The Influence of Personality Traits and Motivational Factors in Predicting Students Academic Achievement.

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BA (Hons) in Psychology

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Submitted to the National College of Ireland, April, 2015

ABSTRACT

Research has shown that non intellective factors also contribute to academic performance (Poropat, 2009). A study was carried out whereby the big five personality traits (Openness to New Experience, Conscientiousness, Extraversion, Agreeableness and Neuroticism) and motivational factors (intrinsic motivation and extrinsic motivation) where investigated to detect if they predicted positive academic results and to what extent. 199 participants completed a questionnaire measuring the big five traits levels, motivational style and academic performance. The study showed a positive relationship between conscientiousness, openness to experience, extraversion and an extrinsic motivational style in predicting academic performance. The results indicated there is more research to be done on the area of personality traits, motivational styles and academic performance. Applications for this study can be used at a secondary school level, post-secondary school and at a government level.

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Acknowledgments

I would like to thank my supervisor, Michele Kehoe for all her help and suggestions throughout the project, as well as the rest of the teaching staff of National College of Ireland.

Many thanks go out to all those who volunteered to participate in the study.

Finally I'd also like to thank my parents, Andre and Ana for the understanding and support throughout the study, as well as their patience, encouragement and tolerance.

Contents

Introduction

1.1 Introduction

Research into third level academic performance would help facilitate optimal assessment of students' academic achievement. Research carried out has shown that there are also non intellective factors which are associated with academic performance (Poropat, 2009). The non-intellective factors which are going be discussed are personality traits, learning strategies and motivational factors. This study will also look at academic performance and how it is measured.

1.2 Overview of Personality

An individual's personality can influence how they perform. Personality is an individual's set of characteristics that influence how they behave (Nelson & Quick, 2005). There are four main approached to personality which are the trait approach, psychodynamic approach, humanistic approach and the integrative approach.

The focus here will be placed on the trait approach. The trait theory states that in order for people to understand why individuals behave in certain ways, one has to break their behaviour patterns into a number of traits (Nelson & Quick, 2005).

Gordon Allport came up with the early works of the trait approach. He came up with his own trait theory of personality. This theory was developed theory by him going through the dictionary and noting any word that described a personality trait. From this he came up with over 4,000 factors and categorised them under cardinal, central and secondary traits (Allport, 1961).

Raymond Cattell then came along and analysed Gordon Allports 4,000 factors and condensed it down to 171. From the list of 171 he used factor analysis to group common traits together and ended up with a condensed list of 16 factors which is now known as Cattell's 16 Personality Factors (Conn & Rleke, 1994).

Hans Eysenck's came up with a very simple trait theory consisting of three universal traits which were introversion/extraversion, Neuroticism/emotional stability and psychoticism.

There where main concerns with the theories above, Gordon Allports model had too many factors, Cattell's 16 personality factor was too complex and Eysenck's three factor model was too limited.

1.3 The Big Five

Research began with D.W Fiske (1949) which led to the development of the Big 5 personality traits by McCrae & Costa (1987). The big 5 consists of Openness to New Experience, Conscientiousness, Extraversion, Agreeableness and Neuroticism. Openness to experience describes somebody that is creative, curios and cultured. They tend to have broad interests and willing to try new things. A conscientiousness individual is hardworking, organized and dependable. An extroverted person is someone who is very sociable, likeable, gregarious and assertive. Agreeableness describes an individual that is cooperative, warm and agreeable. Neuroticism relates to someone who is self-conscious, anxious, insecure and sensitive (Nelson & Quick, 2005). These dimensions represent broad areas of personality. McCrae found out that the big five personality traits are exceptionally universal. A study looking at people from across 50 cultures found that the big five could precisely describe personality (McCrae et al, 2005).

1.4 Research on Personality traits

Many studies carried out showed that academic achievement is strongly correlated with different measures of individual's personality traits (Poropat, 2009) and one will see how its replicated in studies which will be discussed. An informative analysis was provided which analysed the relationship between intelligence, personality and interest (Ackermand and Heggested 1997). In 2009 Poropat was able to show that academic performance is associated with the five-factor personality traits.

A lot of studies have been done looking at the predictive value of conscientiousness and openness. In 1994 a study carried out those analysed teacher ratings on different age groups found that both traits showed high correlations with academic achievement. These results have been replicated in other studies and found the

Conscientiousness and openness were the most important personality correlates of academic achievement (Barbaranelli, Caprara, Rabasca, and Pastorelli, 2003).

Diseth found that the big 5 personality trait of openness and conscientiousness predicted a deep approach to individuals learning styles. A deep approach to learning is where the students are motivated by interest and seek to understand the material they are being thought, not just memorise it. They relate ideas to one another and make evaluations. Neuroticism predicted a surface learning style.

The motive for the surface approach to learning is the fear of failure. They do the minimum required in order to get the required grade. Conscientiousness predicted a strategic approach to learning. The strategic approach to learning is an approach taken to achieve positive results. Individuals who take this approach organise their time and use it effectively (Lublin, 2003). Researchers suggest that 20%-45% variance of an individual's learning style can be accounted for by the Big Five (Chamorro-Premuzic, Furnham, & Lewis, 2007; Zhang, 2003). So there is an overlap between SAL and personality.

A meta-analysis of research carried out by Melissa O'Connor and Sampo Paunen at the University of Ontario, Canada looked at the on relationships between academic achievement and the Big 5 traits showed that academic success was frequently predicted by conscientiousness and openness (O'Connor & Paunonen, 2007). Research shows traits of neuroticism, openness and conscientiousness are the main personality traits that predict academic achievement (cf., Diseth, 2003).

A study carried by Age Diseth at the University of Bergen in 2013, aimed to investigate the relationship between personality (neuroticism, openness and conscientiousness), course experience, SAL and academic achievement. 70 students with the mean age of 21.2 from Norway participated in the study. The measures used were the Neo-five inventory, course experience questionnaire, approaches and study skills inventory for student and academic achievement was measured by multiple choice questions. The result showed that examination grades correlated significantly with conscientiousness, teaching quality, surface approach and strategic approach. The model showed that personality accounted for 27% variance in teaching quality and 18% in appropriate workload. Personality and course experience accounted for

19% variance in deep SAL, 55% variance in Surface SAL, 48% of variance in strategic SAL, and the model accounted for 13% variance in examination grade. This model produced a satisfactory comparative fit and showed how personality was correlated with course experience, SAL and academic achievement (Diseth, 2013).

The facets of conscientiousness such as diligence, self-discipline and competence, were partially responsible for performance in academic settings, predicted Grade point average(Martin et al., 2006), academic motivation and academic aspirations. (Rottinghaus, Lindley, Green, & Borgen, 2002). Openness once again relates with academic achievement and success (Asendorph & Van Aken, 2003). It has been positively associated to final grades and to critical thinking strategies (Bidjerano & Dai, 2007) and learning motivation (Tempelaar, Gijselaers, Schim Van Der Loeff, & Nijhuis, 2007). In 1997, Graziano et al, assessed the Big Five model from self-reports of 5th to 8th graders and openness was found to be to be directly and positively associated with self-report and teacher rating of academic adjustment.

Personality traits and self-efficacy beliefs have proven to be important predictions of academic achievement (Caprara et al., 2008) many studies have looked at personality and self-efficacy separately (Caprara et al, 2011). Individual differences played a unique role in undergraduate performance across four years.

Two longitudinal studies were carried out on British students investigating the relationship which exists between personality and academic performance. The results found that the personality tests which the students took when they started had a significant association with their final exam grades. Furthermore the relationship between personality and academic behaviours like attendance and class participation were also looked at. An additional 10-17% variance in academic performance. In another study Furnham et al (2003), personality traits accounted for $1/5^{th}$ in exam marks. The will to achieve has been linked to Conscientiousness in the big five model. Meta-analysis indicated that conscientiousness is the strongest personality predictor of academic performance for second and third level education. This is even so after controlling for variables such as intelligence (Poropat, 2009). It's linked to sustained effort, goal setting strategies, high concentration on assignments, effective time management and learning. (Digman, 1989) From this it leads one to believe that an

individual who scores high on conscientiousness take a strategic or deep approach to learning as they possess similar qualities.

Ackermans (1996) PPKi theory attempted to develop a framework for understanding the relationship between non-cognitive and cognitive individual differences that underlies between the attainment of knowledge and intellect. In his theory he says that personality traits are crucial in the development of knowledge as they direct an individual's choices. It also directs to what extent the individual is willing to stay in education and persist to engage in intellectually stimulating activities and settings. In other words this theory is indicating that an individual's personality traits may also influence their academic performance. Openness to Experience has been associated with academic success in school and university, at both undergraduate and postgraduate level (Shuerger and Kuma, 1987). Academic performance and the trait Openness to experience has been associated by many in terms of typical performance (Goff & Ackerman, 1992; Hofstee, 2001) rather than the correlation between crystallized intelligence and Openness to Experience (Brand,1994). It highly correlates with typical intellectual engagement, which refers to the trait that corresponds with one's typical efforts to invest in intellectual activities. Despite so when tested Openness to Experience and typical intellectual engagement have not shown predict validity in terms of academic achievement.

Two traits that have been associated with academic performance are Extraversion and Neuroticism. Studies which were carried out in the 1960's found the relationship between Extraversion and introversion on academic performance.

Research indicates that Introverts had the ability to concentrate on learning, not being easily distracted as extroverts and had better study habits (Entwistle and Entwiste, 1970). Similar findings are found in studies from recent years. That extroverts don't perform as well as introverts in academic situations as they get distracted easily, are careless and more sociable (Sanchez-Marin, Rejano-Infante, & Rodriguez-Troyano, 2001).

A negative relation between academic achievement and neuroticism (Furnham & Medhurst, 1995) has been associated with a state of stress and anxiety under exam like conditions (Zeidner & Matthews, 2000) but can also affect academic performance in different ways. The personality trait which is consistently related with

academic performance is conscientiousness. From ongoing research this association has been replicated in schools, undergraduate level and postgraduate level.

A study was carried out by Thomas Premuzic and Adrian Furnham in 2002 to investigate to what extent to big five traits can predict academic performance at university, which are the most significant predictors and whether the prediction of academic performance by personality can be more so accurate at the super- or primary trait level. It was carried out by 247 undergraduate students in University College London (UCL).

It was a longitudinal study with results been obtained for three academic years. The results received where consistent with those received in previous studies (Blickle, 1996; Busato et al., 2000). There was a significant correlation between conscientiousness and academic performance and significant negative correlation between academic performance and neuroticism. The correlational analysis carried out on a primary level showed that conscientiousness primary traits, dutifulness and achievement striving and self-discipline were significantly correlated with high academic performance. Anxiety and impulsiveness were negatively and significantly correlated with academic performance. Results from this study indicated that conscientious, stable and introverted individuals are more likely to succeed in university-based academic settings and the variables may account for about 15% of variance in academic examination performance (Chamoro Premuzic, T., & Furnham, A. 2003).

Research indicates that intelligence and aptitudinal factors were shown to be the best academic achievement predictors according to early studies (Berdie, 1955). From results that were obtained from Cattell's personality test carried out on students second level students showed that the primary personality traits most associated with academic achievement were conscientiousness, self-discipline, boldness, warmth, non-impulsiveness, self-sufficiency and insecurity. These factors are said to explain 20% of variance in academic achievement.

Anton Aluja and Angel Blanch carried out a study in 2004 was set to examine personality factors, scholastic aptitudes and study habits so they can test the contribution of each variable to academic achievement prediction in both males and females. It was carried out on 453 boys and 434 girls, they were all secondary school

students from 29 schools in Spain. They were from both urban schools and rural schools. They used the Spanish Version of the HSPQ, which is Cattell's High school personality scale. The means and differences in the scale are similar to previous findings (Amador et al, 1993). The boys scored indicate that they may be more impulsive, individualistic and self-sufficient than girls. Girl's scores indicate they are more calm, responsible, sensitive, self-disciplined and anxious than boys. The personality traits most associated with academic achievement are related to socialization. The most significant ones are conformity and self-discipline. Boys and girls with better study habits also score higher on conformity and self-discipline. When looking at the relationship between personality and academic achievement only conformity in boys and non-impulsiveness factors in girls show a significant relationship with academic achievement. The best predictor for study habits is self-discipline for boys and conformity in girls. This study states that personality factors have a consistent impact on study habits than on academic performance. Gender is also an important effect on personality and study habits (Aluja, A., & Blanch, A. 2004).

Despite all the research carried out on the big five model especially as regards conscientiousness and openness being positive predictors of academic success, the Big five model has also been critiqued. There had been claims that the big give factor model are robust. The trait openness to experience has not been found in lexical analyses. (Goldberg, 1993). Evidence derived from empirical research carried out by Hofstee et al shows that the two traits, openness and conscientiousness dimensions have been viewed to differ from one study to another (Hofstee et al, 19920, Johnson & Ostendorf,1993). Cattel claimed that McCrae and Costa extracted an insuffient number of second-stratum factors. A study was carried out using Cattells 16 personality factor model and Mc Crae and Costas Big five model on 17, participants. The results of the same data using different types of personality scales were varied. Cattels factor found a hyper plane count of 71% and Costa and McCraes solution found a hyper plane count of 31%. This suggested that the five factor model failed to meet simple structure criteria (Deary, 1996). Zuckerman noted that the five factor model popularity is due to the fact they had to fill in the gap as Eysenck's model was too limited and Cattell's model was too broad. The results on the five factor model have not been able to be replicated consistently in different samples. Despite the

critique there is much support for the model and it is still being used globally. In 2004 Rossier affirmed that the big five personality factor model is more reliable than the 16 factor model (Rossier et al, 2004).

1.5 Motivation

The personality traits which an individual has can also influence how they are motivated (Philips, Abraham et al, 2003). Crozier (1997) mentions motivation as a core trait in the Big Five factor model of personality knowing that conscientious individuals are organized, hardworking, self-disciplined, ambitious and persevering. In addition, motivation has an important influence on a learner's learning behaviour and achievement (Vallerand et al., 1992). A motive is a direct or indirect impulse which causes an individual to act. Motivation is an internal process which pushes an individual to manoeuvre towards an anticipating goal (Nelson & Quick, 2005). Motivation is a vital component of any reliable model of human performance (D. J. Campbell & Pritchard, 1976; Maier, 1955; Pinder, 2011). The importance of motivation has been highlighted in many areas which include industrial and organizational psychology (Steers, Mowday & Shapiro, 2004), academic performance (Hidi & Harackiewicz, 2000) and healthcare system (Franco, Bennett & Kanfer, 2002).

1.6 Theories of Motivation

There are many theories to motivation such as Maslow's Hierarchy of needs, Expectancy theory and Self-determination theory but for the purpose of this study the focus will be on Deci and Ryans Self-determination theory.

Maslow's Hierarchy of needs was developed by Abraham Maslow. It's a needs theory which emphasizes psychological and interpersonal needs alongside psychical and financial needs (Nelson & Quick, 2006). Its consists of five dimensions in hierarchy that are physiological needs, safety & security needs, social needs, esteem needs and self-actualization needs. The theory indicates that people are motivated to reach certain needs. The needs at the bottom of the pyramid also known as deficiency need have to be met primarily before progressing to needs towards the top of the pyramid. Progression through the needs can be disrupted by unforeseen life events. For

example a person may lose their job while at esteem needs therefore they begin to fluctuate between needs. Fredrick Herzberg also believed that psychological forces drove human behaviour. Maslow's work has been critised due to the methodology, it is very complicated to test Maslow's self-actualization concept (McLeod, 2007).

The Expectancy theory of motivation was suggested by Vroom. It's illustrated as a process theory and gives reason as to why individuals choose to pursue certain behaviour over others (Redmond, 2010). "Expectancy theory proposes that work motivation is dependent upon the perceived association between performance and outcomes and individuals modify their behaviour based on their calculation of anticipated outcomes" (Chen & Fang, 2008). There's three key relationships formulated by the Expectancy theory.1) the effort-performance relationship which notes that the anticipated probability that's exerted leads to successful performance. 2) Performance- reward relationship is the belief that successful performance will lead to the intended outcome. 3) Rewards-personal goals relationship is how attractive/valuable is the reward in question to the individual. This theory argues that the strength of a tendency to act in a certain way is dependent on the strength of the expectation that they will receive a given outcome and that the outcome is desired (O'Malley, 2015).

Psychologist Deci and Ryan came up with the self-determination theory, which is a theory of motivation. The Self-determination Theory (1985) proposed three types of motivation which were intrinsic, extrinsic and a-motivation. This theory highlights that people are not only motivated by external rewards such as money, prizes etc. but primarily on the need to gain knowledge, independence and personal growth (Ryan & Deci, 2000).

1.7 Research on Motivation

Motivation is multidimensional. Motivational researchers agree that there a three fundamental questions a student that is engaging in a learning task must answer. The questions are: Can I do the activity? Why do I want to do this activity and what do I need to do to succeed ? (Wiegfield & Eccles, 2001)

The first question has to do with the students expectations of how capable they are of performing the activity. This is the principle of Bandura's self-efficacy which states, "Peoples judgement of their capabilities to organize and execute courses of action

required to attain designated types of performance" (Bandura, 1986). It affects how much effort the student puts into the activity and how persistent they are at it. Self-efficacy has been highlighted by many studies to be a strong predictor of student achievement (Bandalos, Geske & Finney, 2005).

The second question is regards the individuals motivation for participating in the activity. The most basic distinction made by the Self-determination theory as to why people are motivated to do something, are extrinsic motives and intrinsic motives. Intrinsic motivation is participating in an activity for its inherent satisfaction rather than rewards etc. Intrinsic motivation dates back to the 1950's where in experimental studies of animal behaviour, animals were found to still be playful and participate in certain activities even when they weren't given a reward or being reinforced (White, 1959). Intrinsic motivation can be said to be innate in humans. From birth onwards individuals are generally prying, inquisitive, cheerful, always wanting to know more and willing to explore without being given incentives. This is essential for social, physical and cognitive development as this is the main way individuals grow in knowledge and skills. Despite the importance of intrinsic motivation not all activities are participated in primarily for inherent interest. Extrinsic motivations are a form of motivation that individuals participate in whereby the activity is done to receive a separable outcome whether they are tangible or psychological. The phenomenon of extrinsic motivation is evident in Skinners operant conditioning 1953, the idea that all behaviours are motivated by rewards such as food and money (Ryan & Deci, 2000). A-motivation is a state where an individual lacks any motivation for engaging in a behaviour (Vallerand,2004).

Performance can be described as something that an individual does and can be clearly seen by others (J. P. Campbell, McCloy, Oppler, & Sager, 1992). It is an achievement related behaviour that can be assessed. Incentives are things which are offered in order to motivate people to do something. People assume that if they offer incentives individuals will put much more into the desired behaviour (Greene, 2011). There is evidence to demonstrate that this belief is true as two Meta analyses show that giving financial incentives is correlated with higher performance (Condly, Clark, & Stolovitch, 2003). Despite the importance of intrinsic motivation there is no meta-analysis on the intrinsic-motivation link. As there is no meta-analysis, the expected

effect size that intrinsic motivation operates under is still unclear. It is not known if intrinsic motives have the same predictive utility in academics as it does in other fields like work and sports.

Self-determination theory notes that a relation exists between intrinsic motivation and choice of direction. If individuals find a task interesting they are very likely to give the task their full attention. Students who are intrinsically motivated have been found to engage in learning at a deep level whilst extrinsically motivated students take a surface learning passive approach (Benware & Deci, 1984). It is said that intrinsic motivation levels should be linked to successful performance as regards the self-determination theory. This can be so because if an individual finds a task enjoyable they will be willing to partake in the task for longer hours, beyond the point they can be rewarded (Deci, 1972).

So it leads to the assumption that intrinsically motivated students spend more time on tasks hence leading to better academic results (A. E. Gottfried, 1985) and job performance. It is argued whether high levels of intrinsic motivation leads to higher performance. One will also have to look at how performance is described within this context. What type of performance is in question? Is it of "quality" or "quantity". Adams noted in 1965 that "quality and quantity-type performance criteria had differential links with motivational constructs". Once again there is not a Meta analytic review carried out examining this issue. It has been argued that quality performance tasks will have a stronger link with intrinsic motivation. This will be due to the fact that quality type tasks are deemed to be more complex and hence need a higher engagement of skills, therefor the individual need to be committed to personal evaluation, growth and also have a strong work ethic (Rich, 2006).

Andrew J. Martin carried out a study at the University of Sydney and stated that, as students tend to go through secondary school their motivation tends to decrease, usually student motivation is at lowest while they are in secondary school in comparison to primary school and third level education. This view is also evident in studies by other researchers (Martin, 2009; Otis, Grouzet, & Pelletier, 2005). Due to the lack of motivation students tend to skip school, misbehave as they are bored in secondary school which leads to poor performance (Bailey et al, 2002). Research shows that students who are fully engaged in their academics perform better than

students who are less engaged in their school work (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). Academic skills such as time management, problem solving skills, and study skills are correlated with good college grades and retention (Robbins et al, 2004). Research indicates that students who engage more with their school work are probably intrinsically motivated. They tend to take on more challenging tasks than the less engaged students (Fredricks, Blumenfeld & Parsi, 2004). For example students who participate on debating teams, they do this because due they are interested in debating and topics which are raised not because they will be given a reward at the end.

1.8 Measuring Academic Performance

Student's academic performance is measured through continuous assessment and examinations. Examination scores are a measurement by which student's levels or knowledge is differentiated (Habibah et al, 2011). Student's university qualifications provide them with a key to their successful careers/ pathway (Waggoner and Goldman, 2005). The GPA (Grade point average) system is grading system which is understood by many institutions around the world. There are a few advantages of the system apart from it being internationally recognised. It allows a student to track their performance throughout your years in third level education. It allows you to identify where you're at and how much more you need to work to reach your desired GPA. It allows all students to be treated fairly and gives transparency. GPA rewards individuals for maintaining high average levels of performance.

One can see how personality traits and motivational constructs influence academic performance. A study is going to be carried out on first year university students in Ireland to see if motivational factors and personality traits are significant factors of academic performance whilst taking into account demographics such as age, gender and socioeconomic status.

1.9 Hypothesis

This study aims to investigate which factors of personality influence student academic performance. To focus on students individual motivational styles (intrinsic and extrinsic motives) and assess if there's a correlation between these styles, personality traits and academic achievement.

From the information gathered the hypotheses formulated are:

1. Conscientiousness and openness will be two significant factors of academic performance. Students that scored high on conscientiousness have a higher academic grade point average.
2. Intrinsic motivation will be positively correlated to academic performance. Intrinsically motivated students performed better than extrinsically motivated students.

1.10 Rationale

There has been researched carried out in the area of academic performance before but this research will be looking at it specifically within an Irish context. The focus here will be placed on their first semester results from first year college student's to see how the factors above influence their performance from the onset of their third level education. First year in university is a critical transition period. First year semester university GPA is one of the major responsible factors for early drop-out from college (McGrath and Braunstein, 1997). The results which will be reported can be used to demonstrate to students and academics the effectiveness of non-intellective constructs in contributing to their academic success. This can be used as a future template or guide in helping students assess their performance based on these constructs. It could lead to further research questions into the area of academic performance to further enhance our knowledge on constructs which influence performance. This is very beneficial to students and they can use it as a guide to evaluate their individual personality traits and motivational factors and see how it can hinder their performance and think of coping mechanisms to deal with it. Also as a form of evaluation on their motivational factors and learning strategies to see if they are being used to the maximum.

Method

2.1 Participants

Participants from the National College of Ireland and Dublin City University were requested to participate in the study by filling out an online questionnaire which was made on google docs. Facebook was the main form of social media used to invite people to take part in the study alongside phone applications such as WhatsApp. Invitations would be sent to them directly through private message or it would be posted on relevant Facebook group page such as NCI's psychology society etc. University class representatives were also sent the online questionnaire and urged to forward it to other class members. Links would be sent directly to people via WhatsApp.

A total of One hundred and ninety-nine undergraduate students from the National College of Ireland (NCI) and Dublin City University (DCU), voluntarily participated in this study. There was 96 (48.2 %) males and 103 (51.8%) females. There was a total of 125, 17-22 years olds (62.8%) and 74 (37.2%) mature students (23 years plus). The participants were also asked to provide their first year first semester grade point average. 42 (23.1%) participants had a first class honours (70% -100%) , 87 (43.7%) participants received a second class honour, first division (60% - 69%) , 31 (15.6 %) participants had a second class honour, second division (50% - 59%) , 35 (17.6 %) had a third class honour (40% - 49%) and no participants failed (30% - 39%).

2.2 Sampling

Participants were selected using convenience and snowball sampling. This was done by sending invitation on Facebook. Facebook pages specifically for undergraduate students and WhatsApp. All participants were informed that it was voluntary and they were free to withdraw consent at any time.

2.3 Materials and Measures

All the participants needed access to the internet in order to access the link whether it's through the computer, laptop or portable devices.

The materials were an online questionnaire created on google documents and consisted of four main parts.

Part 1 was an information sheet. It gave the participant a brief overview of the study and the reason why is being carried out. Participants where made informed that it is confidential, anonymous and that they could withdraw consent whenever they wanted. They were provided with details of the researcher and the supervisor. (See Appendix A)

Part 2 of the questionnaire consisted of three questions. Information was collected regarding the participant's gender, age group and first year exam results average was asked. The exam results average was asked in order to measure for academic achievement. (See Appendix B)

Part 3 was 120 questions asked in order to get the individuals personality traits. The measure used was the IPIP NEO personality questionnaire. (See Appendix C)

The IPIP NEO test stands for The international personality item pool- neuroticism, extraversion and openness. It assess peoples personality based on the big five model created by Costa & Crae. It consists of extraversion, openness, conscientiousness, agreeableness and neuroticism. This test is scientifically based and accepted worldwide to be an accurate measure of personality. The IPIP NEO short form revised version was used which can be accessed through http://www.personal.psu.edu/~j5j/IPIP/ipipneo120.htm

The full IPIP was created by Dr. Lewis Goldberg. It was designed to educate people on the big five personality traits. The IPIP inventory estimates participants standing on the 5 broad domains and 30 subdomains of personality. The original long form IPIP may provide more reliable and valid results than the short version. Yet the short form is also time efficient. The scoring narrative was designed by Dr. John A. Johnson a professor of Psychology at Penn State University. Below is how the IPIP scored:

For + keyed items, the response "Very Inaccurate" is assigned a value of 1, "Moderately Inaccurate" given the value of 2, "Neither Inaccurate nor Accurate" given a 3, " Moderately Accurate" given the value 4, and "Very Accurate" a value of 5.

For – keyed items, the response "Very Inaccurate" is assigned a value of 5, "Moderately Inaccurate" given the value of 4, "Neither Inaccurate nor Accurate" given a value of 3, "Moderately Accurate" a 2, and "Very Accurate" a value of 1.

Part 4 was 28 questions asked in order to find the individuals motivational factor for going to college. The measure used was The AMS-C 28 motivational questionnaire. (See Appendix D)

The AMS-C questionnaire stands for the academic motivation scale. It is a measure of intrinsic, extrinsic and a-motivation is education. It was created by Robert Vallerand. It was based on the self-determination theory. Below is the scoring key for AMS-C 28

 # 2, 9, 16, 23, 6, 13, 20, 27, 4, 11, 18, 25   Intrinsic motivation

3, 10, 17, 24, 7, 14, 21, 28 , 1, 8, 15, 22   Extrinsic motivation

5, 12, 19, 26 Amotivation

2.4 Design

A quantitative study was undertaken. Quantitative research is explaining phenomena by collecting numerical data that are analysed using mathematically based methods using statistics (Aliaga and Guderson, 2000). Data is going to be collected and analysed in order to see if the hypothesis are supported or not. Qualitative data can't be used to quantify data. Qualitative study doesn't use statistical analysis and doesn't use structured methods for data collection. They gather data that is not in a numerical form. It's semi-structured and usually consists of individual interviews or group discussions.

The dependent variable is academic performance. Motivational factors and personality traits are the independent variable. Academic performance is what is being measured.

2.5 Procedures

All ethical implications where taken into consideration before designing the study and gathering data.

Data was gathered through an online questionnaire on Google docs. Questions from the personality measure and motivation measure were copied and uploaded onto the questionnaire.

Prior to links being sent out a pilot study was carried out on 20 first year students from the National College of Ireland. A pilot study is a preliminary analysis carried out to identify if the study design is feasible.

Links to the survey were placed on the social media site Facebook, applications such as WhatsApp and Facebook pages set up specifically for student academia purposes. Links were sent to four Facebook pages and sent to class representatives from DCU and NCI. All three Facebook pages were for psychology first year students. Three class representatives from DCU and four from NCI. The class representatives were two business students, two computing students, an engineering student, a media studies student and a communication student. Participants were asked to share the link to the questionnaire to other class members which would help aid the snowball effect. All the data was collected through the online questionnaire. The questionnaire was designed in a way that the participant was required to answer all from one section before moving onto the next. This ensured the questionnaire was completed without any gaps. The questionnaire took approximately 10 to 20 minutes. The overview of the questionnaire made the participant aware that it was strictly confidential, they were aware of the aims of the research and that they could stop the questionnaire whenever they wanted without question. Participants had contact details if they needed further information about results and were thanked for participating.

The data from the questionnaire was downloaded in Microsoft Excel format. Incomplete answers were removed and the dataset was imported into SPSS format (version 21). Recoding of data then took place for certain items of the Big Five Inventory which required reverse scoring.

The data collected was automatically placed into a Microsoft excel file on google documents. Once all the data was collected the excel file was imported into SPSS format (version 21). The data was in SPSS format recoding of data took place for items of the IPIP NEO that required reverse scoring. Five subscales will then have to be computed for the 5 subscales of the IPIP NEO (extraversion, openness, conscientiousness, agreeableness and neuroticism) and three subscales for the

motivational factors (intrinsic motivation, extrinsic motivation and a motivation). The data was check to see if they met the parametric assumptions and then a regression analyse was run to see if they hypothesis were supported or not.

Results

3.1 Descriptive Statistics

199 participants took part in the study. Of these, there was 96 (48.2 %) males and 103 (51.8%) females. 125 of the participants were between the ages of 17-22. 74 participants were mature students. A check for normality of age distribution showed a negatively skew amongst participants, (see Figure 1).

Histogram

Mean = 1.63
Std. Dev. = .485
N = 199
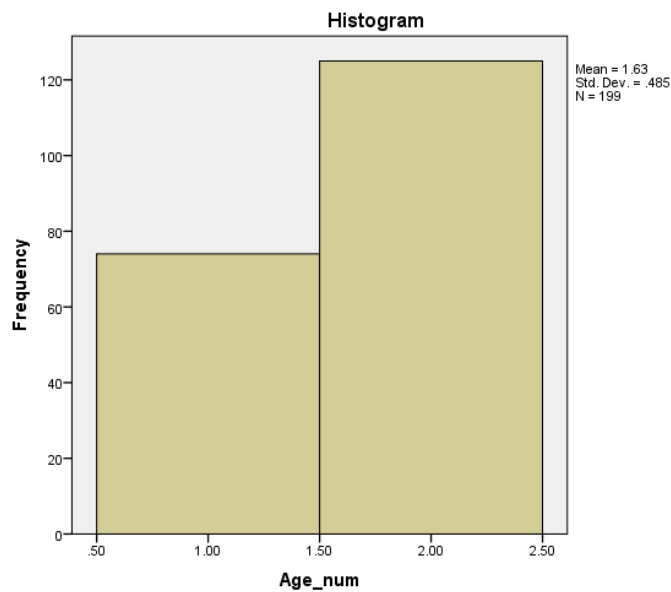
Figure 1

Figure 2 shows a pie chart showing the distribution of participant's first semester exam results. The majority of participants (87) received a second class grade one result.
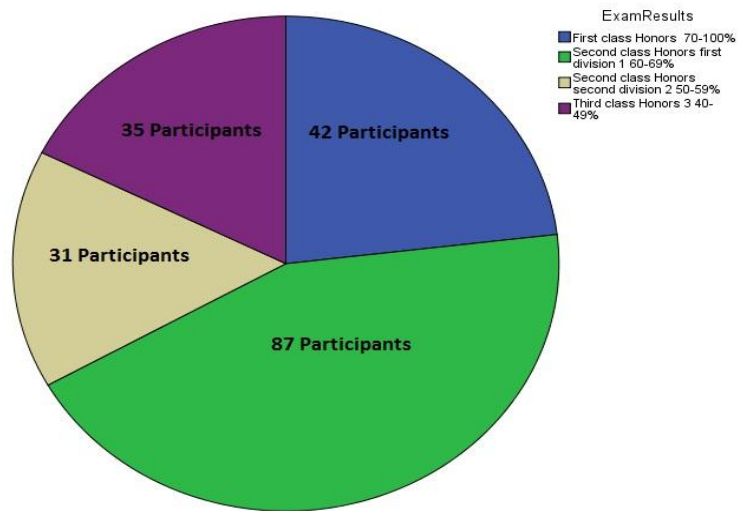
Figure 2

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Table 1 shows the means, medians, standard deviations, skewness and minimum and maximum scores of the Big 5 personality traits, neuroticism, extraversion, openness to experience, agreeableness and conscientiousness. Table also shows the means, medians, standard deviations, Skewness and minimum and maximum scores of the motivational styles, intrinsic motivation, extrinsic motivation and a motivation. Skewness levels for Neuroticism, extraversion and amotivation were between -1 and 1, implying normal distribution.

Variables	N	Mean	Median	SD	Skewness	Minimum	Maximum
Neuroticism	199	59	60	7.0	.006	43	74
Extraversion	199	69	69	7.3	-.044	46	90
Openness	199	73	73	6.4	.190	59	86
Agreeableness	199	58	58	6.4	.191	44	73
Conscientiousness	199	68	69	8.6	-.270	43	88
Extrinsic	199	65	68	12.42	-1.41	19	83
Amotivation	199	13	10	7.0	.60	4	28
Intrinsic	199	51	54	15.45	-.534	14	76

Table 1

3.2 Inferential Statistics

Multiple regression analysis was performed in order to investigate the ability of the Big Five personality traits (Openness to New Experience, Conscientiousness, Extraversion, Agreeableness and Neuroticism) and Motivational styles (intrinsic motivation, extrinsic motivation and a-motivation) to predict study academic results. Also to test the hypotheses.

Preliminary analyses were conducted in order to ensure that no violation of the assumptions of normality, linearity, and homoscedasticity. If they were violated it was decided to use non parametric measures. Correlations between the independent variables included in the study were examined. All correlations were weak to moderate, ranging between $r = .33$, $p < .001$ and $r = .57$, $p < .001$. This indicates that multicollinearity was unlikely to be a problem (see Tabachnick and Fidell, 2007).

Most predictor variables were statistically correlated with participant exam results which indicated that the data was suitably correlated with the dependent variable for the examination through multiple linear regressions to be reliably undertaken.

All the independent variables included in the model explained approximately 33% of variance in dependent variable. $F(8,187) = 11.40$, $p < .0005$.

Table 2 shows that not all the predictors were statistically significant

	R^2	β	B	SE	CI 95%(B)
Model	**.34*****				
Neuroticism .038/.006		-.11	-.02	.011	-
Extraversion .010/.048		.21***	.03	.010	
Opennes to .002/.044		.13**	.02	.012	-
Experience					
Agreeableness .030		-34	.05	.012	-.077/-
Conscientiousness .004/.039		.15*	.02	.011	-
Extrinsic .013/.037		.30***	.03	.006	
Amotivation .00/.044		.15**	.02	.011	

Intrinsic	-.4	-.03	.005	-.036/-.015

Table 2

The model tested Hypothesis One - Conscientiousness and openness will be two significant factors of academic performance. Students that scored high on conscientiousness have a higher academic grade point average.

Conscientiousness recorded a positive Beta value ($\beta = .15$, $p < .05$). Openness to Experience also recorded a negative Beta value ($\beta = .13$, $p < .05$)

Model tested for Hypothesis Two - Intrinsic motivation will be positively correlated to academic performance. Intrinsically motivated students performed better than extrinsically motivated students.

Intrinsic motivation recorded a negative Beta value ($\beta = -.40$ $p > .05$). Extrinsic motivation recorded a positive Beta value ($\beta = .30$ $p < .001$)

Discussion

4.1 Aims

The study looked at investigating the relationship between student's personality traits, motivational styles and academic performance. There were two hypotheses which were said to be tested in this study. The first hypothesis was that conscientiousness and openness will be two significant factors of academic performance. Students that scored high on conscientiousness have a higher academic grade point average. The second hypothesis was that intrinsic motivation will be positively correlated to academic performance. Intrinsically motivated students performed better than extrinsically motivated students.

4.2 Summary of findings

For the first hypotheses, conscientiousness and openness were supposed be the two significant factors of exam results. This was based on previous research carried out. Melissa O'Connor investigated the relationship between academic performance and the personality traits and from this meta-analysis study found the conscientiousness and openness were prominent personality traits which predicted positive academic performance (O'Connor & Paunonen, 2007). Characteristics of conscientiousness such as self-discipline, diligence etc. were said to be to be contributing factors to predicting higher grade point average (Martin et al, 2006). This is just an example of many studies that have been done that found conscientiousness and openness to be predictive factors of academic success.

A correlation was found in this study. Conscientiousness and openness to new experience where both positively correlated with academic performance measured by the dependent variable exam results. They both had positive significant beta values. Despite so they were not strong predictive values which was expected. Conscientiousness recorded a positive Beta value ($\beta = .15$, $p < .05$). Openness to Experience also recorded a negative Beta value ($\beta = .13$, $p < .05$). Even though they were significant predictors of academic performance the correlation was not as strong as expected, yet hypothesis one was supported.

Surprisingly Extraversion recorded a stronger predictive value of β =.21. This is very interesting as it is contrary to research that has been carried out. Studies indicated that Extraversion had a negative associated with academic performance. It was recognized that extroverts don't perform as well as introverts in academic situations. (Sanchez-Marin, Rejano-Infante, & Rodriguez-Troyano, 2001). This result challenges the view of many researchers. This results supports the criticism on the big five model that results on personality traits have not been able to be replicated in all studies (quote.). Agreeableness scored the Beta negative value of -.34 indicating that the trait agreeableness does not predict positive exam results. Neuroticism noted a negative Beta value of -.11. This goes in line with research that there's a negative relation between academic success and neuroticism.

The second hypothesis, Intrinsic motivation will be positively correlated to academic performance. Intrinsically motivated students performed better than extrinsically motivated students. This hypothesis derived from the work of Deci and Ryan's, self-determination theory. According to Deci and Ryan intrinsic motivation should be linked to successful performance. This was due to the belief that intrinsically motivated students spent more time on tasks than extrinsically students (A.E. Gottfried, 1985). Intrinsic motivation recorded a negative Beta value ($β = -.40$ $p > .05$). Extrinsic motivation recorded a positive Beta value ($β = .30$ $p<.001$). Therefore hypothesis two was not supported. A-motivation also recorded a positive Beta value ($β = .15$ $p <.01$)

The results received for hypothesis two, were surprising due to the research in support of intrinsic motivation to be a positive academic predictor of exam results. Perhaps the results are so, due to the type of performance the participants were involved in were the results based on quantity type or quality type modules. Certain subjects are quantity type results others quality type. It's difficult to analyse this as no meta-analysis study has been done on this area. (Rich, 2006)

4.3 Strengths and limitations

There were a few strengths and limitations of this study. The fact the questionnaires were carried out online could be viewed and a strength and a limitation. Initially it was planned that the test be carried out on pen and paper. Questionnaires would have to be handed out to individuals, but to get large groups questionnaires would be

handed out during class and filled out then collected. Given the length of the questionnaires this could take up to twenty minutes, which lectures would not be willing to waste. Also the cost of printing these questionnaires would have been a disadvantage. As of this an online questionnaire was set up. The problem with and online questionnaire was that it was impossible to control when the participants decided to take the questionnaire, how they were filling it out and under what environment. Looking through the data set on excel one could see that some participants were taking the questionnaire late at night which could impact there how they respond as they could be tired.

Despite the online questionnaire made it easy to get access to a large sample within a short time frame. The larger the sample size the more reliable the statistical analysis is.

The personality inventory scale which was used contained 120 questions. There was other personality scales that could have been used that were also much shorted like the Jung Typology test which was by Isabel Myer Briggs and Carl Jung. The NEO IPIP inventory can provide more reliable and valid results.

Accessing the students was easy as two colleges were used.

A weakness of the study could have been the length of the questionnaire. Several participants complained saying that it was too long. There was 120 short personality questions and 28 academic motivation questions. The maximum time it took was twenty minutes and some felt that this was too long. They may have got tired half way through the questionnaire and become negligent as to how they answer. They could have simply ticked any box simply just to get through it.

If the study was to be carried out again, the focus would be primarily be placed on how personality traits influence academic performance or how motivational factors influence academic performance. Doing both personality traits and motivational factors was a substantial amount of work. There was so much literature on both of the topics that it was difficult deciding what to include and what to leave out.

Collecting the data would have been started earlier. First of all questionnaires were handed out to filled in but after only a few questionnaires this was stopped. This was due to the fact, questionnaires would have to be handed out in big class groups if they

were to be done quickly but it would be disturbing classes. Plus from the first few questionnaires it was noted that a few people skipped questions so they had to be discarded straight away. This would have been a big problem if it kept happening. So it was decided to be done online where participants could do it at their own time, their own pace and where required to answer all questions. By the time it got to this stage a lot of time was wasted and invitations constantly had to be sent out to students and reminders sent for them to fill it out so that the required amount of participants could have it done in order to carry out the analysis within the short time frame. In future such problems should be anticipated and start the data collecting earlier, as it took much longer than expected.

The focus was only placed on first year college students which may be a weakness. In future a longitudinal study should be carried out measuring the students' academic performance, personality traits and motivational style from first year to final year. This same approach could be done on secondary school pupils assessing them once a year from first to sixth year to see if the variables results are consistent throughout the years.

4.4 Implications and possible applications

The results of this study indicate that further research should have to be done in this area especially on a larger sample to get a more accurate representation of the student population of Ireland to see if the results correlate. The applications for such a study can be used in three levels.

It could be used at a secondary school level, third level education and government level. There are certain elements of personality and motivation that would be beneficial for second level students, especially those in the senior cycle looking to do their leaving certificate. These students should be aware of their personality traits and how it could be used at their benefit. It may suit them for certain courses and not in others. Career Guidance counsellors could use these results and studies noted as a guide for when they are discussing career and course options with students. They should be well aware of this before they go out and fill in their CAO forms. Teachers and career guidance should make students aware of how their personality traits may influence how they perform and act in third level, so they should choose wise and

carefully. It could be incorporated into the syllabus that in C.S.P.E class's students learn the basics and personality and motivation.

If students knew more about their personality traits coming into college it might make the transition easier. A template can be made from recent findings and past findings to demonstrate to students that their personality traits and motivational style can impact on how they perform. This will be beneficial for them to allow them to regulate or adjust their styles in given situations. For example and extrovert with and extrinsic motivational style may need to change the way they act in certain classes in order to get the most out of it. They may have to use different study techniques which will be more suited to them than introverts. The Student's union can set up support services where people are trained to adapt styles in given situations.

The government can be very helpful in order to introduce policies whereby they notice the importance of personality and motivational factors and make sure that it's taken into consideration by the Department of Social and Family affairs. When giving people certain jobs they should take these factors on board as it may help them stay in the job longer if it's suited to them. They should organise clinics to help people adjust their personality and motivational styles in order to get the job done.

Individualistically it's important to understand your personality style therefore you will understand why you act and react the way you do. It will therefor make working in a group easier for individuals. If everyone is aware of each other's personality delegating tasks will be easier, time wasting may be avoided, arguments avoided and therefor leading to better academic results.

4.5 Conclusion

In conclusion, this study attempted to bring together the Big five personality traits by Costa & McCrae and the motivational factors established by Deci and Ryan in order to see if these factors had a relationship with student academic performance. Previous research carried out led to the hypothesis that conscientiousness and Openness would be significant predictors of academic performance. Intrinsically motivated students would perform better than extrinsically motivated students. It was measured using the Academic motivational scale 28 and the NEO IPIP inventory. Academic performance was measured using first semester exam results. A multiple regression analysis was run to investigate the hypotheses. The first hypothesis was supported with also some interesting findings that extraversion was also a positive predictor of academic performance. Contrary to the research the second hypothesis was rejected and there is still a lot of work to be done in the field of motivational factors in order to access why this is the case. The sample size was large and reliable measures where used. In future to get a more consistent result, one might control for the type of course the participant does as it may affect the results. Applications for this study may be used at a secondary school level, third level and government level. Overall the results show that there is definitely room for more research in the area of personality and especially academic motivational factors.

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Appendices
Appendix A

Influence of Personality traits and motivational factors on academic Peformance

This study is being carried out as part of my thesis for my Undergraduate Psychology Degree at the National College of Ireland. The study will be supervised by Michele Kehoe, a lecturer at the National College of Ireland.This study aims at exploring the relationship between personality traits, motivational factors and academic performance. There has been a lot of studies and research done on this area but not within an Irish context.

You will be asked to fill out a personality questionnaire, academic motivation questionnaire and to insert your first semester average exam results.This should take approximately 15 minutes.

Participation in this study is entirely voluntarily. You may decide to stop being part of the research study at any time without explanation and any data you have given will be destroyed. You also have the right to ask any questions you may have about the study. There are no known benefits or risks for you in this study. All of the information collected will be kept anonymously and the only person with access to it will be the researcher.

The supervisor of this study, Lecturer Michele Kehoe, will be happy to answer your questions regarding this study at any time. You can contact her at michele.kehoe@ncirl.ie . If you wish to find out any results of this study they will be available in May 2015 and you may contact the supervisor or the researcher to access them.
Thank you for your time and participation.

Angelica Lumanisa

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Appendix B

Influence of Personality traits and motivational factors on academic Peformance

* Required

Gender *
○ Female
○ Male

Age *
○ 17-22
○ 23 +

First Semester exam results average *
○ First class Honors I 70–100%
○ Second class Honors, first division II.1 60–69%
○ Second class Honors, second division II.2 50–59%
○ Third class Honors III 40–49%
○ Fail F1 30–39%

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Appendix C

Short Form for the IPIP-NEO(International Personality Item Pool Representation of the NEO PI-R™)

Retrieved from http://www.personal.psu.edu/j5j/IPIP/ipipneo120.htm

1.	Worry about things.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
2.	Make friends easily.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
3.	Have a vivid imagination.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
4.	Trust others.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
5.	Complete tasks successfully.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
6.	Get angry easily.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
7.	Love large parties.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
8.	Believe in the importance of art.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
9.	Use others for my own ends.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
10.	Like to tidy up.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate ○	Moderately Accurate ○	Very Accurate ○

Nor Inaccurate
○

11.	Often feel blue.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
12.	Take charge.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
13.	Experience my emotions intensely.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
14.	Love to help others.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
15.	Keep my promises.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
16.	Find it difficult to approach others.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
17.	Am always busy.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
18.	Prefer variety to routine.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
19.	Love a good fight.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
20.	Work hard.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
21.	Go on binges.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○

22.	Love excitement.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
23.	Love to read challenging material.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
24.	Believe that I am better than others.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
25.	Am always prepared.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
26.	Panic easily.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
27.	Radiate joy.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
28.	Tend to vote for liberal political candidates.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
29.	Sympathize with the homeless.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
30.	Jump into things without thinking.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
31.	Fear for the worst.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
32.	Feel comfortable around people.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
33.	Enjoy wild flights of fantasy.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○

34.	Believe that others have good intentions.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
35.	Excel in what I do.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
36.	Get irritated easily.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
37.	Talk to a lot of different people at parties.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
38.	See beauty in things that others might not notice.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
39.	Cheat to get ahead.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
40.	Often forget to put things back in their proper place.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
41.	Dislike myself.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
42.	Try to lead others.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
43.	Feel others' emotions.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
44.	Am concerned about others.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
45.	Tell the truth.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○

46. Am afraid to draw attention to myself.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
47. Am always on the go.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
48. Prefer to stick with things that I know.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
49. Yell at people.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
50. Do more than what's expected of me.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
51. Rarely overindulge.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
52. Seek adventure.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
53. Avoid philosophical discussions.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
54. Think highly of myself.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
55. Carry out my plans.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
56. Become overwhelmed by events.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
57. Have a lot of fun.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○

58.	Believe that there is no absolute right or wrong.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
59.	Feel sympathy for those who are worse off than myself.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
60.	Make rash decisions.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate Nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
61.	Am afraid of many things.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
62.	Avoid contacts with others.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
63.	Love to daydream.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
64.	Trust what people say.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
65.	Handle tasks smoothly.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
66.	Lose my temper.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
67.	Prefer to be alone.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
68.	Do not like poetry.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
69.	Take advantage of others.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○

70. Leave a mess in my room.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
71. Am often down in the dumps.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
72. Take control of things.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
73. Rarely notice my emotional reactions.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
74. Am indifferent to the feelings of others.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
75. Break rules.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
76. Only feel comfortable with friends.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
77. Do a lot in my spare time.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
78. Dislike changes.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
79. Insult people.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
80. Do just enough work to get by.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
81. Easily resist temptations.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○

		Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
82.	Enjoy being reckless.	○	○	○	○	○
83.	Have difficulty understanding abstract ideas.	○	○	○	○	○
84.	Have a high opinion of myself.	○	○	○	○	○
85.	Waste my time.	○	○	○	○	○
86.	Feel that I'm unable to deal with things.	○	○	○	○	○
87.	Love life.	○	○	○	○	○
88.	Tend to vote for conservative political candidates.	○	○	○	○	○
89.	Am not interested in other people's problems.	○	○	○	○	○
90.	Rush into things.	○	○	○	○	○
91.	Get stressed out easily.	○	○	○	○	○
92.	Keep others at a distance.	○	○	○	○	○
93.	Like to get lost in thought.	○	○	○	○	○

		Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
94.	Distrust people.	○	○	○	○	○
95.	Know how to get things done.	○	○	○	○	○
96.	Am not easily annoyed.	○	○	○	○	○
97.	Avoid crowds.	○	○	○	○	○
98.	Do not enjoy going to art museums.	○	○	○	○	○
99.	Obstruct others' plans.	○	○	○	○	○
100.	Leave my belongings around.	○	○	○	○	○
101.	Feel comfortable with myself.	○	○	○	○	○
102.	Wait for others to lead the way.	○	○	○	○	○
103.	Don't understand people who get emotional.	○	○	○	○	○
104.	Take no time for others.	○	○	○	○	○
105.	Break my promises.	○	○	○	○	○

106. Am not bothered by difficult social situations.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
107. Like to take it easy.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
108. Am attached to conventional ways.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
109. Get back at others.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
110. Put little time and effort into my work.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
111. Am able to control my cravings.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
112. Act wild and crazy.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
113. Am not interested in theoretical discussions.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
114. Boast about my virtues.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
115. Have difficulty starting tasks.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
116. Remain calm under pressure.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
117. Look at the bright side of life.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○

118. Believe that we should be tough on crime.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
119. Try not to think about the needy.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○
120. Act without thinking.	Very Inaccurate ○	Moderately Inaccurate ○	Neither Accurate nor Inaccurate ○	Moderately Accurate ○	Very Accurate ○

Appendix D

WHY DO YOU GO TO COLLEGE (CEGEP) ?

Using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons why you go to college (CEGEP).

Does not correspond at all	Corresponds a little	Corresponds moderately	Corresponds a lot	Corresponds exactly
1	2 3	4	5	6 7

WHY DO YOU GO TO COLLEGE (CEGEP) ?

1. Because with only a high-school degree I would not find a high-paying job later on.   1   2   3   4   5   6   7

2. Because I experience pleasure and satisfaction while learning new things.   1   2   3   4   5   6   7

3. Because I think that a college (CEGEP) education will help me

   better prepare for the career I have chosen.   1   2   3   4
5   6   7

4. For the intense feelings I experience when I am

   communicating my own ideas to others.   1   2   3   4
5   6   7

5. Honestly, I don't know; I really feel that I am wasting

   my time in school.   1   2   3   4
5   6   7

6. For the pleasure I experience while surpassing

   myself in my studies.   1   2   3   4
5   6   7

7. To prove to myself that I am capable of completing my

   college (CEGEP) degree.   1   2   3   4
5   6   7

8. In order to obtain a more prestigious job later on.   1   2   3   4
5   6   7

9. For the pleasure I experience when I discover

   new things never seen before.   1   2   3   4
5   6   7

10. Because eventually it will enable me to enter the

    job market in a field that I like.   1   2   3   4
5   6   7

11. For the pleasure that I experience when I read

    interesting authors.   1   2   3   4
5   6   7

12. I once had good reasons for going to college (CEGEP);

however, now I wonder whether I should continue.   1   2   3   4

5   6   7

13. For the pleasure that I experience while I am surpassing

myself in one of my personal accomplishments.   1   2   3   4

5   6   7

14. Because of the fact that when I succeed in college (CEGEP)

I feel important.   1   2   3   4

5   6   7

15. Because I want to have "the good life" later on.   1   2   3   4

5   6   7

---

16. For the pleasure that I experience in broadening my

knowledge about subjects which appeal to me.   1   2   3   4

5   6   7

17. Because this will help me make a better choice

regarding my career orientation.   1   2   3   4

5   6   7

18. For the pleasure that I experience when I feel completely

absorbed by what certain authors have written.   1   2   3   4

5   6   7

19. I can't see why I go to college (CEGEP) and frankly,

I couldn't care less.   1   2   3   4

5   6   7

20. For the satisfaction I feel when I am in the process of

accomplishing difficult academic activities.

1   2   3   4

5   6   7

21. To show myself that I am an intelligent person.

1   2   3   4

5   6   7

22. In order to have a better salary later on.

1   2   3   4

5   6   7

23. Because my studies allow me to continue to learn about

many things that interest me.

1   2   3   4

5   6   7

24. Because I believe that a few additional years of

education will improve my competence as a worker.

1   2   3   4

5   6   7

25. For the "high" feeling that I experience while reading

about various interesting subjects.

1   2   3   4

5   6   7

26. I don't know; I can't understand what I am

doing in school.

1   2   3   4

5   6   7

27. Because college (CEGEP) allows me to experience a

personal satisfaction in my quest for excellence

in my studies.

1   2   3   4

5   6   7

28. Because I want to show myself that I can succeed

in my studies.

1   2   3   4

5   6   7

Evidence of output

Frequency Table

Gender_num

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	96	48.2	48.2	48.2
	Female	103	51.8	51.8	100.0
	Total	199	100.0	100.0	

Age_num

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	23 +	74	37.2	37.2	37.2
	17-22	125	62.8	62.8	100.0
	Total	199	100.0	100.0	

ExamResults

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First class Honors 70-100%	46	23.1	23.1	23.1
	Second class Honors first division 1 60-69%	87	43.7	43.7	66.8
	Second class Honors second division 2 50-59%	31	15.6	15.6	82.4
	Third class Honors 3 40-49%	35	17.6	17.6	100.0
	Total	199	100.0	100.0	

DATASET ACTIVATE DataSet1.

Gender_num

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	96	48.2	48.2	48.2
	Female	103	51.8	51.8	100.0
	Total	199	100.0	100.0	

Age_num

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	23 +	74	37.2	37.2	37.2
	17-22	125	62.8	62.8	100.0
	Total	199	100.0	100.0	

ExamResults

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First class Honors 70-100%	46	23.1	23.1	23.1
	Second class Honors first division 1 60-69%	87	43.7	43.7	66.8
	Second class Honors second division 2 50-59%	31	15.6	15.6	82.4
	Third class Honors 3 40-49%	35	17.6	17.6	100.0
	Total	199	100.0	100.0	

DATASET ACTIVATE DataSet1.

Evidence of frequencies

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig
	1.073	1.039		1.032	.30
R	-.016	.011	-.111	-1.469	.14
ON_R	.029	.010	.212	3.070	.00
	.021	.012	.134	1.791	.07
NESS_R	-.053	.012	-.340	-4.551	.00
IOUSNESS_	.017	.011	.148	1.577	.11
OTIVATION	.025	.006	.303	4.013	.000
N	.022	.011	.152	1.948	.053
MOTIVATION	-.026	.005	-.391	-4.994	.000

a. ExamResults

Evidence of Beta Values

Untitled3 (2).sav

	ID	Gender	Age		FirstSemesterexamresultsaverage
1	1.0	Female	23 +	1	First class Honors 70-100%
2	2.0	Female	17-22	2	Second class Honors first division 1 60-69%
3	3.0	Male	17-22	3	Second class Honors second division 2 50-59%
4	4.0	Female	17-22	4	Third class Honors 3 40-49%
5	5.0	Male	23 +	5	First class Honors 70-100%
6	6.0	Male	17-22	6	Second class Honors second division 2 50-59%
7	7.0	Male	17-22	7	Second class Honors first division 1 60-69%
8	8.0	Male	17-22	8	Second class Honors second division 2 50-59%
9	9.0	Male	17-22	9	Second class Honors first division 1 60-69%
10	10.0	Male	17-22	10	Second class Honors first division 1 60-69%
11	11.0	Male	23 +	11	Second class Honors first division 1 60-69%
12	12.0	Male	17-22	12	First class Honors 70-100%
13	13.0	Male	23 +	13	Second class Honors first division 1 60-69%
14	14.0	Female	17-22	14	Third class Honors 3 40-49%
15	15.0	Female	17-22	15	Second class Honors first division 1 60-69%
16	16.0	Male	17-22	16	Second class Honors first division 1 60-69%
17	17.0	Female	17-22	17	Second class Honors first division 1 60-69%
18	18.0	Female	23 +	18	First class Honors 70-100%
19	19.0	Female	17-22	19	First class Honors 70-100%
20	20.0	Female	17-22	20	Second class Honors first division 1 60-69%
21	21.0	Female	17-22	21	First class Honors 70-100%
22	22.0	Male	23 +	22	Second class Honors first division 1 60-69%
23	23.0	Male	17-22	23	Second class Honors first division 1 60-69%
24	24.0	Female	23 +	24	First class Honors 70-100%
25	25.0	Female	17-22	25	First class Honors 70-100%
26	26.0	Female	17-22	26	Second class Honors second division 2 50-59%
27	27.0	Female	17-22	27	Second class Honors second division 2 50-59%
28	28.0	Female	17-22	28	Second class Honors first division 1 60-69%
29	29.0	Male	17-22	29	Second class Honors second division 2 50-59%
30	30.0	Male	23 +	30	Third class Honors 3 40-49%
31	31.0	Male	17-22	31	Second class Honors second division 2 50-59%
32	32.0	Female	23 +	32	First class Honors 70-100%
33	33.0	Female	23 +	33	First class Honors 70-100%
34	34.0	Female	17-22	34	Second class Honors first division 1 60-69%
35	35.0	Male	17-22	35	Second class Honors first division 1 60-69%
36	36.0	Female	17-22	36	Second class Honors first division 1 60-69%
37	37.0	Male	17-22	37	Second class Honors first division 1 60-69%
38	38.0	Male	23 +	38	Second class Honors first division 1 60-69%

Data of Age, gender and exam results

Age_num	ExamResults	NEUROTIC_R	EXTRAVERSION_R	OPENNES_R	AGREEABLENESS_R	CONSCIENTIOUSNESS_R
2.00	2.00	69.00	68.00	86.00	67.00	83.00
2.00	3.00	62.00	63.00	71.00	52.00	83.00
2.00	2.00	64.00	69.00	71.00	53.00	60.00
2.00	2.00	61.00	62.00	70.00	64.00	70.00
1.00	2.00	63.00	72.00	73.00	57.00	59.00
2.00	1.00	61.00	67.00	75.00	61.00	65.00
1.00	2.00	61.00	69.00	63.00	62.00	75.00
2.00	4.00	72.00	66.00	76.00	44.00	71.00
2.00	2.00	68.00	60.00	73.00	57.00	74.00
2.00	2.00	64.00	69.00	71.00	53.00	60.00
2.00	2.00	60.00	74.00	71.00	65.00	67.00
1.00	1.00	51.00	71.00	62.00	50.00	58.00
2.00	1.00	60.00	66.00	68.00	57.00	73.00
2.00	2.00	54.00	72.00	72.00	61.00	61.00
2.00	1.00	67.00	78.00	75.00	59.00	72.00
1.00	2.00	53.00	79.00	75.00	56.00	56.00
2.00	2.00	53.00	72.00	63.00	65.00	70.00
1.00	1.00	54.00	71.00	71.00	47.00	43.00
2.00	1.00	55.00	71.00	67.00	52.00	66.00
2.00	3.00	57.00	66.00	62.00	45.00	59.00
2.00	3.00	68.00	67.00	74.00	51.00	71.00
2.00	2.00	62.00	70.00	82.00	65.00	69.00
2.00	3.00	53.00	76.00	77.00	68.00	73.00
1.00	4.00	53.00	58.00	71.00	55.00	69.00
2.00	3.00	50.00	58.00	76.00	48.00	49.00
1.00	1.00	65.00	65.00	75.00	63.00	77.00
1.00	1.00	65.00	65.00	75.00	63.00	77.00
2.00	2.00	53.00	90.00	82.00	69.00	79.00
2.00	2.00	58.00	74.00	62.00	65.00	68.00

Data of Personality traits

XTRINSIC_MOTIVATION	AMOTIVATION	INTRINSIC_MOTIVATION
54.00	20.00	50.00
73.00	25.00	27.00
68.00	6.00	51.00
57.00	18.00	37.00
59.00	7.00	56.00
69.00	18.00	60.00
77.00	10.00	46.00
79.00	25.00	74.00
69.00	9.00	43.00
68.00	6.00	51.00
70.00	8.00	69.00
78.00	7.00	72.00
74.00	6.00	58.00
77.00	14.00	70.00
75.00	8.00	63.00
79.00	8.00	65.00
67.00	5.00	65.00
65.00	6.00	71.00
67.00	4.00	64.00
66.00	4.00	60.00
77.00	7.00	54.00
66.00	14.00	58.00
79.00	13.00	63.00
78.00	11.00	53.00
55.00	8.00	41.00
74.00	14.00	63.00
76.00	14.00	62.00
72.00	23.00	71.00
74.00	11.00	62.00

Data of motivational styles