University of Tartu
Faculty of Social Sciences
Institute of Psychology

Ave Vilu

PERSONALITY TRAITS AND IMPULSIVITY AS PREDICTORS OF HIGH-SCHOOL ACADEMIC ACHIEVEMENT AND ABSENTEEISM

Master's thesis

Supervisor: Kenn Konstabel, PhD

Running head: Predictors of academic achievement and absenteeism

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Abstract

The Big Five personality factors and trait impulsivity were studied as predictors of academic achievement in a sample of Estonian high school students. A total of 137 students participated in this study. Personality traits were measured by the Estonian Personality Item Pool NEO (EPIP-NEO) and trait impulsivity by Dickman's Impulsivity Inventory (DII). Three different measures of grade point averages (GPA) were calculated for each participant – overall GPA, Humanities GPA and Sciences GPA. Conscientiousness, gender and both trait impulsivity scales were statistically significant predictors of the variance in GPA. In addition, two different measures of absenting were obtained for each participant – the total number of overall absences for one school year and the number of un-authorized absences among the former. For absences, dysfunctional impulsivity scale showed predictive capacity. Significant gender differences emerged for un-authorized absences, high school boys truanting more than high school girls.

Keywords: academic achievement prediction; personality; impulsivity; high school students

Kokkuvõte

Impulsiivsus ja isiksus õppeedukuse ennustajatena

Suure Viisiku isiksusefaktoreid ja impulsiivsust uuriti õppeedukuse ennustamise osas. Käesolevas uurimuses osales kokku 137 Eesti gümnaasiumi õpilast. Isiksuse mõõtmiseks kasutati EPIP-NEO isiksuse küsimustikku ja impulsiivsuse mõõtmiseks Dickmani Impulsiivsuse küsimustiku eestindatud varianti. Õppeedukuse hindamiseks arvutati iga uurimuses osaleja jaoks kolm erinevat keskmise hinde näitajat – üldine keskmine hinne, humanitaarainete ja reaalainete keskmised hinded. Mõlemad impulsiivsuse skaalad seostusid oluliselt peaaegu kõigi kolme keskmise hinde muutujaga. Meelekindlus, sugu ja mõlemad impulsiivsuse skaalad kirjeldasid ära pisut üle veerandi kogu hinnete hajuvusest. Keskmiste hinnete osas ilmnesid olulised soolised erinevused – tüdrukute said keskmiselt paremaid hindeid võrreldes poistega. Puudumisi arvestati terve kooliaasta lõikes, sh eraldi põhjuseta puudumisi. Puudumisi ennustas kõige olulisemalt düsfunktsionaalne impulsiivsus. Oluline erinevus ilmnes põhjuseta puudujate lõikes, millest selgus, et poisid puuduvad sagedamini ilma vabandatava põhjuseta.

Võtmesõnad: õppeedukuse ennustamine, impulsiivsus, isiksus, gümnaasiumiõpilased

Many more young people today than ever before have decided in favor of secondary education compared to vocational schooling. While pursuing a high school diploma is voluntary, the curricula needed to accomplish it are not. School attendance has become a major concern in the light of present days' demands put on the young adults. In order to meet these demands, many high school students have decided to attend classes selectively, favoring the subjects of state final exams and discarding the rest.

Absenteeism is believed to have either direct or mediated significant effects on student achievement outcomes. The students, who are absenting, are not attaining information needed to achieve. The effects of missing school tend to build up in the course of time and therefore have adverse effects to the consecutive study process. Student absenteeism contributes to poor academic performance and increases the likelihood of dropping out of school. It is therefore of main importance to gain deeper understanding of the related field of educational striving. Recent research has suggested that personality inventories may be equally effective in predicting academic performance as compared to measures of intelligence or ability (Chamorro-Premuzic & Furnham, 2003a, 2003b).

Before I begin to investigate the specific behavioral problems of school attendance more closely it is important to clarify the concepts that will come under investigation in this study. Absenteeism is defined as periods of not being in attendance. Another widely used term in the field of attendance research is truancy. The distinguishing line between the two highly similar concepts has been drawn to the act of volition. Whereas absenteeism may have several valid excusable reasons, truancy has not – in school setting it is unauthorized, un-excusable non-attendance behavior. Truants just choose not to go to school and the reasons behind this decision are far more diverse compared to the excused absences where the number one cause is student's illness. School refusal is yet another one concept that has been related to the problem of absenteeism but since it is rather seen as stemming from the anxiety disorder, it will therefore not be discussed in this study.

Factors associated with school absenteeism

It has become apparent that school absenteeism is a multi-causal problem. Psychological, educational, social, personal, parental and familial factors have been identified that are associated with the phenomena of school absenteeism. The acts of not attending school are seen as problematic by several individuals who are affected by it (teachers, parents, classmates of absenting students, school officials) but not necessarily always by the absenting students themselves (Davies & Lee, 2006). De Jung and Duckworth (1985) found a remarkable difference in the absenting students attitude, where about half of the high-absence group students reported not feeling unduly concerned about missing classes or days of school, compared to the low-absence group of students who said they were concerned about the consequences of their behavior. Truancy has also sometimes been seen as a mean to resort from the problems of unhappiness and unsuccessfulness in school (Mullen, 1950). Truancy has been reported to be the behavior mentioned to produce guilt over externalizing behaviors involving defiance of school regulations among the 8^{th} grade students but later in higher grade levels its importance declines again (Williams & Bybee, 1994). Compared to school refusers, truants are not considered to be over-anxious or fearful about attending school, although some pupils may exhibit characteristics of both – emotional problems and anti-social behaviors (Lauchlan, 2003). Previous studies have related student absenteeism rates and average class grades among other variables to classroom social climate, specifically high in competition and teacher control and low in teacher support (Moos & Moos, 1978). Williamson and Cullingford (1998) studied alienation during adolescence and found clear differences between truants and non-truants and more tentatively between occasional and regular truants. Students who were identified as regular truants in this aforementioned study scored higher on the Meaninglessness scale which implies perceiving a lack of connectedness between their current studies and life and career plans. Impulsive behavior has the largest effect in predicting truancy and other delinquent activities among adolescent boys, compared to the social competence variables (Oyserman & Saltz, 1993). Also some parental variables affecting school attendance have been identified, namely, fathers' reports of high self-restraint (impulse control, suppression of aggression, consideration of others, and responsibility) correlated

positively with sons' reports of regular school attendance (D'Angelo, Weinberger, & Feldman, 1995). The truants more frequently come from broken homes, from families on relief, or in which a parent or sibling is known to be delinquent, they also lack self-confidence, engage in inadequate recreational activities (Mullen, 1950) and do not feel dignified or respected, some do not feel safe and protected (Davies & Lee, 2006). In an attempt to distinguish between absentee students from regular attenders, Corville-Smith, Ryan, Adams and Dalicandro (1998), noted that the absentees possessed lower global self-esteem than the regular attenders (e.g. feel inferior academically) and were less competent in their social relations as compared to the non-truants (e.g. were more likely to exhibit antisocial behavior in the classroom) (see also Reid & Kendall, 1982). They also expected the absenting and attending students to differ on the measures of self-reported anxiety, but failed to replicate the previous findings on the statistically significant level. In the light of adapting to changing demands, non-attending students do not see the content of the curriculum as a problem for them, but a transition from primary school to secondary school and from year 9 to 10 is problematic and for many, may lead to non-attendance (Davies & Lee, 2006).

On the side of protection factors, Petrides, Frederickson and Furnham (2004) found that pupils with high trait emotional intelligence scores were less likely to have had unauthorized absences. At the younger ages the fact of being the eldest of several children, only child, or the only child of opposite sex among siblings, militates against the development of truancy, but this effect of position in the family appeared to become much lessened if not lost by the time the child becomes adolescent (Mullen, 1950).

Absenteeism and personality

For adolescents, the Big Five personality traits have been found to be useful in predicting absences from school. In an investigation of personality traits in relation to adolescent school absenteeism, Openness, Conscientiousness, and Emotional Stability were negatively related to absences for all three grade levels (7^{th}, 10^{th}, 12^{th}), whereas Agreeableness was negatively related to absences for the 10^{th} and 12^{th} graders (Lounsbury, Steel, Loveland, & Gibson, 2004) and among college students (Farsides and Woodfield, 2003). Chamorro-Premuzic and Furnham (2003b) reported Openness to be

positively correlated to college students' absenteeism. Modest positive correlations between Neuroticism (e.g. Furnham, Chamorro-Premuzic, & McDougall, 2003; Reid & Kendall, 1982) and absences were noted in the series of studies conducted by Lounsbury et al. (2003), and negative correlations with all the other Big Five personality traits, except for one, surprisingly, the Conscientiousness. In addition, no gender differences emerged; correlations were almost identical for both sexes. Conscientiousness was, on the other hand, positively associated with attendance in the studies of Chamorro-Premuzic and Furnham (2003b), Conard (2006), Furnham et al. (2003) and Farsides and Woodfield (2003). Using the Eysenck Personality Questionnaire-Revised (EPQ-R), Petrides, Chamorro-Premuzic, Frederickson, & Furnham (2005) found low Extraversion and Psychoticism to be significant positive predictors of attendances for high school students, and more so for high school girls than for high school boys. Neuroticism did not approach significance in this sample. Any of the three Eysenckian dimensions was not related to the number of unauthorized absences.

Consequences of absenteeism

Absenteeism is seen as a key risk factor for many different consequences. One very clear discriminator between high-absence and low-absence students is the grade point average (GPA), which usually decreases as students' absences increase (De Jung & Duckworth, 1985). A significant moderate to strong positive correlation for attendance and grade point average emerged in the research on high school attendance conducted by Strickland (1998) and among college students (Conard, 2006; Farsides & Woodfield, 2003; Paunonen & Ashton, 2001). Similar results were obtained by Petrides, Chamorro-Premuzic, Frederickson, & Furnham (2005), showing that truancy scores were negatively related to academic performance. Monk and Ibrahim (1984) combined individual level data with classroom level data to examine interactions between these two levels of analysis, and came to conclusions that students in a class with more absenteeism are more adversely affected academically than students in the classroom with less absenteeism, because absenting implies logistical problems for teachers who have to take class time to provide remedial help for returning students. Truancy acts like a key mediating variable between early conduct problems and leaving school without qualifications, linking the

adolescent behavioural problems to reduced later life opportunities like educational under-attainment, unemployment and low status occupations (Fergusson & Horwood, 1998; Reid & Kendall, 1982). The authors of *The Silent Epidemic* assert that attendance patterns are a key early warning sign of student disengagement leading to high school dropout (Bridgeland, J. M., Dilulio, J. J., & Morison, K. B., 2006). Hallfors et al. (2002) assessed the reliability of different risk measures that are associated with substance use, judging the truancy to be superior because its' strong predictive value, particularly among younger students.

Prevalence of absenteeism

It has been suggested that persistent absenteeism does appear to increase substantially in the later years of schooling, from about ten percent in primary and middle schools to about twenty percent in high-school and about quarter of these pupils have no legitimate reason for absence (for an overview of the topic see Reid & Kendall, 1982). Truancy as a school problem increases in prevalence with age, especially among adolescent girls, from 11 percent to 39 percent between age groups of 9-12 and 13-16 (Mullen, 1950). Absences also tend to increase slightly as the school year progresses and students tended to be absent more often from the classes they were failing than from their other classes (De Jung & Duckworth, 1985).

Age and gender differences in absenteeism

School absenteeism is thought to be largely unrelated to gender (Kearney, 2008). Similarly, De Jung and Duckworth, (1985) did not find any gender differences in the high-absence group among high school students. On the other hand, Dukes and Stein (2001) found that high school girls reported truanting more than middle school girls and less than high school boys. Reid & Kendall (1982) cite that at both the secondary and primary school levels girls have been found to be more frequently absent than boys, but for unjustified absences there was almost no difference between secondary school girls and boys. McCarthy (2000) reported the mean days absent in high school for females to be higher than for males, this difference was significant for both groups of students – participating and non-participating in school-sponsored activities (e.g. sports), where

non-participating students absented twice as much as participating students. Contrary to the previous findings, it has been also found that female students had higher attendance levels than male students, but the difference was significant only before adjusting to personality trait scores (Petrides, Chamorro-Premuzic, Frederickson, & Furnham, 2005). Mullen (1950) noted significant differences among adolescent truants, where larger percentages of the boys than the girls were reported as having withdrawn, unsocial natures and showing aggressive, antisocial behavior. Girls on the other hand differed in the realm of family factors, coming from the families on relief, from crowded homes and from homes where a parent or sibling was known to be delinquent.

Academic achievement, personality and impulsivity

Besides intelligence, personality is probably the concept second most often researched in relation to academic achievement. Previous studies have reported different personality traits to be related to academic performance on different levels of significance (Lounsbury, Tatum, Gibson, Park, Hamrick, & Wilburn, 2003). Although much of the research has been conducted among college level student samples, middle school and high school populations have as well shown significant correlations with all personality traits of the Big Five or other measures (Lounsbury, Sundstrom, Loveland, & Gibson, 2003a; Rindermann & Neubauer, 2001).

Ample body of evidence from the previous studies has clearly demonstrated that personality is a substantial predictor of performance in an academic environment. Although, there are also some researchers, who have found most of the valid variance in achievement to be unrelated to personality (Allik & Realo, 1997; Diseth, 2003; Goh & Moore, 1978), and some, who have de-emphasized the findings on relations between personality variables and academic performance (Duff, Boyle, Dunleavy, & Ferguson, 2004; Farsides & Woodfield, 2003). Still, for example, Diseth (2003) noted correlations between personality and examination grade among college students to be sample-specific. Similarly, in the highly distinct sample of distance education students, Burton and Nelson (2006) found none of the personality factors to be related to academic success as measured by GPA.

Most of the research on academic achievement has been conducted in the domain of Big Five personality traits. The instrument probably most often used is NEO-PI-R, which is a comprehensive personality questionnaire providing an assessment of the five broad personality domain factors and thirty more specific personality facets (Costa & McCrae, 1992).

Empirical support for the predictive ability of personality traits in relation to academic achievement has been mixed. For example, *Neuroticism* has usually been reported to show a negative relationship to measures of academic performance in secondary school (Laidra, Pullmann, & Allik, 2007; Lounsbury et al., 2003; Maqsud, 1993; Rindermann & Neubauer, 2001), and in college level education (Chamorro-Premuzic & Furnham, 2003a, 2003b; Goh & Moore, 1978; Sanchez-Marin, Rejano-Infante, & Rodriquez-Trojano, 2001). But also positive, though rather small correlations with high school mean grades (Allik & Realo, 1997), and with undergraduate examination grades (Diseth, 2003) have been reported. Busato, Prins, Elshout, & Hamaker (2000) found no association with grade point average. O'Connor and Paunonen (2007) conclude in the review article on the personality predictors that Neuroticism may not be a strong determinant of individual differences in scholastic achievement in general, because of the small mean correlation and narrow confidence interval.

Extraversion has often been shown to be negatively related to academic attainment among secondary school pupils (Maqsud, 1993), and college students (Bauer & Liang, 2003; Busato, Prins, Elshout, & Hamaker, 2000; Chamorro-Premuzic & Furnham (2003a); Furnham, Chamorro-Premuzic, & McDougall, 2003; Goh & Moore, 1978; Nguyen, Allen, & Fraccastoro, 2005; Sanchez-Marin, Rejano-Infante, & Rodriquez-Trojano, 2001). In contrast, Burton and Dowling (2005) and De Fruyt and Mervielde (1996) reported the Extraversion to be significantly positively correlated to college student academic success and also to predict academic achievement. Lounsbury et al. (2003) did so for secondary school samples. On the other hand, Extraversion failed to show significant linear relationship with academic success in the study conducted by Farsides and Woodfield (2003). O'Connor and Paunonen (2007) suggest on the basis of

confidence intervals that Extraversion has rather a tendency to be negatively associated with academic achievement.

No systematic relationships with academic success on college level students have been detected for the trait *Openness to Experience* by Busato, Prins, Elshout, and Hamaker (2000) and Chamorro-Premuzic and Furnham (2003a). Diseth (2003) reported a sample-specific positive relationship with achievement among college students; Laidra, Pullmann and Allik (2007) and Lounsbury et al. (2003) among high school students. Furnham, Chamorro-Premuzic, & McDougall (2003) noted a non-significant negative relationship to exam performance. Still, in the study conducted by Farsides and Woodfield (2003), Openness to Experience predicted academic performance after controlling for IQ. Nguyen, Allen, & Fraccastoro (2005) found Openness to Experience positively and significantly predict course grade (as did also Lounsbury, Sundstrom, Loveland, & Gibson, 2003b), but not overall grade point average, suggesting the effect of Openness to be criterion specific.

Agreeableness has not very often emerged as a significant predictor variable when academic achievement is considered. Diseth (2003) reported a sample-specific negative correlation with achievement among students. Laidra, Pullmann and Allik (2007) found a positive correlation for high school students; Lounsbury et al. (2003) also for middle school students and Conard (2006) and Gray and Watson (2002) for college students. Busato, Prins, Elshout, & Hamaker (2000), De Fruyt and Mervielde (1996) and Chamorro-Premuzic and Furnham (2003a) found no evidence for correlation with academic success, whereas Farsides & Woodfield (2003) found the effects of Agreeableness for college students' final grades to be wholly mediated by seminar attendance. O'Connor and Paunonen (2007) conclude that Agreeableness is not an important determinant of academic performance.

Conscientiousness is by far the dimension that is most often revealed its predictive power in the domain of academic performance. It explains unique variance in GPA at all academic levels (Gray & Watson, 2002; Laidra, Pullmann, & Allik, 2007; Wagerman & Funder, 2007). Educationally relevant associations have been found to be

in correlations with academic success in positive direction in the secondary school (Lounsbury et al., 2003), and college student samples (Bauer & Liang, 2003; Busato, Prins, Elshout, & Hamaker, 2000; Chamorro-Premuzic & Furnham (2003a), De Raad & Schouwenburg, 1996; Furnham, Chamorro-Premuzic, & McDougall, 2003; Lounsbury, Sundstrom, Loveland, & Gibson, 2003b; Nguyen, Allen, & Fraccastoro, 2005; Paunonen & Ashton, 2001). These positive linear relationships have persisted even when relying not only on self-report data, but also on the acquaintance informant collected reports (Wagerman & Funder, 2007). Conscientiousness has even been shown to have incremental validity higher than aptitude tests (i.e. SAT) in predicting GPA (Conard, 2006). Still, positive effect of Conscientiousness on academic success might be limited. Cucina and Vasilopoulos (2005) have suggested that extremely high levels of the trait may have a detrimental effect on grades, showing that moderately conscientious students had higher GPAs than students with elevates scores. Surprisingly, Conscientiousness showed no positive relationship with academic success in the Farsides and Woodfield (2003) study.

Number of studies have found no direct relationship between personality scales like Conscientiousness and Openness, but rather they have been partially or fully mediated by various behaviors, like learning strategies (Blickle, 1996), approaches to learning (Burton & Nelson, 2006; Diseth, 2003), study habits (Aluja & Blanch, 2004), and attendance (Conard, 2006). This effect of moderator variables has also been suggested by O'Connor and Paunonen (2007), specifically in the case of Openness to Experience.

No sex differences in correlations between personality variables and academic performance have been found by some researchers (Wagerman & Funder, 2007), whereas others (Nguyen, Allen, & Fraccastoro, 2005) have stated the opposite, presenting significant gender differences in the course of analysis. Specifically, they reported Emotional Stability (the polar opposite of Neuroticism) to have negative correlation with course grade but not with GPA in the whole sample and positive correlation with GPA only among male students. De Fruyt and Mervielde (1996) found a significant negative relationship between Neuroticism and academic achievement among male students and a positive correlation with Conscientiousness and a negative correlation with Openness

among female students. Petrides, Chamorro-Premuzic, Frederickson, & Furnham (2005) reported high school girls' academic achievement to be negatively related to Extraversion and high school boys' to show similar negative relationship with Psychoticism on the Eysenck Personality Questionnaire-Revised.

Empirical research has demonstrated that narrow personality traits can be better predictors, adding significant, incremental validity to the Big Five personality traits in academic success (Lounsbury, Sundstrom, Loveland, & Gibson, 2003a). Paunonen and Ashton (2001) propose that much important information can be lost when focus on personality is exclusively at the Big Five factor level. Blickle (1996) proposed that "if basic personality traits influence grades, it can be through facets" (p. 338). Concordantly, De Fruyt and Mervielde (1996) reported at the NEO-PI-R facet level the magnitudes of the correlation coefficients to exceed those observed for the domain factors. Similarly, Gray and Watson (2002) demonstrated the utility of examining relations at the specific, lower-order level. They found NEO-PI-R Achievement Striving facet scale to be a particularly good predictor of academic performance, especially college GPA. Paunonen and Ashton (2001) reported Conscientiousness subscale named Achievement correlating slightly better with grades than the main scale. Similarly, they found the same pattern to apply to the broad trait of Openness, whereas its constituent trait scales were better predictors of academic achievement. On the other hand, Chamorro-Premuzic and Furnham (2003a) warrant the use of facets in reliably predicting academic success, stating that the results of their study favor the use of super-traits, but also encourage research using primary-level traits for exploratory purposes. Specifically, at the facet level, they found Dutifulness and Achievement Striving positively and Anxiety and Activity negatively to be significantly related to academic performance. Still the authors note that relative to the number of predictor variables, primary traits were less powerful than the super-factors in accounting for the variance. For a thorough review on the topic, please see O'Connor and Paunonen (2007). De Raad and Schouwenburg (1996) conclude, that achievement seems to be restrained by neurotic and extraverted tendencies, and enhanced by conscientious and intellectual tendencies.

Impulsivity is the personality dimension that has not received as much consideration within the research field of academic achievement like the Big Five traits has had. Sometimes the relationship between impulsivity and academic performance has been assessed on the facets level among the NEO-PI-R domain. Impulsiveness, the lower level facet scale of Neuroticism, has been reported to be significantly negatively correlated to GPA (Chamorro-Premuzic & Furnham, 2003a; Paunonen & Ashton, 2001) and also so for both males and females (De Fruyt & Mervielde, 1996). Using the Cattell's 16PF personality survey, Sanchez-Marin, Rejano-Infante, & Rodriquez-Trojano (2001) found the extraverts to have a tendency to fail courses in college more frequently than introverts among other features because of their impulsiveness. Aluja-Fabregat and Blanch (2004) concluded in their study on adolescent personality that girls obtained better academic achievement because among other academic performance related variables they reported to be less impulsive than boys.

Deriving from the NEO-PI-R facet scales, Whiteside and Lynam (2001) argued that impulsivity is not as much a unitary trait, but is best conceived as made up of several distinct pathways from which personality traits can lead to various impulsive behaviors. These four traits were identified as facet scales of Impulsiveness, Excitement-Seeking, Self-Discipline and Deliberation. The lack of perseverance (which represents the NEO-PI-R Self-Discipline) was hypothesized to be important in educational outcomes. Accordingly, Duckworth and Seligman (2005) reported highly self-disciplined adolescents to outperform their more impulsive peers on several academic-performance variables.

Impulsivity is suggested to have debilitating effect on achieving, since it prevents from performing according to the persons potential (Schweitzer, 2002). Impulsive/Careless problem solving style is considered to be a dysfunctional problem-solving dimension which has been shown to be effective in predicting high school academic performance and college GPA (Rodríguez-Fornells, A., & Maydeu-Olivares, A. 2000). Impulsivity has even been found to be better predictor of the measures of academic performance than Conscientiousness (Hair & Hampson, 2006). Similarly, Colom, Escorial, Shih, and Privado (2007) reported significant though moderate negative

correlations between impulsiveness and middle school students grades and found it to account for a high degree of the variance in academic performance.

Within the domain of personality, impulsivity is considered a trait dimension and is usually measured by self report questionnaires such as Dickman's scale of functional/dysfunctional impulsivity (Dickman, 1990). Important distinction is made by Dickman, suggesting that the consequences of impulsivity need not to be always negative and are manifested as such in the scale of functional impulsivity.

In the achievements domain, impulsivity seems to be inversely related to academic achievement. Vigil-Colet and Morales-Vives (2005) found the dysfunctional, but not functional impulsivity to be moderately related to academic failure among high school students. For college student sample, Spinella and Miley (2003) reported that lower levels of impulsivity associated with higher grades, and the results persisted even after adjustments to remove the influence of age, sex, and years of education were made. Contrary, neither of the trait impulsiveness scales, functional nor dysfunctional, emerged to be related to self-reported GPA in the study conducted by Reeve (2007).

The present study

The focus of the present study is on the high-school student absenteeism and academic achievement. The aim of this paper is to further clarify specific personality traits that predict school absenteeism and academic performance among high school students.

In addition to comprehensive grade point average, separate scores were calculated for Humanities and Sciences. Data are analyzed in relation to possible gender differences, focusing on trait impulsivity measures. Multiple regression analyses for academic achievement and Poisson regression models for absenteeism measures will be used to determine the predictive power of different personality traits and gender. Based on the mixed results of previous empirical studies, no definite hypothesis will be made about the relation between absences and gender. For academic achievement, deteriorating effect of impulsivity is expected to emerge in the course of analysis.

Method

Subjects

The sample consisted of 137 Estonian-speaking public secondary school students attending 10th, 11th and 12th grades (45 males and 92 females). The age of the sample ranged from 15 to 19 years, with a mean age of 17.1 ± 0.82 years. Data were collected in spring, 2006.

Measures

Personality traits were assessed with the Estonian version of the International Personality Item Pool NEO, (Mõttus, Pullmann, & Allik, 2006), which is a linguistically simple Big Five personality inventory that has psychometrical properties comparable to NEO-PI-R. EPIP-NEO consisted of 240 items. Each of the five major personality dimensions – Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness - is represented by 48 items. Items were rated on a 5-point scale ranging from 0 *(strongly disagree)* to 4 *(strongly agree)*.

Impulsivity was assessed with Estonian version of the Dickman's (1990) measure of functional and dysfunctional impulsivity (Kuppart, 2005). Dickman's Impulsivity Inventory is a self report measure of trait impulsivity, which consists of 24 items. Items were rated on a 5-point scale ranging from 0 *(strongly disagree)* to 4 *(strongly agree)*. Internal consistency reliability estimates based on the current sample were $\alpha = .77$ for the functional impulsivity scale and $\alpha = .69$ for the dysfunctional impulsivity scale.

Academic achievement was measured by the student's grade point average (GPA) in school subjects for the whole school year. For each participant, GPA was computed on the basis of the grades of the nine compulsory subjects: Estonian Language and Literature, Primary Foreign Language (English) and Secondary Foreign Language (Russian or German), Mathematics, Physics, Chemistry, Geography, Biology, and History. The grade point average of the sample ranged from 2.6 to 4.9 on the five-point

scale, with a mean of 3.7 ± 0.40 points. Humanities grade point average was calculated on the basis of composite of Estonian Language and Literature, two Foreign Languages and History; Sciences GPA score is the composite of Mathematics, Physics and Chemistry marks. Grade point average for Humanities had a mean of 3.8 ± 0.50 points, and 3.5 ± 0.40 points for Sciences.

Absences were also measured for the whole school year. Two different measures of absences were collected: total number of absences during school year and the total number of un-authorized absences among the former.

Procedure

Before the data was collected, a notification letter was sent via schools' electronic information system to all of the parents of the high school students to inform about the purpose of the study and to ask for their consent for the recruitment of the participants among high school student body. Schools' principals' permission was obtained to use the schools' electronic records containing discrete personal information about students' academic performance (i.e. grades and absences) for scientific purposes. Students were informed about the aims of the study and the participation was voluntary. All subjects of the current sample were asked to complete a battery of self report questionnaires, including Estonian versions of the International Personality Item Pool NEO and Dickman's Impulsivity Inventory. After returning the completed questionnaires, personalized feedback was provided to each participant to compensate for their effort. Measures of school subject grades and absences for every participant were retrieved from the schools' electronic information records.

Results

Academic achievement

In order to assess the reliability of an academic achievement measure used in the analysis, the grade point average, principal component analysis was conducted. Analysis of different compulsory high school subjects yielded a single factor solution, asserting that the computing of GPA was justified. Cronbach's alpha coefficient for high school GPA was .87. Similar results were observed for Humanities and Sciences grade point average, Cronbach's alphas were .83 and .75, respectively.

The descriptive statistics for the personality measures and grade point averages are shown in the Table 1.

Table 1. *Descriptive statistics for the EPIP-NEO, Dickman's Impulsivity Inventory, and grade point averages*

	Boys		Girls		Total		
	M	*SD*	*M*	*SD*	*M*	*SD*	*a*
Neuroticism	70.02	17.94	82.74	22.54	78.50	21.90	0.91
Extraversion	115.16	27.88	121.61	23.08	119.46	24.87	0.93
Openness to Experience	119.31	22.16	124.20	16.70	122.56	18.77	0.98
Agreeableness	112.91	20.28	125.77	17.89	121.48	19.61	0.88
Conscientiousness	115.23	22.49	113.49	25.16	114.07	24.23	0.93
Dysfunctional Impulsivity	17.13	7.23	17.73	5.94	17.53	6.38	0.69
Functional Impulsivity	26.62	8.56	23.81	7.25	24.74	7.79	0.77
GPA	3.55	0.38	3.78	0.39	3.70	0.40	0.87
Humanities GPA	3.63	0.46	3.92	0.49	3.83	0.50	0.83
Sciences GPA	3.42	0.38	3.52	0.41	3.49	0.40	0.75

Notes. GPA – grade point average; $N = 91$ (girls) + 45 (boys); *M* – mean; *SD* – standard deviation; α – Cronbach's alpha coefficient.

Table 1 presents individual differences on the level of gender, girls having higher scores than boys on all EPIP-NEO personality trait scales, except for Conscientiousness. Boys scored generally higher on Dickmans' Functional Impulsivity scale (FI) and girls slightly higher on Dysfunctional Impulsivity scale (DI). Observed gender differences between mean scores of trait impulsivity scales are comparable to Kuppart's (2005) study. For Dickmans' Impulsivity Inventory (DII), the internal consistencies for scales were somewhat lower than reported by the author, being .83 and .86, for functional and dysfunctional impulsivity, respectively (Dickman, 1990), but still within the acceptable range. Similarly the alphas were lower compared to those previously observed in the large Estonian sample of high school and college students, being .86 for FI and .82 for DI (Kuppart, 2005).

Table 2 presents statistically significant differences between groups of high school boys and girls mean grade point averages for composite score, for Humanities and for Sciences.

Table 2. *GPA differences between groups*

	Girls		Boys			
	M	*SD*	*M*	*SD*	*t*	*p*
GPA	3.78	0.39	3.55	0.38	3.21	0.002
Humanities GPA	3.92	0.49	3.63	0.46	3.30	0.001
Sciences GPA	3.52	0.41	3.42	0.38	1.26	0.211

Notes. GPA – grade point average. $N = 91$ (girls) + 45 (boys). *M* – mean; *SD* – standard deviation; *t* – computed value of *t* test.

Concordant to previous empirical findings, girls obtained higher grade point averages on all three different composite measures of subjects' marks. Statistically significant differences were observed for general GPA ($t = 3.21$, $p < 0.002$) and for Humanities GPA ($t = 3.30$, $p < 0.001$).

Table 3 presents the correlations between Big Five traits, impulsivity scales, and grade point averages.

Table 3. *Pearson's product-moment correlations for personality measures and grade point averages*

	N	E	O	A	C	DI	FI	GPA	HGPA	SGPA
N	-									
E	**-0.36**	-								
O	-0.13	**0.31**	-							
A	**-0.20**	0.03	0.12	-						
C	**-0.48**	-0.02	0.03	**0.37**	-					
DI	**0.40**	**0.22**	0.00	**-0.30**	**-0.66**	-				
FI	**-0.53**	**0.53**	0.18	-0.09	**0.20**	-0.03	-			
GPA	0.02	-0.17	0.12	0.08	**0.30**	**-0.23**	**-0.23**	-		
HGPA	0.03	-0.17	0.15	0.05	**0.24**	**-0.21**	**-0.22**	**0.92**	-	
SGPA	0.02	-0.13	0.00	0.01	**0.24**	-0.17	**-0.19**	**0.81**	**0.57**	-

Notes. N – Neuroticism; E – Extraversion; O - Openness to Experience; A – Agreeableness; C – Conscientiousness; DI - Dysfunctional Impulsivity; FI - Functional Impulsivity; GPA – grade point average; HGPA – grade point average for Humanities, SGPA – grade point average for Sciences.
$N = 124$. Significant correlations ($p < .05$) are in boldface.

Both trait impulsivity scales, functional and dysfunctional, have significant negative correlations with high school student grade point averages, except for Sciences GPA and Dysfunctional Impulsivity scale. Surprisingly, there was only one personality dimension that appeared to be significantly related to different GPA-s, namely, Conscientiousness, ranging between .24 - .30. Correlations between impulsivity scales and personality dimensions of Neuroticism and Conscientiousness are highly similar to correlations in Kuppart's (2005) study. Similarities also appeared for Extraversion and Functional Impulsivity scales, but not for Dysfunctional Impulsivity, that has not been related to Extraversion in previous study. Openness to Experience was not significantly related to impulsivity scales.

In order to determine the contribution of personality and gender variables to prediction of general grade point average, multiple regression analyses were conducted. Results are presented in Table 4.

Table 4. *Results of multiple regression analyses predicting overall GPA*

	ß	*SE*(ß)	*t*	*p*
Neuroticism	-0.08	0.12	-0.63	0.532
Extraversion	-0.09	0.11	-0.78	0.434
Openness to Experience	0.17	0.09	1.98	0.051
Agreeableness	-0.21	0.09	-2.16	**0.033**
Conscientiousness	0.39	0.12	3.35	**0.001**
Dysfunctional Impulsivity	-0.01	0.12	-0.12	0.908
Functional Impulsivity	-0.32	0.11	-2.89	**0.005**
Gender	0.25	0.09	2.73	**0.007**

Notes. ß = standardized regression parameter; *SE(ß)* = standard error of the standardized regression parameter; *t* – computed value of *t* test.
$N = 136$; $R^2 = 0.266$; $F(5,215) = 5.194$, $p < 0.000$.

First regression analysis was conducted to determine the predictive capacity of Big Five personality measures, trait impulsivity scales and gender on the GPA variable. Results reveal that 26.6% of the variance was explained by independent variables in the model. Conscientiousness was found to be the most significant predictor of academic achievement, which is in concordance with previous empirical research; followed by Functional Impulsivity, gender (girls obtained higher grades than boys) and finally, Agreeableness.

Since the focus of this study is on the trait impulsivity, next regression analyses were run controlling for the predictive ability of Neuroticism facet scale Impulsiveness and Dickman's Functional and Dysfunctional Impulsivity scales. Results are presented in Table 5.

Table 5. *Results of multiple regression analysis predicting overall GPA by impulsivity facet scale and DII scales*

	ß	*SE(ß)*	*t*	*p*
N5: Impulsiveness	-0.04	0.10	-0.38	0.708
Dysfunctional Impulsivity	-0.25	0.10	-2.55	**0.012**
Functional Impulsivity	-0.21	0.08	-2.54	**0.012**
Gender	0.25	0.08	3.05	**0.003**

Notes. DII – Dickman's Impulsivity Inventory. *ß* = standardized regression parameter; *SE(ß)* = standard error of the standardized regression parameter; *t* – computed value of *t* test.
$N = 136$; $R^2 = 0.184$; $F(7,290) = 3.998$, $p < 0.000$.

Exploring the predictive ability of impulsivity measures alone, both DII scales emerge as statistically significant predictors of overall GPA. Still, compared to the impulsivity scales, the strongest predictor is gender. Neuroticism facet scale Impulsiveness is not a significant predictor in this model, which accounts for the 18.4% of the variance.

Tabel 6 presents the results of regression analysis where only Dickman's Impulsivity Inventory scales and gender are used to predict overall GPA.

Table 6. *Results of multiple regression analysis predicting overall GPA by DII scales*

	ß	*SE(ß)*	*t*	*p*
Dysfunctional Impulsivity	-0.27	0.08	-3.46	**0.001**
Functional Impulsivity	-0.20	0.08	-2.52	**0.013**
Gender	0.24	0.08	3.04	**0.003**

Notes. DII – Dickman's Impulsivity Inventory. *ß* = standardized regression parameter; *SE(ß)* = standard error of the standardized regression parameter; *t* – computed value of *t* test.
$N = 136$; $R^2 = 0.183$; $F(9,738) = 3.979$, $p < 0.000$.

Models predictive power is similar to the previously used, explaining 18.3% of the variance, but in this model, the strongest predictor is dysfunctional impulsivity, not gender.

Next series of multiple regressions were run for the Humanities grade point average. Results are summarized in Table 7.

Table 7. *Results of multiple regression analyses predicting Humanities GPA*

	ß	*SE(ß)*	*t*	*p*
Neuroticism	-0.10	0.12	-0.84	0.405
Extraversion	-0.14	0.11	-1.26	0.210
Openness to Experience	0.21	0.09	2.41	**0.017**
Agreeableness	-0.21	0.10	-2.20	**0.030**
Conscientiousness	0.30	0.12	2.55	**0.012**
Dysfunctional Impulsivity	-0.03	0.12	-0.28	0.782
Functional Impulsivity	-0.27	0.11	-2.46	**0.016**
Gender	0.29	0.09	3.02	**0.003**

Notes. β = standardized regression parameter; *SE(ß)* = standard error of the standardized regression parameter; *t* – computed value of *t* test.
$N = 136$; $R^2 = 0{,}248$; $F(4,743) = 5.194$, $p < 0.000$.

As can be seen, 24.8% of the variance was explained by the model, which includes the variables of personality dimensions, impulsivity scales and gender. Once again, gender is the most significant independent predictor variable, followed by Conscientiousness, Functional Impulsivity, Openness to Experience, and Agreeableness.

Similarly to the previous sections' analyses, regressions focusing on trait impulsivity scales, were run for the Humanities grade point average. Results comparing these independent variables, are presented in Tables 8 and 9.

Table 8. *Results of multiple regression analyses predicting Humanities GPA by impulsivity facet scale and DII scales*

	ß	*SE(ß)*	*t*	*p*
N5: Impulsiveness	0.00	0.10	0.03	0.974
Dysfunctional Impulsivity	-0.26	0.10	-2.57	**0.011**
Functional Impulsivity	-0.20	0.08	-2.41	**0.018**
Gender	0.25	0.08	3.11	**0.002**

Notes. DII – Dickman's Impulsivity Inventory. *ß* = standardized regression parameter; *SE(ß)* = standard error of the standardized regression parameter; *t* – computed value of *t* test.
$N = 136$; $R^2 = 0.176$; $F(6,902) = 5.859$, $p < 0.000$.

Table 9. *Results of multiple regression analyses predicting Humanities GPA by DII scales only*

	ß	*SE(ß)*	*t*	*p*
Dysfunctional Impulsivity	-0.25	0.08	-3.18	**0.002**
Functional Impulsivity	-0.20	0.08	-2.45	**0.016**
Gender	0.25	0.08	3.15	**0.002**

Notes. DII – Dickman's Impulsivity Inventory. *ß* = standardized regression parameter; *SE(ß)* = standard error of the standardized regression parameter; *t* – computed value of *t* test.
$N = 136$; $R^2 = 0.176$; $F(9,274) = 5.859$, $p < 0.000$.

Both models explain exactly the same amount of the variance in Humanities GPA, 17.6%. Again, Neuroticism facet scale of Impulsiveness is not significant predictor. For the former model, most important statistically significant variable is gender, but for latter model, gender has almost the same predictive power that dysfunctional impulsivity does.

Finally, in the series of grade point average measures, the multiple regressions are computed for Sciences GPA. Results of the first model are in Table 10.

Table 10. *Results of multiple regression analyses predicting Sciences GPA*

	ß	*SE(ß)*	*t*	*p*
Neuroticism	-0.02	0.13	-0.14	0.889
Extraversion	0.00	0.12	0.03	0.975
Openness to Experience	0.05	0.09	0.51	0.611
Agreeableness	-0.18	0.10	-1.71	0.089
Conscientiousness	0.35	0.13	2.81	**0.006**
Dysfunctional Impulsivity	0.00	0.13	0.02	0.982
Functional Impulsivity	-0.28	0.12	-2.36	**0.020**
Gender	0.09	0.10	0.85	0.396

Notes. *ß* = standardized regression parameter; *SE(ß)* = standard error of the standardized regression parameter; *t* – computed value of *t* test.
$N = 136$; $R^2 = 0.139$; $F(2,317) = 2.741$, $p < 0.024$.

The regression model of independent variables for Sciences GPA has the lowest predictive capacity of the three. This model explained 13.9% of the variance. For Sciences GPA, only two significant predictors emerged. The most significant predictor variable was Conscientiousness. Contrary to the results for regressions for overall GPA and Humanities GPA, gender was not a significant predictor for Sciences GPA. Instead, Functional Impulsivity was the second most important predictive variable in the model.

Tables 11 and 12 present the results of multiple regression analyses for Sciences GPA, focusing on impulsivity trait scales.

Table 11. *Results of multiple regression analyses predicting Sciences GPA by impulsivity facet scale and DII scales*

	ß	*SE(ß)*	*t*	*p*
N5: Impulsiveness	-0.09	0.11	-0.87	0.387
Dysfunctional Impulsivity	-0.15	0.10	-1.46	0.148
Functional Impulsivity	-0.18	0.09	-2.11	**0.037**
Gender	0.09	0.09	1.07	0.284

Notes. DII – Dickman's Impulsivity Inventory. *ß* = standardized regression parameter; *SE(ß)* = standard error of the standardized regression parameter; *t* – computed value of *t* test.
$N = 136$; $R^2 = 0.086$; $F(3,025) = 1.884$, $p < 0.020$.

Trait impulsivity centered regression models had very low predictive capacity for Sciences GPA. Only 8.6% of the variance was explained by the impulsivity model. As noted in previous, larger model, gender did not reach significance in predicting the Sciences GPA. Instead, functional impulsivity did, and was the only statistically significant predictor variable.

Table 12. *Results of multiple regression analyses predicting Humanities GPA by DII scales only*

	ß	*SE(ß)*	*t*	*p*
Dysfunctional Impulsivity	-0.21	0.08	-2.45	**0.016**
Functional Impulsivity	-0.17	0.09	-2.01	**0.047**
Gender	0.08	0.09	0.99	0.324

Notes. DII – Dickman's Impulsivity Inventory. *ß* = standardized regression parameter; *SE(ß)* = standard error of the standardized regression parameter; *t* – computed value of *t* test.
$N = 136$; $R^2 = 0.080$; $F(3,789) = 1.766$, $p < 0.012$.

Regression model using only DII scales and gender for predicting Sciences GPA, had the lowest multiple R^2 - only 8% of the variance was explained by independent variables in the model.

Absenteeism and personality

Overall absences have modest significant negative correlations with Conscientiousness and positive correlations with Dysfunctional Impulsivity scale. Un-authorized absences appear not to be related to any of the personality variables. Summary of correlations is presented in Table 13.

Table 13. *Pearson correlations between personality and absences*

	N	E	O	A	C	DI	FI
Overall Absences	0.17	0.07	0.04	-0.02	**-0.23**	**0.22**	0.01
Unauthorized absences	-0.01	0.01	0.01	-0,09	-0.09	0.14	0.13

Notes. N – Neuroticism; E – Extraversion; O - Openness to Experience; A – Agreeableness; C – Conscientiousness; DI - Dysfunctional Impulsivity; FI - Functional Impulsivity.
$N = 124$. Significant correlations ($p < .05$) are in boldface.

It has been suggested that using Poisson regression to analyze absenteeism data, can lead to a large number of false positives (Sturman, 1996). Therefore, for analysis of high school students absences, Overdispersed Poisson regression was used. Total score of absences for one school year and total number of un-authorized absences among the former are analyzed in separate sets, using similar patterns of predictors as for measures of GPA – personality traits, DII and gender.

Table 14 presents the results for the first overdispersed Poisson regression, which is a type of analysis that takes in account the skewed nature of the absences distribution.

Table 14. *Results of overdispersed Poisson regression analysis predicting absences by personality and gender*

	Estimate	Standard error	Wald statistic	*p*
Neuroticism	0.006	0.005	1.211	0.271
Extraversion	0.001	0.004	0.087	0.767
Openness to Experience	0.001	0.004	0.015	0.903
Agreeableness	0.005	0.005	0.983	0.322
Conscientiousness	-0.006	0.005	1.738	0.187
Dysfunctional Impulsivity	0.010	0.017	0.331	0.565
Functional Impulsivity	0.013	0.013	1.053	0.305
Gender	0.053	0.097	0.302	0.582

Notes. $N = 136$. All *p*-values are non-significant.

None of the independent predictor variables in the model reached statistical significance for overall number of absences. Next model will focus on the impulsivity scales of DII and NEO-PI-R Neuroticism facet scale of Impulsiveness (see Table 15).

Table 15. *Results of overdispersed Poisson regression analysis predicting absences by impulsivity facet scale and trait impulsivity scales*

	Estimate	Standard error	Wald statistic	*p*
N5: Impulsiveness	-0.013	0.020	0.47	0.494
Dysfunctional Impulsivity	0.030	0.014	4.36	**0.037**
Functional Impulsivity	0.006	0.010	0.46	0.499
Gender	0.119	0.082	2.12	0.145

Notes. $N = 136$. Significant *p*-value is in boldface.

Among the measures for impulsivity, only dysfunctional scale of the DII reaches statistical significance for overall number of absences. Results are further confirmed in

the regression model using only DII and gender as predictive variables as are shown in Table 16.

Table 16. *Results of overdispersed Poisson regression analysis predicting absences by Dickman's Impulsivity Inventory*

	Estimate	Standard error	Wald statistic	*p*
Dysfunctional Impulsivity	0.024	0.011	4.46	**0.035**
Functional Impulsivity	0.007	0.009	0.60	0.440
Gender	0.112	0.081	1.92	0.166

Notes. $N = 136$. Significant *p*-value is in boldface.

For un-authorized absences, overdispersed Poisson regressions were run in the similar series as for overall number of absences. Results of the first model, including personality traits, impulsivity scales and gender are presented in Table 17.

Table 17. *Results of overdispersed Poisson regression analysis predicting un-authorized absences by personality and gender*

	Estimate	Standard error	Wald statistic	*p*
Neuroticism	0.002	0.007	0.11	0.736
Extraversion	-0.003	0.005	0.38	0.539
Openness to Experience	0.001	0.006	0.05	0.829
Agreeablenes	0.003	0.006	0.26	0.612
Conscientiousness	-0.001	0.006	0.02	0.877
Dysfunctional Impulsivity	0.028	0.023	1.52	0.218
Functional Impulsivity	0.025	0.017	2.13	0.144
Gender	-0.253	0.123	4.24	**0.040**

Notes. $N = 136$. Significant *p*-value is in boldface.

Only independent variable to reach statistical significance for predicting un-authorized absences is gender. None of the personality or impulsivity scales is statistically significant predictive variable for the un-authorized absences.

The predictive ability of gender on un-authorized absences is further confirmed in the next regression model focusing on impulsivity scales (see Table 18). Boys are having more un-authorized absences than girls; the respective means are 10.8 and 6.4.

Table 18. *Results of overdispersed Poisson regression analysis predicting un-authorized absences by impulsivity facet scale and trait impulsivity scales*

	Estimate	Standard error	Wald statistic	*p*
N5: Impulsiveness	0.013	0.027	0.24	0.626
Dysfunctional Impulsivity	0.023	0.018	1.57	0.210
Functional Impulsivity	0.018	0.012	2.08	0.150
Gender	-0.241	0.100	5.78	**0.016**

Notes: N = 136. Significant *p*-value is in boldface.

Table 19 below replicates the finding in relation to the predictive power of gender variable, but also adds the effect of dysfunctional impulsivity that now reaches statistical significance in the model using only DII scales and gender variables, without Neuroticism facet scale Impulsiveness.

Table 19. *Results of overdispersed Poisson regression analysis predicting un-authorized absences by Dickman's Impulsivity Inventory*

	Estimate	Standard error	Wald statistic	*p*
Dysfunctional Impulsivity	0.028	0.014	3.88	**0.049**
Functional Impulsivity	0.017	0.012	2.00	0.158
Gender	-0.235	0.098	5.67	**0.017**

Notes. N = 136. Significant *p*-values are in boldface.

In general, the results for academic achievement were as expected, Conscientiousness having significant correlations with different composites of GPA and also being the strongest predictor for overall GPA. Gender variable emerged as a statistically significant predictor of academic achievement. The impact of impulsivity on academic performance is unanimously negative. For absences, only gender and dysfunctional impulsivity variables have significant predictive power. In addition, significant differences between boys and girls emerged both, for GPA and absenting.

Discussion

The goal of this study was to explore high school students' academic achievement in relation to personality, and to school related problem behavior, namely absenting. The present study focused on the specific personality traits known from previous empirical research to predict academic performance and academic achievement. Main purpose of this research was to determine the role of trait impulsivity in relation to academic achievement, reflected in grade point average, and to absenteeism.

Comprehensive reviews about the predictive validity of personality traits across different measures are presented elsewhere (De Raad & Schouwenburg, 1996; O'Connor & Paunonen, 2007), therefore, the focus was not set solely on Big Five traits, but in addition to more specific measures of trait impulsivity. In the domain of academic achievement, the concept of impulsivity has not been subjected to overly extensive research. Still, as much is known on the topic, impulsivity has generally been reported to have negative effects on performance, including academic performance.

Among the high school student sample in present study, girls had significantly higher mean grades than boys. This difference between groups appeared to have statistical significance for overall GPA and for Humanities GPA, but not for Sciences GPA. The only Big Five trait to show significant relationship to the measure of overall grade point average, was Conscientiousness. This significant positive relationship is often replicated and was expected to emerge in the course of analysis. Neuroticism and Extraversion were not related to any of the GPA scores, nor were they emerging as

predictive variables among others. Both trait impulsivity scales had significant negative, though modest correlations (ranging from .19 to .23) with all three measures of grade point average, except dysfunctional impulsivity for Sciences GPA, which is the composite measure that had the most questionable properties among the other composite scores of different GPA-s. Humanities GPA had the largest set of predictive variables, including Agreeableness and Openness to Experience, in addition to Conscientiousness, functional impulsivity and gender. Latter emerged as significant predictive variable for overall and Humanities GPA but not for Sciences GPA, which had the smallest set of predictors. Contrary to expectations, Impulsiveness, the facet scale of Neuroticism, did not reach significance in any of the models of regression analyses for predicting high school GPA. The predictive capacity of Dickman's Impulsivity Inventory scales for academic achievement, on the other hand, was asserted in the series of regression analyses. Dickman's (1990) suggestion, that functional impulsivity might be beneficial for performance in some situations, was not supported in this study of academic achievement.

The only scales to have correlations with overall score of absences were Conscientiousness, negatively and Dysfunctional Impulsivity, positively. Former finding replicates previous results of Chamorro-Premuzic and Furnham (2003b), Conard (2006), Furnham et al. (2003) and Farsides and Woodfield (2003). Surprisingly, none of the personality or impulsivity measures was found to be correlated to un-authorized absences. Regression analyses for overall score of absences did not reveal any statistically significant predictive variables in the model including variables of Big Five dimensions, Dickman's Impulsivity Inventory and gender. In narrower regression models focusing solely on impulsivity scales and gender, dysfunctional impulsivity emerged as a single significant predictor variable. For un-authorized absences, gender variable was found to have predictive capacity in all three regressions. In the last regression, predicting un-authorized absences only by two variables - Dickman's Impulsivity Inventory and gender, besides gender, dysfunctional impulsivity emerged again on the statistically significant level. Significant gender differences were noted for the un-authorized absences, stating that boys are having generally more unexcused absences during the school year compared to girls. This finding is in accordance with the findings of Dukes

and Stein (2001) and Petrides, Chamorro-Premuzic, Frederickson, & Furnham (2005), but contradicts the reported differences by Reid and Kendall (1982) and McCarthy (2000).

Some limitations to the present study must be reviewed. First, the sample size utilized was relatively small. Second, the sample includes a higher proportion of females than males. Third, sample is taken from one school, making it homogeneous.

Conclusion

The study affirmed the predictive utility of the Conscientiousness personality dimension for academic achievement, reflected in different composite scores of grade point average. Impulsivity is further confirmed to have significant negative effect on academic performance, including school related problem behavior, like absenting.

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