



Emotional intelligence and its effect on health behaviour

Abstract

This paper shows how emotional intelligence has a positive correlation with doing well on cognitive tasks and exercising.

Erasmus University Rotterdam
Behavioural Economics
Supervisor: Han Bleichrodt
Co-reader: Chen Li
Thesis by: Jemimah Erasmus

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Introduction

People with higher emotional intelligence tend to do better in many aspects of life compared to people with lower emotional intelligence. Emotional intelligence has been shown to have strong correlations with developmental, educational, clinical, and counselling, industrial, and organizational psychology (Bar-On R. , 2001). Emotional intelligence has also been related to success and academic achievements (Parker J. D., Summerfeldt, Hogan, & Majeski, 2004) (Van der Zee, Thijs, & Schakel, 2002), work success and performance (Vakola, Tsaousis, & Nikolaou, 2004), leadership (Cooper & Sawaf, 1997), and occupational stress (Bar-On, Brown, Kirkcaldy, & Thome, 2000); (Nikolaou & Tsaousis, 2002). The higher one advances in one's career, the more important emotional intelligence becomes (Dulewicz & Higgs, 2003). In Ciarrochi, Deane, & Anderson (2002). People who scored high on emotional intelligence, cope more effectively with environmental demands and pressures. In 2005, research showed that people with higher EI levels used exercise both for interpersonal and intrapersonal reasons. Interpersonally, as these individuals exercised to socialize with other people, and intrapersonally, as they exercised to moderate their mood (Austin & Saklofske, 2005). Austin and Saklofske also show the negative correlation between peer pressure for excessive amount of alcohol consumption and individuals with high emotional intelligence levels. Furthermore, in Tsaousis & Nikolaou's (2005), the association with smoking, for example, is discussed to be negatively correlated with people who have high emotional intelligence levels.

This paper will make an empirical study to show the positive relationship between emotional intelligence and cognitive tasks. Furthermore, this paper will also show a significant positive correlation between emotional intelligence and exercising, and show what errors should be avoided when using several categories per variable to explain the data. By giving focus on training people on their emotional intelligence, people can perform better on tasks, and adopt healthier behavioural traits. Since it is possible to improve the emotional intelligence of a person, relatively more than the IQ of a person, more people could benefit of having a higher emotional intelligence, especially people with lower IQ levels.

Statement of the problem

IQ has always been one of the main indicators for success in life. However, research has shown that people who tend to have higher emotional intelligence levels tend to do better personally and professionally in their lives, compared to people who only have high IQ's (Aydin, Leblebici, Arslan, & Oktem, 2005). In a society where the world has become more globalised, and different cultures become more entangled every day, and different types of people need to communicate and work well together, understanding one's emotions, and those of others has become more crucial. Emotional intelligence can be taught, measured and developed (Dulewicz & Higgs, 1999). By doing so, one can deal with emotions successfully, such as frustration, stress, and other negative emotions. This way, people deal better with issues in life. By focussing on emotional intelligence, performance on many aspects in life can be improved.

Purpose of the study

Research shows that emotional intelligence can improve one's life in different ways. Since evidence (Piaget, 1981) suggests that mood states influence cognitive performance, one might expect those with higher emotional intelligence to do better on difficult cognitive tasks (Damasio, 1999). Furthermore, higher emotional intelligence should enable individuals to better regulate negative emotions such as frustration when dealing with difficult situations and not interfere with performance, nor resorting to drinking or smoking, and exercise more. When individuals have high emotional intelligence, they can identify and control their own emotions, and understand those of others. This same control on emotions can help focus on the positive

emotions to achieve maximum personal engagement and productivity in themselves and others (Lam & Kirby, 2002), showing that emotional intelligence adds to the improvement of one's personal and professional life. This study further supports these previous researches, where the focus lies on the positive correlations that exist between emotional intelligence and exercise, and the negative correlations with drinking and smoking. Thus, the research question of this paper. *How does emotional intelligence affect one's health behaviour?*

What is emotional intelligence?

Dating back to the 1920's, E. L. Thorndike divided intelligence into three sectors; abstract, mechanical, and social intelligence. Here, he referred social intelligence as the ability to understand and manage people. Gardner (1983) continued this research in intrapersonal and interpersonal intelligence. However, the first authors to coin the term 'emotional intelligence' were Salovey and Mayer in 1990. Emotional intelligence is a subset of Gardner's personal intelligences. Salovey and Mayer (1990) divided emotional intelligence into three categories; appraisal and expression of emotion in oneself and of others, regulation of emotion, and utilization of emotions in problem solving. The authors defined emotional intelligence as "*the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions*" (Salovey & Mayer, 1990, p. 149). To elaborate, if a person can *perceive* emotions, this person is able to recognize facial expressions, voice, and body language. If a person can use emotion to help one think, and being able to recognize when to use which suitable emotion or if it is needed in the first place, one can generate emotions to *assist thought*. As for understanding emotion, one can analyse emotion and be aware in which direction this emotion will go. Furthermore, one can also understand how these emotions work, and how it goes hand in hand with propositional thought and the growth of language. Managing emotions on the other hand, involves the remaining parts of one's personality and how this person manages emotions in a contextual form of one's goal, self-knowledge, and social awareness (Salovey & Mayer, 1990). In 1995, Goleman wrote the book 'Emotional Intelligence' which expanded the term to also include specific social and communication skills which are connected to understanding and expressing of emotions. A model created by Cooper and Sawaf (1997) divided emotional intelligence into four keystones which included, emotional literacy, emotional fitness, emotional depth, and emotional alchemy. Emotional literacy is defined as knowing one's own emotions and how they function, emotional fitness is defined as emotional hardiness and flexibility, emotional depth includes emotional intensity and potential for growth, while emotional alchemy is defined as the ability to use emotions to spark creativity. In that same year, Mayer and Salovey revised their definition of emotional intelligence, arguing it to be a real intelligence. It was defined as the capacity to reason about emotions, and of emotions to enhance thinking. Divided into four sections, it included the abilities to accurately perceive emotions, to access and generate emotions to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions to promote emotional and intellectual growth (Mayer & Salovey, What is Emotional Intelligence?, 1997). The latter being the most complex processing. Each section can cover a basic developmental progress or become a more sophisticated version of it. Emotional intelligence is also considered to make an individual become more effective in their social and personal life by improving one's emotional and social abilities competencies, and skills (Bar-On R., Tranel, Denburg, & Bechara, 2003). Lam and Kirby (2002) found that overall emotional intelligence, emotional perception, and emotional regulation uniquely explained individual cognitive-based performance over and beyond the level attributable to general intelligence. The authors explain that it is not the presence of emotions which causes problems for task performance, rather the specific emotion experienced and the interpretation and regulation of these emotions. Therefore, it is important that the cognitive system of the brain recognizes and

is aware of these negative emotions to guard against them and build on enhancing emotions which help improve individual and team performance (Lam & Kirby, 2002).

Emotional intelligence, mental and physical health

Slaski & Cartwright (2002) state that when a person has a negative connection with its environment, this leads to stress and negative emotions, pinpointing how the link exists between stress and emotional intelligence. By being capable of being aware and in control of these emotions for the person and of others, one can help reduce stress for oneself. Goldman, Kraemer, and Salovey (1996) studied 134 undergraduate students, and determined that the undergraduates who focussed on mood repair, were less likely to report illness, concluding that how one assesses mood is a crucial mediator between reporting illnesses and having symptoms and distress. When Ciarrochi et al. (2002) measured stress, emotional intelligence (both objectively and self-measured), and mental stability, the authors concluded that stress had an association with negative emotions including suicidal thoughts for people who scored high in emotional perception and those who scored low in managing others' emotions. In Tsaousis & Nikolaou's (2005) paper, emotional intelligence is also proven to be negatively associated with not only good physical and psychological health, but also gathered data showing that emotional intelligence was negatively associated with smoking and drinking, and positively associated with exercising. This shows the relationship between emotional intelligence and health functioning. Dulewicz et al. (2003) also found a correlation between physical and psychological health with emotional intelligence in a group of retail managers. Stress, distress, morale, and poor quality were measured against emotional intelligence. Parker et al. (2004) show that there is a strong association with several dimensions of emotional intelligence for students who achieved a GPA of 80% or better. These dimensions include intrapersonal, adaptability, and stress management abilities. The authors show in their study that stress management is a good predictor for academic success, and are therefore an important factor for a successful transition from high school to university, since it includes that students can manage stressful situations in a relatively calm and proactive way. People who receive a high score for stress management ability, are rarely impulsive and work well under pressure (Bar-On R., 1997). As Matthews and Zeinder accurately put it; 'adaptive coping might be conceptualized as emotional intelligence in action, supporting mastery emotions, emotional growth, and both cognitive and emotional, allowing us to evolve in an ever-changing world' (p. 460). This can be explained by a few factors. An individual might have a general way of thought that helps the individual with specific stressful situation. Aside from that, there might be specific personality traits, which play a critical role in controlling one's adaptive outcome. Emotional intelligence might be the factor between handling stress and the ability to select which traits need to be used at which time. Furthermore, a study was performed to test the general wellbeing of a group of managers and it was concluded that in general, the managers who exercised more often had a higher emotional intelligence. These managers also had better health, since these managers used to exercise to reach achievement and create a positive mind-set (Slaski & Cartwright, 2002). However, this was only a correlation, as direct causality was not established.

Lower emotional intelligence and deviant behaviour

Some studies have suggested lower emotional intelligence is related to involvement in self-destructive behaviours such as deviant behaviour, cigarette smoking, (Brackett & Mayer, 2003) (Trinidad & Johnson, 2002) and alcohol consumption (Formica, 1998). Lower emotional intelligence in males, principally the inability to perceive emotions and to use emotion to facilitate thought, was associated with negative outcomes, including illegal drug and alcohol use, deviant behaviour, and poor relations with friends (Brackett, Mayer, & Warner, 2004) (Mayer, Caruso, & Salovey, 1999). Studies have also shown that these correlations are independent from

personality and verbal intelligence (Bracket, Mayer, & Warner, 2004). Goleman (1995) hypothesized that low levels of emotional intelligence resulted in an inability to cope and manage one's emotions which contributes to the onset of substance abuse. One of the abilities one had when having a higher emotional intelligence, is the ability to manage emotions. One of these emotions studied is the effect of peer pressure on adolescents. Lower tobacco and alcohol abuse can be reduced, if adolescents are able to better detect unwanted peer pressure and overcome it. If kids are being taught and trained on their emotional intelligence, this can be achieved, and thus possibly lead to better health behaviour.

Higher emotional intelligence and 'good' behaviour

Research has also shown that emotional intelligence has been linked with positive behaviours. For example, Seipp (1991) suggests that individuals with high emotional intelligence can use buffering techniques to ensure that emotions can be segregated and controlled to maintain a good level of performance of oneself and as a team, since they are less likely to be negatively affected by fear, anxiety, and other negative emotions. Similarly, individuals with high emotional intelligence can also use positive emotions to help produce maximum engagement and productivity for themselves and for a team (Seipp, 1991). High emotional intelligence is related to self-reported parental warmth, secure attachment, in children's pro-social behaviour in school, and manager effectiveness (Mayer, Caruso, & Salovey, 1999). Stein and Book (2011), mention in their book that individuals who are highly emotional intelligent can intuitively grasp what others want and need; are aware of their own strengths and weaknesses; are able to remain unflustered by stress and are generally regarded as having good 'people skills'. Children also benefit from having a higher emotional intelligence, being considered more prosocial by their teachers and less aggressive by other children (Rubin, 1999). As for work environments, teams who scored higher on their emotional intelligence levels were rated as more effective workers by their managers (Rice, 1999). Overall, individuals who had higher emotional intelligences, coped better stress, were relatively healthier and had better performance levels.

Emotional intelligence, leadership skills, and task performance

To be a successful leader, one is believed to have a high emotional intelligence. Those leaders who can regulate their own emotions, can serve as great role models for their teams, which in turn makes the team trust their leader. Empirical studies have shown significant correlations between emotional intelligence and three aspects of transformational leadership, namely idealized influence, inspirational motivation, and individualized consideration (Barling, Slater, & Kelloway, 2000). A high correlation between emotional intelligence and all categories of transformational leadership was found. It was also advised that emotional intelligence should be tested when selecting new leaders/management (Gardner & Stough, 2002) (Palmer, Walls, Burgess, & Stough, 2001). Furthermore, Schutte et al. (2001) also analysed the correlation between emotional intelligence and cognitive tasks. By controlling for IQ, the researchers measured emotional intelligence levels of the participants, with how well they did on difficult cognitive tasks. Moreover, research has shown that combining IQ and emotional intelligence together was a better indicator for success, than measuring them separately (Dulewicz & Higgs, Emotional intelligence; a review and evaluation study, 2000). A moderate high level of emotion can also facilitate learning (McGaugh, 1990) and a pleasant emotional state can enhance problem solving abilities (Nantais & Schellenberg, 1999).

Training emotional intelligence

Much can be said about emotional intelligence, however, if it is something given and cannot be trained or developed, there is not much that can be done to improve or increase the level of emotional intelligence. It is therefore of importance to show that training emotional intelligence is achievable and can be done successfully, and can lead to an improvement in health behaviour.

There are several ways to improve emotional intelligence of individuals and by doing so, it could be used as a tool to nudge people's behaviour into finding practical ways to reduce stress and promote health (Slaski & Cartwright, 2002). Many studies have shown how emotional intelligence can be developed through training. For example, Lam and Kirby (2002) show that two opposite emotional control mechanisms will be employed, depending on the emotion being enhancing or distracting; namely buffering and personal engagement. Buffering entails controlling unwanted emotions by segregating emotions, so the task performed is not interrupted by such emotions (Ashforth & Humphrey, 1995). On the other hand, personal engagement in tasks leads to high performance in tasks (Kahn, 1990) and Goleman (1997, p. 90) also discusses that this peak performance is where 'emotions are not just contained and channelled, but positive, energized, and aligned with the task at hand'. Emotional knowledge can be improved through education and if these relations are causal, perhaps training children and adults in emotional intelligence can lead to their more adaptive behaviour. For example, it appears that infusing emotional literacy programs into existing school curricula can help increase emotional knowledge and work against the initiation and progression of harmful behaviours such as excessive alcohol consumption, illegal drug use and deviant behaviour (Brackett & Salovey, 2006). Goleman (1995) shows how emotional intelligence grows with age and seems to also be linked with maturity. Through practice and commitment emotional intelligence can be learned, developed, and improved. Furthermore women, in general, tend to have a better understanding of their emotional intelligence. Reviewed research shows that mothers communicate their feelings more to their daughters versus their sons. Additionally, mothers also tend to display a wider range of feelings to their daughter, while responding less expressively to their sons. Brody (2009) reports that when mothers communicate with their daughters, as compared to their sons, they use more vivid facial expressions. This may contribute to girls developing better skills at recognizing each other's emotions, which leads to them having a higher level of EI, compared to boys. Essentially, this shows that the level of EI a person has is explained partially through the characteristics and gender of the child, but also on how a parent communicated with the child. This can be compared with trainings in emotional intelligence. Through the training of emotional intelligence, emotional intelligence can increase, which in turn can help improve health behaviour.

Hypothesis options

From the literature and everything discussed so far, the following hypothesis was formulated.

H₁: People with higher emotional intelligence work better on cognitive tasks.

H₂: People with higher emotional intelligence behave in a healthier manner.

Measures of emotional intelligence

Ciarrochi et al. (2002) show in their paper that emotional intelligence has a distinctive construct from other personality trait measures such as the big five personality traits, making it an additional value when evaluating an individual, and not just measuring the same thing in a different way. They also discuss that emotional intelligence is statistically different from other relevant measures. A few assessments have been created to measure emotional intelligence, and even though they do not contradict each other, they tend to have slightly different perspectives on how to measure emotional intelligence. There are mainly two different concepts of emotional intelligence, and therefore also two different categories in measuring emotional intelligence. The first concept is the ability of emotional intelligence, and the second is a "mixed" emotional intelligence. The ability of emotional intelligence is defined as being able to "*engage in sophisticated information processing about one's own and others' emotions and the ability to*

use this information as a guide to thinking and behaviour" (Mayer, Salovey, & Caruso, 2008). The "mixed" emotional intelligence considers a combination of non-cognitive capabilities that leads to successful coping under difficult situations. Aside from the abilities of emotional intelligence, motivation, personality, temperament, character, and social skills are also included.

One of the best-known tests are the MSCEIT V2.0 and its predecessors (MEIS and MSCEIT), which is an ability test of emotional intelligence (Mayer, Caruso, & Salovey, 2002). The best known mixed emotional intelligence tests are the EQ-i (the Emotional Quotient Inventory), which is a self-report test of emotional intelligence (Bar-On R. , 1997), and the SSEIT (Schutte et al.'s self-report Emotional Intelligence test (Schutte, et al., 1998), another self-report test. Self-report tests are not as accurate as an ability test, where answers are either correct or incorrect. Cooper and Sawaf (1997) also had an assessment created to measure emotional intelligence; however, no information regarding its validity or reliability was presented. The EQ MAP consisted out of 250 items, which in turn is divided in 21 scales. To obtain as many responses as possible, it was decided to employ a survey using the lowest number of questions, while still providing a realistic portrayal of the respondents' level of emotional intelligence. The SSEIT scale from Schutte et al. was chosen to measure participants' emotional intelligence, based on the size of the self-report. The SSEIT scale has one of the shortest questionnaires, which makes it convenient when the individuals being asked, receive no compensation for filling it in. It has also been shown to be a valid measure of emotional intelligence by several researchers mentioned above. The SSEIT-scale and other emotional intelligence measures are explained below.

SSEIT scale

The selected measure for emotional intelligence for this paper is the SSEIT scale. The SSEIT is a short self-report scale based on Salovey and Mayer's (1990) original model of emotional intelligence. A pool of 62 items was created, which then after further analysis became a 33-item scale. The SSEIT scale was independently evaluated for clarity, readability, and the adequacy of implementation of the model. The test has a good internal consistency and test-retest variability, and has been able to predict grade point averages (GPA) of college students (Schutte, et al., 1998). Thirty of the 33 items are ranged from negative to strongly positive, whilst 3 are the other way around, where a reverse item scoring is needed for these 3 items. The SSEIT uses a self-report Likert scale test ranging from *strongly agree* to *strongly disagree*. The test measures emotional intelligence on four sub-scales: emotion perception, utilizing emotions, managing self-relevant emotions, and managing others' emotions. Each sub-test score is graded and added together to the total score for the subjects.

The Dulewicz and Higgs EIQ

The Dulewicz and Higgs EIQ started as a self-report test consisting out of 16 competencies related to emotional intelligence. Later, it was tailored into a 7 elements self-report questionnaire. The validity of this test has been examined by reviewing different books and articles from several authors and papers to ensure that the questionnaire does indeed measure emotional intelligence in a valid way. A positive, significant relationship was found between scores of emotional intelligences and scores received of mental health, and job satisfaction measures (Dulowicz, Higgs, & Slaski, 2003). For this paper, this test could not be found for use.

The MEIS, MSCEIT, and MSCEIT V2.0

Mayer, Caruso and Salovey attempted to measure emotional intelligence with the MEIS test, which was later improved into the MSCEIT, and ultimately into the MSCEIT V2.0. The MEIS was designed to measure emotional intelligence as a mental ability, where one's capacity to emotions to assist cognition is evaluated (Mayer & Salovey, 1997). This assessment is performance based and argues that emotional intelligence can successfully describe specific skills related to emotions, i.e. perceiving emotions, using emotions to facilitate thought, understanding emotions,

and managing emotions. The MSCEIT is an objective assessment as it can be answered either right or wrong. There is a correlation between existing intelligences, but the test also shows unique variance. Research has shown it to be reliable and valid as well. The MSCEIT V2.0 consists out of 141-item scale, making it a rather long test for the participants who do not have enough incentive to fill in 141 items, making it less ideal for this paper.

The EQ-i

The EQ-i is a self-report model approach to emotional intelligence. The EQ-i is a 133-item self-report measure divided into 15 different scales, measuring empathy, emotional self-awareness, stress tolerance, interpersonal relationships, social responsibility, impulse control, flexibility, happiness, optimism, assertiveness, self-regard, independence, self-actualization, problem solving, and reality testing. This assessment measures an “array of non-cognitive capabilities, competencies, and skills that influence one’s ability to succeed in coping with environmental demands and pressures” (Bar-On R. , 1997). Despite the EQ-i being a great measure for emotional intelligence, it is quite long as well to fill in, and was therefore not chosen this paper.

Experimental design

7-point Likert scale as dependent variable

In the original SSEIT scale, a five-point Likert scale was used for their research. For this thesis, a seven-point Likert scale was used as it would make the results more refined as the participants would have more options to select from. Using a 7-point scale has shown to reach the upper limits of the scale’s reliability (Nunnally, 1978), and might therefore affect the constructed validity of the SSEIT scale, since the variance per question could be bigger. However, it has been demonstrated that score from either a five-point scale of a seven-point scale are practically equivalent and thus quite unlikely that any difference might arise from this adjustment (Colman, Norris, & Preston, 1997).

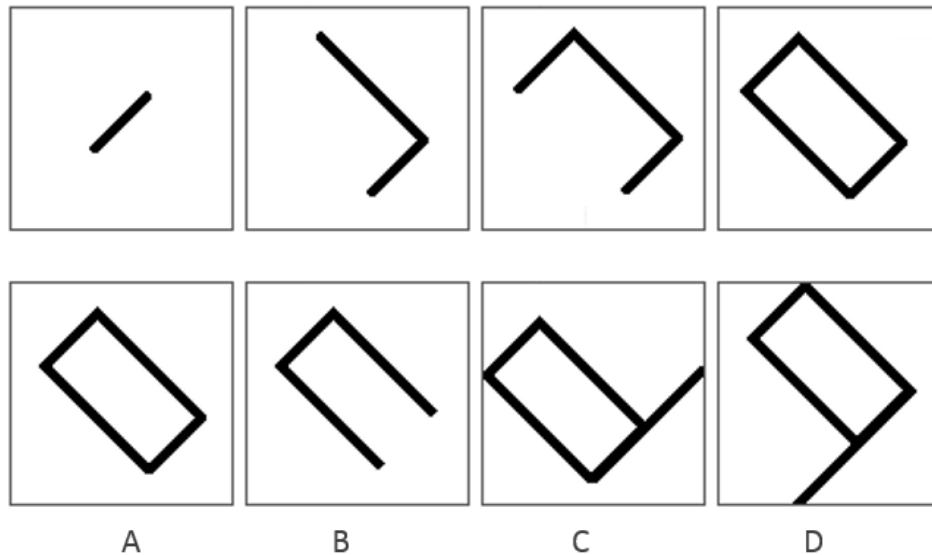
The dependent variable is a sum of 33 Likert scale ordinal variables, with 7 categories, ranging from completely disagree to completely agree. The minimum is 33 points, while the maximum score possibly obtained is 231. When the dependent variable is considered an ordinal variable, nonparametric tests should be applied, and will be tested in this paper. However, the Likert scale can also be considered as a continuous interval variable. When the data is treated as interval instead of ordinal data, it enables the possibility to use parametric tests, which in general have more power and provide more information compared to non-parametric alternatives. Furthermore, parametric tests tend to be more accurate, even when assumptions do not hold, up to an extreme degree (Norman, 2010), concluding that using parametric tests are acceptable when analysing Likert scale responses. Some researchers still do not agree with this, since you cannot prove that the difference between “*completely agree*” and “*somewhat agree*” is the same between “*completely disagree*” and “*somewhat disagree*”. However, other researchers believe that there is an underlying latent variable that is continuous, especially if more than 5 categories are present (Johnson & Creech, 1983) (Zumbo & Zimmerman, 1993). Since the SSEIT test is a combined test to describe the trait emotional intelligence, a combined score will be used as the dependent variable.

Procedure

Each surveyor filled in the 33-points measure of emotional intelligence. Each sub-test score is graded and then added together to give the total score for each individual. The 33 items of the questionnaire are the indicators of the latent variable, emotional intelligence. The participants needed to rate themselves on a seven-Likert scale which ranged from 1 = “to strongly disagree” to 7 = “strongly agree”. Next, surveyors needed to participate in an assessment test, where 7

anagrams where discussed. The participants needed to figure out what would the following block be. This test is usually used to check a candidate's abstract reasoning

Choose the most logical block.



Participants would therefore need to figure out which of the 4 blocks below would make the most logical sense. Unfortunately, there was no incentive to ensure that the participants try to get all the answers right, except for their own intrinsic motivation. Aside from this task, participants needed to fill in how many times per week they exercised, how much they drank per week, and if they either smoked, sometimes smoked, or did not smoke at all. Control variables for education, age, and gender were also asked.

Data analysis

A total of 90 participants filled in the survey which was sent over by social media. The survey could be filled in either on the participants' phones or computer. There were no missing values.

| Descriptive Statistics | | | | | |
|------------------------|----|---------|---------|--------|----------------|
| | N | Minimum | Maximum | Mean | Std. Deviation |
| Tot_EI | 90 | 91 | 165 | 127,22 | 14,655 |
| Tot_Assessment | 90 | 1 | 7 | 3,59 | 1,586 |
| Age | 90 | 19 | 31 | 25,04 | 3,270 |
| Valid N (listwise) | 90 | | | | |

To get the total score of the latent variable of emotional intelligence of every individual, the sum of all the SSEIT questions per individual will be added up, therefore creating a new variable Tot_EI per subject. The minimum was a total score of 91 and a maximum of 165 for this group, with an average of 127 points. This will be the dependent variable of this paper.

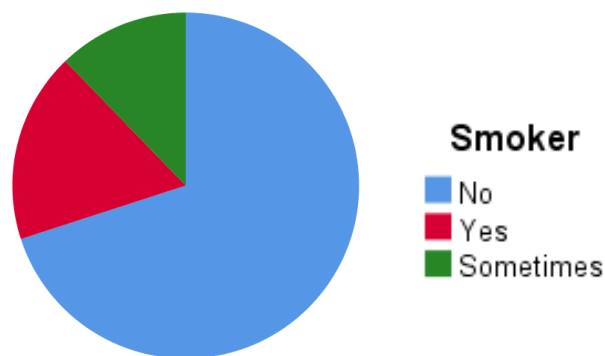
The assessment questions are added together, and a new variable is created: Tot_Assessment, where the minimum score was 0 for this sample, and a maximum of 7. The average was 3.59

correct answers. Age is a continuous variable, ranging from 19 to 31. The average age of the participants is 25 years old.

| Gender | | | | | |
|--------|--------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Female | 44 | 48,9 | 48,9 | 48,9 |
| | Male | 46 | 51,1 | 51,1 | 100,0 |
| | Total | 90 | 100,0 | 100,0 | |

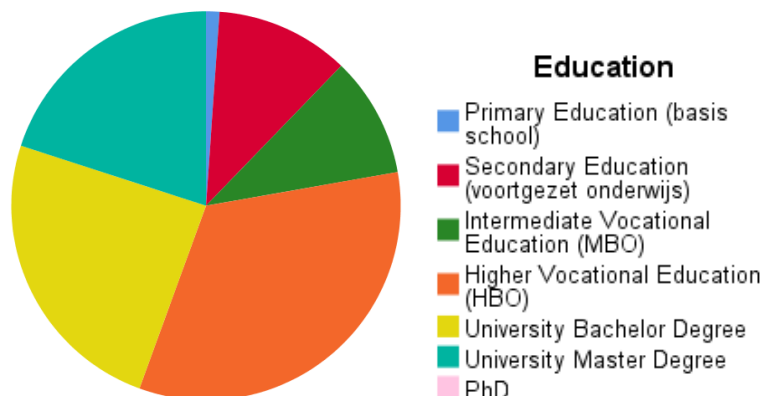
Gender is a binary variable where female is 1, and male is 2, from which 44 were females, and the remaining 46 were males, coming close to a 50/50 proportion. A dummy variable will be created for male, where female = 0 and male = 1, thus making the reference category male.

As for the variable smoking, a categorical variable of 3 different categories is used, where the majority (63 participants) were not smokers, while 11 sometimes smoked, and 16 were regular smokers. Two dummies are created for parametric testing; sometimes smoke, and another dummy variable for regular smokers, while the reference group is non-smokers.



The categorical variable Education is divided into 7 categories. For the participants' education levels, 18 had obtained a master degree, 22 had received a bachelor degree, 30 had received a higher vocational education (HBO), and the remaining had either Intermediate Vocational Education (MBO), Secondary education and one had primary education.

For parametric testing, the three categories MBO, secondary education, and primary education will be made into one category. Three dummies will be created for University Bachelor degree, HBO, and lower than HBO, while making Master degree as the reference group.



The remaining two categorical variables are Alcohol_Con and Exercise, which were divided into 6 and 4 categories, respectively. Alcohol consumption for these participants was between drinking 0 drinks per week and more than 16 drinks per week. The majority drank 1-4 drinks per week, which is used as the reference group in the parametric tests, and creating 4 dummy variables for the remaining categories, by adding the last two categories together.

| Alcohol_Con | | | | | |
|-------------|--------------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 0 | 13 | 14.4 | 14.4 | 14.4 |
| | 1-4 | 37 | 41.1 | 41.1 | 55.6 |
| | 5-8 | 15 | 16.7 | 16.7 | 72.2 |
| | 9-12 | 13 | 14.4 | 14.4 | 86.7 |
| | 13-16 | 9 | 10.0 | 10.0 | 96.7 |
| | More than 16 | 3 | 3.3 | 3.3 | 100.0 |
| | Total | 90 | 100.0 | 100.0 | |

The participants exercised on average 2 to 4 days per week, with a minimum of no exercise per week and a maximum of 5 to 7 days a week. Exercise remained as one continuous variable and no dummies were created for this variable.

| Exercise | | | | | |
|----------|----------------------------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | I don't regularly exercise | 17 | 18,9 | 18,9 | 18,9 |
| | Once a week | 27 | 30,0 | 30,0 | 48,9 |
| | 2 to 4 days a week | 39 | 43,3 | 43,3 | 92,2 |
| | 5 to 7 days a week | 7 | 7,8 | 7,8 | 100,0 |
| | Total | 90 | 100,0 | 100,0 | |

From the above-mentioned variables, the following model is obtained:

$$Tot_EI = \beta_0 + \beta_1 Tot_Assessment + \beta_2 age + \beta_3 male + \beta_4 less\ than\ HBO + \beta_5 HBO + \beta_6 MSc + \beta_7 sometimes_smo + \beta_8 reg_smo + \beta_9 alcohol_con1 + \beta_{10} alcohol_con3 + \beta_{11} alcohol_con4 + \beta_{12} alcohol_con5 + + \beta_{13} Exe + u$$

Since the SSEIT is a 33-item Likert scale variable, a test for internal consistency will be evaluated. The reliability of the questionnaire will be checked and verified for consistency by testing the Cronbach's alpha.

| Reliability Statistics | | |
|------------------------|--|------------|
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
| ,746 | ,770 | 33 |

From the table above can be seen that the Cronbach's Alpha is 0.746, which indicates a high level of internal consistency (on a scale from 0 to 1) for the emotional intelligence measure. A higher alpha is possible if some items are removed, however, it is not a very substantial difference. Despite possible higher alphas, these questions will not be removed as the alpha with all the questions included is a reasonable alpha. From the Cronbach test can be concluded that these 33 questions are measuring the same latent variable. The remaining Cronbach's Alpha test can be found in the appendix of this paper.

Nonparametric testing

The first test presented is to check if Tot_EI is normally distributed. The one-sample Kolmogorov-Smirnov test is used. The significance level is higher than 5% (20%), indicating that the null hypothesis cannot be rejected, showing that there is indeed a normal distribution for this sample.

Testing across gender shows us that there is no significant difference between genders. By using the independent-samples Mann-Whitney U test, we have a significance level of 0.622, which is higher than a 10% level, which shows us that the null-hypothesis cannot be rejected. EI levels are therefore on average not statistically different between male and female.

For the category smoking, a significance level of 0.303 is present, giving once more a higher significance level of 10%. The independent-samples Kruskal-Wallis test is used. As for the variable smoker, no significant difference can be seen between the three categories and their emotional intelligence levels.

The same conclusions can be made for the category alcohol. Using the same test as for the variable smoking. The significance level is 0.247, and thus higher than the 10% significance level. Therefore, the variable Alcohol_Con does not have any statistically significant difference between the groups when comparing their emotional intelligence levels and amount of average weekly alcohol consumption.

As for exercise, the same conclusions can be made. By using the independent-samples Kruskal-Wallis test, we can see that the significance level is 0.101, making it higher than the significance level of 10%. We therefore cannot reject the null-hypothesis, which means that there is no significant difference of emotional intelligence levels across the different categories of average weekly exercise.

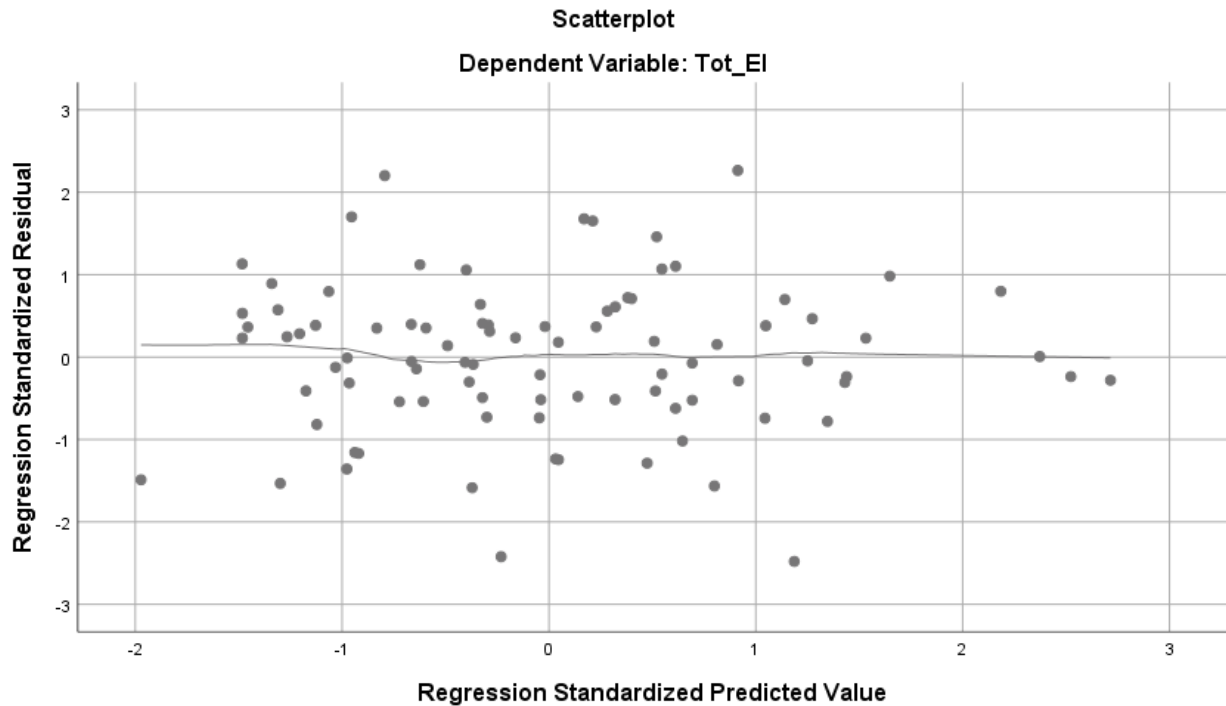
For the last parametric test, a Kruskal-Wallis test is also performed on emotional intelligence levels and the different categories of education. As the previous tests, there is no significant difference between education level with a significance level of 0.262, and thus higher than the significance level of 10%. It can be therefore concluded that there is not statistical difference between the levels of emotional intelligence levels and the different categories of education.

Assumptions

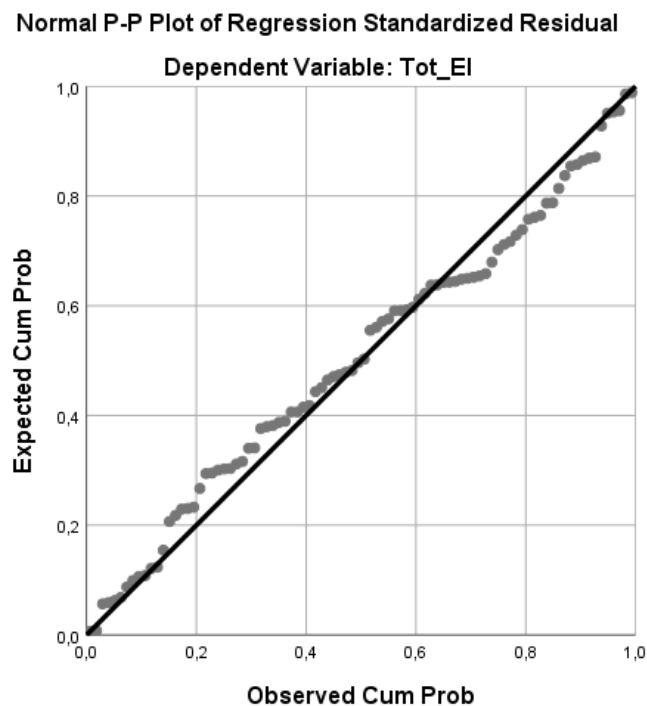
Since not much information could be gathered from non-parametric tests, the focus will next be put on parametric testing. To be able to use parametric tests, a few assumptions should hold for a classic linear regression model.

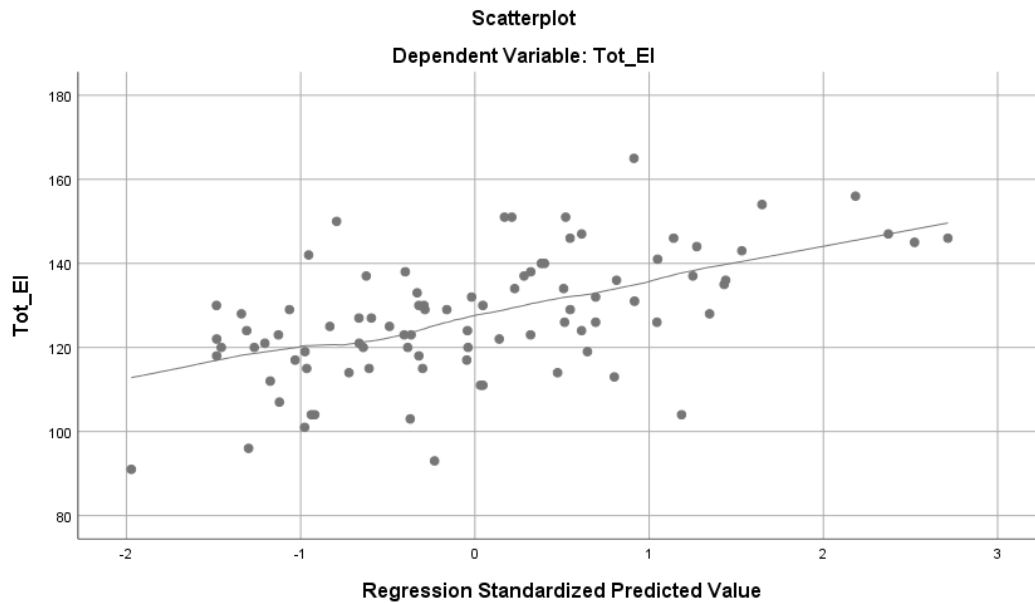
Model must be linear in the parameters

The scatterplot of the standardized predicted value with the standardized residuals is scattered randomly and roughly linear around the zero line. This assumption does hold.



Furthermore, the plot below shows linearity in the model, as the plot is used by applying ordinary least squares. The dots remain quite close to the line.





From the graph above of Regression Standardized Predicted Value on Tot_EI, one can see that there is quite some linearity.

By using the Ramsey RESET test for misspecification, non-linear combinations are tested for a better explanation of Tot_EI. By using the unstandardized predicted values, the following results were found.

| Coefficients^a | | | | | | |
|---------------------------------|----------------|-----------------------------|------------|---------------------------|-------|------|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 124,683 | 108,845 | | 1,146 | ,256 |
| | Tot_Assessment | ,389 | 1,322 | ,042 | ,294 | ,770 |
| | Age | ,145 | ,525 | ,032 | ,276 | ,783 |
| | Exercise | 1,551 | 1,915 | ,094 | ,810 | ,421 |
| | Male | -,502 | 3,108 | -,017 | -,161 | ,872 |
| | Alc1 | ,854 | 5,222 | ,021 | ,164 | ,870 |
| | Alc3 | -,871 | 4,362 | -,022 | -,200 | ,842 |
| | Alc4 | ,060 | 4,657 | ,001 | ,013 | ,990 |
| | Alc5 | ,374 | 5,235 | ,009 | ,071 | ,943 |
| | LessThanHBO | -6,139 | 15,434 | -,175 | -,398 | ,692 |
| | HBO | -2,246 | 6,857 | -,073 | -,328 | ,744 |
| | UniMSc | 3,184 | 7,433 | ,087 | ,428 | ,670 |
| | Sometimes_Smo | -1,691 | 5,118 | -,038 | -,330 | ,742 |
| | Reg_Smo | -,792 | 4,481 | -,021 | -,177 | ,860 |
| | Education | -2,649 | 5,772 | -,230 | -,459 | ,648 |
| | Ram2 | -,005 | ,018 | -,778 | -,299 | ,765 |
| Ram3 | 4,613E-5 | ,000 | 1,265 | ,491 | ,625 | |

a. Dependent Variable: Tot_EI

Ram2 is the unstandardized predicted values squared, and Ram3 is to the third power. Both variables are statistically insignificant, which indicates that these two additional powers do not improve the regression. Therefore, the model without these 2 variables is correctly specified, and the linear regression model is good and therefore meets the assumption of linear parameters.

Sample Variation and random sampling

When looking at the VIF of the multicollinearity tests, which can be found in the appendix, all VIF coefficients are smaller than 4, showing no multicollinearity between the variables. Furthermore, the higher VIF's were on the dummy variables of exercise, which has 4 categories. The variables do not have the same value, and there is no correlation between two different values of the variables. Additionally, can be seen that there is no perfect multicollinearity.

Zero conditional mean

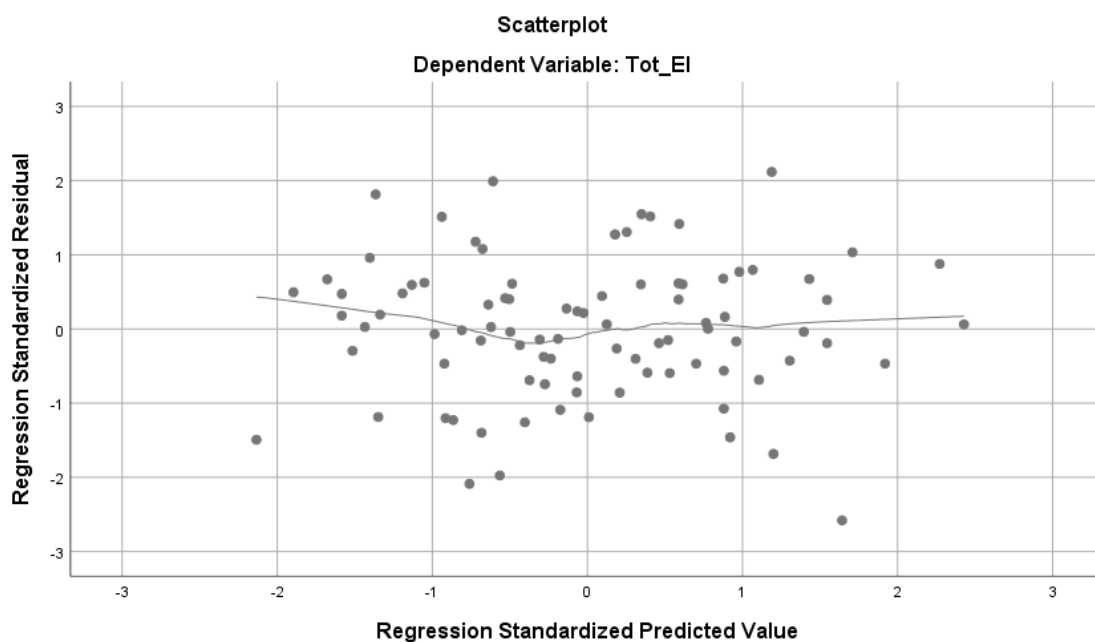
The average of this unobserved variable should be the same regardless of the independent variables. The expectation of the error, given any of the independent variables, is equal to zero as can be seen in the graph below.

| Residuals Statistics ^a | | | | | |
|-----------------------------------|---------|---------|--------|----------------|----|
| | Minimum | Maximum | Mean | Std. Deviation | N |
| Predicted Value | 111,46 | 145,15 | 127,22 | 7,385 | 90 |
| Residual | -35,346 | 29,002 | ,000 | 12,658 | 90 |
| Std. Predicted Value | -2,135 | 2,428 | ,000 | 1,000 | 90 |
| Std. Residual | -2,580 | 2,117 | ,000 | ,924 | 90 |

a. Dependent Variable: Tot_EI

Heteroscedasticity

By simply looking at the scatterplot, you can see that the dots are quite randomly scattered, showing possible constant variance of the error terms.



The Breusch Pagan test is performed and from the graph below can be seen that the p-value is bigger than 5%, which shows that the null-hypothesis of homoscedasticity cannot be rejected, indicating that there is no sign of heteroscedasticity, complying with this assumption.

| Breusch-Pagan Test for Heteroskedasticity ^{a,b,c} | | |
|--|----|------|
| Chi-Square | df | Sig. |
| ,039 | 1 | ,843 |
| a. Dependent variable: Tot_EI | | |
| b. Tests the null hypothesis that the variance of the errors does not depend on the values of the independent variables. | | |
| c. Predicted values from design: Intercept + Tot_Assessment + Exercise + Age + Male + Alc1 + Alc3 + Alc4 + Alc5 + LessThanHBO + HBO + UniMSc + Sometimes_Smo + Reg_Smo | | |

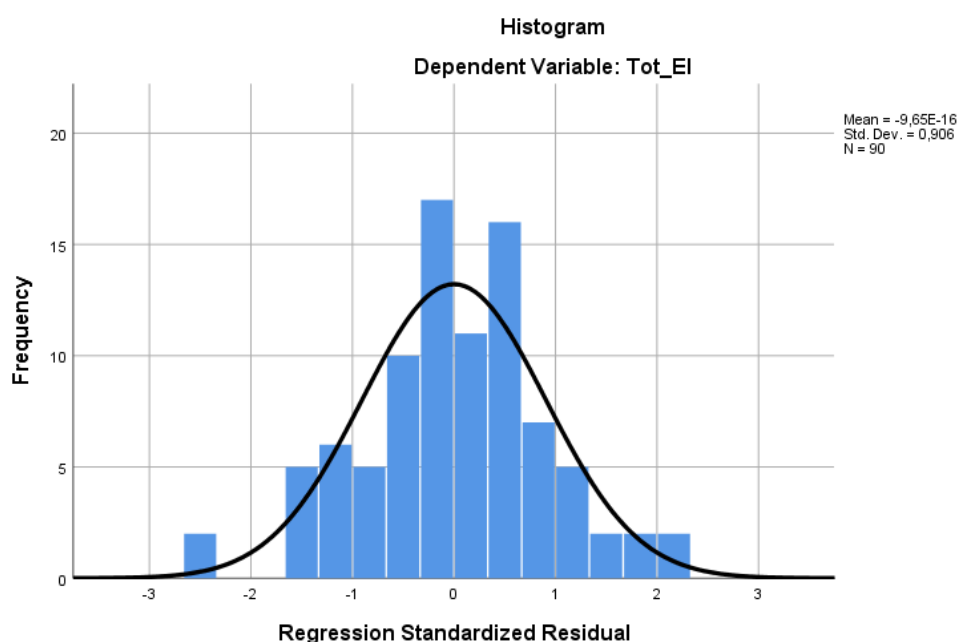
No serial correlation

The residuals should be uncorrelated. A Durbin-Watson Statistic will be performed to test this assumption. If the Durbin-Watson test is between 1.5 and 2.5, it is considered relatively normal. It can be concluded that the residuals are independent.

| Model Summary ^b | | | | | |
|--|-------------------|----------|-------------------|----------------------------|---------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
| 1 | ,504 ^a | ,254 | ,126 | 13,698 | 1,920 |
| a. Predictors: (Constant), Reg_Smo, Exercise, LessThanHBO, Alc3, Sometimes_Smo, Male, Age, Tot_Assessment, Alc1, UniMSc, Alc5, Alc4, HBO | | | | | |
| b. Dependent Variable: Tot_EI | | | | | |

Normally distributed errors

The error terms are normally distributed with zero mean and variance, and independent of the independent variables.



Additionally, as can be seen in the table below, the test of normality is also applied for the residuals.

| Tests of Normality | | | | | | |
|--|---------------------------------|----|-------|--------------|----|------|
| | Kolmogorov-Smirnov ^a | | | Shapiro-Wilk | | |
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Tot_EI | ,058 | 90 | ,200* | ,993 | 90 | ,906 |
| *. This is a lower bound of the true significance. | | | | | | |
| a. Lilliefors Significance Correction | | | | | | |

Since the p-value is higher than the 10% level, no statistically significant difference can be seen from a normal distribution, which means that this assumption is also met.

Regression

After meeting all the assumptions above, a multiple linear regression is performed.

| Coefficients ^a | | | | | | |
|---------------------------|----------------|-----------------------------|------------|---------------------------|--------|------|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 90,962 | 14,202 | | 6,405 | ,000 |
| | Tot_Assessment | 2,694 | ,977 | ,292 | 2,758 | ,007 |
| | Age | ,654 | ,486 | ,146 | 1,346 | ,182 |
| | Exercise | 3,758 | 1,712 | ,227 | 2,195 | ,031 |
| | Male | -,522 | 3,114 | -,018 | -,168 | ,867 |
| | Alc1 | 7,290 | 4,683 | ,176 | 1,557 | ,124 |
| | Alc3 | -,1298 | 4,360 | -,033 | -,298 | ,767 |
| | Alc4 | ,825 | 4,719 | ,020 | ,175 | ,862 |
| | Alc5 | 6,485 | 4,803 | ,151 | 1,350 | ,181 |
| | LessThanHBO | 4,413 | 4,421 | ,126 | ,998 | ,321 |
| | HBO | -,374 | 4,056 | -,012 | -,092 | ,927 |
| | UniMSc | 3,376 | 4,732 | ,093 | ,713 | ,478 |
| | Sometimes_Smo | -,6145 | 4,573 | -,138 | -,1344 | ,183 |
| | Reg_Smo | -,6365 | 4,014 | -,167 | -,1586 | ,117 |

From the model it can be seen that Tot_Assessment is positively correlated at a 1% significance level, indicating that on average, for every additional correct answer, the emotional intelligence of the participants increased with 2.27 points. We therefore cannot reject H₁: *People with higher emotional intelligence, work better on cognitive tasks*. This backs up the rest of the theory on emotional intelligence and cognitive tasks.

Furthermore, exercise is statistically significant at a 5% level, indicating that as the participants increased the amount of exercise per week, on average, their emotional intelligence level increased with 3.758 points. The remaining variables are not statistically significant and therefore no conclusions can be drawn from the coefficients. Since the results obtained in this

research are different from what has been shown in the past, H₂: *People with higher emotional intelligence behave in a healthier manner*, in two hypotheses.

H_{2a}: *People with higher emotional intelligence, exercise more.*

H_{2b}: *People with higher emotional intelligence, drink and smoke less.*

From the regression above, H_{2a} cannot be rejected. This backs up the theory behind emotional intelligence and exercising. H_{2b} on the other hand, is rejected.

As can be seen from the adjusted R-squared, the dependent variable is explained by 12.6% by the independent variables.

| Model Summary ^b | | | | |
|--|-------------------|----------|-------------------|----------------------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | ,504 ^a | ,254 | ,126 | 13,698 |
| a. Predictors: (Constant), Reg_Smo, Exercise, LessThanHBO, Alc3, Sometimes_Smo, Male, Age, Tot_Assessment, Alc1, UniMSc, Alc5, Alc4, HBO | | | | |
| b. Dependent Variable: Tot_EI | | | | |

Discussion

Despite of not getting all the expected outcome, some things are worth mentioning of this paper. The participants in this research did, on average, do better on cognitive task as their emotional intelligence levels increased. Based on these results alone, emotional intelligence is an additional value to a person's growth, and should be taught and developed. Since it is possible to improve the emotional intelligence of a person, relatively more than the IQ of a person, more people could benefit of having a higher emotional intelligence. For future research, it could be suggested to train emotional intelligence and see if this does indeed improve the subject's ability to work better on cognitive tasks.

As for the second hypothesis, where better health behaviour is correlated with higher levels of emotional intelligence; the hypothesis was divided into two separate ones; good and deviant health behaviour. If analysing the coefficient of the regression, the category for exercise shows that the more one exercised, the higher their emotional intelligence. Based on this result, the conclusion can be made that there is a positive correlation between the two, indicating that emotional intelligence could possibly lead to better health behaviour. That people exercise to further socialize outside of work or school and to also work on their own intrapersonal skills is a great argument on how these two variables are possibly correlated.

Regarding smoking and drinking, not much can be said about this hypothesis. This does not, however, imply that there is a negative correlation between emotional intelligence and the two variables drinking and smoking. This in turn also does not necessarily contradict previous research. The problem might lie in the power of this study, the size of the sample used. Most of the participants of this group were non-smokers, making the smokers sample quite small compared to non-smokers. For future research, a better ratio between smokers and non-smokers should be achieved, or at least have more smokers participating in the research.

As the sample might have been a little small for the 5 categories present for the drinking category, one participant's answers affect the overall results heavily and might therefore lead to a Type II error, where an effect is not found, while there might be. A bigger sample should be

considered for future research. As other things could affect the level of emotional intelligence of a person, further research can be done to test this. Furthermore, aside from having small statistical power other reasons might have affected the results. There might have been a bias due to convenience sampling; the individuals easiest to reach and willing to fill in the survey were approached, which could lead to biased results. The sample that was available were friends, colleagues, and members of one student sport's association. Furthermore, comments were also received where people believed that a certain outcome was not an acceptable form of behaviour. In the emotional intelligence test, the higher your score, the better your emotional intelligence, however, many believed that the higher the score, the more emotional you were, which might have led to some lower scores. This is a form of desirable answering. Furthermore, when filling in a survey, some people might find it discouraging to really put effort in answering the questions seriously. In hindsight, better incentives, either being monetary or non-monetary does increase response rates (Church, 1993). Furthermore, the method used was by sending the survey online, which is known to be have less response as offline surveys (Kwak & Radler, 2002).

When going back to the research question of this paper; *How does emotional intelligence affect one's health behaviour?*, the conclusion can be made that emotional intelligence does have some impact on one's health behaviour, especially when focussing on the good behaviour aspect. For the deviant side of health behaviour, no negative correlations are shown, as the results are not statistically different. Much more effort should be put in trying to obtain more participants as there were many variables that were divided into several categories, which led to some small samples, which affect the results quite heavily. However, this paper still shows some evidence of emotional intelligence having an impact on one's abilities in a positive way and should therefore not be disregarded for future policies.

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Appendix 1

The 33-item emotional intelligence scale

- (1) I know when to speak about my personal problems to others
- (2) When I am faced with obstacles, I remember times I faced similar obstacles and overcame them
- (3) I expect that I will do well on most things I try
- (4) Other people find it easy to confide in me
- (5) I find it hard to understand the non-verbal messages of other people*
- (6) Some of the major events of my life have led me to re-evaluate what is important and not important
- (7) When my mood changes, I see new possibilities
- (8) Emotions are one of the things that make my life worth living
- (9) I am aware of my emotions as I experience them
- (10) I expect good things to happen
- (11) I like to share my emotions with others
- (12) When I experience a positive emotion, I know how to make it last
- (13) I arrange events others enjoy
- (14) I seek out activities that make me happy
- (15) I am aware of the non-verbal messages I send to others
- (16) I present myself in a way that makes a good impression on others
- (17) When I am in a positive mood, solving problems is easy for me
- (18) By looking at their facial expressions, I recognize the emotions people are experiencing
- (19) I know why my emotions change
- (20) When I am in a positive mood, I am able to come up with new ideas
- (21) I have control over my emotions
- (22) I easily recognize my emotions as I experience them
- (23) I motivate myself by imagining a good outcome to tasks I take on
- (24) I compliment others when they have done something well
- (25) I am aware of the non-verbal messages other people send
- (26) When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself
- (27) When I feel a change in emotions, I tend to come up with new ideas
- (28) When I am faced with a challenge, I give up because I believe I will fail*

(29) I know what other people are feeling just by looking at them

(30) I help other people feel better when they are down

(31) I use good moods to help myself keep trying in the face of obstacles

(32) I can tell how people are feeling by listening to the tone of their voice

(33) It is difficult for me to understand why people feel the way they do*

Appendix 2

Cronbach Alpha if deleted.

| Item-Total Statistics | | | | | |
|--|----------------------------|--------------------------------|----------------------------------|------------------------------|----------------------------------|
| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
| Please fill in to what best applies to you - I know when to speak about my personal problems to others. | 123,50 | 206,949 | ,095 | ,525 | ,751 |
| Please fill in to what best applies to you - When I am faced with obstacles, I remember times I faced similar obstacles and overcame them. | 123,78 | 215,343 | -,066 | ,366 | ,760 |
| Please fill in to what best applies to you - I expect that I will do well on most things I try. | 123,23 | 207,776 | ,159 | ,474 | ,745 |
| Please fill in to what best applies to you - Other people find it easy to confide in me. | 123,58 | 209,685 | ,089 | ,392 | ,748 |
| Please fill in to what best applies to you - I find it hard to understand the non-verbal messages of other people. | 122,31 | 222,037 | -,198 | ,437 | ,771 |
| Please fill in to what best applies to you - Some of the major events of my life have led me to re-evaluate what is important and what is not. | 122,51 | 205,264 | ,216 | ,410 | ,742 |
| Please fill in to what best applies to you - When my mood changes, I see new possibilities. | 122,92 | 208,455 | ,164 | ,475 | ,744 |
| Please fill in to what best | 122,81 | 198,986 | ,398 | ,517 | ,733 |

| | | | | | |
|---|--------|---------|------|------|------|
| applies to you - Emotions are one of the things that make my life worth living. | | | | | |
| Please fill in to what best applies to you - I am aware of my emotions as I am feeling them. | 123,27 | 205,703 | ,272 | ,466 | ,740 |
| Please fill in to what best applies to you - I expect good things to happen. | 123,30 | 208,729 | ,190 | ,325 | ,743 |
| Please fill in to what best applies to you - I like to share my emotions with others. | 123,02 | 200,831 | ,332 | ,502 | ,736 |
| Please fill in to what best applies to you - When I experience a positive emotion, I know how to make it last. | 124,01 | 203,337 | ,169 | ,485 | ,746 |
| Please fill in to what best applies to you - I arrange events others enjoy. | 123,60 | 196,333 | ,451 | ,524 | ,729 |
| Please fill in to what best applies to you - I seek out activities that make me happy. | 123,11 | 197,066 | ,445 | ,655 | ,730 |
| Please fill in to what best applies to you - I am aware of the non-verbal messages I send to others. | 124,11 | 209,066 | ,105 | ,411 | ,748 |
| Please fill in to what best applies to you - I present myself in a way that makes a good impression on others . | 123,33 | 197,124 | ,436 | ,568 | ,730 |
| Please fill in to what best applies to you - When I am in a positive mood, solving problems is easy for me. | 123,11 | 193,943 | ,540 | ,733 | ,725 |
| Please fill in to what best applies to you - By looking at their facial expressions, I recognize the emotions | 123,14 | 193,159 | ,555 | ,631 | ,724 |

| | | | | | |
|--|--------|---------|-------|------|------|
| people are experiencing. | | | | | |
| Please fill in to what best applies to you - I know why my emotions change. | 124,22 | 198,871 | ,356 | ,585 | ,734 |
| Please fill in to what best applies to you - When I am in a positive mood, I am able to come up with new ideas. | 123,39 | 198,488 | ,489 | ,700 | ,730 |
| Please fill in to what best applies to you - I have control over my emotions. | 123,67 | 197,146 | ,329 | ,448 | ,735 |
| Please fill in to what best applies to you - I easily recognize my emotions as I experience them. | 124,39 | 205,184 | ,204 | ,457 | ,743 |
| Please fill in to what best applies to you - I motivate myself by imagining a good outcome to tasks I take on. | 124,40 | 197,883 | ,355 | ,454 | ,734 |
| Please fill in to what best applies to you - I compliment others when they have done something well. | 123,51 | 197,309 | ,454 | ,688 | ,730 |
| Please fill in to what best applies to you - I am aware of the non-verbal messages other people send. | 123,46 | 198,678 | ,484 | ,577 | ,730 |
| Please fill in to what best applies to you - When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself. | 123,24 | 201,535 | ,265 | ,450 | ,739 |
| Please fill in to what best applies to you - When I feel a change in emotions, I tend to come up with new ideas. | 123,18 | 196,417 | ,451 | ,599 | ,729 |
| Please fill in to what best applies to you - When I am | 121,49 | 220,320 | -,187 | ,447 | ,762 |

| | | | | | |
|---|--------|---------|-------|------|------|
| faced with a challenge, I give up because I believe I will fail. | | | | | |
| Please fill in to what best applies to you - I know what other people are feeling just by looking at them. | 123,70 | 207,920 | ,114 | ,583 | ,748 |
| Please fill in to what best applies to you - I help other people feel better when they are down. | 123,53 | 203,645 | ,313 | ,530 | ,738 |
| Please fill in to what best applies to you - I use good moods to help myself keep trying in the face of obstacles. | 123,41 | 203,481 | ,321 | ,498 | ,737 |
| Please fill in to what best applies to you - I can tell how people are feeling by listening to the tone of their voice. | 124,28 | 196,900 | ,450 | ,633 | ,730 |
| Please fill in to what best applies to you - It is difficult for me to understand why people feel the way they do. | 122,59 | 213,323 | -,018 | ,469 | ,756 |

Appendix

| Coefficients ^a | | | |
|---------------------------|----------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | Tot_Assessment | ,740 | 1,351 |
| | Age | ,632 | 1,582 |
| | Male | ,871 | 1,148 |
| | less_than_HBO | ,599 | 1,669 |
| | HBO | ,555 | 1,803 |
| | MSc | ,564 | 1,772 |
| | Sometimes_Smo | ,883 | 1,132 |
| | Reg_Smo | ,844 | 1,185 |
| | Alcohol_Con1 | ,755 | 1,324 |

| | | | |
|-------------------------------|--------------|------|-------|
| | Alcohol_Con4 | ,735 | 1,361 |
| | Alcohol_Con3 | ,848 | 1,180 |
| | Exer0 | ,361 | 2,768 |
| | Exer1 | ,415 | 2,407 |
| | Exer3 | ,336 | 2,972 |
| a. Dependent Variable: Tot_EI | | | |

| Coefficients ^a | | | |
|---------------------------------------|---------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | Age | ,548 | 1,826 |
| | Male | ,867 | 1,153 |
| | less_than_HBO | ,619 | 1,615 |
| | HBO | ,556 | 1,797 |
| | MSc | ,564 | 1,772 |
| | Sometimes_Smo | ,886 | 1,128 |
| | Reg_Smo | ,843 | 1,186 |
| | Alcohol_Con1 | ,783 | 1,278 |
| | Alcohol_Con4 | ,765 | 1,307 |
| | Alcohol_Con3 | ,846 | 1,182 |
| | Exer0 | ,278 | 3,595 |
| | Exer1 | ,367 | 2,725 |
| | Exer3 | ,316 | 3,168 |
| | Tot_EI | ,656 | 1,525 |
| a. Dependent Variable: Tot_Assessment | | | |

| Coefficients ^a | | | |
|---------------------------|---------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | Male | ,867 | 1,153 |
| | less_than_HBO | ,596 | 1,677 |
| | HBO | ,555 | 1,803 |
| | MSc | ,607 | 1,647 |
| | Sometimes_Smo | ,882 | 1,133 |
| | Reg_Smo | ,838 | 1,193 |
| | Alcohol_Con1 | ,766 | 1,305 |
| | Alcohol_Con4 | ,738 | 1,355 |
| | Alcohol_Con3 | ,837 | 1,195 |
| | Exer0 | ,394 | 2,538 |
| | Exer1 | ,461 | 2,171 |
| | Exer3 | ,345 | 2,899 |
| | Tot_EI | ,745 | 1,343 |

| | | | |
|----------------------------|----------------|------|-------|
| | Tot_Assessment | ,728 | 1,373 |
| a. Dependent Variable: Age | | | |

| Coefficients ^a | | | |
|-----------------------------|----------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | less_than_HBO | ,597 | 1,676 |
| | HBO | ,555 | 1,801 |
| | MSc | ,566 | 1,767 |
| | Sometimes_Smo | ,882 | 1,134 |
| | Reg_Smo | ,833 | 1,200 |
| | Alcohol_Con1 | ,753 | 1,328 |
| | Alcohol_Con4 | ,785 | 1,274 |
| | Alcohol_Con3 | ,844 | 1,185 |
| | Exer0 | ,271 | 3,685 |
| | Exer1 | ,360 | 2,779 |
| | Exer3 | ,315 | 3,172 |
| | Tot_EI | ,612 | 1,634 |
| | Tot_Assessment | ,688 | 1,455 |
| | Age | ,517 | 1,935 |
| a. Dependent Variable: Male | | | |

| Coefficients ^a | | | |
|--------------------------------------|----------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | HBO | ,779 | 1,283 |
| | MSc | ,690 | 1,449 |
| | Sometimes_Smo | ,886 | 1,129 |
| | Reg_Smo | ,830 | 1,205 |
| | Alcohol_Con1 | ,765 | 1,308 |
| | Alcohol_Con4 | ,742 | 1,348 |
| | Alcohol_Con3 | ,845 | 1,183 |
| | Exer0 | ,276 | 3,627 |
| | Exer1 | ,359 | 2,782 |
| | Exer3 | ,318 | 3,145 |
| | Tot_EI | ,613 | 1,632 |
| | Tot_Assessment | ,715 | 1,399 |
| | Age | ,518 | 1,932 |
| | Male | ,869 | 1,151 |
| a. Dependent Variable: less_than_HBO | | | |

| Coefficients ^a | | | |
|---------------------------|--|--|--|
|---------------------------|--|--|--|

| Model | | Collinearity Statistics | |
|----------------------------|----------------|-------------------------|-------|
| | | Tolerance | VIF |
| 1 | MSc | ,768 | 1,302 |
| | Sometimes_Smo | ,882 | 1,133 |
| | Reg_Smo | ,841 | 1,189 |
| | Alcohol_Con1 | ,771 | 1,297 |
| | Alcohol_Con4 | ,739 | 1,353 |
| | Alcohol_Con3 | ,845 | 1,184 |
| | Exer0 | ,277 | 3,615 |
| | Exer1 | ,370 | 2,700 |
| | Exer3 | ,324 | 3,088 |
| | Tot_EI | ,609 | 1,642 |
| | Tot_Assessment | ,690 | 1,450 |
| | Age | ,517 | 1,934 |
| | Male | ,869 | 1,151 |
| | less_than_HBO | ,837 | 1,195 |
| a. Dependent Variable: HBO | | | |

| Coefficients ^a | | | |
|----------------------------|----------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | Sometimes_Smo | ,883 | 1,132 |
| | Reg_Smo | ,849 | 1,178 |
| | Alcohol_Con1 | ,761 | 1,315 |
| | Alcohol_Con4 | ,735 | 1,361 |
| | Alcohol_Con3 | ,845 | 1,183 |
| | Exer0 | ,274 | 3,656 |
| | Exer1 | ,360 | 2,774 |
| | Exer3 | ,315 | 3,171 |
| | Tot_EI | ,609 | 1,642 |
| | Tot_Assessment | ,687 | 1,455 |
| | Age | ,556 | 1,799 |
| | Male | ,869 | 1,151 |
| | less_than_HBO | ,728 | 1,373 |
| | HBO | ,754 | 1,326 |
| a. Dependent Variable: MSc | | | |

| Coefficients ^a | | | |
|---------------------------|---------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | Reg_Smo | ,864 | 1,157 |

| | | | |
|--------------------------------------|----------------|------|-------|
| | Alcohol_Con1 | ,751 | 1,331 |
| | Alcohol_Con4 | ,741 | 1,349 |
| | Alcohol_Con3 | ,839 | 1,192 |
| | Exer0 | ,271 | 3,688 |
| | Exer1 | ,359 | 2,783 |
| | Exer3 | ,320 | 3,129 |
| | Tot_EI | ,610 | 1,640 |
| | Tot_Assessment | ,691 | 1,448 |
| | Age | ,517 | 1,934 |
| | Male | ,867 | 1,153 |
| | less_than_HBO | ,598 | 1,672 |
| | HBO | ,555 | 1,803 |
| | MSc | ,565 | 1,769 |
| a. Dependent Variable: Sometimes_Smo | | | |

| Coefficients ^a | | | |
|--------------------------------|----------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | Alcohol_Con1 | ,748 | 1,336 |
| | Alcohol_Con4 | ,739 | 1,352 |
| | Alcohol_Con3 | ,836 | 1,196 |
| | Exer0 | ,272 | 3,682 |
| | Exer1 | ,367 | 2,722 |
| | Exer3 | ,323 | 3,094 |
| | Tot_EI | ,619 | 1,615 |
| | Tot_Assessment | ,699 | 1,431 |
| | Age | ,522 | 1,915 |
| | Male | ,871 | 1,149 |
| | less_than_HBO | ,596 | 1,679 |
| | HBO | ,562 | 1,780 |
| | MSc | ,577 | 1,732 |
| | Sometimes_Smo | ,918 | 1,089 |
| a. Dependent Variable: Reg_Smo | | | |

| Coefficients ^a | | | |
|---------------------------|--------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | Alcohol_Con4 | ,751 | 1,332 |
| | Alcohol_Con3 | ,871 | 1,147 |
| | Exer0 | ,271 | 3,688 |
| | Exer1 | ,365 | 2,739 |
| | Exer3 | ,316 | 3,167 |

| | | | |
|--|----------------|------|-------|
| | Tot_EI | ,615 | 1,625 |
| | Tot_Assessment | ,720 | 1,389 |
| | Age | ,530 | 1,887 |
| | Male | ,874 | 1,144 |
| | less_than_HBO | ,609 | 1,641 |
| | HBO | ,572 | 1,748 |
| | MSc | ,575 | 1,740 |
| | Sometimes_Smo | ,887 | 1,128 |
| | Reg_Smo | ,831 | 1,203 |

a. Dependent Variable: Alcohol_Con1

| Coefficients ^a | | | |
|---------------------------|----------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | Alcohol_Con4 | ,768 | 1,302 |
| | Exer0 | ,271 | 3,691 |
| | Exer1 | ,360 | 2,778 |
| | Exer3 | ,318 | 3,146 |
| | Tot_EI | ,618 | 1,619 |
| | Tot_Assessment | ,696 | 1,437 |
| | Age | ,517 | 1,932 |
| | Male | ,875 | 1,142 |
| | less_than_HBO | ,602 | 1,661 |
| | HBO | ,560 | 1,785 |
| | MSc | ,571 | 1,752 |
| | Sometimes_Smo | ,885 | 1,130 |
| | Reg_Smo | ,830 | 1,204 |
| | Alcohol_Con1 | ,779 | 1,283 |

a. Dependent Variable: Alcohol_Con3

| Coefficients ^a | | | |
|---------------------------|----------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | Exer0 | ,278 | 3,599 |
| | Exer1 | ,361 | 2,773 |
| | Exer3 | ,327 | 3,055 |
| | Tot_EI | ,609 | 1,642 |
| | Tot_Assessment | ,716 | 1,396 |
| | Age | ,519 | 1,925 |
| | Male | ,926 | 1,080 |
| | less_than_HBO | ,601 | 1,663 |
| | HBO | ,558 | 1,793 |

| | | | |
|-------------------------------------|---------------|------|-------|
| | MSc | ,565 | 1,771 |
| | Sometimes_Smo | ,890 | 1,124 |
| | Reg_Smo | ,835 | 1,197 |
| | Alcohol_Con1 | ,764 | 1,309 |
| | Alcohol_Con3 | ,874 | 1,144 |
| a. Dependent Variable: Alcohol_Con4 | | | |

| Coefficients ^a | | | |
|------------------------------|----------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | Exer1 | ,684 | 1,463 |
| | Exer3 | ,637 | 1,571 |
| | Tot_EI | ,812 | 1,231 |
| | Tot_Assessment | ,706 | 1,417 |
| | Age | ,752 | 1,330 |
| | Male | ,869 | 1,151 |
| | less_than_HBO | ,606 | 1,650 |
| | HBO | ,566 | 1,766 |
| | MSc | ,570 | 1,755 |
| | Sometimes_Smo | ,883 | 1,133 |
| | Reg_Smo | ,832 | 1,202 |
| | Alcohol_Con1 | ,748 | 1,337 |
| | Alcohol_Con3 | ,836 | 1,196 |
| | Alcohol_Con4 | ,754 | 1,327 |
| a. Dependent Variable: Exer0 | | | |

| Coefficients ^a | | | |
|---------------------------|----------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | Exer3 | ,642 | 1,558 |
| | Tot_EI | ,704 | 1,420 |
| | Tot_Assessment | ,702 | 1,424 |
| | Age | ,663 | 1,509 |
| | Male | ,869 | 1,151 |
| | less_than_HBO | ,596 | 1,678 |
| | HBO | ,572 | 1,749 |
| | MSc | ,566 | 1,765 |
| | Sometimes_Smo | ,882 | 1,134 |
| | Reg_Smo | ,849 | 1,178 |
| | Alcohol_Con1 | ,760 | 1,317 |
| | Alcohol_Con3 | ,838 | 1,194 |
| | Alcohol_Con4 | ,738 | 1,356 |

| | | | |
|------------------------------|-------|------|-------|
| | Exer0 | ,516 | 1,939 |
| a. Dependent Variable: Exer1 | | | |

| Coefficients ^a | | | |
|------------------------------|----------------|-------------------------|-------|
| Model | | Collinearity Statistics | |
| | | Tolerance | VIF |
| 1 | Tot_EI | ,650 | 1,538 |
| | Tot_Assessment | ,689 | 1,452 |
| | Age | ,566 | 1,767 |
| | Male | ,867 | 1,153 |
| | less_than_HBO | ,601 | 1,665 |
| | HBO | ,570 | 1,755 |
| | MSc | ,565 | 1,771 |
| | Sometimes_Smo | ,894 | 1,118 |
| | Reg_Smo | ,851 | 1,175 |
| | Alcohol_Con1 | ,749 | 1,336 |
| | Alcohol_Con3 | ,843 | 1,186 |
| | Alcohol_Con4 | ,763 | 1,311 |
| | Exer0 | ,547 | 1,827 |
| | Exer1 | ,732 | 1,367 |
| a. Dependent Variable: Exer3 | | | |