimulus by means of certain system of reinforcements and punishments, he or she acquires new social skills and, consequently, new properties of his or her personality which can further modify behaviour.

Learning theory is based on the idea that people learn by watching what others do and do not do, and that these processes are central in understanding a personality (Santrock, 2013). Learning theory also argues that "we can only study and influence the behavior we can see" (Payne, 2005, p.120). Furthermore, according to this theory, it is not only the external, environmental context which influences the process of learning and behaviour, but also internal factors such as satisfaction, pride, happiness, and a sense of accomplishment (Cherry, 2013). However, learning can occur simply through observation and in the absence of direct reinforcement (Pervin et al., 2008). People strive to take those actions which result in reinforcement, and avoid those one which result in punishment. In other words, as Payne (2005) considers, people can learn new behaviour in order to meet their needs and can replace the existing behaviour if it causes problems. Social learning theory proposed by Bandura (1977) extends these suggestions by arguing that "most learning is gained by people's perceptions and thinking about what they experience. They learn by coping the examples of others around them" (cited in Payne, 2005, p.121). So in his cognitive-behavioural understanding of human beings' behaviour, Bandura included the concept of observational learning as one of the main theoretical points. Personality according Bandura is formed and developed within the whole lifetime by means of socialization, education and learning.

Operant conditioning is one of the underlying principles of learning theory. This concept implies that consequences of behaviour (**positive and negative reinforcement**) affect the probability that a particular behaviour will be repeated. Learning theory can help to focus on 'positive' impacts reinforcing Internet use (anonymity, feelings of well-being, comfortability, recognition). Young and Nabuco de Abreu (2011) reviewed rewarding/reinforcement traits of Internet and video gaming. They stated that digital technology users experience multiple layers of reward when Internet users use various computer applications. Internet as well as gaming functions on a variable ratio reinforcement schedule (VRRS) (ibid). Whatever application used (general surfing, pornography, chat rooms, message boards, social networking sites, video games, email, texting, cloud applications and games), these activities support unpredictable and variable reward structures. The reward experienced is

intensified when combined with mood enhancing/stimulating content. Cash et al. (2012) mentioned the following examples: pornography (sexual stimulation), video games (e.g., various social rewards, identification with a hero, immersive graphics), dating sites (romantic fantasy), online poker (financial) and special interest chat rooms or message boards (sense of belonging). Furthermore, under learning theory Internet could be seen by some people as a medium for experiencing love, hate, or other emotional satisfactions or satisfaction of social needs and interests without interaction of a traditional nature, such as meeting a friend face-to-face. In other words, there are some characteristics of Internet which may promote new behavioural patterns, and even lead to jeopardy of healthy functioning and well-being.

5. METHODOLOGY

This chapter presents the entire research process: from the methods chosen and the literature review to the description of data collection and data analysis. Furthermore, aspects of credibility of the study and ethics are also covered in this section.

5.1. Research design

In order to answer the first research question it was intended to elicit considerable information on how the sampled university students perceive and describe their Internet use, whether there are any recognizable by them changes in their daily routine, studying process, communicative development, social life, behaviour, welfare in general from the moment they started to use Internet until participating in the questionnaire, whether they feel risks or benefits from the time spent online. Maxwell (2005) suggests that in order to answer as he calls "process research questions" (which focus on understanding how things happen or are experienced by individuals) the use of qualitative approach is relevant because it is often better in showing how things occurred. On the other hand, the first research question seemed also to fall into so called "variance research question". According to Maxwell (2005), this category focuses on correlation, namely is there a relationship between revealed 'tendencies' or patterns. A variance question "implies a search for a difference and for the particular variables that explain the difference" (ibid, p.75). This study implies a "search" for changes which could occur in the respondents' social, physical, occupational, recreational context from the time they started to use Internet until the moment they participated in the survey and what could be the reasons for the changes (if there any). A variance question implies a conduction of quantitative study. Thus, it was decided to conduct quantitative survey with purposive sampling applied in order to address the first research question. Such data collection method was relevant to use because of its efficiency in providing data at a relatively low cost and within time frame available for the project. It also allows anonymity for respondents which can encourage frankness when sensitive topics are involved.

It was decided to go beyond the limitations of a single approach and put a second research question which could probably provide more comprehensive answers and a better understanding of the empirical data (which were collected to answer the first research question). The second research question was intended to understand social workers' views on Internet and effects of its use on students and to reveal new aspects of empirical data (which were gathered for the first research question). It was also important to understand whether there is a recognition among social work

professionals that problems related to Internet use do exist, that Internet can influence young people's daily routines, whether social workers deal with Internet related problems in their daily practice, and if yes– how they do it. The qualitative method seemed proper to address the second research question. So, it was decided to conduct semi-structured interviews with people from social work field who might work with either young people/students in their daily work or work with dependencies of any kind or in intervention field. The main advantage of semi-structured interviews is that they give "considerable freedom in the sequencing of questions, in their exact wording, and in the amount of time and attention given to different topics" (Robson, 2011, p.285). It secured quite relaxed and open attitude during the interviews. Even though the interviewer guided and led the interviews, the whole time was dedicated to the respondents' reflections and suggestions on research topic without interrupting them as it is recommended by Kvale and Brinkmann (2009).

5.2. Mode of procedure

5.2.1. The choice of literature

Some time was spent to develop a small set of keywords in various compilations which could be useful to search for relevant literature. They were: Internet use, Internet dependence, Internet disorder, Internet addiction, excessive Internet use, problematic Internet use, influence of Internet use, consequences of Internet addiction, Internet and college students, Internet and young adults.

An extensive literature review was done by using such electronic resources as, for example, Academic Search Elite, Google Scholar, SAGE Journals Online, ScienceDirect.com, SpringerReference.com, Academia.edu. Robson (2011) also asserts that despite the age of Internet, to start the literature search on library shelves since they are "jewels of civilization" and have been with people for a very long time. So, considerable amount of relevant books and articles were found with the help of ebrary and Libris at the library of the Univeristy of Gävle, other relevant books and articles (which were available in book catalogues of other Swedish universities) were received after a few weeks of waiting time. Furthermore, books, reviews and reports available at the library of CAN[9] (Stockholm, Sweden) and the Department of Social Work Library[10] (Stockholm, Sweden) were found to be very useful and

[9] CAN (Centralförbundet för alkohol- och narkotikaupplysning – name in Swedish; The Swedish Council for Information on Alcohol and Other Drugs – name in English).

[10] The Department of Social Work Library (Biblioteket för socialt arbete) is a partly autonomous branch library of Stockholm University Library.

interesting to work with. Course literature of International Social Work department at the University of Gävle was also used to find relevant theories and methods for the conduction and analysis of the results.

5.2.2. Selection of persons to receive questionnaires and to be interviewed

In order to best fit the aim and stay within its frame and limitations (time, distances, resources), both a quantitative survey and qualitative interviews were conducted by applying "purposeful selection" (Maxwell, 2005). "This is a strategy in which particular settings, persons, or activities are selected deliberately in order to provide information that can't be gotten as well from other choices" (ibid, p.88). Grinell and Unrau (2005) called such selection decision as "purposive sampling" and argued that it does not produce a sample that represents some larger population, but it can be exactly what is needed in a case study of clearly defined group.

For the quantitative study there was a following criterion: it should be young people who use Internet in their daily life and who were most likely particularly knowledgeable about "the issues under investigation" (Grinnell & Unrau, 2005). The same logic applied to selection of interview participants. For the qualitative study there were two criteria. Firstly, representatives of social work who in their daily work interact with young people and/or students and face/deal with Internet-related issues, were of interest for this study. Secondly, social work professionals who deal with people experiencing different kinds of dependencies (medical drugs, alcohol, narcotics) or with people who have behaviours that don't involve intoxicants (e.g., video game playing, compulsive gambling, television watching, overeating). All of the members must also willing to participate in the study and share opinion. It was aimed to interview social work professional from different countries to see the difference of what they had experienced, worked with, and suggested on the studied topic. Possible alternatives of countries were Russia (author's homeland) and Sweden (author's temporal place of residence while conducting this study).

5.2.3. Description of the investigation process

Robson (2011, p.82) suggested that a researcher "must already have a substantial amount of conceptual understanding about a phenomenon before/…/investing precious time and resources into such [fixed research] design. So a questionnaire (see Appendix I) with 38 questions was drawn up using the reviewed literature and chosen theory. In addition, Patton (1980) argued that in most of the

cases quantitative approach is hypothetical-deductive. To develop questions for the quantitative survey a following hypothesis was point of departure: it was presumed that the respondents could probably demonstrate the core symptoms of IA outlined in chapter 2 as well as related problems in terms of negative influence on social activities, interpersonal relationships, physical condition, time management.

Furthermore, daily practice of Internet use proves the fact that sometimes individuals are in online contact with people who are not from their nearest environment and might even live in another part of the world. There are cases when people have never even met each other in real life context. That's why, when formulating questions for the questionnaire a clear dichotomy was beard in mind between what happens on Internet and what happens 'outside' of Internet, in other words, there were questions about time/relationships/friends from online and from everyday reality.

According to Robson (2011), fixed designs should always be piloted because it gives the opportunity to revise the conceptual framework of design (e.g., to specify the theoretical framework, to renegotiate the research questions, to rethink the sampling strategy). Therefore, a pilot testing of questions (which were afterwards not included in the questionnaires' results) was executed in order to assist questionnaire design and research conceptualization. Data gathered from the pilot testing was not planned or intended to be used in the results. Some amendments were required to be done in the formulation of questions: few words were replaced with easier for the understanding alternatives; other questions were reformulated or changed to open questions. As a consequence, the questions were formulated in a way that potential respondent would understand them easily.

It was decided to administrate questionnaires at the University of Gävle. The main reason of choosing university as a place of distributing questionnaires was a great likelihood to meet there young people who could be convenient with Internet use in their daily routines. Any ambiguity whether it was not so, was eliminated: before handing over questionnaire to a potential respondent the aim of study was introduced and explained.

On the 19th and 20th of April, 2011 printed questionnaires were administrated at the University of Gävle by the author and another student from the same program. People were approached in the library, mini rooms and cafeteria, whether they would like to participate in the study and fill in the

questionnaire. The participants were asked to quickly look through the questions in order to check if they were not sure about any question's formulation or if they did not understand something. After a while (in 15-25 minutes) all of the papers were received back either by collecting them from these people or respondents came over themselves. It was people's free will to participate or not, not everyone who was approached agreed to participate. There was a group of four students who turned down the invitation due to time absence and their preparation for the project. The probability that this could affect the results was minimal, as the questionnaire was filled in only by people who agreed to take it and answer the questions. Since the sampling method was proportionate, 54 individuals were approached in order to get 50 valid questionnaires with equal proportion: 25 females and 25 males.

To get in contact with social workers, almost 30 letters with the request to participate in the study were sent to social services within therapy treatment, therapeutic centers, mental health clinics, hospitals which were located on the territory of Sweden and to some universities located in Moscow and St. Petersburg (the Russian Federation). Departments taken into consideration were of the following 'directions': social work, social sciences, mental and physical psychology, health psychology, development and diversity, philosophical sciences, anthropology. Email addresses were found by using World Wide Web. The response rate among social workers who were asked to participate in the study was very low. Only two positive responses were received. One response was received from a person who within last 14 years worked as a social worker and at the same time was a lecturer in department of Applied Social Sciences in one of the universities in St. Petersburg city. There was a possibility to conduct a face-to-face interview with this person in Russia during summer 2011. Another response was received from a person working in a Swedish community hospital at the department where people with mental/psychological disabilities as well as drug, alcohol and other types of consumers could get help and treatment. After negotiations with her it was decided to conduct an interview via Skype with the application of web-camera because the author did not have financial possibility to travel to another municipality of Sweden.

The semi-structured interviews were conducted by two interviewers: the author and another student (whose education at the International Social Work program was not finished). Conduction of the interviews was followed by an interview guide (see Appendix II). This interview guide was drawn up in a way that it included a number of certain topics, which were accomplished during the interviews with some extra questions in order to facilitate the interview process. A few leading questions were

also asked during the interviews but not in order to lead in a particular direction, rather than to check the consistency of the given answers. The interviewers also tried to avoid any cues during the interviews which could lead the interviewees to reply in a special way to 'please' the interviewer. Instead questions were asked in a clear and non-threatening way to try to get the social workers to talk freely and openly (Robson, 2011). Guidelines described thoroughly by Kvale and Brinkmann (2009) were also followed while conducting this flexible research design. According to the researchers (ibid), the procedure of conducting interview project should be organized based on seven stages: 1) thematizing; 2) designing; 3) interviewing; 4) transcribing; 5) analyzing; 6) verifying; 7) reporting (102ff) and in this particular case, be constructed with the influence from previous research and theories chosen. Guidelines on how to behave during an interview, how to introduce the studied topic (ibid) and how to carry out the semi-structured interview were followed (Robson, 2011).

Both of the interviews lasted around 40 minutes each. The participants agreed to be recorded. Face-to-face interview with the social worker from Russia was recorded by means of a tape recorder, Skype interview with the social worker from Sweden - was recorded by means of computer program. In both cases notes were written up during the interviews in part as a fail-safe when there could be taping problem.

5.3. Tools of analysis and presentation of the results

In order to analyze the quantitative data, a bivariate analysis was applied. First of all filled in questionnaires were split up into two subgroups: variable 'female' and variable 'male'. Respondents' answers were converted into numerical form. Then two sheets were created in Microsoft Office Excel 2003 for females and males, in both of the sheets all questions were written down in a column, and the categories of answers were also written down into the rows. Then each answer of each question was entered in corresponding cell.

Quantitative data were demonstrated and further analyzed by means of bar chats[11] (created in Microsoft Office Word 2003), their numerical characteristics and texts clarifying these bar chats. The main advantage of this technique is representation of data which can be immediately experienced by the reader. Then by looking at the histograms a subgroup comparison took a place, namely a descriptive analysis of two variables – how female and male respondents experience and describe their

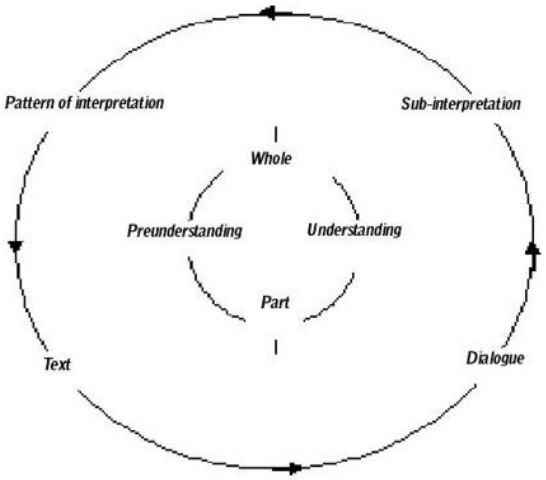
[11] According to Robson (2011, p.121) chat is a histogram where the bars are separated from each other.

Internet use and its influence. To see the correlation within the variable it was meant to notice any tendencies and define gender patterns of Internet use among sampled people. Some data analysis (see Appendix III, IV, and V) was computerized in the Statistical Package for the Social Sciences (IBM SPSS Statistics 22), another type of analysis is presented by means of calculations done in Excel 2013.

Hermeneutics was applied to carry out flexible research design. After the conduction of interviews, they were thoroughly transcribed. Transcription of the interview with the social worker from Russia was translated into English. Transcription of the interview with the social worker from Sweden was in English as it was the only language used during the whole interview session. The respondents' statements were transcribed verbatim and expressions such as 'aaa', 'hmm', as well as laughs, sighs were also noted in the transcriptions (Kvale & Brinkmann, 2009). During the transcribing process each interview was listened thoroughly a few times until they could be listened without any correction done in the transcripts, thus accuracy of the recordings could be ensured. It took around 8 hours to transcribe each of the interviews. Ethical standpoints of the transcription were followed. That means in order to ensure confidentiality of the respondents, their names were not used in the transcriptions and they were designated as social worker A and social worker B from Russia and Sweden respectively. Transcriptions were not read solely by the author: after completion they were send separately to each of the social workers by email in order to discuss later on if all of the information which was presented by them processed in a meaningful and useful manner. The results of transcribed data were partially quoted by the interviewees' own words (see Kvale et al., 2009; Patton, 2002).

Afterwards the 'complete' (transcriptions approved by the social workers) were read in their entirety three times. Application of hermeneutic approach implies a deeper understanding, coherent meaning of the data 'gathered' from an interviewee (see Alvesson & Sköldberg, 2009; Robson, 1980). Using this philosophy of science, it was aimed to look deeper beyond what was said by the interviewees - a close attention was paid on social workers' opinions, assumptions, experience and descriptions. Rereading the transcriptions gave the author a better interpretation of the material received. For every new interpretation some new arguments were found to be critical, useful or supportive in answering the second research question. Base version of the hermeneutic circle (*pic.1*) was applied during the transcription and analysis of interviews.

Picture 1. The hermeneutic circle



Following this circle it was tried to identify and understand the structure of the information collected and to depict how the interviewed social workers experienced Internet related issues at their work and daily practice and what kind of presumptions they had (Payne, 2005). Literally it was like a dialog with the text: the researcher keeps on coming back, underling subjects that seemed to be of major importance for the study. These subjects (discussed by both of the social workers) formed a few themes which are further presented and analysed.

After the themes were indicated, meaning coding/categorization was executed where codes arose based on the interpretation of the patterns found in transcribed texts (Robson, 2011). A "cross-case technique" was applied by grouping together answers to common questions from both of the interviewees (Patton, 2002). Afterwards these texts were coded by detecting a set of keywords. The coding was both concept-driven (based on knowledge gained from previous research in the field) and data-driven (based on data induced) (Kvale and Brinkmann, 2009). The coding was later on condensed into central themes. A separate meaning interpretations of the data (categorized under each theme) was done after. The use of quotes were seen to be the most relevant and illustrative in order to support the accompanying text.

5.4. Essay credibility

5.4.1. Validity

From a realistic perspective validity refers to accuracy of the results (Robson, 2011). On the other hand, validity can be seen as verification process through the whole study with instant checks on plausibility of the findings (Kvale & Brinkmann, 2009).

Furthermore, before drawing up and distributing the questionnaires, one of the main difficulties which could be experienced was the language. Not all young people living, studying in Sweden have good knowledge in English as compared with the native speakers. So, it was anticipated that the respondents might not understand a question correctly and answers could not relate to the studied topic. That's why as it was also already said a pilot testing of questions had been accomplished. It contributed to some insufficient changes of the questionnaire design and formulation. Questions were formulated in a more clear, readable and understandable way, so that all respondents could easily understand and answer any question.

When it comes to interviews, before the conduction an interview guide which could meet the aim and the research questions, was carefully worked out. The preliminary interview guide with the questions was sent by email to future interviewees in order to avoid further misinterpretations and so that they could really capture the purpose and probably give 'deeper' insight on the studied topic. The interview with the social worker from Russian was conducted in Russian, the interview with the social worker from Sweden – in English. Due to the fact that the author is familiar with both of the languages, it is assumed that this may did not cause any loss of empirical data.

Nothing that could affect the responses during the interviews was noticed. The appointments were planned, discussed and mutually agreed on time suitable for both of the participating sides. It seemed that the interviewed people made appointments in their schedules so that they were not disturbed during the interviews by colleagues or other people. The interviewer tried to let the respondents speak as freely and detailed as possible, since it is considered to also increase the validity (Patton, 2002). Both of the interviewees were relaxed and reflective, they talked with interest during the interviews. The interviewer had also enjoyed the time. At the end of each interview, the interviewer made a summary in order to figure if the respondents' answers were understood and interpreted correctly.

Later on both of the interviews were transcribed. When the transcription was finished, in order to secure so called face validity (Robson, 2011), the empirical material was send to the social workers in order to pick up material that seemed to be reasonable and to discuss if the meaning of their statements was correctly written down and interpreted. Some modifications of the interpretations were made during this stage. Furthermore, a relatively large number of excerpts were used for presentation and analysis of the results.

5.4.2. Reliability

During quantitative data collection a few follow-up questions were asked in cases when the response was not fully understood or when the answers of the interviewees were vague. It was done in order to increase reliability of the empirically received data. At the same time, as Kvale and Brinkmann (2009) recommend, in order to test the stability of statements of the respondents, in the questionnaires they could find a number of similar questions worded in a different manner[12] and with another categories of answers: "strongly disagree", "disagree somewhat", "neither", "agree somewhat", "strongly agree". It was done intentionally in order to confirm and/or check previously received answers from the respondents and thus increase reliability of the results.

5.4.3. Generalizability

The respondents as well as the setting was representative (only students at the University of Gävle were asked). The essential characteristics shared by the respondents were their age category (from 19 to 29 years old), main occupational activity (studying at the university) and use of Internet in their daily life. To generalize the findings collected from 50 people against young Internet users who study in other universities either in Sweden or another country was impossible. "The larger the sample, the lower the likely error in generalizing" (Robson, 2011, p.271). It was also impossible and of no interest for this study to generalize the data collected from the face-to-face interviews as the feedback was very subjective and based on personal life and work experiences of two social workers.

[12] An example of such questions is: "It happens that I get trouble with my school/employment due to Internet related activity" vs "If interviewees' job/study performance or productivity suffer because of Internet use".

5.5. Ethical standpoints

Ethical considerations arise when carrying out research involving people. According to both Robson (2011) and Kvale and Brinkmann (2009) ethical considerations should be taken into account both in planning and carrying out the study. Throughout all stages of work with the thesis the ethical principles for humanistic and social scientific research were used as a streamline. The fundamental guidelines for social work profession proposed by IFSW[13]/ IASSW[14] (2004) as well as aim (with its possible outcomes for anyone involved) were also taken into account throughout the entire process of research. And that means: people were informed about the aim of this study and the potential use of the results gained; they were also informed about 'partial' announcement of the data collected (that the name of the University and the community will be mentioned in the study); the questionnaires and interviews were executed only after getting informed consent from the participants; people's participation was voluntarily and they were notified that they could withdraw any time; participants were promised anonymity to such extent that it would not be possible to reveal their identities in the final holistic analysis; participants were informed that access to all recorded material as well as to the filled in questionnaires will be available only for the teachers.

5.6. Some limitations of the study

A disadvantage when searching for research literature was absence of membership of some academic and university libraries. Instead of having access to some electronic versions of books or journals, it was necessary to wait for the print resources within weeks by ordering them via library at the University of Gävle (Sweden). Some full-text journal articles were available for downloading through Internet, but they had to be paid. Studies focusing solely on a particular online application (such as gaming, social networking) were excluded from literature search. Furthermore, in the view that Internet use can bring both opportunities and risks in its users, this study limited its scope by examining the negative outcomes associated with excessive Internet use.

As it was said earlier, it was challenging to get interest response for participation from people to be interviewed. It took several months to find persons who were 'relevant' for this study and who agreed to participate. Only two persons agreed to participate in the interviews and become a part of this study.

[13] International Federation of Social Workers
[14] International Association of Schools of Social Work

Considerably small amount of respondents and administration of questionnaires only in one single University can also be seen as a limitation.

6. RESULTS

6.1. General framework of the data presentation

The quantitative results are presented in bar graphs as a visual representation of the data. The figures in graphs are presented in percentages to reflect the main patterns of the data. The graphs are accompanied by descriptions and clarifications of the data. The population consists of two gender variables': 25 male respondents represent 100% of the questioned male 'population'; 25 female respondents represent 100% of the female 'population'. Reason for this was to be able to identify potential differences in the results based on gender. There was no need to round up percentages to whole number since one respond equals to 4% of the total population. Then by looking at the graphs a gender comparison applied, namely a descriptive analysis of how female and male respondents experience and describe their Internet use and its influence. Numbers that need to be compared on the graphs (female and male variables) are close together. The data collected from the questionnaires were categorized and grouped into several themes for analysis purposes.

The qualitative results are presented in a descriptive manner in subchapter 6.4 on the basis of themes put forward by the author of this thesis. Reliability of the results is demonstrated through citing of excerpts from the transcribed interviews.

6.2. Statistical analysis

According to Smeeton and Goda (2003), small studies can highlight differences that would be large enough to influence further decisions and outcomes, but they lack statistical significance due to a modest sample size. However, as they also stated: "A finding that is not statistically significant may not necessarily be irrelevant" (ibid, p.570). The aim was not to assess the prevalence of IA among N-amount of people during t period of time, but rather to know respondents' opinions. However, an example of conducted statistical calculation of the data is given in Appendix III, IV and V. Calculations were done with the use of IBM SPSS Statistics 22 and Excel 2013.

6.3. Quantitative results

6.3.1. Background information about the sampled people

50 questionnaires were handed out. The age of the participants were within the range of 19-29 years old for the female respondents, and between 22-26 years for the males. The vast majority of respondents spent the biggest part of their life in Scandinavia (female – 32%, male – 40%), almost the same amount of people from Europe, Russia and from China (approximately 20%) and the smallest one - from other parts of the world (India, Kurdistan, Pakistan). There were 96% of single male representatives, and only 4% of questioned men (one man) was living in relationship. There were 64% single females and 36% of responded women were living in relationship.

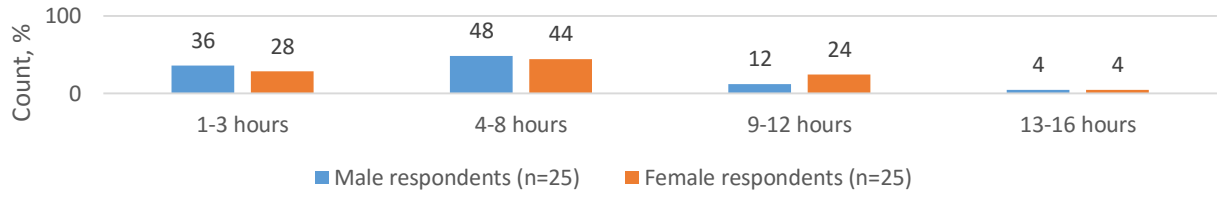
After the data were collected, it was also found out that not all of the participants were studying: 72% of all respondents were only studying, 24% of female and 12% of male were studying and had part-time work at the same time, 4% of men and women were working full-time, 12% of male respondents were working full-time and studying at the same time. Even though a few of the participants did not show to be students, the author name them so throughout this thesis.

6.3.2. Presentation and analysis of the results in relation to previous studies

In pursuit to answer the first research question, the main findings on how the sampled university students describe their Internet use are presented below. In order to simplify analysis of the data collected and trace the 'connections' among the figures presented, the questions from the questionnaire were grouped according to their semantic content. Subtitle was given to every group of questions.

Day-to-day experience of Internet use

Figure 1: Amount of hours spent daily by the respondents on Internet (N=50)

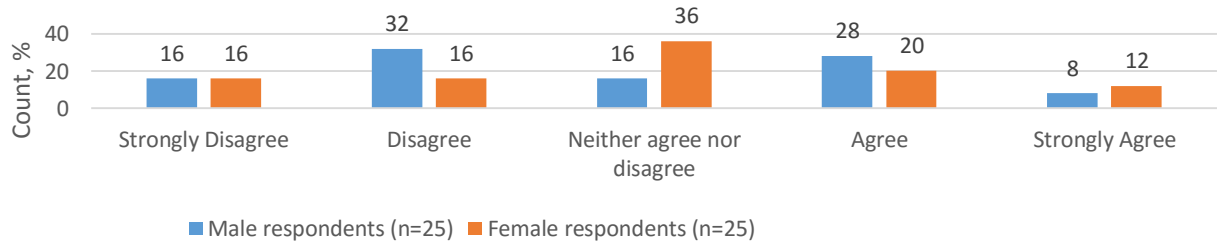


Results (fig.1) show that frequency of Internet use among the sampled students is relatively high. Almost half of all participants spend daily considerable time on Internet (4-8 hours). It is relevant to mention that 7-8 hours is a recommended studying time according many educational syllabi. Eight hours are also recognized as an average workday. More than a third of male respondents and nearly a third of females spend daily 1-3 hours on Internet. A few respondents answered that time they spend online exceeds 13 hours per day. The respondents' answers on this question "In average how many hours do you spend on Internet daily?" could be also analyzed by means of IBM SPSS Statistics 22. An example of crosstabulation of two variables was done in SPSS and presented in Appendix III.

Some studies (see Brenner, 1997; Chou & Hsiao, 2000; Shapira et al., 2000) show evidence of problematic Internet use by indicating that considerable social, occupational, academic and financial distress can happen if time spent online exceeds from 20 to 25 hours per week. If time factor is taken into consideration, based on the previous studies it can be concluded that the majority of respondents is under risk of having problematic Internet use, which could further results in other daily problems. On the other hand, Chou & Hsiao (2000, p.369f) claimed that "heavy Internet use may result in time-management problems but provide users with the opportunity to meet new people, provide additional, if not primary, tools for communicating with friends, and create more topics to share with them".

Further, the respondents answered a question to what degree they agree or disagree with a statement that…

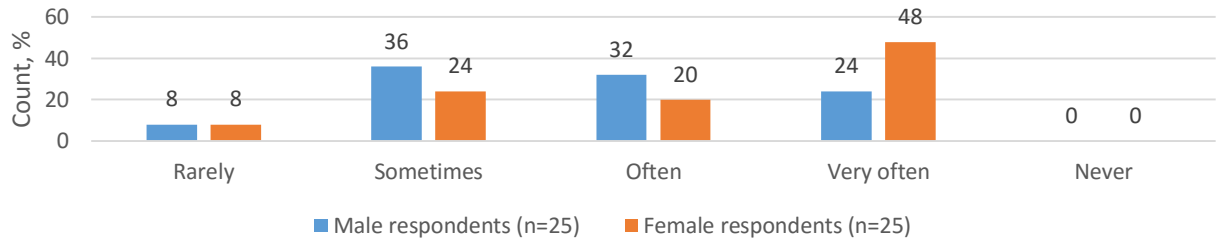
Figure 2: ...Internet takes a significant part in my life (N=50)



Among male respondents nearly half disagreed with the above statement, whereas more than a third agreed. The distribution among female respondents (who agreed and disagreed with the statement above) was equal (fig. 2).

Lin and Tsai (2001) investigated the correlation between attitudes to Internet and addiction to it among Taiwan students. They indicated that those students who highly estimated usefulness of Internet tend to need more time online in order to reach wished level of satisfaction (ibid). In this study the respondents were also asked if they feel a need to spend more time online in order to be more satisfied (to be in better mood, happier). The majority of respondents (92% of females and 72% of males) disagreed with such statement. One woman and one man acknowledged that they feel this need. People were also asked if they ever rearranged social plans in order to spend more time online. The majority again disagreed with the statement, but two men and six women have experienced such situation. So, no data were received that could clearly confirm observations of Lin and Tsai (2001).

Figure 3: ...I find that they stay online longer than I intended (N=50)



Results (fig.3) show that the vast majority of questioned people acknowledged that they hardly control their time spending online. Internet related activities sometimes influence more than a third of males and a fourth of questioned females. Results (see Bakken et al., 2009; Bener et al., 2011; Bergmark, 2011; Beutel et al., 2011; Kheirkhah et al., 2010; Lin et al., 2011) indicated that frequency and amount of time spend online can be associated with the development of IA.

The questionnaire for this study also indicated a question about main activities on Internet. The results showed that preferences of female and male participants differ a little. Online games, pornography, forums, online dating and online movies are more 'popular' among male participants, while e-shopping, email check and social nets (Facebook) are more popular among females. Based on findings reported by Young (1998a) men also use Internet differently as compared with women. According to her observations, men tend to look for dominant activities on Internet (e.g., interactive games with a content of violence, power, and control), they also tend to explore sexual fantasies online (cited in Chou et al., 2005). The results were partially supportive with respect to reasons for Internet use outlined by Leung (2014) and by Papacharissi and Rubin (2000). The most popular answers among

all respondents were: checking email, chatting with friends/colleagues, looking for information for school/job/hobby, watching movies, shopping, updating own profile on social net. Other answers were: online games, gambling, visiting pornographic sites and engagement in cybersex, participation in web forums, meeting new people (dating websites). All above is related to entertainment, and according to Yen et al. (2009b) fun seeking on Internet is associated as a risk factor for IA.

Figure 4: ...I was late for appointments more than once because of my Internet use (N=50)

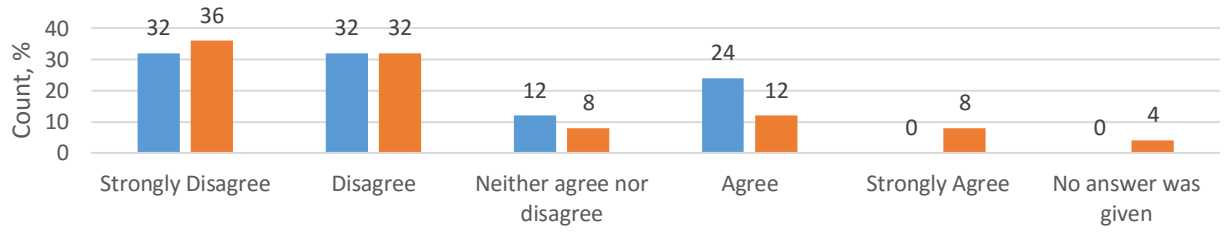
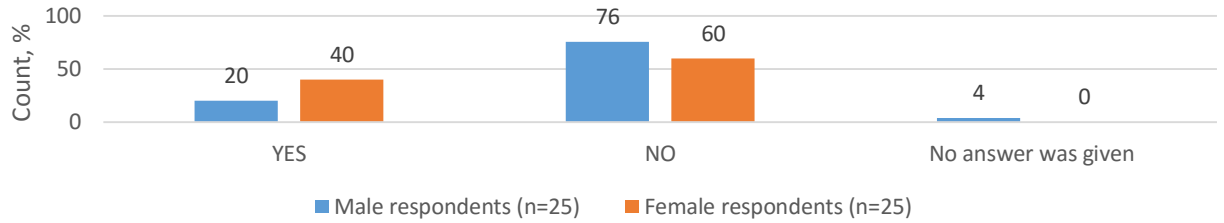


Figure 5: ...I missed more than once a meal because of my Internet use (N=50)

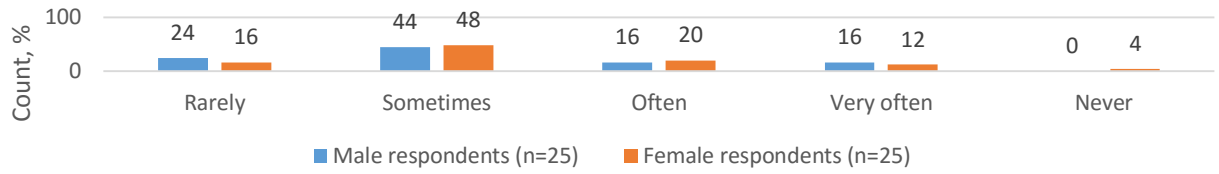


Results (fig.4&5) show that Internet use has seemingly influenced daily routines of some respondents. The majority of respondents claimed that they have never been late for appointments because of Internet use, while a fourth of males and a fifth of questioned females were late for appointments more than once (fig.4). Further, the majority of respondents claimed that they have never missed meal because of Internet use (fig.5). However, there were some people acknowledged that they missed a meal because of Internet use and were late for appointments. These findings seemingly go on the same track with results outlined by Tsai et al. (2009) who stated that a habit of skipping breakfast can be associated with EIU and by Lam et al. (2009) who referred to such a consequence of IA as showing up late for work.

Job/study activity

The respondents answered a question to what degree they agree or disagree with a statement that…

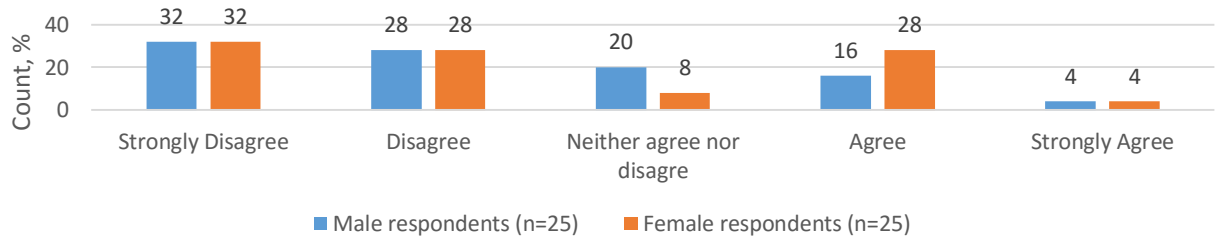
Figure 6: ...my job/study performance or productivity suffers because of my Internet use (N=50)



Job/study productivity suffers, to a greater or lesser extent, among many respondents. Sometimes nearly half of all respondents face troubles with work/school because of Internet use; a third of all respondents have faced such troubles often/very often (fig.6).

Further in the questionnaire the respondents answered two more questions with the same theme but with Likert scaling[15]. It was done intentionally in order to confirm/check the given answers (fig.6) and thus increase reliability of the results.

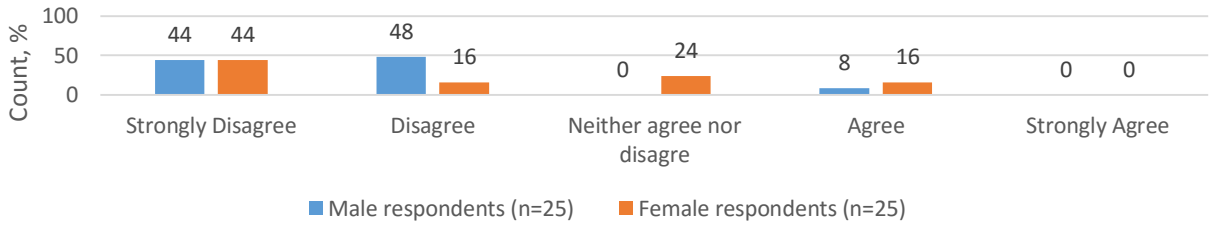
Figure 7: ...my grades and/or work performance have decreased since I started to use Internet (N=50)



More than a half of all respondents noticed no changes in their academic/occupational performance (fig.7).

[15] The format of a typical five-level Likert item, for example, could be: Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree.

Figure 8: ...I get troubles with school/employment due to Internet related activity (N=50)



Results (fig.8) show that the vast majority of males (more than 90%) and more than a half of females disagreed with the statement that their study/work is negatively affected by Internet use.

In study conducted by Young (1998a), 58% of students suffered from bad grades, academic probation, poor study habits, bad grades, failing at school and even expulsion from universities because of excessive Internet use. Results (see Akhter, 2013; Derbyshire et al., 2013; Iskender & Akin, 2010; Lam et al., 2009; Leung & Lee, 2012; Panayides & Walker, 2012; Scherer, 1997; Young, 1998a) indicated that excessive use of Internet is negatively correlated with academic performance as well as professional performance. So, data received are partially supportive.

The respondents were also asked if they ever borrowed money to cover their Internet related activities. The vast majority of all respondents disagreed with this statement, while 16% of women and 12% of men had such experience. This finding is also supportive in relation to previous studies reviewed in chapter 3.

Social life

The respondents answered a question to what degree they agree or disagree with a statement that…

Figure 9: ...I would spend an evening online rather than go out with friends (N=50)

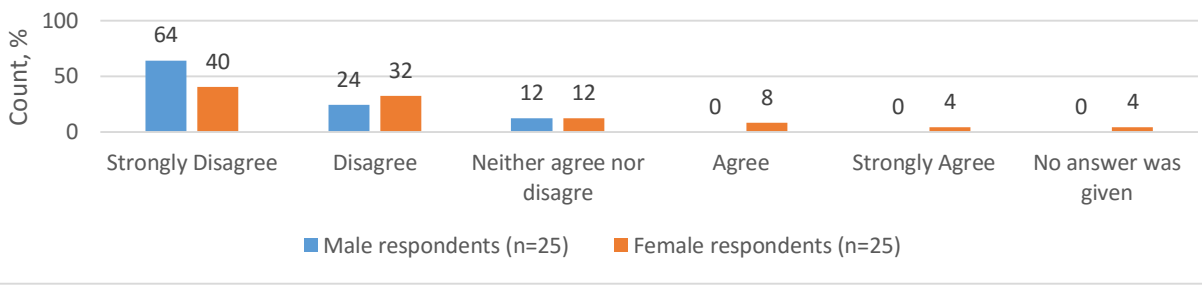
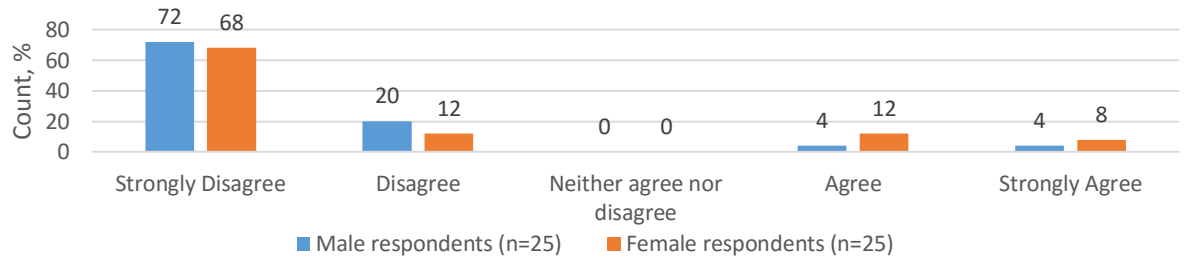


Figure 10: ...my social relationships online are more important for me than social relationships in reality (N=50)

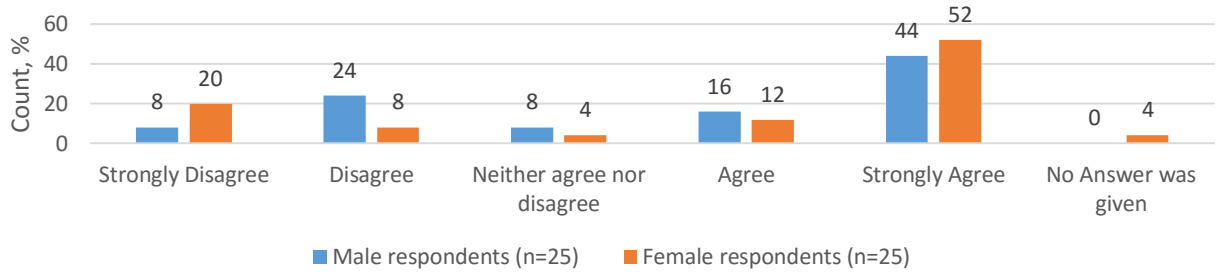


[16]

The vast majority of respondents seemingly prefer to be with friends and go out with them, rather than to be online. However, there were three women who seemed to prefer the opposite (fig.9). The vast majority of respondents also disagreed with the statement that social relationships online are more important for them than social relationships in reality (fig.10).

[16] When questionnaire had been handed over to the respondents, they were informed that a number of questions implied a clear dichotomy between what happens on Internet and what happens outside of Internet (in everyday reality)

Figure 11: ...most of the people I talk to on Internet are persons from reality (N=50)



More than a half of all respondents acknowledged that most of the people they talk to on Internet are persons from real life. At the same time a third of all participants disagreed with this statement (fig.11).

McKenna et al. (2002) found that the contacts and relations formed on Internet were of high quality, long lasting, and were rooted into the real world connection later by meetings or connecting in other ways. Wellman et al. (2001) also came to a conclusion that heavy users of Internet do not use e-mail as a substitute for face-to-face and telephone communication, on the opposite – Internet helped to maintain longer distance relationships. While Morahan-Martin and Schumacher (2003) suggested that EIU results in loneliness cause users spend time too much time on Internet by 'investing' in online interaction and interrupting real life relationships. No data were received that could clearly confirm observations received by McKenna et al. (2002), Morahan-Martin and Schumacher (2003) and Wellman et al. (2001), but the results are supportive in a sense that Internet can affect socializing routines of some respondents. Moreover, it is also seemingly to conclude that for some respondents there is a probability for random contacts or presence of virtual environment, i.e. 'friends' they have never seen or talked to in real context. It means that the sampled students 'invest' their time, energy, emotions to online world environment. McKenna et al. (2002) wrote that "rather than turning to the Internet as a way of hiding from real life, those who are socially anxious and those who are lonely turn to the Internet as a means of forming close and meaningful relationships with others in a nonthreatening environment" (cited in Tyler, 2002, p.201).

Answers of the respondents on the above questions (fig.9,10&11) can be also analyzed by means of IBM SPSS Statistics 22. An example of three-way crosstabulation with six categorical variables was executed in SPSS and presented in Appendix IV.

Communicative skills

The respondents answered a question to what degree they agree or disagree with a statement that…

Figure 12: ...it is easier for me sometimes to resolve an interpersonal conflict electronically instead of face-to-face (N=50)

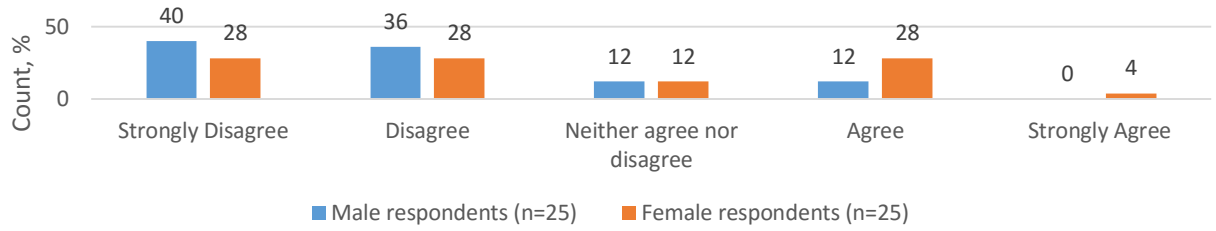
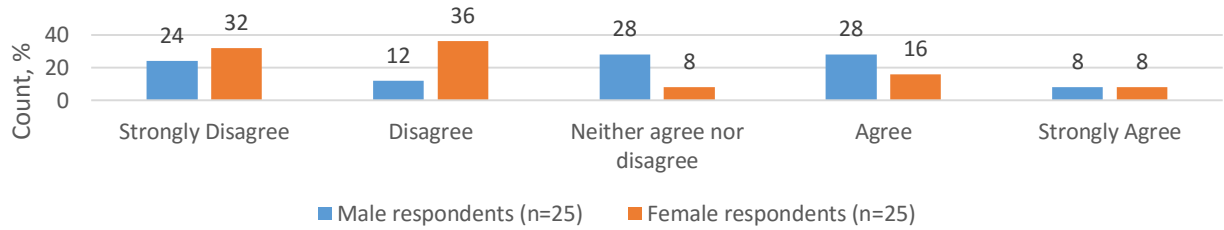


Figure 13: ....I find it is easier to talk, discuss things with people on Internet than in person (N=50)



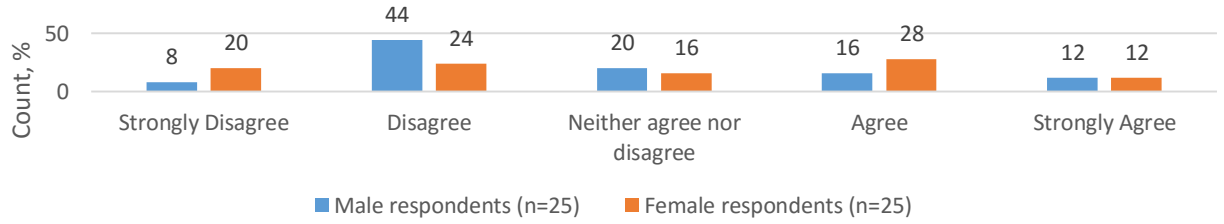
As to communication, participants seemingly communicate physically rather than using virtual communication. The vast majority of males and more than a half of females argued that it is easier for them to resolve an interpersonal conflict face-to-face (fig.12). Further, the vast majority of females and more than a third of males claimed that it is easier for them to talk, discuss things with people in person than on Internet (fig.13). But the results also show that some respondents prefer to dispute/discuss things with others on Internet (fig.12&13). It could imply that they have more time to think what to say, they probably control the emotional and physical reaction if it's a sensitive topic. Oktan (2011) found that showing emotions, verbal expression of emotions, controlling negative physical reactions can be associated with EIU as these people feel more comfortable, confident, and easier and under-control when they express themselves electronically. Further, Campbell et al. (2006) and Kandell (1998) stated that in order to manage main developmental stressors students use online communication to ensure anonymity. In its turn, anonymity allows them to build communication devoid of the anxiety which can, for example, take place in face-to-face communication. Li et al.

(2015) stated that among the respondents failure to exercise and to engage in face-to-face social communication was frequently reported consequence of IA. No data were received that could clearly confirm observations received by Campbell et al. (2006), Kandell (1998) and Li et al. (2015), but the results are supportive in a sense that Internet can affect communicative skills/routines of some respondents. But according to Caplan (2010) preference for online social interaction can predict EIU.

Psychological/emotional/physical condition

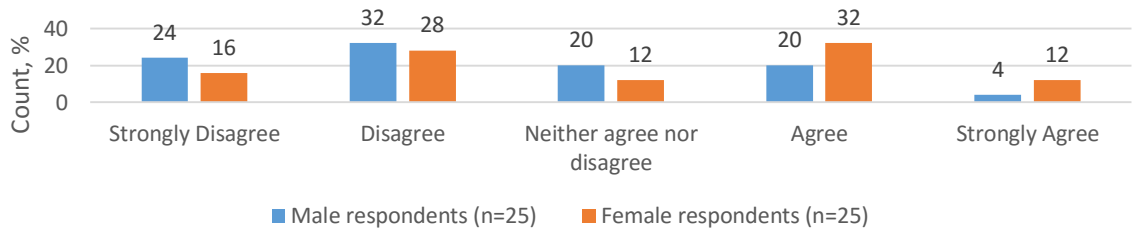
The respondents answered a question to what degree they agree or disagree with a statement that…

Figure 14: ...I would prefer Internet to relax and/or cheer up when I am down or depressed (N=50)



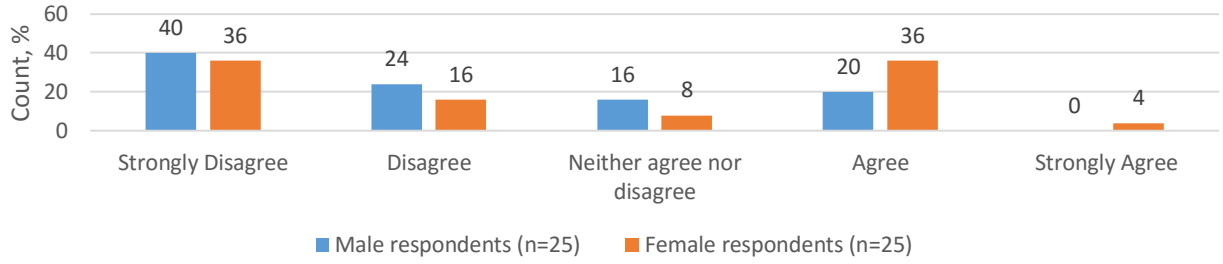
More than half of males and almost half of females do not prefer Internet to relax or cheer up when they are down or depressed, while 40% of women and almost a third of men acknowledged that they use Internet for such purposes (fig.14). Chou (2001) and Morahan-Martin and Schumacher (2003) stated that use Internet use is 'served' for some students as means of alleviating stress and depression. So, the data received are supportive. At the same time, Internet use for mood modification (Caplan, 2010) as well as negative emotion avoidance (Beutel et al., 2011) can predict EIU. Furthermore, results (see Huang et al., 2009; Lin et al., 2011; Morrison & Gore, 2010; Ni et al., 2009; Whang et al., 2003; Yeh et al., 2008) found depression can also result in IA.

Figure 15: ...I would prefer Internet to talk to others at times when I feel alone or down (N=50)



More than a half of men compared to 44% of women would not prefer Internet to talk to others at times when they feel alone or down, while twice as many women compared to men agreed with that (fig.15). It could mean that Internet provides them with sense of belonging to somebody/something from online 'world'. Young (1998a) also underlined that virtual communications give a sense of belonging but only to women who participated in her survey, thus the results are partially supportive as forth of male respondents agreed on statement too. Furthermore, people who prefer to communicate online and develop virtual relations might experience low social support in real life context and that triggers them to EIU (see Tsai et al, 2009; Yates et al., 2012).

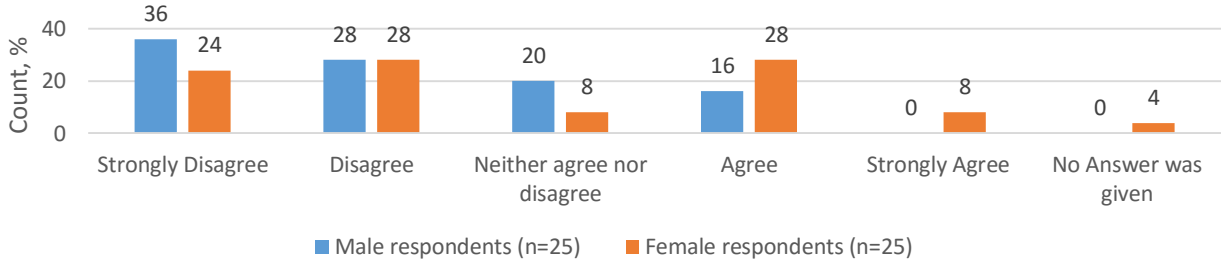
Figure 16: ...I have sometimes experienced some disorientation of reality (insomnia, headache, loss of time, place you are in) after spending hours on Internet (N=50)



In Young's study (1998b), students reported that undue use of Internet created personal, family, and occupational troubles. The main problem was time and space 'deformation', which led to some physical complaints (disrupted sleep patterns and fatigue). The results show that more than a half of all respondents didn't experience disorientation of reality (e.g., loss of time after long time of Internet use, insomnia, and headache), however, there was a few who did meaning that the data received support the results of previous studies (fig.16). Murali and George (2007) came to a conclusion that

Internet addicts experience fatigue related to sleep deprivation, backache from many hours sitting. In its turn, such health problems can negatively affect work performance and can result in broken sleep pattern and job loss (Flisher, 2010).

Figure 17: ...it happens that I feel restless, moody, depressed or irritable when attempting to cut down or stop to use Internet (N=50)



The majority of males and more than a half of females disagreed that it happens that they feel restless, moody, depressed or irritable when attempting to cut down or stop to use Internet (fig.17). Results (see Kerkhof et al., 2011; Kraut et al., 1998; Kuss et al., 2014; Lin et al., 2011) found that social withdrawal and mood regulation difficulties are associated with the psychosocial consequences of IA.

Relationship with people from nearest surrounding

The respondents answered a question to what degree they agree or disagree with a statement that…

Figure 18: ...my relationships with friends/ colleagues/ classmates have been changed in a negative way due to my Internet use (N=50)

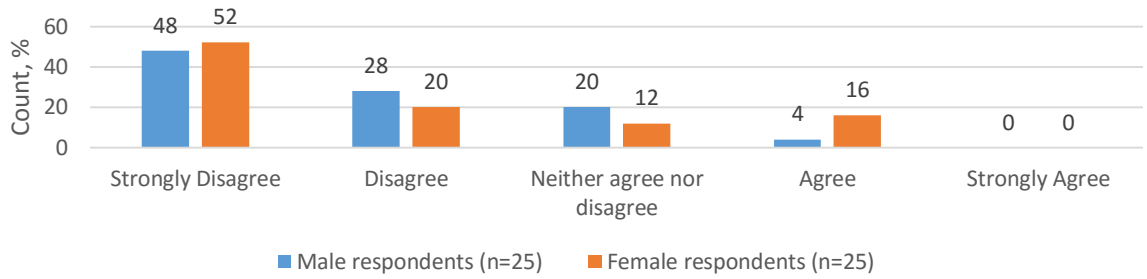
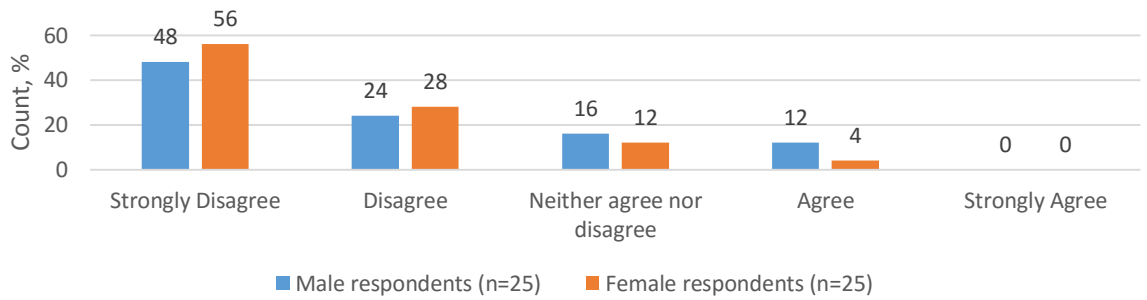


Figure 19: ...my last boyfriend/girlfriend complained about my Internet use (N=50)



The majority of respondents stated that they have not recognized any negative changes in relationships with their friends/ colleagues/ classmates since they started to use Internet. A few people claimed that they faced such problem (fig.18). Familiar pattern can be noticed on figure 19 – the majority of respondents did not get complains from their partners about respondents' Internet use. A few participants faced such problem. That means for them time spent online is time when they seemingly don't engage in recreational activities with their friends and significant others, which can lead to problems and potentially cause impairment according to Kuss et al. (2014).

There were two open questions in the end of the survey: The first question was about the kind of problems respondents have experienced or experience due to Internet use. The responses could be grouped in the following way: The following categories of answers were most frequently met: 1) much of free time is spent online (30%); 2) much money is spent on shopping online resulting in unnecessary purchases (25%); 3) loss of concentration, little time to study due to surfing on Internet

and because continuously chatting with people online (25%); 4) spending time and money on online gambling (20%). In the second open question respondents were given the chance to share other reflections regarding the topic of this study. Three respondents provided a comment: "Internet takes more time of a person's life than necessary", "Live in a real life!", "Take your head away from computer screen and live a real life."

6.4. Qualitative results (the views of two social workers)

- Social worker from Russia – SWA
- Social worker from Sweden – SWB

6.4.1. Themes

Influential effects on various aspects of people's life

Both of the interviewees commented influence of Internet use in daily life of people. As both of them use Internet every day at their work, they suggested that on average during a day a studying or working individual spends alone with computer at least 5-6 hours. If this time is supplemented with phone communication, email correspondence, evening leisure time with television or computer use (virtual communication through FaceTime or Skype, computer game), then total time spending alone with the means of communication can be more than 8-12 hours per day. This may leave its mark on behaviour of an individual and as a result, on his life. Results (see Chou & Hsiao, 2000; Davis et al., 1999; Young, 1998a) indicated that people spending online from eight to 40 hours per week are seen as Internet-addicted.

SWB further suggested that an individual is losing him on the Web because excessive Internet use has contributed to consequences which affect his identity, behaviour, life style, and social being in general. Studies (see Kuss et al., 2014; Petersen et al., 2009; Weinstein & Lejoyeux, 2010; Young, 2004) identified a variety of unfavourable functional, psychosocial, and health consequences associated with IA. To be more specific, some scientists found that young people who spend too much time online suffer from insomnia (see Nalwa & Anand, 2003; Whang et al., 2003) and their interpersonal relationships are deteriorated (see Ko et al., 2008; Lin & Tsai, 2001-2003). Other studies (see Kim et al., 2010; Meerkerk et al., 2009) showed that EIU can cause sleep disorders, malnourishment, depression, anxiety and other psychiatric problems. Furthermore,

"Internet is becoming a real factor of threat to mental health of the population. In the West the problem of Internet addiction has already been recognized" (SWB)

Furthermore, SWB said that based on her work experience, almost all types of addiction look like similar for many reasons, especially because of their negative effects. Results (Kuss et al., 2014) also indicate that a number of core symptoms (e.g., excessive use, negative consequences) appear to be relevant for diagnosis and that assimilates IA with other addiction disorders. SWB continued:

"Comparison of Internet misuse and substance misuse seems to be valid but at the same time quite silly. However, in both cases (excessive Internet use and addiction to substance) an individual might lose himself. Moreover, physical, psychological, social life became jeopardized. Health, emotional condition, sexual realization, and communication with nearest environment, friends, colleagues, job or university performance, and leisure time start to suffer."

Lin et al. (2014) conducted a study with 2,114 high school students (1,204 male and 910 female) who completed a questionnaire assessing IA, problematic alcohol use and associated psychosocial variables. Results indicated that IA was associated with problematic alcohol use; on the other hand, suicidal behaviour and substance dependence were associated with IA as well as problematic alcohol use in adult adolescents.

According to SWA, it has been noticed at her work that people, especially young one, create such image of their personality on Internet which does not always correspond to a person and his traits in everyday reality. She considered it to be a negative side of Internet use. But according to Griffiths (1998), Morahan-Martin (1999) and Young (1997), online personas offer people an outlet for testing different parts of their personality, and let to increase the range of "emotions experienced and expressed toward others as well as different ways of presenting themselves and interacting with others" (cited in Choe et al., 2005, p.379f).

Escape from reality

Young (2004, p.405) assumed that in the same way as "the compulsive behavior serves to reduce the underlying emotional tension", Internet addicts use Internet not as an information tool, but more to

find a psychological escape to cope with life problems. Internet can be seen by students as means of escaping social alienation (ibid). SWB also suggested that almost all forms of addictive behaviour are one of the options or forms to escape from reality, to be exact from stress around it. Same finding was underlined by Buckner et al. (2012) that some people choose to escape from stress by becoming absorbed by Internet. Other who lack confidence in human interaction tend to escape in online interaction (Caplan, 2007).

> *"Internet addiction is some kind of escape from the real feelings of real relationships. Real relationships, love - it's always a pain. People, especially teenagers, are afraid of that."*(SWB)

SWA stated that some unrecognized students immediately join various online communities in order to conceal feelings of fear, anxiety, and depression or to avoid the pressure of having top grades and of fulfilling expectations of their parents. Huang et al. (2009), Lin et al. (2011), Beutel et al. (2011) also found that low satisfaction, poor academic achievements, negative emotion avoidance were associated with EIU.

Influence on studying/job performance

SWA claimed that despite the fact that Internet is an ideal research tool, her students have had problems with studies because they attended sites which were not related to studying activity, spending hours by chatting with friends or playing online games. As a result these students had problems with homework and preparation for examinations.

> *"Very often they cannot control themselves and time spending online and therefore can't get enough sleep after nights spending on Internet. I have noticed that many times when late-to-lecture students entered the class-room holding still-in-use phone."*(SWA)

According to Chou (2001) and Lin and Tsai (2003), many students become so involved with online activities that they fail to attend classes or skip examinations. Holden (2001) also claimed that addiction to Internet results in poor school performance.

SWB simply stated that her clients with EIU most likely exhibit occupational consequences that are similar to individuals addicted to alcohol, drugs other compulsive behaviour. And that is impairment of academic and professional functioning. Same findings reported by many studies reviewed in chapter 3.

Loss of communicative skills

On interview it was understood that due to occupational responsibility SWA used to participate in different seminars, forums and conferences not only with professional social workers and psychotherapists, but also with University's student leaders. She said that for that moment one of the most top issues to talk and deal with was the difficulty of adaptation in a social group, especially (as it was found out on these seminars) among students who used Internet too much for valid reasons and without. SWA suggested that perhaps the core problem was born in the context of intense virtual communication where an individual applied appropriate language and behaviour. Later on, it might be difficult for him to find interlocutors, 'speakers' of the same language in the real world who were able to understand him. As a result, social phobia[17] may arise, or as SWA clarified, a fear which arises in situations of social contacts in reality.

SWA also drew a lot of attention to the fact that nowadays for a person who has grown up on virtual communication, the communication in reality is perceived as threatening, depriving him of familiar space on Internet which is seen by him as endless and safe. SWA argued that people with social phobia have ability to build new contacts, but their applicability is possible only in the context of Internet, which roughly may reduce the self-esteem. She said:

> *"Underdeveloped communication skills make it impossible to build persistent relationships with people."*

SWA also compared electronic interaction with interaction of a traditional nature. She said:

> *"Lonely people are more likely than the non-lonely to be anxious, socially closed. To establish social connections can often be quite difficult for those people who experience*

[17] In accordance with an article "Social phobia and the Net" (2012) a social phobia can be described as: "A person with a social phobia has a fear of blushing, fear of being ridiculed in the group and so on. Such fear appears in the subject in certain circumstances (for example, during critical or responsible situations)." When having social phobia a fear of behaviour implementation in society, volitional component is upset, a person lacks self-control in this or that situation.

high levels of anxiety when they are in real social situations. However, on Internet, many situational factors that can bring anxiety in face to-face encounters are absent."

In other words, she argued that those people who experience anxiety when communicating face-to-face can be drawn to communicate online. Same findings were reported by Bakken et al. (2009) and Ni et al. (2009) who stated that social anxiety is a risk factor associated with the development of IA.

According to professional experience of SWB, a number of patients (who turned to their mental health department with complaints about negative effects of their Internet use) had been increasing from month to month. She specified:

"Due to the fact that an individual spends too much time in front of the computer by chatting, 'creating' relations, meeting new people on Internet, he may lose skills of efficient communication by means of minimization/worsening of non-verbal means of communication (gesticulation, intonation, mimicry of face). As a result this may leads to frustration of person in situations of a real contact."

At the same time she argued that irrespective of the type of misuse, an individual experiences social frustration. Whether he takes narcotics or attached to Internet, in both cases individual becomes 'lost', being outside the traditional system communication and society itself. Results (Clark et al., 2004) also indicate that among psychological consequences of EIU were loneliness, frustration and depression.

"Lost/loneliness in the crowd"

According SWB, modern society has faced a phenomenon of "loneliness in a crowd", which she defined as loneliness among people in a big team or a large organization. Evidently, it has resulted from the development of telecommunication and computer technologies. Nie and Erbring (2000) also argued that Internet was creating a "lonely crowd" effect because Internet usage took time away which could be spent with family and friends. Further, SWB said that recent years a following trend was exhibited: many young people, particularly students, spend too much time on Internet (chatting, participating in group games, teleconferences, searching, communicating, virtual flirting and viewing photos, videos about life, work and leisure of friends, classmates) which can eventually lead to replacement of existing real life, family and friends by virtual one. As an outcome of this, the

replacement of real-world relationships with online one can lead to poor quality relationships and weakened social capacity (see Kandell, 1998; Kraut et al., 1998).

> *"I must say that communication in a format of such Russian Internet resources as Odnoklassniki.ru, Vkontakte.ru, can hardly claim to be a full and effective type of communication. It looks like more – quasi-communication that is imaginary, fictitious, illusory dialogue."*(SWB)

SWB also mentioned the following situation from her work-practice: an individual looked systematically a TV program, an illusion of familiarity with this program's presenters was created, feeling that he (an individual) knew them well. But in fact he only had a stable view of the television image of program's presenters or its daily heroes.

Young (2004) also stated that students easily can get "lost in the crowd" among campuses with many thousands people. "Maybe they do not dress right or look right. But when they join the faceless community of Internet, they find that with little effort, they can become popular with new 'friends'/…/ across the globe" (ibid, p.410).

SWA was of the same opinion. She concluded:

> *"Virtual world in which people feel much more comfortable than in real life poses a threat to the success of real life."*

Internet as alternative to reality

Griffiths (1998) suggested that, for example, high degree of "interactivity" associated with communication in chat rooms and games, may create alternative reality for the users. SWA also considered that with the development of computer technologies, Internet has become more comfortable 'space' for some people than the everyday reality. She specified that it concerns online games, when users can create some heroes with fantasy characteristic and they must be online 8-20 hours for playing in team with other participants. She claimed:

"This environment becomes so realistic for Internet users that they forget about their real life and as a consequence cases are known that people have lost jobs, fail out of school, have relationships breakups and even lose marriages."

SWB stated that it is not only game that may result in similar circumstances, Internet offers a numerous ways for its users to become socialized on Internet. She considered that anonymity of Internet gives possibility for people to create another online life with another decorations, people, and contexts. She continued:

"This opportunity is dangerous for those people who don't satisfy with their offline social life. That's why this condition can lead to Internet addiction".

Both of the social workers also underlined that meeting and acquaint with people online can be seen easier and as the simplest way to have some relationship. SWA explained more:

"Person has time to think how to answer and he can log off if he feels uncomfortable, shy or embarrassed, and therefore socialization with the help of Internet may be seen as a less harmful mean of communication for such people, but at the same time they can be 'placed' in risk group of Internet addiction."

Other societal risks

According to SWA Internet can be seen as a potential risk for young persons' social relationships:

"The problem of Internet use isn't widespread but we know serious cases in which young people don't leave apartment, don't have interpersonal relationship, and have been isolated in front of computer screen for the past few years, and only speak in the language of the characters they play with on interactive video games"

In accordance with work observations of SWB, there is a chance that in a few years they will have people, especially young one, in therapy because Internet will become their main occupation. She also added that these people who are Internet 'dependent' - change their identity as a rule.

"This is not the same harmonic personality, which has been so initially, but personality is addictive. Firstly, addicted people are characterized by change of addictive realization. That means: today he is Internet-dependent, tomorrow – is becoming love addicted person, the day after tomorrow - pathological gambler, and a bit later, he has 'gone' to drugs or alcohol. That is, it is not excluded. Secondly, the danger contains in the fact that many case, sooner or later, the addictive personality is becoming socially maladjusted in real life."

SWB claimed that more and more often it was possible to hear from their clients that they became "addicted" to discussion groups, chats, or leave with his head in online game or virtual relations. According to Murali & George (2007) cited in Rassool (2011, p.196), it is still "not clear what exactly Internet abusers become addicted to". There are several factors which have been seen as potential influences contributing to the development of Internet addition: specific applications (e.g., email, interactive games, gambling, pornography, and instant messaging), the process and sound of typing, the role of Internet as a mean of interaction with other people, the information available and received and the anonymity which is possible on Internet (see Griffiths, 1998; Caplan, 2002; Young, 1998a).

7. ANALYSIS OF RESULTS BASED ON THEORIES

7.1. Analysis of questionnaires

Results (fig.2&3) indicate that some respondents spend considerable amount of time on Internet, others state that they can hardly control their time online. Such outcomes may result in impairment of daily functioning of the individuals and in the view of Bronfenbrenner's model can be interpreted as **dysfunction**.

Furthermore, under Bronfenbrenner's bioecological model, Internet use can be seen as a proximal process. Results (fig.4&5) show that some respondents were late for appointments and missed meal due to their Internet use. Such changes in day-to-day routines of some respondents can be interpreted as **dysfunction** of behavioural patterns.

Results (fig.6,7&8) show that some respondents noticed negative changes in their job/study performance and decreased productivity since they started to use Internet. Internet use has also resulted in borrowing money to cover activities related to Internet use. In the light of Bronfenbrenner's model, such outcomes can be seen as **dysfunction**, namely impairment of academic/work performance, money loss.

Results (fig.9,10 &11) indicate changes in social life routines of some respondents, namely some participants prefer spending time on Internet over social interaction with people they used to meet in real life context; others consider that their online "friends" are of a greater importance than social relationships in reality. It can be assumed that for these respondents Internet use could result in extended social contacts without any geographical boundaries or long-lasting support of significant relationships, therefore people need to spend time online to maintain them. Such "preference for online friends" can be seen as **competence** which appeared in the daily routines of some respondents. On the other hand, the above outcomes could imply that these respondents are maybe less satisfied with the quality of their social contact in reality and thus they would consider Internet contacts to be more significant. Under Bronfenbrenner's model, such outcomes can be seen as **dysfunction**, namely impact of Internet on communication and interpersonal behaviour.

Results presented in chapter 6 show also that the majority of respondents use Internet for instrumental purposes (seeking information, reading online news); recreational (gaming, visiting pornographic sites); communication; satisfaction of different needs and interests. It is possible to assume that such abundant activities are determined by the current modernization of the world and group dynamics, that is - everybody is online. **Learning theory** identifies human behaviour as an interaction of personal factors, behaviour, and the environment: people repeat and do things by watching, observing what others do (Bandura, 1977). Thus, **in respect to learning theory** the results can be interpreted so: in order to be inside of the "system" and be a part of it, the majority of respondents make the same things as the rest of their peers. On the other hand, by using Internet some respondents could gain, for example, profound knowledge in the subject of their interest or popularity among peers. Thus, Internet use can seemingly result in gained **competence** under Bronfenbrenner's model.

Results (fig.12&13) show that some respondents have seemingly acquired new communicative skill and that is – to solve problems, talk to others electronically instead of face-to face. It is possible to assume that the way these people communicate with each other in real life context could be sufficiently deformed because more and more time they talk, discuss, reflect, dispute on Internet. It was also presumed that participants who compulsively surf on Internet, most likely escape from important developmental tasks and at the same time they jeopardize to remain unprepared for real-world communication. According to Bronfenbrenner's bioecological model, above outcomes can be considered as **dysfunction** resulted from preference for Internet. On the other hand, such outcomes can be seen as **competence** for respondents who might experience anxiety, stress, and uncertainty while communicating in real life context. Furthermore, **in the light of learning theory,** activities exercised by an individual are dependent and determined by matter of negative and positive reinforcement (Feist & Feist, 2008). Respondents (who use Internet as a means of satisfaction of their social needs and interests without interaction of a traditional nature) may see Internet in the view of positive reinforcement and might maintain such online behaviour. Thus, **under operant conditioning,** Internet use can become a repetitive behavioural habit.

Results (fig.14&15) show that some respondents have seemingly acquired new behavioural reflex and that is – to use Internet in case of psychological problems (loneliness, depression, to feel relaxed). Internet use which has given opportunities to satisfy the need for belongingness and relaxation can be seen as gained **competence** for some respondents. Such positive 'outcome' can further trigger to use

Internet more due to operant conditioning. On the other hand, some respondents seemingly escape from emotional and behavioural response to negative life events by using Internet. Under Bronfenbrenner's model, subjective escape from problematic situations (which might need actual solution) can be considered as **dysfunction**.

In respect of Bronfenbrenner's bioecological model, such impairment of physical well-being as depression, stress, anxiety (fig.17) and fatigue, insomnia, headache (fig.16) can be seen as **dysfunctional outcomes** resulted from attempt to stop Internet use or undue Internet use**.**

Results (fig.18&19) show that some respondents noticed negative changes in relationship with their partners/friends/colleagues/classmates since they started to use Internet. In the light of Bronfenbrenner's model, such outcome can be seen as **dysfunction**, namely disturbances of occupational/family functioning.

7.2. Analysis of interviews

- Social worker from Russia – SWA
- Social worker from Sweden – SWB

SWA assumed that young person might experience feeling of gladness when being on Internet because he might be recognized, discussed, 'approved', visible, or popular among peers. Shaw and Gant (2002) also discussed positive effects of Internet: increased use was associated with decreased level of loneliness and depression and increased level of social support and better self-esteem or self-realization. In the view of Bronfenbrenner's model this outcome of Internet use can be seen as gained **competence**. But the reverse of the medal is also there. To maintain online 'popularity' and feeling of 'recognition', one will increase amount of time spent online with its ensuring negative circumstances on daily function of individual. SWB claimed:

> *"A failed impulse control and in this case - abuse of Internet - can most likely lead to social human isolation, increasing depression, family breakdown, failure in school, financial disadvantage or loss of job."*

This statement goes on the same track with results of previous research reviewed in chapter 3 of this thesis. Thus, excessive time devoted to Internet can be seen as **dysfunction** under Bronfenbrenner's bioecological model. Furthermore, based on results presented in chapter 6, among the respondents a familiar interdependence of daily troubles vs Internet use was noticed.

Further, SWA suggested that if an individual does not have circumstances with evident negative effects from Internet use, he might use it repeatedly. She continued that a user being online might experience feeling of gladness or, for example, develop competence in some field which is seen to be beneficial. Then it is not a surprise that he would like to keep on experiencing it and will use Internet more and more. **In the view of operant conditioning**, an 'unhealthy' attachment to Internet might be developed if, for example, the outcome of Internet use seen as rewarding. According to SWB, this attachment can have negative effects on individual, his performance, social life, psychological condition and overall physical being as, for example, use of chemicals or alcohol does.

SWA also suggested that the development of conditioned Internet use is possible. She argued:

> *"Seemingly students do not think about consequences or problems especially behavioural one which are associated with excessive Internet use. If they do not see any direct or evident risks or danger, then they spend time on Internet much more then intended or they go deep with head with the disputes and communication in chat rooms or forums. If person enjoys it, a 'habit' to be online can become 'deeper' and busily. Use of Internet becomes then conditioned."*

Such statements go on the same track with results of previous research examined in chapter 3.

SWA also experienced in her daily work cases when some students have problems with their grades because they spend too much online by attending sites which are not related to their studies (chat rooms, e-shopping, gambling, interactive gaming, dating sites, social networks). Internet was also seen as a potential risk for social relationships and commutative competence in youngsters who prefer Internet communication over contact in real context. Such statement support results presented in chapter 6 of this thesis and are in line with previous research examined in chapter 3. Thus, various

dysfunctional outcomes such as decreased academic achievements and difficulties with face-to-face communication can be interpreted as **dysfunction** based on Bronfenbrenner's model.

Both Griffiths (1998) and Bromberg (1996) cited in Griffiths and Wood (2000) claimed that Internet provides an alternative reality to its users and ensures them with feelings of immersion and which may be psychologically rewarding. **In the light of learning theory**, this reinforcement trait of Internet can become conditioned. This is similar to reflections of the social workers reviewed in chapter 6 of this thesis.

By the end of the interview, SWB run a parallel between IA and other compulsive behaviours that can change the state of consciousness:

> *"I dare to suggest that Internet is a mean of changing the state of individuals' consciousness. Everything that takes place inside this cyber space seems to be real, sometimes even more real than reality which in its turn changes the mind and identity."*

She concluded that in irrespective of the types of misuse, identity of an individual might be changed which for sure can be seen as an evident problem for a social worker to deal with.

7.3. Summary

Based on the analysis presented, it can be concluded that with its integrated mix of conditioning effects (such as *easy to access; affordability; anonymity; easy availability of abundant information in all areas of interest; increasing diversity of Internet services; accessibility to interact with many people at the same time; psychological rewards resulted from 'popularity' among online 'friends'; relatively easy, but subjective escape from emotional, social difficulties, personal hardships, problematic situations*), Internet may **become a repetitive habit for some sampled people** who, for example, experience depression and social anxiety or other problems. Internet related activities may produce different 'desirable' outcomes among the respondents such as satisfaction of need for belongingness or relaxation, fulfilled need of social communication, or extinction of negative emotions. In the view of learning theory that is a positive reinforcement which causes/reinforces use of various Internet related activities. Based on the feedback from the social workers, it is possible to assume that such

repeated activities resulting in ‘desirable’ outcomes can further result in addiction to Internet use as a final pattern of use.

8. DISCUSSION

8.1. Main results in response to the research questions asked

The results show that a dramatic increase in Internet use has had significant impacts on communicative skills, interaction with peers and friends, academic/occupational performance, interpersonal behaviour, psychological and physical well-being of some students who were surveyed at the University of Gävle. This research sought to increase understanding of these impacts and the goal was achieved.

To review the prevalence of IA among the sampled group and further compare it with prevalence in other universities or countries was not the goal of this study. However, the explosive growth of Internet and its excessive use by some respondents can likely cause pathological Internet use because a number of people met an array of addictive symptoms (e.g., impairment of functioning) outlined by Young (1999) and Rasmussen (2000).

Within framework of this study, it is also possible to conclude that respondents try to correspond to changes in society, to be transparent and modern, be on the 'wave', and that is - to have online life.

The results also demonstrate that interviewed social workers showed their concern and awareness of the negative aspects as a result of EIU. However, both of the interviewees underlined that many practitioners, clinicians are unfamiliar and as a result are unprepared to treat it. Both of them also agreed with the fact that psycho-social and behavioural problems related to Internet use is an emerging problem for which many people will look for an understanding, assistance and solutions for change.

The results of this study indicate that the vulnerabilities which can be experienced by youngsters due to EIU are better to be detected in an early stage and intervention should be executed in order to prevent development of IA**.**

8.1.1. Gender difference of the results in the view of IA symptoms

It is difficult to say whether there is a significant difference between male and female respondents in their Internet use and its consequences, however, some gender differences have been identified. The

results have been also analyzed below based on IA symptoms proposed by Young (1998a) and Rasmussen (2000).

Many respondents reported that they spend considerable time online, lose track of time and, thus, stay online longer than intended, and, therefore, miss appointments or meal. Results (fig.2,3,4&5) demonstrate presence of three IA symptoms among some respondents; these symptoms are "*preoccupation*"; "*time management*" and "*negative life consequences*". It is interesting to notice that **almost half of males compared to a third of females** who disagreed with the statement that Internet takes a significant part in their life (fig.2). However, the results also show that the vast majority of questioned people (nearly 70% of females and more than 50% of males) acknowledged that often and very often they find themselves staying online longer than intended (fig.3). Moreover, there was a **prevalence among females** (twice as many compared to males) who spend daily 9-12 on Internet (fig.1) and who missed more than once a meal because of Internet use (fig.5). The results also show that **three times more women** have rearranged social plans in order to spend more time online. What could that mean? Denial of the importance of Internet and its influence on their life? Did not male respondents want to admit that they can hardly control their time spending online?

Further, according to figure 16 **twice as many females** claimed that they have sometimes experienced disorientation of reality (insomnia, headache, loss of time/place, fatigue) after spending hours on Internet. Young (1998b) reported that EIU can result in physical complaints from the users which further can led to troubles in occupational/academic performance and family. So, results (fig.6,7&8) demonstrate presence of "*negative life consequences*" symptom among some respondents. Internet use has resulted in borrowing money to cover activities related to Internet use, in troubles with school/work, decreased academic/professional performance, decreased productivity. And it is interesting to notice that **almost twice as many females** agreed with the statement that their grades and/or work performance have decreased since they started to use Internet and that they get troubles with school/work due to Internet related activities (fig.7&8). However, based on the results presented earlier (fig.2), nearly half of all participants spend daily considerable amount of time online: 4-8 hours; furthermore, the majority of all participants argued that often and very often they find themselves staying online longer than intended (fig.3). What could that mean? Female respondents are more self-aware, more self-critical and males deny the appearance of troubles resulted from their EIU?

Presence of additive symptom "*negative life consequences*" is also visible (fig.18&19). Here there were **four times more females** who claimed that their relationships with their friends/ colleagues/ classmates have been changed in a negative way due to Internet use, but **three times more males** who claimed that their girlfriend (or boyfriend) complained about their Internet use.

Results (fig.9,10&11) demonstrate presence of "*preference for online*" among some respondents. This symptom reflects that Internet user has a preference for staying online over meeting with people, his online activities and relationships are more important than social activities in reality or that he is more comfortable with Internet than with people. It is interesting to notice that these 'addicts' who prefer online over offline were **females**. They were a few, but **prevail** over males **2-3 times** (fig.9&10). What could it be about? Female respondents appear to be more attached to Internet compared to males? Are they interested more in people 'on a distance', from online world?

Results (fig.12&13) also show presence of "*preference for online*" among some respondents. This symptom can also reflect that user feels more confident socializing online than offline, and feels "better treated and safer relating to others in online relationships rather than face-to-face" (Leung, 2014, p.429). In this study the **prevalence** was again **among females** (almost three times more compared to males) who claimed that it is easier for them to resolve an interpersonal conflict electronically instead of face-to-face (fig.12). On the other hand, there were **more males** (one and a half times more compared to females) who claimed that it is easier for them to talk, discuss things with people on Internet than in person (fig.13). What could this say about? There is a difference between men and women in communicative preferences when being online – disputing vs taking?

Results (fig.14&15) again demonstrate presence of "*preference for online*" and "*mood modification through Internet use*" among some respondents. The last mentioned reflects that an addict uses Internet or prefers Internet to talk to others when he feels isolated, lonely, depressed or down. It is interesting, but in this study the **prevalence** was again **among females** (1.5-2 times more as compared with males). What could it mean? Females can better distract or get rid of their psychological issues by using Internet or by talking with someone on Internet?

Results (fig.17) show presence of "*withdrawal*" symptom among some respondents which reflects that a user feels restless, moody, depressed, angry when attempting to cut down or stop using Internet.

Interesting, but even here **more than twice females** experienced that. Could it mean that females are more 'attached' to Internet, feel more 'close' to it compared to males?

To summarize, it appears that female participants and different aspects of their everyday life seemed to be more influenced by Internet use compared to male respondents. This finding does not support the most common sociodemographic variable (male gender) which was associated with IA and outlined in many studies reviewed by Kuss et al. (2014).

8.2. Have the aim formulated for the study been fulfilled?

It is considered that the aim of study is fulfilled. The first research question was answered: considerable data about how university students describe their Internet use (what are their perceptions, opinions about it) were collected, presented and analyzed. The second research question was also covered sufficiently: valuable feedback from the social workers on how do they look upon Internet use was obtained, their opinions (on whether they see any social risks or problems which result from students' Internet use) were presented.

8.3. The importance of the findings for social work

Internet has not become a plague of the 21st century yet, but has a real chance to be, so what is extremely important is the prevention and treatment of IA phenomenon. Due to popularity of and easy access to Internet, it is possible to suggest that number of people with IA symptoms will increase in the nearest future. This can be a serious problem for people and society in general since it is known very little about methods of treatment, intervention and nature of this problem.

Before issues of support and development of Internet technologies were considered only in the context of ordinary Internet use, but now Internet use must be seen and determined in relation to mental, physical, psychological, interpersonal, economic and social contexts and condition of an individual, particularly young and lonely one, who encompasses the risk group.

It is considered that the results may contribute to the development of social support in a new direction where more and more help seems to be needed. To recognise Internet related problems and to take seriously people's concerns about their Internet use and its influences on their life is also essential factor. The results showed that abuse of Internet really exists among some respondents. As a suggestion - it can be necessary and relevant to elaborate preventive (precautionary) programs in

schools, college and universities or support groups for students experiencing problems with Internet overuse. Thus for example, it is suggested that counselling unions/departments should invest finances, energy and time in the development and promotion of seminars in order to expand knowledge and understanding among students, teachers, administrators and other campus's staff about potential of Internet addiction and its impact on their study performance. Awareness that it is fine to seek for help in case of experienced IA and that there is nothing to conceal about this problem should be promoted among schools, colleges, universities and community as a whole. Advertising of recovery and supportive centers or programs must be encouraged online as well. Treating IA symptoms as predictors could help in identifying early warning signs for the school personnel and parents and in taking preventive actions before the symptoms turn into Internet risks.

8.4. Critical review

The sample size of the quantitative survey was 50 people. Questionnaires were responded both individually and within a 'group' of two persons. In such 'clusters' it cannot be assumed that "subjects are independent of each other" (Smeeton & Goda, 2003, p.568). There was a probability that the sampled students could discuss questions with each other. This might somehow affect their answers.

It is also relevant to underline that conclusions done based on the received results cannot be applied for generalization. Interpretation of histograms and interviews which take place in chapter 6 is applicable to particular sampled and questioned people.

To validate some explanations and complete the 'diagnosis' of this study more robust findings would seem to be needed. Due to time and resources limitation, interviews with the target group could not be conducted. Otherwise, it would be useful and valid to assess the applications of Internet use, emotions and cognition experienced by the respondents (e.g., presence of low self-esteem, or other depressive cognitions, life stressors).

To supplement the main research method, a qualitative pre-survey focus groups among the target group as well as post-survey in-depth interviews with university counselors, teachers and parents of the respondents could be adopted and further analysis of the data collected with the help of ecological or systems theories, but time that could be devoted to this project was limited.

8.5. Problematizing analysis of chosen theories

The aim was to shed a light on some sides of Internet use among the and to check whether interviewed social workers acknowledge consequences resulting from Internet use which could be both positive and negative. The aim 'extends' in case of discovery of negative outcomes (e.g., excessive time spent online; failure to fulfill main obligations at school, work and home) – whether social workers see arisen problems as a threat for the development and welfare of university students and a potential problem to deal with in the professional area of social work.

It was kept in mind not to use theories which would make this study more inclined towards the etiology of, as many scientists and practitioners call, IA or Pathological Internet Use. Thus two theoretical perspective presented above were seen to be essential and relevant to apply. In this particular study they are considered to be even supplementing and in some way overlapping each other. Namely, if the findings will demonstrate that young person's interaction with Internet can be seen as proximal process and the problems occur with its use reflect developmental dysfunction then it would mean that these problems result from evidently too much time spending by the person online. On the other hand, a person would spend a lot of time on Internet, if he or she gets psychological, social rewarding (positive reinforcement) from Internet use, then it most likely results in repetitive nature of 'consumption' due to operant conditioning, in other words EIU. The last by itself can be seen as an issue for the social workers to deal with.

It is also important to understand that each theory has its strengths and limitations for further data analysis, and the author was aware of the risk that these two theories would be of no use if the results of the empirically received data reveal no changes or no influence on respondents' everyday routine and welfare from the time they started to use Internet until the moment of participating in the questionnaire survey. And if there would be no changes revealed than most likely there were no problems faced by the respondent's to come with to a social worker for assistance and support.

8.6. Suggestions for continued research

Today Internet represents a new field of scientific inquiry, and steps should be made forward to get more knowledge about allure of cyberspace. For example, for a young person facing alcohol or drugs problems there is enough awareness and knowledge about how the person should be helped since these types of addictions are recognized and institutionalized within the area of social work. But little

practices and diagnostics are available for a student that faces social problems due to excessive or inappropriate use of Internet. On the other hand, it is not simply a matter of time spent online. How the impact in family, school, work, relationships can be recognized by person as a cause of Internet use? More understanding, insight is needed about the maladaptive nature and allure of being online, particularly for young people (e.g., university students) as they grow up with Internet.

Exploratory studies can help in getting a better understanding of epidemiological factors of Internet use and prevalence rates. One way to get a clearer picture of Internet use and its consequences is to interview not only individual user, but also his or her significant others. Thus, it will be appropriate and relevant in further research to conduct interviews with parents, school/college/university counselors and teachers in pursuit to better understand the data collected. Moreover, environmental distress (if there are any problems in social, occupational, educational, financial and physical areas of life) of the respondents as well as content of their use can be examined more thorough to get a better 'picture'.

At the same time, some research indicates that IA is associated with other forms of mental distress such as depression, low self-esteem, impulse control disorder (see Dong et al., 2011; Ko et al., 2012; Lee et al., 2012; Treuer et al., 2001; Yen et al., 2009a, b), therefore, more research can be conducted with this target group (university students) in order to detect the primary reasons and 'motivations' for attachment to Internet use. For instance, in further studies a focus on how depression (if young person experiences it) or another compulsive disorder effects the way he/she uses Internet is needed. Furthermore, more interpersonal 'direction' can be taken into consideration. For example, how family/school/neighborhood dynamics or personality characteristics contribute to problematic or EIU among university students. Therefore, it would be relevant to use again what Bronfenbrenner (1979) calls proximal processes. These processes which are affected by the characteristics of young person (e.g., sex, age, personal dispositions) and people in his or her immediate environment or microsystems (e.g., family, friends, teachers), could help to understand young persons' interaction with Internet. Further case studies of Internet addicts may provide more insight into the nature of this disorder and a better platform to execute treatment interventions.

Based on the results received it is also suggested that excessive use of Internet seemingly can be used by some people as **dysfunctional coping mechanism** to deal with such primary disorders as

depression or stress, loneliness, mood regulation. Thus, future research seems to be needed to analyse this more thorough.

8.7. Conclusion

IA is a threat not only to young generation; anyone can be exposed to influence of Internet and its consequences. Moreover, because of the rapidly growing role of Internet in everyday life, it is seemingly impossible to estimate prevalence of IA since it can vary depending on when the studies were conducted. Research conducted a few years ago may underestimate the current prevalence of IA because Internet use itself has become so much more spreading in the past few years. In fact, the "always-on" Internet connection provided by smartphones have erased the distinction between online and offline activities.

IA is no longer just a myth. In October, 2012 radio host from the Voice of Russia, Yulia Monakhova posted the following: "The APA clearly shows that the virtual world might become a real threat to one's mental health and a serious social problem. It relates to the fact that some Internet users present same symptoms as alcoholics, drug addicts and gamblers. In each case experts observe emotional imbalance, lack of concentration, and different forms of social anxiety".

By summing up, it is important to note that at present IA is not recognized as a distinct psychiatric disorder within the official diagnostic system of the American Psychiatric Association, the Diagnostic and Statistical Manual of Mental Health Disorders, 5th edition (DSM5, APA, 2013). When the manual was updated in March 2013, the DSM experts came to a conclusion that the current evidence did not support IA as a distinct addiction syndrome with severe clinical impairment and adverse social consequences (Petry et al., 2014). This places IA in "a group of behavioral addictions, including addiction to pornography, exercise, sex, or food, that have been endorsed by some researchers and clinicians but have yet to be regarded broadly by the scientific community as psychiatric disorders" (Breslau et al., 2015, p.4).

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Appendix I. Questionnaire

1. You are: □ Male □ Female

2. What year are you born? _____

3. Where have you lived the biggest part of life?

□Europe □Russia □China □Scandinavia □ others_____

4. Your relationship status?

□ Single □ Married □ Divorced □ Living in relationship □ others

5. What is your present occupation? (You may check more than one)

□ Studying □ Working part-time □ Working full-time □ Unemployed

6. Please mention two main activities or more during your spare time (open question)
Spare time activity (hobby, sport, parties, travelling)
_____

7. Do you usually use Internet every day?

□ Yes □ No

8. In average how many hours do you spend on Internet daily?

□ 1-3 □ 4-8 □ 9-12 □ 13- 16 Other _____

9. More than once I have missed a meal because I was using Internet.

□ Yes □ No

10. How often do you find that you stay on-line longer than you intended?

□ Rarely □ Sometimes □ Often □ Very often □□Never

11. How often do you think that your job/study performance or productivity suffer because of Internet use?

□ Rarely □ Sometimes □ Often □ Very often □□Never

12. What your main activities on Internet (while online)? (You may check more than one)

- □ checking email
- □ chatting with friends/colleagues
- □ looking for some information for school/job/hobby
- □ on-line games
- □ gambling
- □ watching movies

□ shopping
□ visit pornographic sites and engage in cybersex
□ participation in web forums
□ meet new people (dating websites when looking for a partner)
□ others _____

13. How many clubs, communities, etc ON the Net do you participate in? (for inst., forums, game clubs, club of interests, social networking sites, etc)

□ 0-2 □ 3-5 □ 6-9 □□10+

14. How many clubs, communities, etc OFF the Net (in real life) do you participate in? (for inst., dancing classes, club of interests, student union, etc)

□tc)-2 □ 3-5 □ 6-9 □ 10+

15. On average how much time do you spend socializing OFF of Internet during the week? (e.g., going out to the cafe/restaurant, sitting with friends for the dinner, yogging together with other people, in other words – different activities with people)

□ Rarely □ Sometimes □ Often □ Very often □□Never

16. To what extent do you agree/disagree with the following statement - I would spend an evening online rather than go out with friends

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

17. To what extent do you agree/disagree with the following statement - I have been late for appointments more than once because I was using Internet

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

18. To what extent do you agree/disagree with the following statement - Most of the people I talk to on Internet are persons from my real life

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

19. To what extent do you agree/disagree with the following statement - I prefer Internet to relax and/or cheer up when I am down or depressed.

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

20. To what extent do you agree/disagree with the following statement - Sometimes it is easier for me to resolve an interpersonal conflict electronically instead of face-to-face

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

21. To what extent do you agree/disagree with the following statement - It happens that I feel restless, moody, depressed or irritable when attempting to cut down or stop to use Internet.

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

22. To what extent do you agree/disagree with the following statement - Relationship with my nearest surroundings/friends/colleagues/classmates has been negatively changed due to Internet use
□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

23. To what extent do you agree/disagree with the following statement - The Global space takes a significant part in my life

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

24. To what extent do you agree/disagree with the following statement - It happens that I get trouble with my school/employment due to Internet related activities

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

25. To what extent do you agree/disagree with the following statement - My last boyfriend/girlfriend complained about my Internet use

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

26. To what extent do you agree/disagree with the following statement - I feel the need to spend more and more time online to be satisfied (being in better mood, happier than usual)

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

27. To what extent do you agree/disagree with the following statement - Social relationships online are more important for me than the real one?

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

28. To what extent do you agree/disagree with the following statement - I've rearranged social plans in order to get more time online

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

29. To what extent do you agree/disagree with the following statement - I've jeopardized or risked the loss of a significant relationship, job, educational or career opportunity because of Internet use

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

30. To what extent do you agree/disagree with the following statement - After spending hours on Internet, I have sometimes experienced some disorientation of the reality (loss of the time, place you are in, etc)

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

31. To what extent do you agree/disagree with the following statement - My grades and/or work performance have decreased since I have started to use Internet.

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

32. To what extent do you agree/disagree with the following statement - In general I find it easier talk, discuss things with people on Internet than in person

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

33. To what extent do you agree/disagree with the following statement - I prefer Internet to talk to others at times when I feel alone or down.

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

34. To what extent do you agree/disagree with the following statement - I have borrowed money to cover my Internet related activities (Internet shopping, gambling, etc)

□ strongly disagree □ disagree somewhat □ neither □ agree somewhat □□strongly agree

35. You meet new people more often…

□in the real life □on Internet

36. Have you ever experienced any kind of problems due to Internet use?

□ Yes □ No

37. If YES, what kind of problems occurred?
For inst., unnecessary purchases in online shops, gambling, acquaintances with people who caused trouble to you or even abused you somehow, etc

_____
_____
_____
_____

38. Have you got anything to more say according to the offered topic?
Would like to add anything of importance?

_____
_____
_____
_____

THANK YOU VERY MUCH FOR PARTICIPATING IN THE STUDY!!!

Appendix II. Interview guide

1. At your work what are the new issues or maybe problems which recently arisen to deal with? If there are any - what are they and how do you discuss them and with whom? Please specify or give examples.

2. Have questions related to Internet use or computer technologies ever been at your agenda? If yes – what are the problems based on your particular work and experience? Who is the target group? Please specify.

3. Do you recognise any influence of Internet use on your students' / clients' daily routine? Have you noticed any changes yourself? If yes – what are they?

4. Do your students/clients addressed you with Internet related problems? Have you heard them making any comments about their Internet use and its effects? Please give examples if there are any.

5. Do you agree with a statement that consequences of Internet use are well-estimated by the users and people fully understand how to use this technological tool? If not - please clarify your answer.

6. Do you consider Internet and computer related technologies to be an effective type of communication and development for people? Please explain your answer.

7. There is a suggestion that Internet can serve as an escape from real life contact and context. What do you think about it? Have you ever faced such cases at your work?

8. Do you see any risks or danger for well-functioning in a healthy person who use Internet? If yes- what are they and which situation it might happen? Please specify or give examples.

9. Internet addiction. Have your heard such term? Do you see any risk of development of Internet addiction among your students/ clients? Have you already faced such cases?

10. Abuse of Internet – are there really damaging risks? Is it a social work problem to deal with? If yes – are you as a specialist aware of how to approach the problem?

Appendix III. Example №1 of statistical test (executed in IBM SPSS Statistics 22)

To make Crosstab analysis of two variables, respondents' answers on *question 8* (see Appendix I) were taken into consideration. Every *Crosstabs procedure* begins with a hypothesis (H). Thus, it is assumed that there is a difference between males and females on how many hours they spent on Internet on a daily base.

- H0: There is no difference between males and females regarding the amount of hours they spend on Internet daily.
- H1: There is a difference between males and females on the amount of hours they spend on Internet daily.
- Test at .05 level of significance

This test in SPSS is executed between two variables with variable names "Gender" and "Frequency_of_Internet_use". Values of these variables should be coded. An optional command *Value Labels* "allows you to associate a label with each value of a variable" (Frankfort-Nachmias & Nachmias, 2008)[18]. For example, in dialog box *Value*, one adds a coded value 1 which can stand for the term "Males" (label), then add a coded value 2 - for the term "Females" (label). There were also four time intervals (values) which present the second variable "Frequency of Internet use". Thus, a few labels can be associated with values of this variable, i.e. 1 = "1-3 hours"; 2 = "4-8 hours"; 3 = "9-12 hours"; 4 = "13-16 hours". There is a column called *Missing* in the *Variable View* sheet where one keeps on track the missing responses. In case when not all of the respondents' data were available, it is necessary to minimize item "non-response" and code it by assigning a vale to it. The most recognizable and useful value to apply is "-99" because this value does not occur in the real data of this test.

Picture 4. Data input in SPSS

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	Gender	Numeric	8	0	Gender	{1, Males}...	None	8	Center	Nominal	Input
2	FrIntusage	Numeric	8	0	Frequency of In...	{1, 1-3 hour...	-99	8	Center	Ordinal	Input

[18] Frankfort-Nachmias, C. & Nachmias, D. (2008). Research methods in the social sciences: 7th ed. New York, NY: Worth Publishers, p.508.

To generate one of the analysis the *Descriptive Statistics* can be selected. Then, *Crosstabs* can be 'opened'. A dialog box *Crosstabs* appears. Variable 'Gender' is placed as a *Row(s)*, variable 'Frequency of Internet use' as a *Column(s)*. However, it does not matter which of the variables goes into *Row* and which one in *Column*. It will only affect the orientation of the table. Under *Statistics*, *Chi-Square* can be chosen. Crosstabs analysis is done and presented in SPSS by means of the table.

Table 1. Presentation of gender distribution in relation to how much time the respondents spend time on Internet daily

			Frequency of Internet usage				
			1-3 hours	4-8 hours	9-12 hours	13-16 hours	Total
Gender	Males	Count	9	12	3	1	25
		% within Gender	36,0%	48,0%	12,0%	4,0%	100,0%
		% within Frequency of Internet usage	56,3%	52,2%	33,3%	50,0%	50,0%
	Females	Count	7	11	6	1	25
		% within Gender	28,0%	44,0%	24,0%	4,0%	100,0%
		% within Frequency of Internet usage	43,8%	47,8%	66,7%	50,0%	50,0%
Total		Count	16	23	9	2	50
		% within Gender	32,0%	46,0%	18,0%	4,0%	100,0%
		% within Frequency of Internet usage	100,0%	100,0%	100,0%	100,0%	100,0%

By looking at this table, one can see that there is a difference between male and female respondents in spending a particular time on Internet. The main question is whether these differences are significant. To understand this, *table 2* provides the results of a Chi-Square Tests.

Table 2. Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,293[a]	3	,731
Likelihood Ratio	1,314	3	,726
Linear-by-Linear Association	,746	1	,388
N of Valid Cases	50		

a. 4 cells (50,0%) have expected count less than 5. The minimum expected count is 1,00.

Appendix IV. Example №2 of statistical test (executed in IBM SPSS Statistics 22)

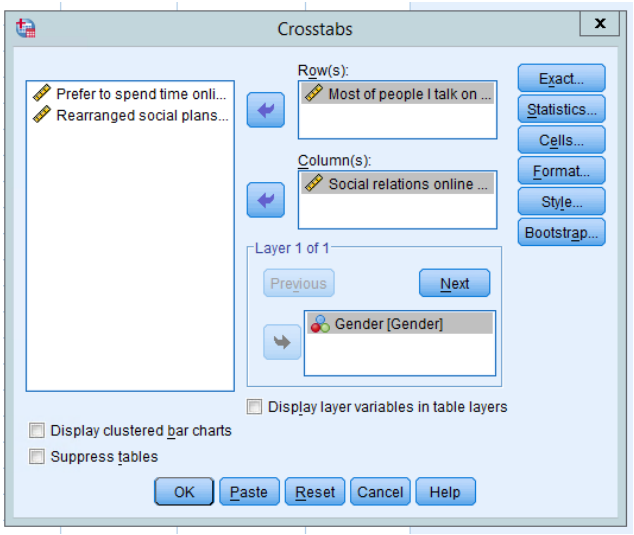
This test in SPSS is executed between three different variables with variable names. Values of these variables should be coded. In dialog box *Value*, one adds a coded value 1 which can stand for the term "Males" (label), then add a coded value 2 - for the term "Females" (label). There were also six category of answers (values) which present other variables (four different questions regarding Internet use, its importance, its correlation with the social life in a real time context). Thus, the following labels can be associated with values of this variable, i.e. 1 = "Strongly disagree"; 2 = "Disagree"; 3 = "Neither agree nor disagree"; 4 = "Agree"; 5 = "Strongly agree"; 6 = "No answer was given".

Picture 5. Data input in SPSS

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	Gender	Numeric	5	0	Gender	{1, Males}...	None	8	Right	Nominal	Input
2	Prtimeonline	Numeric	5	0	Prefer to spend...	{1, Strongly ...	None	8	Right	Scale	Input
3	MostpplfrlNf...	Numeric	5	0	Most of people ...	{1, Strongly ...	None	8	Right	Scale	Input
4	Socrelonlimp	Numeric	5	0	Social relations...	{1, Strongly ...	None	8	Right	Scale	Input
5	Rearrsocplans	Numeric	5	0	Rearranged soc...	{1, Strongly ...	None	8	Right	Scale	Input

To generate one of the analysis in the *Descriptive Statistics* can be selected. Variable 3 (answers of the respondents on most people respondent talks on Internet are persons from real life) is placed as a *Row(s)*, variable 4 (answers of the respondents on whether their social relationship online are more important for them than the real one) as a *Column(s)*. Variable 1 (Gender) is placed as *Layer 1 of 1*.

Picture 6. Data input in SPSS



Under *Statistics*, *Chi-Square* is chosen. The Crosstabs analysis is done and presented in SPSS by means of the table.

Table 3. Presentation of three-way crosstabulation with six categorical variables

Most of people I talk on Internet are from real life * Social relations online more important * Gender Crosstabulation

Gender				Social relations online more important				Total
				Strongly disagree	Disagree	Agree	Strongly agree	
Males	Most of people I talk on Internet are from real life	Strongly disagree	Count	2	0	0	0	2
			% within Most of people I talk on Internet are from real life	100,0%	0,0%	0,0%	0,0%	100,0%
		Disagree	Count	6	0	0	0	6
			% within Most of people I talk on Internet are from real life	100,0%	0,0%	0,0%	0,0%	100,0%
		Neither agree nor disagree	Count	2	0	0	0	2
			% within Most of people I talk on Internet are from real life	100,0%	0,0%	0,0%	0,0%	100,0%
		Agree	Count	4	0	0	0	4
			% within Most of people I talk on Internet are from real life	100,0%	0,0%	0,0%	0,0%	100,0%
		Strongly agree	Count	4	5	1	1	11
			% within Most of people I talk on Internet are from real life	36,4%	45,5%	9,1%	9,1%	100,0%
	Total		Count	18	5	1	1	25
			% within Most of people I talk on Internet are from real life	72,0%	20,0%	4,0%	4,0%	100,0%
Females	Most of people I talk on Internet are from real life	Strongly disagree	Count	5	0	0	0	5
			% within Most of people I talk on Internet are from real life	100,0%	0,0%	0,0%	0,0%	100,0%
		Disagree	Count	2	0	0	0	2
			% within Most of people I talk on Internet are from real life	100,0%	0,0%	0,0%	0,0%	100,0%
		Neither agree nor disagree	Count	1	0	0	0	1
			% within Most of people I talk on Internet are from real life	100,0%	0,0%	0,0%	0,0%	100,0%
		Agree	Count	3	0	0	0	3
			% within Most of people I talk on Internet are from real life	100,0%	0,0%	0,0%	0,0%	100,0%
		Strongly agree	Count	6	3	3	1	13
			% within Most of people I talk on Internet are from real life	46,2%	23,1%	23,1%	7,7%	100,0%
		No answer was given	Count	0	0	0	1	1
			% within Most of people I talk on Internet are from real life	0,0%	0,0%	0,0%	100,0%	100,0%
	Total		Count	17	3	3	2	25
			% within Most of people I talk on Internet are from real life	68,0%	12,0%	12,0%	8,0%	100,0%

Total	Most of people I talk on Internet are from real life	Strongly disagree	Count	7	0	0	0	7
			% within Most of people I talk on Internet are from real life	100,0%	0,0%	0,0%	0,0%	100,0%
		Disagree	Count	8	0	0	0	8
			% within Most of people I talk on Internet are from real life	100,0%	0,0%	0,0%	0,0%	100,0%
		Neither agree nor disagree	Count	3	0	0	0	3
			% within Most of people I talk on Internet are from real life	100,0%	0,0%	0,0%	0,0%	100,0%
		Agree	Count	7	0	0	0	7
			% within Most of people I talk on Internet are from real life	100,0%	0,0%	0,0%	0,0%	100,0%
		Strongly agree	Count	10	8	4	2	24
			% within Most of people I talk on Internet are from real life	41,7%	33,3%	16,7%	8,3%	100,0%
		No answer was given	Count	0	0	0	1	1
			% within Most of people I talk on Internet are from real life	0,0%	0,0%	0,0%	100,0%	100,0%
	Total		Count	35	8	4	3	50
			% within Most of people I talk on Internet are from real life	70,0%	16,0%	8,0%	6,0%	100,0%

Table 4. Chi-Square Tests

Gender		Value	df	Asymp. Sig. (2-sided)
Males	Pearson Chi-Square	12,374[b]	12	,416
	Likelihood Ratio	15,227	12	,229
	Linear-by-Linear Association	5,095	1	,024
	N of Valid Cases	25		
Females	Pearson Chi-Square	20,249[c]	15	,163
	Likelihood Ratio	16,654	15	,340
	Linear-by-Linear Association	5,843	1	,016
	N of Valid Cases	25		
Total	Pearson Chi-Square	36,111[a]	15	,002
	Likelihood Ratio	32,014	15	,006
	Linear-by-Linear Association	11,344	1	,001
	N of Valid Cases	50		

a. 22 cells (91,7%) have expected count less than 5. The minimum expected count is ,06.

b. 19 cells (95,0%) have expected count less than 5. The minimum expected count is ,08.

c. 23 cells (95,8%) have expected count less than 5. The minimum expected count is ,08.

Appendix V. Examples of statistical analysis by applying regression analysis (executed in Microsoft Office Excel 2003)

In order to statistically analyse the quantitative data received, regression analysis can be applied. Regression analysis is a "the method of specifying the nature of a relationship between two interval variable using a linear function" (Frankfort-Nachmias & Nachmias, 2008, p.415).

According to Radchenko[19] (2011), basic concepts of regression analysis are:

- One of the variables depends on the other.
- The first (dependent) variable is called resulting, the second (independent) - factorial.
- It is not always possible to determine unambiguously which of the variables is independent and which is dependent. Usually the relationship is considered to be bi-directional.
- A line which is calculated by using OLS is called regression line. It gives the best approximate description of a linear relationship between two variables.
- Linear regression equation is described by the following equation: Y = a+ b*X, where Y – resulting varibale, X – factorial varibale, b - regression coefficient, a - regression intercept.

Many techniques for carrying out regression analysis have been developed. One of them is *Ordinary Least Squares (OLS) method*. Using this method, it is possible to determine the regression line, calculate the correlation coefficient (r) and regression coefficient (b), determine the mean error and functional relationship of the variables. In this particular study answers given by the respondents on two resembling questions will be analysed. In order to demonstrate statistical calculation, data presented on figures 14 (answers of male respondents) and *17* (answers of male respondents) are taken as an exampl. Figure 14 (see Chapter 6) demonstrates results on a question whether the respondents would prefer Internet to relax and/or cheer up when they are down or depressed. Figure 15 (see Chapter 6) demonstrates results on a question whether the respondents would prefer Internet to talk to others at times when they feel alone or down. Answers for these two questions contained nominal scale and, therefore, were coded as: 1 = "Strongly Disagree"; 2 = "Disagree"; 3 = "Neither agree nor disagree"; 4 = "Agree"; 5 = "Strongly Agree". Response of one person is equivalent to 4% of the 'population'.

[19] Radchenko S.G. (2011). Methodology of regression analysis: Monograph. K.: "Korneichuk".

According to figure 15 (Male respondents):

24% - 6 individuals in answer category 1

32% - 8 individuals in answer category 2

20% - 5 individuals in answer category 3

20% - 5 individuals in answer category 4

4% - 1 individual in answer category 5

Thus, code 1 – 6; code 2 – 8; code 3 – 5; code 4 – 5; code 5 – 1. A row of these variables are put in in Excel as below and further necessary calculation is accomplished by using OLS method:

#	Xi	Pi	Xi*Pi	Xi^2	(Xi^2)*Pi	Pi/Xi	Xi^P	Xi-x	|Xi-x|	Pi*(Xi-x)	Pi*|Xi-x|	(Xi-x)^2	Pi*(Xi-x)^2	(Xi-x)^3	Pi*(Xi-x)^3	(Xi-x)^4	Pi*(Xi-x)^4
1	1,000	6,000	6,000	1,000	6,000	6,000	1,000	-1,480	1,480	-8,880	8,880	2,190	13,142	-3,242	-19,451	4,798	28,787
2	1,000																
3	1,000																
4	1,000																
5	1,000																
6	1,000																
7	2,000	8,000	16,000	4,000	32,000	4,000	256,000	-0,480	0,480	-3,840	3,840	0,230	1,843	-0,111	-0,885	0,053	0,425
8	2,000																
9	2,000																
10	2,000																
11	2,000																
12	2,000																
13	2,000																
14	2,000																
15	3,000	5,000	15,000	9,000	45,000	1,667	243,000	0,520	0,520	2,600	2,600	0,270	1,352	0,141	0,703	0,073	0,366
16	3,000																
17	3,000																
18	3,000																
19	3,000																
20	4,000	5,000	20,000	16,000	80,000	1,250	1024,000	1,520	1,520	7,600	7,600	2,310	11,552	3,512	17,559	5,338	26,690
21	4,000																
22	4,000																
23	4,000																
24	4,000																
25	5,000	1,000	5,000	25,000	25,000	0,200	5,000	2,520	2,520	2,520	2,520	6,350	6,350	16,003	16,003	40,328	40,328

Then, a list of other variables should be calculated as below, according to formulas from monograph of Radchenko (2011):

Varibale	**Formula**	**Calculation**	**Result**
Aggregate number of cases	n		25
Harmonic mean	$\bar{x} = \frac{n}{\sum \frac{1}{x_i}}$	25/(6+4+1,667+1,25+0,2)	1,905972046
Geometric mean	$\bar{x} = \sqrt[n]{x_1 x_2 \ldots x_n} = \sqrt[n]{\Pi x_i}$	(1^(1/25))* (256^(1/25))* (243^(1/25))* (1024^(1/25))* (5^(1/25))*	2,188389629
Arithmetic mean	$\bar{x} = \frac{x_1 + x_2 + \ldots + x_n}{n} = \frac{\sum x_i}{n}$	(1*6+2*8+3*5+4*5+5*1)/25	2,48

Quadratic mean	$\bar{x} = \sqrt{\frac{\sum x_i^2}{n}}$	√ (1/25 +256/25 + 243/25 +1024/25 +5/25)	7,820485918
Variation size R	$R = x_{max} - x_{min};$	5-1	4
Oscillation coefficient	$\rho = \frac{R}{\bar{x}};$	4/2,48	1,612903226
Standard linear deviation	$a = \frac{1}{n}\sum_{i=1}^{n} \lvert x_i - \bar{x} \rvert,$	(8,88+3,84+2,6+7,6+2,52)/25	1,0176
Variance	$\sigma^2 = \frac{1}{n}\sum_{i=1}^{n} (x_i - \bar{x})^2;$	(13,142+1,843+1,352+11,552+6,35)/25	1,3696
Standard deviation	$\sigma = \sqrt{\frac{1}{n}\sum_{i=1}^{n} (x_i - \bar{x})^2};$	√1,3696	1,170299107
Variation coefficient	$V = \frac{\sigma}{\bar{x}};$	1,170299107/2,48	0,471894801
Deviation ratio	σ / a	1,170299107/1,0176	1,150058085

Then, a number of variables (respondents' answers for another question which resembles in meaning with question presented on figure 15) should be calculated in the same manner.

According to figure 14 (Male respondents):

8% - 2 individuals in answer category 1

44% - 11 individuals in answer category 2

20% - 5 individuals in answer category 3

16% - 4 individuals in answer category 4

12% - 3 individuals in answer category 5

Thus, code 1 – 2; code 2 – 11; code 3 – 5; code 4 – 4; code 5 – 3. A row of these variables are put in in Excel as below and further necessary calculation is accomplished by using OLS method:

#	Xi	Pi	Xi*Pi	Xi^2	(Xi^2)*Pi	Pi/Xi	Xi^P	Xi-x	|Xi-x|	Pi*(Xi-x)	Pi*|Xi-x|	(Xi-x)^2	Pi*(Xi-x)^2	(Xi-x)^3	Pi*(Xi-x)^3	(Xi-x)^4	Pi*(Xi-x)^4
1	1,000	2,000	2,000	1,000	2,000	2,000	1,000	-1,800	1,800	-3,600	3,600	3,240	6,480	-5,832	-11,664	10,498	20,995
2	1,000																
3	2,000	11,000	22,000	4,000	44,000	5,500	2048,000	-0,800	0,800	-8,800	8,800	0,640	7,040	-0,512	-5,632	0,410	4,506
4	2,000																
5	2,000																
6	2,000																
7	2,000																
8	2,000																
9	2,000																
10	2,000																
11	2,000																
12	2,000																
13	2,000																
14	3,000	5,000	15,000	9,000	45,000	1,667	243,000	0,200	0,200	1,000	1,000	0,040	0,200	0,008	0,040	0,002	0,008
15	3,000																
16	3,000																
17	3,000																
18	3,000																
19	4,000	4,000	16,000	16,000	64,000	1,000	256,000	1,200	1,200	4,800	4,800	1,440	5,760	1,728	6,912	2,074	8,294
20	4,000																
21	4,000																
22	4,000																
23	5,000	3,000	15,000	25,000	75,000	0,600	125,000	2,200	2,200	6,600	6,600	4,840	14,520	10,648	31,944	23,426	70,277
24	5,000																
25	5,000																

Then, a list of other variables should be calculated as below, according to formulas from monograph of Radchenko (2011):

Varibale	**Formula**	**Result**
Aggregate number of cases	n	25
Harmonic mean	$\bar{x} = \frac{n}{\sum \frac{1}{x_i}}$	2,321981424
Geometric mean	$\bar{x} = \sqrt[n]{x_1 x_2 \ldots x_n} = \sqrt[n]{\Pi x_i}$	2,559077557
Arithmetic mean	$\bar{x} = \frac{x_1 + x_2 + \ldots + x_n}{n} = \frac{\sum x_i}{n}$	2,8
Quadratic mean	$\bar{x} = \sqrt{\frac{\sum x_i^2}{n}}$	10,34021276
Variation size R	$R = x_{max} - x_{min};$	4
Oscillation coefficient	$\rho = \frac{R}{\bar{x}};$	1,428571429
Standard linear deviation	$a = \frac{1}{n}\sum_{i=1}^{n} \lvert x_i - \bar{x} \rvert,$	0,992
Variance	$\sigma^2 = \frac{1}{n}\sum_{i=1}^{n} (x_i - \bar{x})^2;$	1,36
Standard deviation	$\sigma = \sqrt{\frac{1}{n}\sum_{i=1}^{n} (x_i - \bar{x})^2};$	1,166190379

Variation coefficient	$V = \frac{\sigma}{\bar{x}};$	0,416496564
Deviation ratio	σ / a	1,17559514

In order to differentiate the results, variables which are significant for further calculation (standard deviation and arithmetic mean) for figure 15 will be of index x, the main variables for figure 14 will be of index y.

The results presented in below table are partially taken from above calculation in Excel, rest is calculated step by step depending on the parameter needed for the next formula:

	sigma x=	1,170299107	**sigma y=**	1,166190379			
	x=	2,48	**y=**	2,8			
	(Xi-x)	**(Xi-x)^2**	**(Yi-Y)**	**(Yi-Y)^2**	**(Xi-x)*(Yi-Y)**	**Y'=a+b*xi**	**(Yi-Y')^2**
	-1,48	2,1904	-1,8	3,24	2,664	1,428470754	0,183587187
	-0,48	0,2304	-0,8	0,64	0,384	2,355179704	0,126152622
	0,52	0,2704	0,2	0,04	0,104	3,281888654	0,079461213
	1,52	2,3104	1,2	1,44	1,824	4,208597604	0,04351296
	2,52	6,3504	2,2	4,84	5,544	5,135306554	0,018307864
SUM		**11,352**			**10,52**		**0,451021846**

Then, it is necessary to calculate below parameters.

	Formula	**Calculation**	**Result**
Regression coefficient, b	∑(Xi-x)^2/ ∑(Xi-x)*(Yi-Y)	10,52/11,352	0,92670895
Regression intercept, a	y-b*x	2,8-0,92670895*2,48	0,501761804
Correlation coefficient, r	b*x/y	0,92670895*2,48/2,8	0,929973936
Средняя ошибка оценки, mb	√∑(Yi-Y')^2/(n-m-1)/∑(Xi-x)^2 * This is a pair regression model (single-factor model), that's why number of degrees of freedom is calculated as n-m-1, where m - number of factors, as a result n-2	√0,451021846/(25-2)/11,352	0,041562215
Coefficient's t-value	b/mb	0,92670895/0,041562215	22,29690982

Covariation coefficient, cov(x,y)	∑(Xi-x)*(Yi-Y)/n	10,52/25	0,4208

- If r<0,1, there is no correlation;
- if r<=0,4 – weak correlation;
- if r<=0,7 – average correlation;
- if r<=0,9 – stable correlation.

SUMMARY: In this particular example r = 0,929973936, in other words, the nature of a relationship between two rows of interval variables extracted from the results on figures 14 and 15 have stable correlation..

According to Frankfort-Nachmias and Nachmias (2008), in order to present a functional relationship between two variables a linear regression can be used in the research. As it was said earlier, linear regression equation is described by the following algebraic equation: Y = a+ bX, where Y – resulting varibale, X – factorial varibale, b - regression coefficient, a - regression intercept.

Regression equation in this case has the following equation: **Y = 0,502 + 0,927 X.** Regression coefficient is not symmetric parameter, it changes if the rows of input data are interchanged. So, analogical calculation can be done if one starts from the results presented on figure 14, then on figure 15.