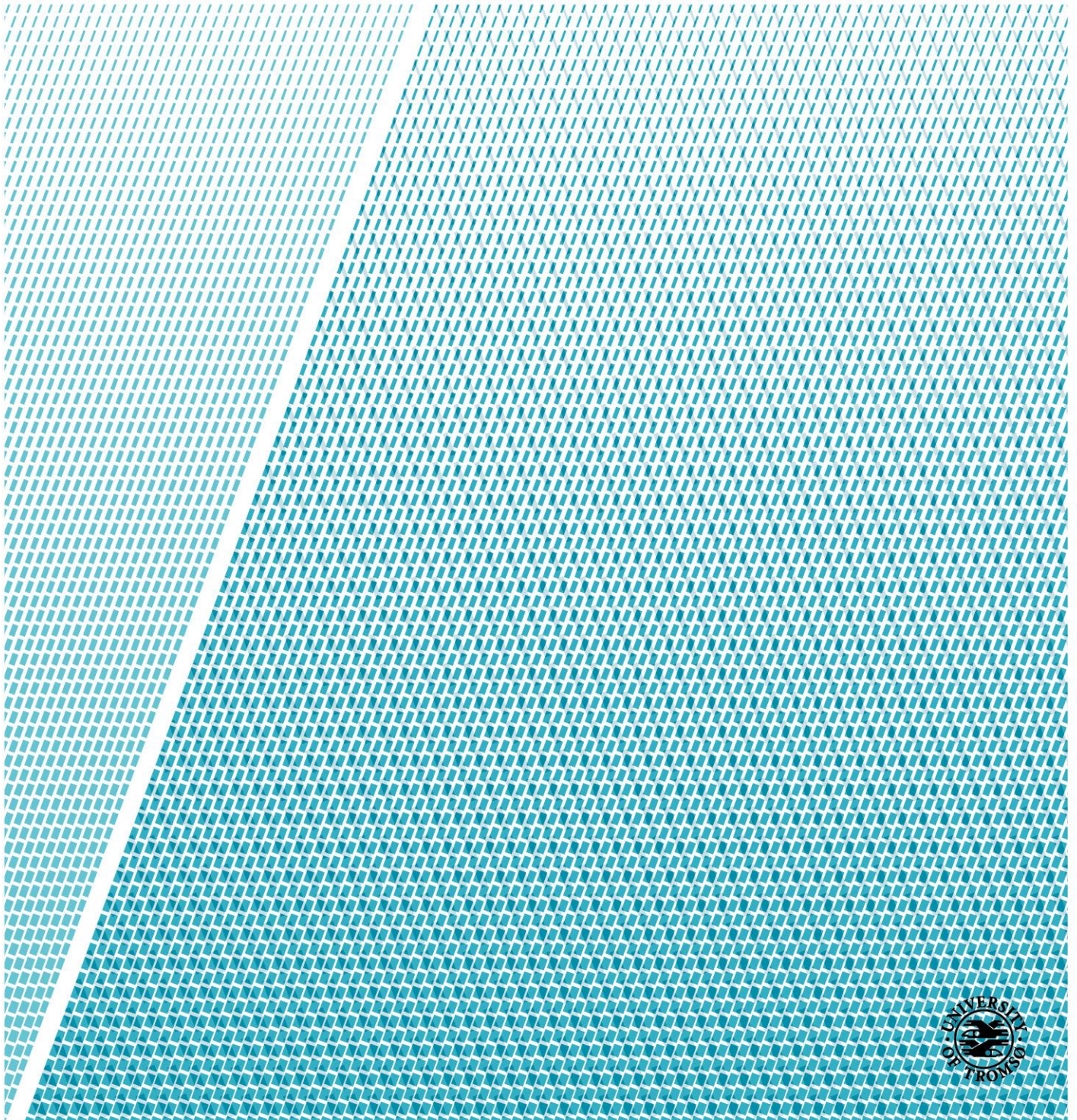


Pathological gambling among university students – the impact of personality and subjective well-being

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Preface

This study is a part of the course PSY-2901, master thesis for clinical psychology at the University of Tromsø. The main supervisor during this study was Professor and Deputy Head of the Department of Psychology, Martin Eisemann. This study had the purpose to enhance the knowledge of the relationship between personality, pathological gambling and subjective well-being among a student population. Generally there is limited research regarding pathological gambling, and especially combined with personality. The authors have collected the data, designed the procedure, run the statistical analysis and written the master thesis themselves. The work load between the authors have been equal during the process. The main supervisor has contributed with feedback regarding language and thesis structure. Research articles were collected through the search engines “PsychInfo”, “BibSys” and “Google Scholar”. We want to thank Martin for his wisdom and great advice. We also want to thank each other for a successful cooperation.

Abstract

Introduction: Students are at a higher risk of developing pathological gambling compared to the general population. Research has revealed a link between higher Neuroticism, lower Conscientiousness and pathological gambling, and that pathological gamblers tend to report poorer subjective well-being. Thus, the major objective of this study was to investigate the relationship between pathological gambling (PG), personality traits and subjective well-being (SWB) among university students.

Method: 150 students were recruited to complete three questionnaires: the Canadian Problem Gambling Index (CPGI) as a measure of severity of gambling, the Big five inventory (BFI-20) to measure personality traits, and the HUNT Quality of Life-5 (QoL-5) to assess subjective well-being (SWB).

Results: By using the program IBM SPSS Statistics for Mac version 25, we established a relationship between PG and low Conscientiousness, but not high Neuroticism or low SWB. SWB could be largely explained by high Neuroticism, low Extraversion and low Conscientiousness. Gender, i.e. males, was also associated with PG.

Conclusion: Our findings indicate that Norwegian male students are more prone to have characteristics associated with problem gambling behavior, and that low Conscientiousness is associated with problem gambling behavior.

Introduction

Pathological gambling

In several countries, the gambling industry has grown a lot in the past 20 years. Norway's liberal view on gambling came late but all the stronger. Slot machines were introduced in Norway in the 1990's. During this decade the slot machine revenue was 47-fold, and Norway was the country in Europe with the most liberal policy for slot machines – the most addictive form of gambling. The problems connected to the liberalisation of gambling are well known in countries where the liberalisation occurred earlier, and the scientific literature on that matter is increasing. In Canada, Australia and Sweden gambling is considered a public health issue (Fekjær, 2001).

Gambling is the same as hazard games or games of chance, and the word is particularly used in the context of cash games (Eilertsen, 2018). There are many different types of gambling such as casino, betting, poker, bingo and horseracing. Most forms of gambling can be played both online and at physical venues (Pallesen, Molde, Mentzoni, Hanss & Morken, 2016).

The International Classification of Diseases-10 (ICD-10) characterizes pathological gambling (PG) as a habit and impulse disorder consisting of frequent, repeated gambling episodes that intrude an individual's life in a way that is harming social, occupational, material and family conditions (World Health Organization, 1992). A person suffering from PG will show an obsession of gambling and an addiction to the thrill that gambling with increasing activity is providing. Patients with PG cannot decrease or terminate their gambling, regardless of the fact that it may contribute to lying, stealing, losing important relations, unemployment, or lack of educational opportunities. Most people engaging in gambling do not have a problem, while others lose control. Signs of a gambling problem include constantly thinking and lying about gambling, using family or work time on gambling, feeling bad after gambling

without stopping, and using money needed for other daily expenses. The disorder often becomes more prominent when life otherwise is perceived as stressful.

Pathological gambling has a striking resemblance to alcohol dependence when looking at the clinical picture. Recent research also suggests that there might be a biological vulnerability (Potenza et al., 2011). The number of serotonin receptors in the brain (serotonin – a transmitter among other things important for mood and behaviour regulation) contribute to regulate the level of serotonin in the brain. Studies in animals show a connection between serotonin 1B-receptors and consumption behaviour. Similar findings are reported in one study in humans, where the gambling addiction was associated with a higher number of serotonin receptors. Biological similarities put aside, it seems as if those with PG experience a greater feeling of losing control compared to substance abusers (Fekjær, 2001).

In the revised edition of Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5) from 2013, PG - here known as gambling disorder, is fully recognized as an addiction disorder (Hartney, 2017).

Student gambling

In a Norwegian population study from 2015 it was found that about 60% of the Norwegian population had engaged in some kind of gambling within the last 12 months (Pallesen et al., 2016). About 7.7% were characterized as "low-risk gamblers", 2.3% as "moderate-risk gamblers", while 0.9% were defined as "problem gamblers". None of the above proportions showed a significant increase since 2013. The extent of the problem in Norway appears low compared to other countries, possibly due to the lottery and gambling legislation. Previous studies on students and gambling have shown that students more often have gambling problems, with up to 8% meeting the criteria of PG (Moore et al., 2013). Students have reported that their motivation for gambling includes winning money, having

fun, socializing, seeking excitement, or having something to do (Neighbors, Lostutter, Cronce & Larimer, 2002).

Gambling in Norway

Findings from the population study mentioned in the section above showed that moderate risk gamblers and problem gamblers to the greatest extent were males, had a lower educational level, were unemployed, disabled or on work assessment allowance (AAP), were born outside Norway and had during the last 6 months engaged in gambling. Casino games, online Poker, sports betting and online bingo were the games named as problematic to control and/or to limit. Sixty percent of the active gamblers did it for fun or to win money.

Psychosomatic symptoms turned out to rise in accordance with gambling group, with people placed in the higher groups reporting more symptoms. In 2015, half of those gambling on foreign online casinos were moderate-risk and problem gamblers which is an increase from 2013, when the number was 1 out of 3 – and this seems to be related to increased advertising (Pallesen et al., 2016).

Personality

Personality is a term describing an individual's characteristic way of thinking, feeling and acting across time and place. An individual's personality is essential to how one relates to the outside world. While personality to a large degree seems to be biologically determined, it also appears that childhood environment, life events, and illness to some degree can affect an individual's personality (Malt, 2016). Some theories emphasize traits and descriptions of these traits, while others point out that different forces in the personality or hidden motives are more important. The current research of personality focuses on two broad areas, where one is to understand individual differences in terms of specific personality characteristics, such as sociability and irritability, whilst the other is the understanding of how different parts of a person melt into a whole (Kazdin, 2000).

Trait theory - "The Big Five"

An individual's personality is not concluded from informal observations of behaviour, but rather gathered from results of specific tests that have been developed to identify specific personality characteristics. Their goal is to identify the possible causes of individual differences in behaviour. Identifying and describing personality characteristics is not the same as explaining them. Still, identifying is the first step towards an explanation (Martin, Buskist & Carlson, 2013).

One of the most prominent trait models is the Five Factor Model (FFM), developed by Costa and McCrae (1992). The five factors are Extraversion, Neuroticism, Agreeableness, Conscientiousness and Openness, which are often named "the Big 5" (John & Strivastava, 1999). The traits that build the five-factor model refer only to descriptive traits and do not constitute a personality theory (Heine & Buchtel, 2009). However, research show that all five personality traits have a significant and approximately equal heritability (Plomin, DeFries, McClearn & McGuffin, 2001), and a large degree of stability in adulthood (Costa, Herbst, McCrae & Siegler, 2000). The model is among the newest models developed to explain personality and seems to be among the most practical and applicable models available in the field of personality psychology. Even though there exists a large degree of debate around the five factors, there is a general consensus around the identification and their interpretive value (Popkins, 1998).

All the different traits have an opposite (Table 1) - for example Introversion as the opposite of Extraversion – making each trait dimensional rather than bipolar (Nordvik, 2009). The Big 5 can for example be measured with the use of The Revised Neuroticism, Extraversion, Openness – Personality Inventory (NEO-PI-R) consisting of 240 items (Costa & McCrae, 1992; Martinsen, Nordvik & Østbø, 2005). Big Five Inventory (BFI) is one of the most applied personality inventories based on FFM (Engvik, 1993). Because of its fewer

items (44) it is easier to apply than the original. Each factor in the NEO-PI-R comprises six associated facets, for example anxiety, warmth, trust and fantasy. When removing items to make inventories such as BFI-44 the facets are partly lost, and these inventories do not have the dimension that the facets help to create, but rather consist of characteristics for each factor.

Table 1

The Big 5 traits (left) and their opposite trait (right).

The Big 5 trait	Opposite trait
Extraversion	Introversion
Neuroticism	Emotional Stability
Agreeableness	Antagonism
Conscientiousness	Loss of direction
Openness	Closedness

Extraversion includes features of energy, direct speech and direct demeanour, while Introversion involves being closed off, more secluded and careful (Malt, 2018). Neuroticism involves anxiety, nervousness and being “touchy”, while emotional stability reflects an inner calmness, robustness and security – even in face of great pressure. Agreeableness includes features of caring for others and empathy, while the opposite – antagonism – involves being hostile, stubborn and considered insensitive by others. Conscientiousness involves being tidy and reliable, which may turn into conformity and rigidity if it gets too pronounced. Loss of direction, the opposite of Conscientiousness, reflects a low degree of control which at its highest degree includes unreliability and lack of conscience. Openness to ideas and impressions includes ingenuity, cultural interest and flexibility, and also a tolerance for the unusual and new. A high degree of closedness is often seen in more practical individuals who have less interest for new ideas and theories (Popkins, 1998).

Subjective well-being

Subjective well-being (SWB) is a subjective condition based on how people evaluate their lives. These subjective evaluations can include people's mood, emotional reactions to events, judgements about their satisfaction of life, fulfilment and satisfaction with work and relationships. Subjective well-being (SWB) is not constant and can steadily change (Diener, Oishi & Lucas, 2003). There are especially two approaches to well-being: hedonism and eudaimonia. Hedonism is mostly about being happy and the term explains positive feelings, affects and emotions. Eudaimonia explains the importance of having purpose in life and being able to achieve life goals (Vittersø, 2016). Most recent research suggests that well-being is a combination of these two approaches and that it is possible to experience well-being in some life contexts and not so much in other (Fave, Massimini & Bassi, 2011).

There are cultural differences regarding well-being and research points to diverse components across cultures. On the other hand, there is also evidence of a cross-cultural universality (Diener et al., 2017).

Pathological gambling and personality

Personality traits have shown to be consistent and represent important factors in various externalized behaviours, including addiction, aggression and antisocial behaviour (Miller et al., 2013).

In a study on the predictive value of both personality traits and neuropsychological characteristics in patients with PG and non-clinical groups, it was found that personality traits are better predictors than neuropsychological characteristics concerning whether someone is suffering from PG (Forbush et al., 2008). PG was associated with fronto-temporal dysfunction and maladaptive personality traits, such as impulsivity and thrill seeking. In NEO-PI-R impulsiveness is a facet of Neuroticism (ETS, 2012).

In a Norwegian study it was found that high scores on Neuroticism, low scores on Openness, high impulsivity and need for stimulus intensity were significantly related to PG (Myrseth, Pallesen, Molde, Johnsen & Lorvik, 2009). In another study they found a link between PG and high Neuroticism and low Conscientiousness (Karre, Mottus & Konstabel, 2009), and a number of studies have found that impulsivity is associated with PG (Alessi & Petry, 2003; Nower, Derevensky, & Gupta, 2004).

Internet Gaming Disorder (IGD) is defined in the 11th Revision of the International Classification of Diseases (ICD-11) as a pattern of digital or video gaming characterized by impaired control over gaming, and by prioritizing gaming over other activities to the extent that gaming overtakes other interests and daily activities (World Health Organization, 2018). IGD is associated with higher levels of Neuroticism, decreased Conscientiousness and low Extraversion. The level of Neuroticism does not appear different between those with IGD and PG, and low Conscientiousness and low Extraversion are suggested being characteristics of IGD. Low Conscientiousness is shown as a predictor for addiction disorders and as the strongest predictor for IGD (Müller, Beutel, Egloff & Wölfling, 2014).

The interpretation of the results from the studies mentioned above is complicated, both due the fact that a) gamblers seeking treatment represent a minority within the PG population (Slutske, 2006), and b) those who seek treatment typically have the highest scores on Neuroticism and the lowest scores on Conscientiousness. Additionally, the risk for selection bias is particularly a high risk if those with high Neuroticism are overrepresented amongst the relatively small amount of people with PG who seek treatment (MacLaren, Best, Dixon & Harrigan, 2011).

MacLaren et al. (2009) examined the relationship between the NEO-PI-R domains and facets and self-reported gambling behaviour in undergraduate students, considering the selection bias mentioned. They found that non-treatment seeking PGs had lower

Agreeableness and Conscientiousness – and higher Neuroticism, compared to non-treatment seeking non-problem gamblers (NPG). Bagby et al. (2007) found that the non-treatment seeking PG group scored significant higher on Neuroticism and lower on Conscientiousness compared to non-treatment seeking NPGs. The same was found in a Norwegian population study, where gamblers with low, moderate and severe levels of gambling problems scored significantly higher on Neuroticism and lower on Conscientiousness compared to NPGs (Brunborg, Hanss, Mentzoni, Molde & Pallesen, 2016). Lower Agreeableness was in this study linked to moderate and severe gambling problems.

To sum up, the results of studies of personality traits and their link to PG differ, but the personality traits which were consistently differing throughout the various studies were higher Neuroticism and lower Conscientiousness in PG groups compared to NPGs.

Personality and subjective well-being

A number of studies have shown that personality characteristics are associated with physical and mental health. Many personality traits have been linked to SWB, but much research has pointed to a moderate to strong correlation between SWB and Extraversion and Neuroticism (Diener, Oishi & Lucas, 2003). The consistency in the findings of the association between Extraversion and pleasant affect and Neuroticism and negative affect has led many researches to suggest that these two personality traits represent the primarily links between personality and SWB.

In a study using three different measures of SWB and personality traits, SWB was associated with Neuroticism, Extraversions and Conscientiousness, but not Openness or Agreeableness (Hayes & Joseph, 2003).

Studies have shown that high Conscientiousness is associated with a significantly reduced likelihood of mental and physical disorders (Goodwin & Friedman, 2006). Generally, a high degree of Conscientiousness is often combined with good health and health promoting

behaviour such as physical exercising, dieting, avoiding substance abuse and following health guidelines due to illness (Murray & Booth, 2015).

Most of the theories explaining the relationship between personality and well-being have been focusing on the personality's direct effect on emotional and cognitive well-being (Diener, Oishi & Lucas, 2003). However, it is also plausible that indirect or interactional effects can have an impact, e.g. that various events or life circumstances can influence SWB differently among people with diverse personality profiles. Extraverted prisoners emerged as less happy than introverted prisoners, although extraverts generally report being more happy than their counterparts (Kette, 1991).

The findings above suggests that personality traits, in particular Neuroticism, Extraversion and Conscientiousness, can explain a significant amount of the variability in SWB, but that life circumstances also may exert long-term effects.

Pathological gambling and subjective well-being

Pathological gambling has been associated with poor general health (Gerstein et al., 1999). Stressful events can be related to the development of gambling problems and pathological gambling can be seen as an activity aimed to self-healing from stress (Coman, Burrows & Evans, 1997; Haustein & Schuergers, 1992). Triggering events can be anxiety, boredom, or arguments with someone (Lightsey & Hulseley, 2002). Sharpe (2002) has suggested that the high arousal state that accompanies stress, tends to be perceived in a negative way, whereas high arousal activities such as gambling may give a positive interpretation of the stress-related arousal in the form of excitement associated with winning and losing. The positive interpretation becomes in turn reinforced through a negative reinforcement mechanism.

Problem gamblers, when compared to non-gamblers, report poorer life satisfaction and quality of life (Grant & Kim, 2005). Other findings suggest that gamblers with an obsessive

passion towards gambling had a tendency to report negative mood in addition to low life satisfaction (Rousseau, Vallerand, Ratelle, Mageau & Provencher, 2002). Low life satisfaction in problem gambling groups may also reflect feelings of shame and guilt caused by a distorting way of viewing one self and life in general as well as their problem gambling behaviour (Grant & Kim, 2005). Previous studies of the link between gambling and SWB indicate that SWB is declining as the gambling disorder is worsening (i.e. Farrell, 2017).

Hypotheses

In consistency with previous studies we expect to find:

1. Students from the PG group will show higher Neuroticism and lower Conscientiousness, compared to students from the NPG group.
2. SWB will decrease with severity of gambling; more severe gambling group will correlate with lower SWB.
3. There will be gender differences between gambling groups, with males being more prone to the moderate-risk or problem group.
4. There will be an impact of Neuroticism, Extraversion and Conscientiousness onto SWB.

Method

Recruitment and procedure

UiT – The Arctic University of Norway is the third largest university in Norway and the northernmost of the world (Solberg, 2017). In 2018 there were 16.747 students enrolled, 58.73% female (NSD, 2019).

We distributed a web survey by means of Facebook asking students at UiT for participation. We also encouraged the students to share the survey in private student groups on Facebook. Participation was voluntary and participants were able to cancel the survey at any given time. We did not ask for their study program to ensure the participant's anonymity.

Brief information about the content and the purpose was given prior to the survey – e.g. stating that the survey would be a part of the master thesis for three psychology students. We also gave an estimated time frame for how long the survey would take. The survey was open for participation from August 24th 2018 until January 28th 2019. Our findings are based on the answers of 150 students at UiT – The Arctic University of Norway.

Measurements

General information

Demographic information about gender, age and student status was gathered. Non-student participants could not continue on to the next part of the survey.

Personality

We used the Norwegian 20-item version of the Big Five Inventory (Engvik & Clausen, 2011). Respondents were asked to answer the questions on a Likert-scale ranging from 1 to 7, with only the endpoints verbally described as 1 = Unsuitable and 7 = Fits perfectly (for example “Is talkative”). The self-report measure BFI-20 by Engvik & Clausen is not translated to English, but the original BFI-44 is. (See Appendix A for items chosen from BFI-44). The reason for creating BFI-20 was to shorten but also to retain the psychometric validity of BFI-44. The psychometric properties were measured by structural validity (to minimize correlation between the different items), maximal representativeness (multiple correlation between the items in BFI-20 and equivalent factors in BFI-44), maximal stability over time (test retest-reliability) and maximal validity criteria (multiple correlation between self and peers evaluation). As a result BFI-20 consists of five subscales with four items each, subscales from BFI-44 in parenthesis, Extraversion (Extraversion), Friendly (Agreeableness), Control (Conscientiousness), Emotional stability (Neuroticism), and Fantasy (Openness). In the following we will use the subscale names from BFI-44 when referring to the BFI-20 subscales, in an attempt to make it easier for the reader and to link our findings to previous

research of FFM. Be aware that BFI-20 does not measure the different personality traits with all its facets and dimensions. The alpha values of the BFI-20 range from .57 (Control) to .78 (Extraversion) and the instrument is considered to have poor to acceptable psychometric properties (Tavakol & Dennick, 2011; Engvik & Clausen, 2011). The BFI-20 scores of each personality trait are summed and divided by number of items (John, Robinson & Pervin, 2011). The total score of a personality trait will range from 1 to 7. Prior to scoring item 2, 6, 8, 9, 12, 16, 18 and 20 had to be reversed.

Problem gambling

To assess the participants gambling habits we used The Canadian problem gambling index (CPGI) created by Ferris and Wynne (2001), which is a self-report inventory consisting of 9 items with Likert-type ratings where 0 = Never and 3 = Almost always (for example “Have you bet more than you could really afford to lose?”). The respondents are asked to base their answers onto the last 12 months. The CPGI is reported to show high internal validity (Cronbach’s $\alpha = .88$) (Pallesen et al., 2016). The scores are summed into a total score and divided into groups of Non-problem gambling 0, Low level of problems with few or no identified negative consequences 1-2, Moderate level of problems leading to some negative consequences 3-7, and Problem gambling with negative consequences and a possible loss of control 8 or more (Ferris & Wynne, 2001). The total score of CPGI has a range from 0 to 27.

Subjective well-being

Helseundersøkelse i Nord-Trøndelag Quality of Life-5 (HUNT QoL-5, hereby named QoL-5) is a Norwegian quality of life instrument consisting of 5 items. QoL-5 has Likert-type ratings with different verbal description with two items ranging from 1 to 4 and three items ranging from 1 to 7 (for example “Are you usually happy or depressed?”). QoL-5 is assumed to measure subjective well-being (SWB) based on mental function, emotional function, energy and the ability to take action (Bergland & Wyller, 2006). The questionnaire is based

on five questions from the Nord-Trøndelag Health Study: HUNT-1, and most of the questions in the original version are sourced from an instrument called Subjective Well-Being (Hofoss & Nord, 1997; Holmen et al., 1990). The instrument is appealing because of its brevity and it can be used in quite different contexts. Its validity has so far not been studied to a large degree. The internal validity for QoL-5 was acceptable (Cronbach $\alpha = .79$) in a study of elderly Norwegian women (age: 75 and above) (Bergland & Wyller, 2006). The correlation between the QoL-5 and the GHQ-20 sum score was $.75$ ($p < 0.001$) in the same study. There were also a significant correlation between the probands' quality of life, measured by GHQ-20 and QoL-5 and their physical, psychological and social function. Because of the fact that QoL-5 is less time consuming due to fewer items than the GHQ-20, and its acceptable psychometric properties, we preferred the QoL-5 in our study. The scores are summarized, ranging from 5 (high well-being) to 29 (low well-being). Prior to scoring item 4 and 5 were reversed.

The different assessments were combined in one 34-item survey (Appendix B).

Statistical analysis

All data were analyzed with the use of IBM SPSS statistics for Mac version 25. The analyzes applied were descriptives, to provide an overview of the different variables, frequencies, to obtain gambling group frequency, one-way ANOVA between subjects, to test for group differences and a following Tukey HSD post hoc test when we found one, bivariate correlation, to see if and how the different variables were connected, Fisher's exact test, to find significant group differences between categorical variables, ordinal regression, regression with two categorical variables, and linear regression, regression with scale variables.

Ethics

The study collected no direct personal identifiable information through the survey. Furthermore, the layout "hidden identity" was chosen, so no direct or indirect identifiable

information, such as IP-address, chosen browser or email was stored. The link to the survey was distributed through Facebook using public status and posting the link on different private class or study groups, for example “Medicine class of 2014” or “Economics at UiT”. The study is considered to be in accordance with the Norwegian health research law. Information about health or other sensitive information was not collected and therefore it was not necessary applying to Regional committees for medical and health research ethics (REK) or to “General Data Protection Regulation” of the Norwegian Centre for Research Data (NSD).

Results

General data

Our sample (n=150) ranged from 19-40 years with a mean age of 24.5 (SD = 3.98 years). 32.7% were males.

Table 2

Age, BFI-20 and QoL-5 scores: Mean, standard deviation and significance levels from ANOVA

	Mean	SD	Sig.
Age	24.50	3.98	.08
Extraversion	5.14	1.11	.39
Neuroticism	3.35	1.08	.26
Agreeableness	4.49	.58	.52
Conscientiousness	4.94	.94	.00*
Openness	4.16	1.27	.46
QoL-5	13.33	3.95	.44

Note. For analysis of variance (one-way ANOVA) DV = PG group. * Significant at the $p < .01$ level.

Gambling groups and gender differences

Using the CPGI (Ferris & Wynne, 2001), 69.3% (n = 104) of the 150 survey participants were identified as NPGs, 15.3% were identified as low-risk gamblers (LPG), 8,0% were moderate-risk gamblers (MPG), and 7,3% classified as PGs (Table 3). Results from Pearson correlations (Table 4) indicated that gender correlated significantly with several

of the gambling categories, i.e negatively between gender and NPG, positively between gender and MPG and PG. Because both gender and gambling group are considered categorical variables, Fisher's exact test was used for statistical analysis of possible significant group differences and showed significant gender differences in NPG ($X^2(1) = 36.4, p < .001$), MPG ($X^2(1) = 15.22, p < .001$), and PG ($X^2(1) = 18.31, p < .001$).

Table 3

Gambling group statistics and gender differences (n = 150)

Gamblers (CPGI score)	Male		Female		Total	
	N	%	N	%	N	%
Non-problem gamblers	18	12.0	86	57.3	104	69.3
Low-risk gamblers	11	7.3	12	8.0	23	15.3
Moderate-risk gamblers	10	6.7	2	1.3	12	8.0
Problem gamblers	10	6.7	1	0.7	11	7.3
Total	49	32.7	101	67.3	150	100

Table 4

Correlations between CPGI, QoL-5 and BFI-20

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11
1. Gender	-	-.49**	.14	.32**	.35**	-.08	-.33**	-.18*	-.33*	.24**	.04
2. NPG		-	-.64**	-.44**	-.42**	.00	.13	.10	.33**	-.13	-.11
3. LPG			-	-.13	-.12	.10	-.04	-.12	-.13	.07	.07
4. MPG				-	-.08	.00	-.15	-.03	-.014	.09	.00
5. PG					-	-.12	-.03	.00	-.25**	.04	.11
6. BFI: E						-	-.28**	.21*	.23**	.24**	-.41**
7. BFI: N							-	.05	-.05	-.01	.50**
8. BFI: A								-	.25**	.05	-.16*
9. BFI: C									-	-.07	-.40**
10. BFI: O										-	.00
11. QoL-5											-

Note. * $p < .05$, ** $p < .001$, Gender (1 = Female, 2 = Male)

Pathological gambling and personality

There was a highly significant correlation between NPG and Conscientiousness and between PG and Conscientiousness (Table 4).

According to the one-way ANOVA between subjects there was a significant effect of gambling group on Conscientiousness for the four conditions [$F(3,146) = 6.79$, $p = .001$], with no significant results for the other personality variables (Table 2). Post hoc comparisons using the Tukey HSD test indicated that the mean score for the NPG condition ($M = 5.13$, $SD = .93$) was significantly different for the PG condition ($M = 4.11$, $SD = .42$). Low PG ($M = 4.64$, $SD = .93$) and MPG ($M = 4.48$, $SD = .76$) did not significantly differ from the other conditions in Conscientiousness.

In order to run a regression with a dependent variable consisting of four categories (NPG, LPG, MPG and PG) an ordinal regression with the PLUM procedure has to be used. One of the drawbacks of the PLUM procedure is that it does not produce output “odds ratios” or their “95% confidence intervals”. Therefore we had to run our data through Output Management System Control Panel (OMS) to obtain these outputs. Our data met the

assumption that our DV (gambling group) is measured at an ordinal level, and that our independent variables are categorical (gender) and continuous (Neuroticism, Conscientiousness, Extraversion, Openness and Agreeableness). Further, the ordinal regression requires that there is no multicollinearity and that it has proportional odds. The collinearity statistics showed that our data set had no multicollinearity symptoms, with VIF values between 1-2. The test of parallel lines in SPSS shows that our model is significant, meaning that it violates the assumption of proportional odds, meaning that the interpretation has to be done cautiously. More generally, our results show that our overall model is statistically significant. Looking at the pseudo R-square table, Nagelkerke, our model explains 33,6% of the variance in the DV (Table 5).

The significant results imply that a decrease in Conscientiousness is associated with an increase in the odds of meeting the criteria of PG, with an odds ratio of .561 (95% CI, .345 to .914), Wald $X^2(1) = 5.38$, $p = .020$. The odds of females meeting the criteria of PG were .098 (95% CI, .038 to .247) times that of males, a statistically significant effect, Wald $X^2(1) = 24.074$, $p = .000$.

Table 5

Ordinal Regression Predicting Membership in the PG group

Predictor	B	Standard error	Wald Statistic	<i>P</i>	Odds ratio	95% CI
Gender = 1	-2.33	0.47	24.07**	0.00	0.10	.04-.25
NPG	-1.03	2.34	0.20	0.66	0.36	.00-34.97
LPG	0.20	2.34	0.01	0.93	1.22	.01-119.41
MPG	1.22	2.35	0.27	0.60	3.38	.03-336.87
PG	REF					
Extraversion	0.17	0.20	0.70	0.41	1.18	.8-1.74
Neuroticism	-.00	0.24	0	0.99	1.00	.63-1.58
Agreeableness	0.27	0.35	0.58	0.45	1.31	.66-2.60
Conscientiousness	-0.58	0.25	5.38**	0.02	0.56	.35-.91
Openness	-0.07	0.16	0.18	0.67	0.93	.68-1.29
QoL-5	0.05	0.06	0.5	0.48	1.05	.92-1.18

Note. CI = confidence interval. Gender variable was dummy coded 1 = female, 2 = male. The complete set of predictors explained 33.6% (Nagelkerke, R^2) of the variability in PG group.

* Denotes a significant Wald statistic, $p < .001$, ** Denotes a significant Wald statistic, $p < .05$.

Personality and subjective well-being

There were highly significant correlations between QoL-5 and Extraversion, Agreeableness, Conscientiousness and Neuroticism (Table 4).

Because of our finding in the correlation matrix between QoL-5 and certain personality traits from BFI-20, we ran a stepwise linear regression with QoL-5 as the dependent variable. The assumptions for a regression analysis were confirmed through different analyses: linear relationships, multivariate normality, no or little multicollinearity, no auto-correlation, and homoscedasticity (Field, 2012). The linear regression concludes that Neuroticism explains 25% of the variance in QoL-5 scores, and that Neuroticism combined

with Conscientiousness, and Conscientiousness and Extraversion explains 38 and 43% respectively, of the variance in scores (Table 6).

Table 6

Stepwise linear regression QoL-5 as DV

Model	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the Estimate	Sig.
1	.50 ^a	.25	.25	3.43	.00
2	.62 ^b	.38	.38	3.12	.00
3	.65 ^c	.43	.42	3.02	.00

Note. QoL-5 score DV. ^a Neuroticism. ^b Neuroticism, Conscientiousness. ^c Neuroticism, Conscientiousness, Extraversion.

When scrutinizing the beta weights in Table 7 we can see the predictors' individual contribution. All predictors remained significant in model 3, the strongest of our models (Table 7).

Neuroticism (Standardized $\beta = .50$). This value indicates that when Neuroticism increases by one SD (1.08), SWB will increase by .50 SD. The standard deviation for QoL-5 is 3.95 and this will make a change of 1.98 (.50 x 3.95) in SWB. Conscientiousness (Standardized $\beta = -.37$). This value indicates that when Conscientiousness increases by one standard deviation (.94), SWB will decrease by .37 standard deviation. This will make a negative change of 1.46 (-.37 x 3.95) in SWB. Extraversion (Standardised $\beta = -.22$). This value indicates that when Extraversion increases by one SD (1.11), SWB will decrease by .22 SD. This will make a negative change of .87 (-.22 x 3.95) in SWB.

Table 7

Coefficients (regression)

Model		<i>b</i>	Std. Error	β	t	Sig.
1	Constant	7.22	.94		7.90	.000
	Neuroticism	1.82	.26	.50	7.02	.000
2	Constant	15.02	1.61		9.33	.000
	Neuroticism	1.75	.24	.48	7.43	.000
	Conscientiousness	-1.54	.27	-.37	-5.66	.000
3	Constant	18.80	1.93		9.73	.000
	Neuroticism	1.54	.24	.42	6.49	.000
	Conscientiousness	-1.34	.27	-.32	-4.98	.000
	Extraversion	-.79	.24	-.22	-3.31	.001

Note. Constant: QoL-5

Pathological gambling and subjective well-being

As indicated in Table 8, the PGs obtained the highest mean QoL-5 score of 14.8 (SD = 3.5). LPGs had the second highest score of 14.0 (SD = 3.4), MPGs the second lowest score of 13.3 (SD = 5.1), and NPGs had the lowest score of 13.0 (SD = 4.0). Table 4 shows that no correlation between SWB and any of the gambling categories was found, and this was further confirmed by a one-way ANOVA between subjects that showed no significant differences in mean scores between the various groups ($p > .05$).

Table 8

Gambling group scores on the QoL-5 (n=150)

Gambling group	Mean QoL-5 score	SD
Non-problem gamblers	13.03	3.98
Low-risk gamblers	13.96	3.37
Moderate-risk gamblers	13.33	5.05
Problem gamblers	14.82	3.49

Discussion

In this cross-sectional study of PG, SWB and personality traits, we found that (1) male students scoring low on Conscientiousness were more likely to have PG. On the other hand, no impact of high Neuroticism was found (2) SWB did not decrease significantly with severity of gambling, (3) there were significant gender differences – with males more likely to belong to MPG and PG groups, females more likely to belong to NPG group, and (4) high Neuroticism, low Extraversion and low Conscientiousness explained the largest amount of variance in SWB - correlated with lower well-being.

In our student sample of 150 participants we found 7.3% PGs. This is about the same proportion found in other studies of university student populations from other countries, with rates ranging from 2,2% to 6% with MPG or PG in Canada (Barnes, Welte, Hoffman, Tidwell, 2010; Huang & Boyer, 2007) to 6% to 8% with PG in other Western countries (Derevensky & Gupta, 2007; George et al., 2016; Moore et al., 2013; Mubarak & Blansky, 2013; Nowak, 2014). This is also consistent with other findings suggesting that students are more prone to have gambling problems, compared to the general population where about 1% are considered PGs (Pallesen et al., 2016).

Gender difference

We expected to find gender differences in the gambling groups, with males dominating the higher problem gambling groups. Our PG group mostly consists of men and within the male students one out of five belonged to the PG group. NPG had a negative moderate significant correlation with gender, i.e. being female and belonging to the NPG group. In our ordinal regression, females had a significantly smaller odds of meeting the criteria of PG (Table 5). Moderate PG and PG were weakly correlated to male gender. There were significant gender differences in LPG, MPG and PG. One of the reasons for the gender difference might be that men start gambling earlier than women with some studies showing that men that start gambling in their teens (Custer, 1982; Livingston, 1974), while females

tend to start later (Custer & Milt 1985). Studies have also shown a higher prevalence of males in PG groups (Calado, Alexandre & Griffiths, 2016). The reason for this gender difference may be that men in general are more likely to take risks and have lower levels of impulse coping compared to women, and that these are the same characteristics found in those engaging in gambling (Wong & Zane, 2011).

Pathological gambling and personality

We expected to find that students placed in the PG group would show higher Neuroticism and lower Conscientiousness compared to students placed in the NPG group. However, we only found a relationship between the gambling groups and Conscientiousness. There was a positive weak correlation between NPG and Conscientiousness, and a negative weak correlation between PG and Conscientiousness. This suggests that higher scores on Conscientiousness is associated with NPG, and low Conscientiousness with PG. This was further on confirmed by the ordinal regression analysis, concluding that lower scores on Conscientiousness meant higher odds of meeting the PG criteria. This is consistent with previous findings (Müller, Beutel, Egloff & Wölfling, 2014); Karre, Mottus & Konstabel, 2009), and the results suggest that scores on Conscientiousness do have an effect on which gambling group students belong to, but only regarding NPG and PG – not LPG or MPG.

Conscientiousness is considered to be the trait that best captures the capacity to manage desires and resist impulses (Costa & McCrae, 1992), which means that low Conscientiousness could decrease impulse control and lead to a lacking ability to resist gambling desires.

Multiple studies have found links between PG and high Neuroticism (Karre, Mottus & Konstabel, 2009; Mann, et al., 2017), which we did not find in our study. When looking closely at research about Neuroticism and PG, several studies suggest that the facet impulsiveness is the most common facet related to PG (Alessi & Petry, 2003; Nower,

Derevensky, & Gupta, 2004; Mann, et al., 2017). BFI-20 does not contain any facets, such as impulsiveness, like NEO-PI-3 does. The items included in BFI-20 under Neuroticism is “Is depressed, blue”, “Is relaxed, handles stress well”, “Worries a lot” and “Gets nervous easily” – mostly about emotional stability. If impulsivity is highly linked to PG, then this might explain why we didn’t find this in our study.

Pathological gambling and subjective well-being

We did not find any significant associations between any of the PG statuses and SWB as we hypothesized. The mean score on QoL-5 in our study shows that the scores on SWB varies little between the PG-statuses, although it is a small increase in the PG-group (mean 14,82). This was surprising since other studies have shown that people who have a gambling problem have a tendency to report low life-satisfaction and negative mood (Rousseau, Vallerand, Ratelle, Mageau & Provencher, 2002). Since our PG group did not report significantly lower SWB compared to the other groups, the findings suggests that even though students with PG report gambling problems – it does not seem to have a direct link to their SWB; they report to be as happy as the other gambling groups in our study. Previous research have shown that gamblers can use gambling as a way to regulate negative emotions (Lightsey & Hulse, 2002) and self-healing from stress (Coman, Burrows & Evans, 1997; Haustein & Schuergers, 1992). The questions that remains are: Are the students in the PG group experiencing as much SWB as the other students, or is gambling a successful way of regulating negative emotions and stress? Can the findings be explained by the fact that most students do not have as much to lose and as much responsibilities as adults with a job, mortgage and a family to take care of?

Subjective well-being and personality

As hypothesized we found that high scores on QoL-5, meaning lower SWB, was associated with lower Neuroticism, higher Extraversion and higher Conscientiousness. The

findings also suggest a weak significant correlation between higher SWB and higher Agreeableness. Further, the regression analysis depicts that Neuroticism, Extraversion and Conscientiousness explains 43% of the variance in QoL-5 scores, and that these are the only significant in the model. Neuroticism alone explains 25% of the variance in our study, which is consistent with studies suggesting high Neuroticism as the most important predictor for a satisfaction with life (Hayes & Joseph, 2003). Other studies suggests that Neuroticism and Extraversion are the two traits that primarily yield links between personality and SWB (Emmons & Deiner, 1986; Garcia, 2011; Heaven, 1989; Hills & Argyle, 2001; McKnight, Huebner & Suldo, 2002; Diener, Oishi & Lucas, 2003; Pavot, Diener & Fujita, 1990; Schimmack, Diener & Oishi, 2002; Schimmack, Oishi, Furr & Funder, 2004), while others argue that also Conscientiousness is important in relation to SWB (Hayes & Joseph, 2003). Well-being is often considered to be highly subjective, and it is therefore interesting to see the relationship between personality traits and SWB. Personality traits are defined as relatively stable individual differences in how different people think, act and feel across different situations (Kennair, 2018), and this may be why certain traits in their higher or lower extents are more or less linked to SWB. Neuroticism involves facets such as anxiety, depression and impulsiveness (Popkins, 1998), is often associated with mental illness (Malt 2018) and a stronger experience of negative affect (Diener, Oishi & Lucas, 2003). The strong link between Neuroticism and SWB in our study may also be explained by the items belonging to this factor, as discussed earlier. Conscientiousness, i.e. having order, deliberation and self-discipline (ETS, 2012), has been linked to increasing probability of health promoting behaviour (Muray & Booth, 2015) - and in turn taking action for own SWB. Extraversion includes activity, excitement seeking and positive emotions (ETS, 2012). Even though Extraversion only explained 5% of the variance of SWB, other studies suggest Extraversion

as an important trait for the feeling of SWB since it's in our nature to be social and most people have a distinctive need to feel affiliation (Hofer & Hagemeyer, 2018).

Limitations

We used different format of Likert-scales in the questionnaire, BFI-20 (1-7), CPGI (1-4), and QoL-5 (1-4 and 1-7), with varying descriptions for different scores. The responding to BFI-20 is based on how the person usually regards him/her self, CPGI during the last 12 months, and QoL-5 based on the last month. These varying time frames might be confusing for the respondent and require that he/she resets before answering a new subscale. In an attempt to compensate for this inconsistency the different subscales were marked with headlines and had instructions for responding.

QoL-5 is relatively new and has not been used so much in research. Accordingly, the validity has not been confirmed in various population samples.

In both our study and in the general student population of UiT, females are the majority. In our study the gender distribution was approximately two thirds female and one third male, while in the total student population of UiT females represent 59% which makes our gender distribution slightly skewed. We believe that the reason for the gender difference in our study is that females in general more often participate in studies of this kind (Curtin, Presser & Singer, 2000; Moore & Tarnai, 2002). We could have tried try to recruit more males but we were afraid to manipulate the data by non-randomizing and affect the validity of the study.

Due to our limited sample size we did not control for type of gambling, such as online poker, slot machines, or sports betting. This could be important in identifying subjects vulnerable to specific gambling problems.

Research has shown that personality traits in general tend to be stable during adulthood, with thrill-seeking decreasing with age (Costa et al., 2000). To interpret

differences as predispositions can thus seem reasonable. The majority of studies that examine personality traits and cognitive style, such as negative self-schemata, are cross-sectional correlational studies (Halvorsen, 2009), which do not allow to draw causal conclusions. Personality traits can also change during the course of a mental illness. Even though the traits show stability during for example a depression, they will also be affected by the clinical state of depression – where the personality profile of individuals vulnerable for depression will be reinforced (Costa, Bagby, Herbst & McCrae, 2005; DeFreut, Van Leeuwen, Bagby, Rolland & Ruillon, 2006). From our study we cannot conclude if personality traits can be affected by a clinical PG state.

Conclusion

This study provides a better understanding of the relation between PG, personality and SWB even though we could not confirm all of our hypotheses, especially the link between PG and SWB, and Neuroticism and PG. We did find a relation between PG and lower Conscientiousness in primarily males, suggesting that low scores on Conscientiousness are predictive of pathological gambling (PG) among males. As concerns gender, the proportion of males was significantly higher in the MPG and PG group.

SWB was mostly explained by Neuroticism, Extraversion and Conscientiousness, and as expected, the PG group reported the lowest SWB, but the difference between gambling groups in mean score failed to be significant.

To sum this up, our findings imply that Norwegian male students are more prone to having gambling behavior with respect to moderate-risk or problem gambling, and that among male students low Conscientiousness is associated with problem gambling behavior.

Further research

To shed further light on possible vulnerability factors there is the necessity of prospective, longitudinal designs that include several measurement time points. Such designs would allow vulnerability factors being examined during course of a problem gambling state.

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Appendix A

Items included in BFI-20 from BFI-44

Items marked in bold are the ones included in BFI-20. Converted item number in parenthesis.

BFI-44

1. **Is talkative (1)**
2. Tends to find fault with others
3. **Does a thorough job (3)**
4. **Is depressed, blue (4)**
5. **Is original, comes up with new ideas (5)**
6. Is reserved
7. **Is helpful and unselfish with others (7)**
8. **Can be somewhat careless (18)**
9. **Is relaxed, handles stress well (9)**
10. Is curious about many different things
11. Is full of energy
12. Starts quarrels with others
13. Is a reliable worker
14. Can be tense
15. Is ingenious, a deep thinker
16. Generates a lot of enthusiasm
17. Has a forgiving nature
18. **Tends to be disorganized (8)**
19. **Worries a lot (14)**
20. **Has an active imagination (10)**
21. **Tends to be quiet (6)**
22. Is generally trusting
23. Tends to be lazy
24. Is emotionally stable, not easily upset
25. Is inventive
26. Has an assertive personality
27. **Can be cold and aloof (2)**
28. Perseveres until the task is finished
29. Can be moody
30. Values artistic, aesthetic experiences
31. **Is sometimes shy, inhibited (16)**
32. **Is considerate and kind to almost everyone (17)**
33. Does things efficiently
34. Remains calm in tense situations
35. Prefers work that is routine
36. **Is outgoing, sociable (11)**
37. **Is sometimes rude to others (12)**
38. **Makes plans and follows through with them (13)**
39. **Gets nervous easily (19)**
40. **Likes to reflect, play with ideas (15)**
41. **Has few artistic interests (20)**
42. Likes to cooperate with others
43. Is easily distracted
44. Is sophisticated in art, music, or literature

Appendix B

Survey: Personality and gambling

Personlighet, generell helse og gambling

Vi er tre profesjonsstudenter i psykologi ved UiT - Norges arktiske universitet som ønsker at DU som er student ved UiT deltar i vår studie.

Vi har alle ulike personlighetstrekk, en generell helse - samt et forhold eller ikke-forhold til pengespill. I den forbindelse ønsker vi å se om det finnes noen mulige sammenhenger mellom de overnevnte temaene.

I det følgende vil du bli stilt 34 spørsmål om disse emnene, og vi håper spørsmålene åpner for selvrefleksjon. Spørreundersøkelsen vil ta omtrent 10 minutter å gjennomføre, og svarene vil ikke kunne kobles tilbake til deg.

Vi anser ingen ulemper med å delta i undersøkelsen, og du er fri til å velge å trekke din deltakelse når som helst under besvarelsen. Undersøkelsen er en del av et empirisk arbeid i forbindelse med vår hovedoppgave i psykologi, eventuelt en artikkel.

Vi takker på forhånd for din interesse i prosjektet!

Dersom du har noen spørsmål kan du ta kontakt med Studentene:

xx

xx

xx

Veileder:

Martin Eisemann, professor, PhD, ved UiT - Norges arktiske universitet,
martin.eisemann@uit.no

Er du student ved UiT - Norges arktiske universitet?

Ja

Nei

Kjønn

Mann

Kvinne

Annet

Alder:

Appendix B (Continued)**BFI-20**

Nedenfor finner du en rekke på stander som passer mer eller mindre godt for ulike mennesker. Kryss av i den ruten som passer deg, slik du vanligvis er. Ikke tenk for mye på hver oppgave, men sett et kryss i ruten du umiddelbart synes stemmer best. Sett ett kryss per linje.

	1. Passer ikke	2	3	4	5	6	7. Passer helt
Er pratsom							
Kan være kald og fjern							
Gjør en grundig jobb							
Er deprimert, nedtrykt							
Er original, kommer med nye ideer							
Har en tendens til å være stille av seg							
Er hjelpsom og uegoistisk i forhold til andre							
Har en tendens til å ha lite orden på tilværelsen							
Er avslappet, takler stress godt							
Har livlig fantasi							
Er utadvendt og sosial							
Kan noen ganger være uhøflig							
Legger planer og følger dem opp							
Bekymrer seg mye							
Liker å spekulere, leke med ideer							
Kan være sky og hemmet							
Er hensynsfull og vennlig ovenfor de fleste mennesker							
Kan være uforsiktig							
Blir lett nervøs							
Har få kunstneriske interesser							

Appendix B (continued)**Canadian Gambling Problem Index (CPGI)**

Nedenfor følger noen spørsmål om ditt forhold til pengespill. Tenk nøye gjennom hvert spørsmål før du svarer. Husk at du er helt anonym i undersøkelsen. Du skal bare sette ett kryss for hvert spørsmål.

Hvor ofte i løpet av de siste 12 månedene...	Aldri	Noen ganger	For det meste	Alltid
a ... har du satset mer enn du egentlig har råd til å tape?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b ... har du følt behov for å spille mer og mer penger for å oppnå ønsket spenningsnivå?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c ... har du gått tilbake en annen dag for å finne tilbake pengene du har tapt?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d ... har du lånt penger eller solgt gjenstander for å skaffe penger til spill?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e ... har du følt at du kanskje har et problem med pengespill?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f ... har spilling forårsaket helseproblemer for deg, inkludert stress og angst?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g ... har andre rundt deg, kritisert spillingen din og fortalt deg at du har et spilleproblem, uavhengig av om du har opplevd dette som sant eller ei?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h ... har ditt pengespill forårsaket økonomiske problemer for deg selv og din husholdning?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i ... har du hatt dårlig samvittighet i forbindelse med hvordan du spiller og hva som skjer når du spiller?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B (Continued)

HUNT QoL-5

Nedenfor finner du noen spørsmål om hvordan du har det nå for tiden. Svar det som best betegner din situasjon i løpet av den siste måneden.

1. Når du tenker på hvordan du har det for tida, er du stort sett fornøyd med tilværelsen, eller er du stort sett misfornøyd?

- 1. Svært fornøyd
- 2. Meget fornøyd
- 3. Nokså fornøyd
- 4. Både og
- 5. Nokså misfornøyd
- 6. Meget misfornøyd
- 7. Svært misfornøyd

2. Føler du deg stort sett sterk og opplagt, eller trett og sliten?

- 1. Meget sterk og opplagt
- 2. Sterk og opplagt
- 3. Ganske sterk og opplagt
- 4. Både og
- 5. Ganske trett og sliten
- 6. Trett og sliten
- 7. Svært trett og sliten

3. Har du i det store og hele en rolig og god følelse inne i deg?

- 1. Nesten hele tiden
- 2. Ofte
- 3. Av og til
- 4. Aldri

4. Har du i løpet av den siste måned vært plaget av nervøsitet (irritabel, anspent eller rastløs)?

- 1. Nesten hele tiden
- 2. Ofte
- 3. Av og til
- 4. Aldri

5. Er du vanligvis glad eller nedstemt?

- 1. Svært nedstemt
- 2. Nedstemt
- 3. Nokså nedstemt
- 4. Både og
- 5. Nokså glad
- 6. Glad
- 7. Svært glad