

# RIGHT MATCH: PERSONALITY RELATED COMPETITIVE ATTITUDE

## A SAMPLE FROM THE NETHERLANDS LABOR MARKET

### Abstract

Not everyone gives the same answer to the question of how much they enjoy competition. When matching someone with a job requiring strong competitive attitude, analyzing his personality can be a good starting point. By using data obtained from a real working environment, this paper can provide readers a clear understanding of the relationship between one's personality and competitive attitude. Results demonstrate that of these five personality dimensions, extraversion and conscientiousness show strong positive relationship with one's competitive attitude. Agreeableness and neuroticism, on the contrary, have negatively associated with one's attitude towards competition. Openness, however, has no clear relationship with one's competitive attitude. Further, the impact of age, gender and education has also been tested in this paper. Males, on average, show stronger preference to competition than females. And education also casts a significantly positive impact. However, age fails to reflect a clear relationship.

**Keywords:** Big-Five personality, competitive attitude, gender and education

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## 1 Introduction

During a recruiting process, one's personality type is one of the most important factors to be taken into consideration besides actual capabilities. For some certain type of jobs, an individual's competitive attitude plays a crucial role for the success of these jobs. Sales and commercial jobs for example are highly recognized by competitive working environment.

Some individuals have very strong competitive attitude and treat the experience of dealing with competitive situations and overcoming obstacles as a source of satisfaction. These individuals may perform better when they are placed in a working environment which has the clear requirement of strong competitive attitude. However, it seems that not everyone feels really comfortable working in a highly competitive environment. Others can perform much better when they feel relaxed and do not have to rush into competition with their colleagues. In this case, competition can create prolonged stress for some people and even lead to depression in a long term. Being exposed too long under competition can even lead to "burnout" for these people. ( Mslach, Schaufeli, Leiter 2001 ) reported in their study that the mismatch of workload can exhaust an individual's energy to the extent that recovery becomes impossible. Moreover, they pointed that this mismatch can result from mismatch of work, which may lead to burnout as response to overwhelming stress. "A mismatch of employees' desires and the organization's ability to meet such desires can lead to job dissatisfaction and possibly turnover" ( Beutell & Brenner, 1986 ). Undoubtedly, competition can become a big source of stress for some individuals. Even if individuals face situations which are not as extreme as burnout, stress has considerable negative impact on individuals' job performance and commitment to their job.

Standing on the other side of the job market, recruiters and HR interviewers play an important role of matching talent with right jobs. When making the decision whether or not hiring someone, it is true that recruiters can directly assess the competitiveness of a potential employee during an interview. However an individual who is competitive in his profession does not mean that he also wants his job to be surrounded by competition. Therefore, a more accurate assessment of someone's competitive attitude plays a very important role in the matching process between a employer and a employee. Moreover, as interviews are limited by duration ( mostly around 1 hour ) and questions ( partly the same questions everywhere ), a more accurate assessment of competitive attitude becomes difficult in this situation. Firstly, a recruiter can only design limited questions to elicit the quality of a potential employee within limited time. And within the limited number of questions, a recruiter has to assess many sides of a interviewee. Therefore, competitive attitude might drag a little or no attention. Moreover, because an individual in most situation stick with certain type of job which is or close to his own profession, after attending some interviews, he will learn the tricks from his experience. This behavior will direct him to speak what a recruiter expects to hear during an interview. Thus, this behavior sometimes can lead recruiters to make wrong conclusions. ( Arvey & Campion 1982 ) mentioned in their study that some applicant characteristics such as age, sex and experience and training as interviewee may have significant influence on the perception of the interviewer and the outcome of the interview. Thus, during an interview a more accurate judgment about an interviewee is crucial for a recruiter to match the interviewee with a more suited job position. Besides what have been mentioned here, many other factors such as individual differences may cast influence on the decision process of recruiting. Therefore, a quick access to a more accurate judgment of an individual's potential ability such as competitive attitude, a very impotent quality for some jobs, has been called in need.

Although, judging someone's potential competitive attitude in a short time period is not easy in every situation, there are some indicators, such as personality, age and sex, can give recruiters some clear starting points. In some extent an individual's competitive attitude may be related with his personality. Some type of personalities may have stronger competitive attitude than others. This speculation is also the main research purpose of this paper.

Personality as a very important indicator of potential job performance has been studied by numerous researchers over the past decades. A well-established personality description is the Big Five model of personality. ( Barrick & Mount, 1996 ) investigated that the relation of the Big Five personality dimensions to three job performance criteria for five occupational groups. And they found that of the five personality dimensions, conscientiousness showed consistent relations with all job performance criteria for all occupational groups. For the other four personality dimensions, the estimated true score correlations varied by occupational group and criterion type. However, some may still argue that through personality test, recruiters might not be able to fully judge someone's actual ability and the real job performance. Understanding someone's personality, however, can give recruiters a clue how someone may react under different situations, which is important for making the decision whether or not hiring a potential employee, especially for jobs with special requirements. As already studied by psychologists and economists, each one of these five personality dimensions is characterized by very different psychological response to different situations including decision-making and problem-solving. And different personalities develop very different strategies, tactics, skills and processes in their learning and studying situation ( Abouserie, 1995 ). Therefore, it is possible that taking competitive attitude as an example, there might be an order relationship among these five personality dimensions. For example, extraverted individuals on average may

have stronger competitive attitude than agreeableness individuals.

The next question of course arising from an inevitable factor: gender. It is highly possible when male and female share the same type of personality, they still act very different when facing different situations. Some researches have documented that women often respond less favorably to competition than men ( Shwalb, 1985, Ahlgren & Johnson, 1979 ). This sex difference may result from many factors such as attitude towards work and family, psychological response to competition and values towards money and promotion, etc. Moreover, when dealing with one's competitive attitude, there is also no doubt that age and education can also be essential factors to shape someone's personality and competitive attitude which related with it.

This paper will contribute to the understanding of the relationship between individuals' competitive attitude and personality. Therefore, above reasons form the interesting interactions of competitive attitude with personality, age, gender and education. To the best of my knowledge , there exists no research trying to find out which personality types are possibly associated with stronger competitive attitude. To be more specific, there exists no research works over how competitive attitude differs in personality, gender, education and age. This paper will shed interesting light on this research gap.

The remaining paper is organized as follow. Section 2 contains literature that presents the results of previous studies. Section 3 explains hypothesis and methodology. Section 4 will contain data description and regression results, respectively. And then section 5 concludes.

## 2 Literature Review

### 2.1 Personality difference in competitive attitude

Looking back the research history about competitiveness, attitude towards competition drag lots of attention. However, not very much is known yet about the exact relationship between competitive attitude and personality. One very relevant study is from ( Kaur, 2013 ) who studied whether or not students with high and low achievement motivation differed from each other in personality? He investigated a total number of 559 university students and found that both sexes with high achievement motivation and those having low achievement motivation differed significantly on their score on extraversion and conscientiousness. For students who are extraverted, the author concluded that extraverts are active, ambitious, hard-working and competitive-oriented. All these personality advantages facilitated extraverted students to have higher score on achievement and competitive motivation. This interesting finding revels the possibility of the existence of the connection between one's personality type and competitive attitude.

After understanding how influential of one's personality can be, matching one's personality type with suited job stands out in the question line. In their study about personality as predictor of educational streaming and achievement, ( Fruyt & Mervielde, 1996 ) investigated 934 dutch/ Flemish students to access individual difference among study majors and to predict academic achievement. They pointed out that students enrolled in sales-oriented majors were more surgent, more achievement striving, and more competitive. physicists are more introverted, cautious, controlled, inhibited, careful and unsociable. They concluded, just as convincingly, that "with respect to the Big Five dimensions, some personality traits might be more suited for one

academic major and that other traits are more suited for another major”. Their findings not only support that the importance of matching a job with the right personality type, but also indicates that individuals’ competitive attitude is related with their personality type. This conclusion is supported by ( Siegel & Shaugnessy, 1992 ). They also demonstrated that personality plays a very important role in academic success in both general and specific disciplines. Moreover, They indicated that “the underachievement of some able students may results from deficient in their personality, such as low competitive and achievement motivation”. More support can be found in ( Jackson & Corr, 1997 ). They demonstrated that “For sales performance, extraversion is significantly correlated with better sales performance. And high achievement-oriented, competitive and energetic personality contribute to a better performance in sales jobs”

To understand how different one’s competitiveness can be and how it can influence one’s work, ( Spence & Helmreich, 1983 ) provides a clear description. “ Education, ability, social background, and opportunity makes important contributions to success; but even among individuals who are similar in all those respects, wild difference in accomplishments may still be observed. If we are to understand what makes some people more successful than others, we must take into account the intensity and the nature of their competitive and achievement-related motives” .

In the process of understanding personality related competitive attitude, a different term “hypercompetitiveness” has been defined by ( Karen Horney, 1937 ). In her study of neurosis, She described hypercompetitiveness which is highly related with personality neuroticism as “an indiscriminate need to compete and win at any cost as a means of maintaining or

enhancing feelings of self-worth". Although in her study, she treated hypercompetitiveness as one of the inborn symptoms of neurotic individuals, her study provides support to the hidden relationship between one's personality type and competitive attitude. Therefore, it is not odd to expand her study to a wider level that individuals' competitive attitude may differ with personality types.

A stronger evidence for the relation between personality and competitive attitude can be found in ( Lynn & Martin, 1994 ). They explained the national difference in work ethic and competitiveness with three personality dimensions. They indicated that their results can be reasonably interpreted as indicating the presence of differing values of the three personality dimensions ( extraversion, neuroticism and psychotism ) in work values like competitiveness. Although the personality description in their study differs from the one in this paper, their results rise my confidence of heading to an interesting conclusion.

The focal point of this paper is to test the difference in competitive attitude among working individuals. Each personality dimension may endow or develop individuals with different reactions, thoughts and needs towards competition. And this difference may reflect in work. This perspective is supported by ( Kirkcaldy, Furnham & Lynn, 1992 ). In their study, 309 Germans were tested for individual difference and work attitude. The conclusion they draw from their study as follow: "personality variables play a significant role in work-related competitive attitudes. Psychotism was negatively correlated with achievement motivation, competitiveness and achievement through conformity. Neuroticism was significantly negatively correlated with achievement motivation". Support for this conclusion can be found in ( Ross, Rausch & Canada, 2003 ). They also demonstrated that agreeableness was negatively related to competition, extraversion is positively related to personal development competition and competition is not at all correlated with the factor of conscientiousness. It is not difficult to

notice that most empirical studies confirm that the connection between personality type and competitiveness. However, it is surprising that there have been few studies attempting to explore personality difference in competitiveness. Nonetheless, these previous researches lay a solid foundation for this paper.

Above findings from previous studies support that placing individuals with different personality type to a suitable job is very important for the development of individuals themselves and their commitments to jobs. And empirical studies also indicated that there may exist personality difference in individuals' competitive attitude.

## 2.2 Gender difference in competitive attitude

Gender difference has always been on the spot light of all kinds of research topics. Besides gender discrimination, differences of psychological response to problems and situations between males and females plus different values towards competition create the source for inevitable disparity and discussion. Many studies have demonstrated that gender difference in competitive attitude can already be observed in the very early stage of life. ( Shwalb, 1985 ) studied Japanese 5<sup>th</sup> through 12<sup>th</sup> grade students to explore the development of cooperative and competitive attitudes. He found that female students were more cooperative than their male counterparts. This conclusion is supported by ( Ahlgren & Johnson, 1979 ). They investigated over 2,400 students in grades 2-12 to explore sex difference in cooperativeness and competitiveness. As a conclusion, they found that “ Females showed consistently more positive attitude towards cooperation, whereas males were more likely to prefer competition. The difference between two sexes ranged from 0.2 to 0.9 standard deviation ”. A field study from ( Gneezy & Rustichini, 2004 ) has also confirm this gender disparity in competitiveness. 140

fourth grade students were engaged in their study which was conducted during a physical education class of a short track running. They concluded that gender difference in competitive attitude is indeed exist and competition enhances the performance of males, but not females.

Different attitude towards competition between male and female can also be observed in decision making process. In their research about choice over study profiles in The Netherlands, ( Buser, Niederle & Oosterbeek, 2012 ) concluded that “while boys and girls have very similar levels of academic ability, boys are substantially more likely than girls to choose more prestigious and competitive profiles”.

Besides studies based on data obtained from schools, researchers also expanded their research to real labor markets to explain such gender difference in competitiveness. ( Niederle & Vesterlund, 2007 ) discussed the gender difference in risk attitude as one reason why there exists difference in competitive attitude between males and females. They concluded that females on average show greater risk aversion than males when facing competitive situations. And this strong risk aversion of females can explain why males are more into competition.

Further, the sex difference in competitive attitude has also been often observed in work. ( Spence & Helmreich, 1983 ) demonstrated that “men tend to place higher value than do women on factors related to career advancement and recognition, such as opportunity for promotion, high pay and increasing responsibilities”. And male, in their study, scores much higher on the motive of competitiveness. The same opinion is shared by ( Furnham, 1984 ): “Males tended to be more obsessed with money while females were more conservative and security-conscious than males”. And ( Lynn, 1993, Kirkcaldy, Furnham & Lynn, 1992 ) also concluded that “men are more competitive than women. And competitiveness and the valuation of money are positively correlated”. The conclusion from Lynn’s across-cultures study provide

solid support to the gender difference in competitiveness. And the attitude towards money has been found to contribute to the higher competitiveness of males due to money is a symbol of success.

Other views about the gender difference in competitive attitude such as sex difference in vocational behavior has also been discussed. ( Beutell & Brenner, 1986 ) found that “ Some of the significant differences were consistent with stereotypical male and female work value patterns (e.g., advancement and taking risks for men and comfortable work environment and pleasant associates for women)” and even between male and female with same career orientation, significant difference in their work value preference has been observed.

Besides all the factors mentioned above can lead to gender difference in competitive attitude. Genetic difference has also been proved to contribute to the disparity in competitiveness. Many psychologists and evolutionary biologists emphasize the importance of the nature. ( Knight, 2002 ) explained that the sex difference in competitiveness is not only restricted in human race. And such difference in competitiveness results from the different effort for the evolutionary need of reproductivity between male and female. This conclusion about natural difference in competitive attitude between sexes is supported by ( Colarelli, Hechanova & Spranger, 2006 ). They found that “ in situations that are competitively neutral, competitive behavior is more likely to emerge in all-male than in all-female groups. This is evident beginning at around age 5. And genetically, men have to always compete to be the “high quality” men whenever possible”. Therefore, such behavioral pattern may form males’ competing nature on a psychological and genetic base. And this can also provide an explanation to the difference between male and female in psychological response to competition.

### 2.3. Age difference in competitive attitude

Next, age as another important indicator of human behavior has also been frequently discussed in different studies over competitive attitude. A number of previous studies have acknowledged that the overall increase trend of competitive attitude with age. ( Herndon & Carpenter, 1982 ), in their study of competitive attitude among school students, demonstrated that competitiveness in all grades increased with age. And the increase trend were shared by both sexes. One research reported slightly different results. ( Alhgren & Johnson, 1979 ) found that males maintain a high competition mean through 2-12 grades, however, females experience a jump in preference for cooperation over competition at 8 grade.

However, these previous studies share some common limitations. Firstly, the age range of research samples are not wide enough to have a convincible conclusion on the age effect. And secondly, samples from these studies are consisted of only students. Apparently, with age getting older in the early years of individuals' life span, deeper understanding of the self-development and the competitive environment in school will inevitably lead students to develop stronger competitive attitude. However, the completely different environment from work can also shape individuals' attitudes towards decision-making and competition. The increase trend of competitive attitude indeed happens in the early years of individuals' life, especially at school age. However, this conclusion can be challenged when the age range goes wider. This paper will use a sample from a real working environment to study the relationship between individuals' competitive attitude and age

## 2.4. The impact of education on one's competitive attitude

The last factor that will be discussed in this paper is, of course, education. The importance and influence of education on one's competitive attitude is beyond doubt.

“Education is how to make sure we've got a workforce that's productive and competitive”.

—President George W. Bush

The way education shapes one's competitive attitude can be put under two directions. On the one hand, the competitive environment that education provides can make students become familiar with competitive situations. No one would doubt that with education becoming modern and widespread, how to stand out from the majority, be the best, receiving better education and build better future becomes important and difficult to every student. Competing for a better education is somehow an investment for one's own future.

( Wise, 1975 ) in his study of the relation between job productivity and academic achievement mentioned that “Entry into higher level jobs is often restricted to college graduates, and in many cases graduate or professional degrees are required”. Such expectation inevitably make students to compete in school. And this effect works on all students, regardless of personality type. Moreover, due to the high requirements from the job market and social values, students have to compete with each other since very early in their life. ( Messerschmidt, 1993 ) in his study demonstrated that in the modern society, the environment of school emphasizes competition and academic success. Such environment encourages students to compete with each other and, meanwhile, fosters a sense of shame in losing. The highly competitive environment shapes students to be goal-oriented and highly competitive. And, meanwhile, competition becomes so normal to students. Competing with each other can happen everyday

and everywhere. Competition in school sometime is so heavy so that it can even cause problems. ( Zeng and Tendre, 1998 ) who studied the relationship between academic competition and adolescent suicide concluded that academic competition, exam pressure is indeed related with adolescent suicide in japan.

Above previous findings provide a clear impression about the competitive environment of school. It takes no effort to understand that adjusting to such competitive environment may train students to have stronger competitive attitude.

Further, education, on the other hand, can increase individuals' ability in their professions and make them handle competition easier, which also make individuals more likely to enjoy competition and develop strong competitive attitude. Through education, individuals can access to more professional knowledge and training, which can help them to deal with problems that may happen in their work. "It is generally assumed that education changes an individual in such a way as to increase his capacity to perform job-related tasks" ( Wise, 1975 ). Another research ( Kaufman, 1978 ) holds the same opinion. In his study of the relationship of continuing education to job performance, he also demonstrated that in the R&D environment, the more graduate courses engineers complete, the more likely that they would maintain their performance during their career. The positive impact of education on individuals' ability may facilitate them to shape stronger competitive attitude due to confidence building in their capabilities.

More researches can be found to support the impact of education. ( NG & Feldman, 2009 ) indicated that individuals' education attainments are positively related to career outcome, promotion and job mobility. And these opportunities come from the positive impact of education on individuals' ability. Moreover, they also concluded that " In addition to positively

influencing core task performance, education level is also positively related to creativity and negatively related to absenteeism” .

Therefore, as education increasing one’s professional ability, it may also enhance one’s competitive attitude due to better professional ability and higher possibility to win in a competitive situation.

### **3 Methodology and hypothesis**

#### **3.1 Methodology**

##### **3.1.1 The “Big Five” personality instruments**

The main purpose of this paper is to test the possible relationship between personality and competitive attitude and the impact of age, gender and education on individuals’ competitive attitude. Two measurement instruments were adopted in this paper to collect data.

The Big Five model of personality description has dragged numerous attention over the last decades. ( Behling, 1998) said that this framework captures the key aspects of personality in five primary dimensions and it is more widely accepted than any other. And in his paper about employee selection process, he indeed found that there were clear relationships between the Big Five personality dimensions and job performance, especially for dimension conscientiousness. Other researchers such as ( Barrick, M. R. & Mount, M. K. 1996 ) also support this personality construct in their paper of testing whether 2 types of response distortion (self-deception and impression management) affect the predictive validity of the Big Five personality dimensions. With increasing confidence in the robustness of the Big Five

model of personality description, researchers in the early 1990s began to adopt this personality measure for selection research.

After the five-factor framework being widely accepted, several rating instruments have been introduced to measure the Big Five personality dimensions. ( Costa, Jr. & McCrae, 1992 ) introduced a 240 items personality questionnaire: The Revised NEO Personality Inventory (NEO-PI-R). Although this instrument provides sound and accurate quality to access someone's personality, it is too lengthy to use in reality. Considering most individuals may get fatigue from the personality test, a very brief instrument for accessing personality has been developed by (Gosling, Rentfrow & Swann Jr. , 2003). Instead of asking numerous relevant questions about someone's personality, they designed an instrument which directly asks about someone's personality trait. A very brief measure containing 10 questions has been introduced in their study. However, due to several limitations arising from using very short measure, they recommended that this brief measure should be only used in situation where brevity is high priority.

In this study, I will adopt the 44-items Personality Inventory ( BFI ) which has been widely used in many researches and considered a very sound instrument to measure personality traits in reality. In the validation study of The BFI, some researchers concluded that the five-factor structure provided an acceptable fit. And the BFI had internal reliability estimates ranged from 0.69 for agreeableness to 0.81 for neuroticism ( Leung & Wong, 2013 ). The validation study of the dutch version of the BFI reveled that the high level of internal consistency, factorial and external validity, and good applicability in different age groups of the Dutch BFI are consistent with the psychometric quality of the English original BFI version ( Denissen , Geenen , Van

Aken , Gosling & Potter, 2008 ). Therefore, by using the 44-items Personality Inventory ( BFI ), I can avoid bringing fatigue to respondents and, meanwhile, receive very sound results.

### 3.1.2 The measurement of competitive attitude

Little attention had been focused on accessing individuals' competitiveness since 1992. A competitiveness index ( CI ), a 20-item scale, developed by ( Smither & Housten, 1992) filled the gap and can be used to measure an individual's competitive attitude. In their paper, they proved that the CI has a high degree of internal consistency. And in the later studies about the validation of the competitiveness index, ( Housten, Farese & Du, 1992 ) proved both internal and external validity of the CI. And their results also demonstrated that the CI is consistent across different population samples.

The original 20-item CI scale consists of 20 true-false questions related to competitive attitude. Based on the validation test, the CI indeed has both internal and external validity. However, in reality when people try to answer these questions, they can only use very extreme choices, yes and no, to indicate their answers, which limits the accuracy of the scale. For instance, a question from the CI questionnaire: "I am a competitive individual". It is difficult to use simply yes and no to describe everyone's self judgment about his own competitiveness. This problem arising from lacking of description scale has also been concerned by some researchers. " The true-false format of CI may limit the measure's sensitivity to differences in competitiveness by restricting the variability of responses " (Housten, Harris, McIntire & Francis, 2002). Instead of using the original true-false CI scale, they modified the scale to 5-points Likert-type scale. After examining the modified version of the CI scale, they demonstrated that the new measure

was positively correlated with the original Competitiveness Index ( $r = .82$ ,  $p < .001$ ). And the restricted variability in scores associated with the original index was solved by adopting the 5-point ratings. In this paper, I will adopt the competitiveness index with 5-points Likert-type scale to elicit individuals' extent of competitive attitude.

The two different questionnaires were put together in one survey and the survey was mentioned for only academic purpose. This paper will focus mainly on individuals who work in The Netherlands. The survey was made available online. And emails containing the web link of this survey were sent out to people to collect data. Although, this survey consists two different parts, there is no clear information to indicate the function of each part. Respondents were not informed that this survey aims to investigate their competitive attitude and personality. Moreover, this survey was made anonymous so that respondents can feel safe when they fill out the questionnaire.

### 3.2 Hypothesis

**Hypothesis 1 : individuals who get higher score on extraversion, open to experience and conscientiousness score also higher on CI.** People who are extraverted often perceived as full of energy, they tend to be enthusiastic, action-oriented individuals. High extraversion is often perceived as attention-seeking, and domineering. Researches support that these characteristics may encourage extraverts to seek for challenges, excitement and competition in their jobs ( Jackson & Corr, 1997, Ross, Rausch & Canada, 2003, Kaur, 2013 ). The dimension openness

has always been difficult to predict the exact relationship with job performance. Early studies argued that they didn't reach a conclusion of a clear relationship between openness and competitiveness ( Wolfe & Johnson, 1995, Kaur, 2013 ). Nonetheless, characters such as curiosity, variety of experience and unusual ideas of individuals who open to experience may facilitate them to expand their experience through competition. Conscientiousness, another dimension of personality, has been broadly admitted to be the most reliable predictor for hard working and good performance. The will to achieve, self-control, persistence and dependability may maintain conscientious individuals a high level of competitive and achievement motivation ( Komaraju and Karau, 2005 ).

**Hypothesis 2: People who get higher score on agreeableness and neuroticism are tend to get lower score on CI.** As the name of this personality dimension indicates, agreeableness is associated with a disposition towards cooperation and altruism. Individuals who sorted under this personality dimension have strong preference on team work and cooperation, instead of competition ( Ross , Rausch & Canada, 2010, Ross, Rausch & Canada, 2003 ). The last dimension of the Big Five, Neuroticism refers to the degree to which people experience negative emotions, depression and mood swings. Even though there are studies which indicate that hypercompetitiveness is positively related to neuroticism ( Karen Horney, 1937 ). In real life, however, one would expect that the suffering from low self-esteem, negativity and psychological distress would make neurotic individuals avoid interpersonal competitive situations in work. ( Kirkcaldy, Furnham & Lynn, 1992 ) also found the negative relationship between emotional lability ( neuroticism ) and competitive motivation. Therefore, these two personality dimensions are expected to be negatively related to one's competitive attitude.

**Hypothesis 3: After controlling personality, males on average have higher score on CI than females.** A number of researches have documented that women often respond less favorably to competition than men ( Shwalb, 1985, Buser, Niederle & Oosterbeek, 2012, Ahlgren & Johnson, 1979 ). Following the finding of ( Knight, 2002 ), the genetic and biological underlying sex difference in attitude towards competition can cast a remarkable impact on competitive attitude beyond the impact of personality. Even when individuals are similar in personality types, gender difference has to be taken into consideration. Same as discussed early in this paper, this disparity in competitive attitude between sexes results from many possible factors. ( Niederle & Vesterlund, 2007 ) found that females on average show greater risk aversion than males when facing competitive situations. Moreover, attitude to promotion and psychological preference to cooperation and altruism can also contribute to the gender difference in competitive attitude ( Spence & Helmreich, 1983, Ahlgren & Johnson, 1979 ).

**Hypothesis 4: Age, on average, shows an Inverse-U relationship with one's competitive attitude.** Early study concluded that competitive attitude grows with age among school students for both sexes ( Herndon & Carpenter, 1982 ). However, as age range of a sample goes wider, data may provide different results than monotonous increase relationship. Because till certain age, most individuals prefer to seek safety and stability for their career. Their competitive attitude or impulse may decrease after certain age, regardless of the personality type and gender. ( Rosen, Jerdee, 1976 ) found the existence of age stereotypes that depict an older person as potentially less employable than younger person, particularly for highly demanding and challenging positions. And they also demonstrated that the older person is less interested in change and highly interested in stability. Although the personality type and gender

may influence the age turning point of one's competitive attitude, the inverse-u shape of age effect is expected to apply to all personality types and both sexes. Therefore, the speculation is that age is expected to show an Inverse-U shape with one's competitive attitude.

**Hypothesis 5: Education is a booster for competitive attitude.** Education, undoubtedly, is a negligible shaper of the attitude towards competition. Based on early studies, education can shape one's competitive attitude with two forces. Firstly, education itself can increase an individual's capability and confidence in certain professions. It is widely accepted that education can increase one's capacity to perform job-related tasks and maintain the performance during one's career ( Wise, 1975, Kaufman, 1978 ). Secondly, education in the modern society is provided by institutions which are filled with competition. The process and personal wish of receiving better education from even primary school up till university creates the source of competition, which influences individuals to feel easier to handle competitive situations and also shapes their competitive attitude stronger and stronger. ( Messerschmidt, 1993 ) in his study concluded that the environment of school emphasizes competition. Such environment encourages students to compete with each other. Thus, although two individuals who are similar in all respects such as personality and gender, the one experience higher education is expected to be stronger in competitive attitude.

## 4.Data and results analysis

### 4.1 Data description

The data of this paper was collected by using questionnaire (see appendix). The questionnaire was made available online and anonymous. The first part of the questionnaire is the 44-item Big Five personality scale and the second part is the 20-item modified CI scale. Both parts are rated on 5 point Likert-type scale anchored by 1 "disagree strongly" and 5 agree strongly. Besides questions in the questionnaire, respondents also have to fill in also their age, gender, education level and current state: studying or working. And every question is required to be answered. In the end of the survey, questionnaires were randomly completed by 193 individuals, 86 males and 107 females, respectively. Of these 193 respondents, 2 respondents were currently studying and 1 filled in the education level in a wrong way. 3 of them were dropped out from the sample. All of these left 190 individuals were currently working in The Netherlands when the survey was conducted. After gathering all questionnaires, all negatively-keyed items were recoded. Table 1 shows the layout of the data.

Table 1: Summary of the data

variables	Male (Obs. =84)				Female (Obs. =106)			
	mean	Std. Dev.	Min	Max	mean	Std. Dev.	Min	Max
CI	3.079167	.5640435	1.8	4.6	2.745755	.5969413	1.4	4.3
Age	34.60714	9.228058	20	55	33.74528	8.698179	23	58
Extra.	3.260417	.5821803	1.25	4.75	3.232311	.7023427	1.5	4.88
Agree.	3.732804	.5744107	2.67	5	3.844864	.5240101	2.56	5
Consc.	3.518519	.5536334	2.56	4.78	3.431866	.5868079	2.22	4.67
Neur.	2.717262	.7023302	1	4.5	2.887972	.6431714	1.38	4.5
Open.	3.296429	.5936301	2.2	4.6	3.074528	.6020696	1.9	4.5

Note: CI stands for Competitive attitude and extra., agree., consi., neur. and open. stands for personality dimension

extraversion, agreeableness, conscientiousness, neuroticism and openness, respectively.

## 4.2. Results

The wide range of all variables gives the sample a very sound quality for analysis. The OLS econometric model will be adopted to analyze the data. The first OLS model is to test the relationship between individuals' personality type and competitive attitude. Model:

$$CI = \beta_0 + \beta_1 extraversion + \beta_2 agreeableness + \beta_3 conscientiousness + \beta_4 openness + \beta_5 neuroticism + \varepsilon$$

Will be estimated. Each personality of the big five personality dimensions are treated as independent variables and CI is the dependent variable. Table 2 gives the estimated results of this model.

Table 2: OLS regression - relationship between personality and competitive attitude

	CI	t-value	p-value
extraversion	0.214*** (0.0661)	3.24	0.001
agreeableness	-0.366*** (0.0756)	-4.85	0.000
conscientiousness	0.191** (0.0749)	2.55	0.011
openness	0.109 (0.0670)	1.63	0.105
neuroticism	-0.304*** (0.0645)	-4.71	0.000
Constant	3.432*** (0.508)	6.76	0.000
Observations	190		
R-squared	0.332		

Notes: \*\*\*, \*\*, \* indicates the significant level of 1%, 5% and 10%, respectively

As can be expected, the regression results confirm that there exists indeed significant relationship between one's competitive attitude and his personality. Extraversion reports the biggest positive impact on CI. 1 score higher on extraversion leads to roughly 0.21 ( $t = 3.24, p < 0.01$ ) score higher on CI. Attention seeking, domineering and action-oriented main characters of extreaverts may explain this phenomenon of having strong competitive attitude in their career life. Taking sales jobs for instance, competing to reach higher targets or performing better than the rest may becomes source of excitement and satisfaction. Conscientiousness ( $t = 2.55, p = 0.01$ ) and openness ( $t = 1.63, p = 0.105$ ) also shows positive relation with CI. 1 score higher on conscientiousness increases CI score by 0.19. However, coefficient of openness is not significant under 5% confidence level, which consists with other researchers' finding. The possible explanation is that open to experience defines individuals' emotion, imagination and thought for arts and various experience. These facets of openness may have little to do with getting satisfaction from experiencing competition. Openness individuals may not make strong connection between their job satisfaction and competitive environment. They are more neutral about competition. When looking at the other two variables, coefficients of agreeableness ( $t = -4.85, p = 0$ ) and neuroticism ( $t = -4.71, p = 0$ ) are negative and significant under 5% and 1% confidence level, respectively. Of those two personality dimensions, it is not surprising that agreeableness shows the strongest negative effect on personal CI score. 1 score higher on personality agreeableness decreases an individual's CI score by about 0.37. The cooperative nature of individuals sorted under dimension agreeableness gives them very strong preference for cooperation. Those individuals like to cooperate and share. And being friendly to their colleagues, being average in the team and caring about others' feeling is very important to them. Moreover strong altruism also make them avoiding competition. The last dimension neuroticism, with  $\beta_5 = -0.3$ , shows a slightly small negative effect than agreeableness on

personal CI score. Suffering from psychological distress and low self-esteem may make neurotic individuals seeking for comfort zone, keeping low key and avoiding competition.

The first OLS model proves hypothesis 1 and 2 and shows the relationship between each personality dimension and competitive attitude. To analyze further, the next OLS model will include gender dummy as an independent variable to elicit the gender difference in personal CI score.

Model:

$$CI = \beta_0 + \beta_1 gender + \beta_2 extraversion + \beta_3 agreeableness + \beta_4 conscientiousness + \beta_5 openness + \beta_6 neuroticism + \varepsilon$$

will be estimated. The gender dummy indicates the respondent is female when it takes value 0 and male when it equals 1. Table 3 gives the regression results for this model.

Table 3: OLS regression-gender difference on competitive attitude

	CI		
		t-value	p-value
gender	0.212*** (0.0752)	2.83	0.005
extraversion	0.237*** (0.0654)	3.62	0.000
agreeableness	-0.326*** (0.0756)	-4.31	0.000
conscientiousness	0.173** (0.0738)	2.34	0.020
neuroticism	-0.277*** (0.0640)	-4.32	0.000
openness	0.0706 (0.0671)	1.05	0.294
Constant	3.222***		

	(0. 504)	6. 39	0. 000
Observations	190		
R-squared	0. 36		

Notes: \*\*\*, \*\*, \* indicates the significant level of 1%, 5% and 10%, respectively

After entering gender as an independent variable, effects on personal CI score from all five personality types decrease compared with results from table 2. And openness (  $t= 1.05$ ,  $p = 0.294$  ) reminds insignificant under 5% confidence level. Apparently, gender (  $t= 2.83$ ,  $p = 0.005$  ) catches significant impact on individuals' competitive attitude. Females on average score 0.21 lower in CI than their male counterparts. Results from this sample are consistent with early researches which use only students from school as research sample. This result confirms hypothesis 3 that the existence of gender difference in competitive attitude. Perhaps, in a real work setting, besides differences on psychological and emotional response to competition, gender difference on traditional career values is another reason to explain the difference between males' and females' personal CI score. Moreover, males are often assumed to be more career oriented. Competing to a higher pay or position is treated more important by males than females. Therefore, even though they are similar in personality type, males are expected to have stronger competitive attitude in work.

Another important purpose of this study is to test if age casts a non-linear effect on personal competitive attitude. It is well known that age is a powerful factor to shape one's personality. The age variable here aims to catch time effects on individuals' competitive attitude. For instance, till certain age, individuals prefer stability and safety in their career. Because most individuals have similar career cycle, the inverse-u shape of age effect is expected to be independent from gender and personality type.

To catch this possible non-linear effect,  $age^2$  has been generated. Model:

$$CI = \beta_0 + \beta_1 age + \beta_2 age^2 + \varepsilon$$

will be estimated. Table 4 shows the results.

Table 4: regression- age effect on competitive attitude

	CI	t-value	p-value
age	-0. 0374 (0. 0446)	-0. 84	0. 403
age2	0. 000617 (0. 000609)	1. 01	0. 312
Constant	3. 401*** (0. 775)	4. 39	0. 000
Observations	190		
R-squared	0. 018		

Notes: \*\*\*, \*\*, \* indicates the significant level of 1%, 5% and 10%, respectively

As reported in table 4, age shows U-shape relationship with CI instead of inverse-U shape expected in the hypothesis 4. However, coefficients of age and  $age^2$  ( $t = -0.84$ ,  $p = 0.403$  ;  $t = 1.01$ ,  $p = 0.312$ , respectively ) are both not significant under 5% confidence level. Although the results here are insignificant, they still can provide some possible ideas to understand how age can shape individuals' competitive attitude. In this sample, 30 years old is the age turning point for someone's competitive attitude. The unexpected rising of competitive attitude after 30 may result from that from 30 years old, individuals start to build and fight for their career. Competitive attitude may then increase strongly from this age point due to the wish of climbing up in career. Because the age range of this sample is from 20 to 58 years old and all respondents were working while the survey was conducted, the sample might not be able to catch the entire age effects. Considering the age effects maybe more complicated than only U

shape, for instance competitive attitude may fluctuate with age, future research can also include students to make the age range even wider to test the age effects.

To examine the education effects, a dummy variable heduc is generated. And heduc stands for higher education. It equals to 1 if the respondent has bachelor degree or above and equals to 0, otherwise. Because of the sample feature that most respondents finished high school, using bachelor as the boundary of higher education is appropriate in this situation. Model:

$$CI = \beta_0 + \beta_1 heduc + \beta_2 gender + \beta_3 age + \beta_4 age^2 + \beta_5 extraversion + \beta_6 agreeableness + \beta_7 conscientiousness + \beta_8 neuroticism + \beta_9 openness + \varepsilon$$

will be estimated.

Table 5: education effects on competitive attitude

	CI		
		t-value	p-value
heduc	0.221*** (0.0835)	2.65	0.009
gender	0.206*** (0.0742)	2.78	0.006
age	-0.0143 (0.0375)	-0.38	0.704
age2	0.000237 (0.000508)	0.47	0.642
extraversion	0.251*** (0.0649)	3.86	0.000
agreeableness	-0.303*** (0.0751)	-4.04	0.000
conscientiousness	0.193** (0.0771)	2.51	0.013
neuroticism	-0.245*** (0.0656)	-3.74	0.000

openness	0. 0458 (0. 0670)	0. 68	0. 495
Constant	3. 068*** (0. 916)	3. 35	0. 001
Observations	190		
R-squared	0. 387		

Notes: \*\*\*, \*\*, \* indicates the significant level of 1%, 5% and 10%, respectively

Results are presented in table 5, the coefficient of *heduc* (  $t = 2.65$ ,  $p = 0.009$  ) is significant under 1% confidence level. And *age* and  $age^2$  continue to be insignificant under 5% confidence level. As expected, education indeed shows positive effect,  $\beta_1 = 0.221$ , on personal competitive attitude. Individuals who experienced higher education, on average, score also higher on CI. The double push effects of education make individuals building stronger competitive attitude. On the one hand, education provide a highly competitive environment, adjusting to the environment makes students get used to competitive situations in their later life. Education, on the other hand, can provide individuals more professional knowledge to deal with problems that they face during their work. And higher ability means more chance to win a competitive situation, which may make individuals enjoy competition. Therefore, Confidence building during education can reinforce individuals' competitive attitude.

To make this study more interesting and see how relationships between personality and CI differs across gender. The sample is divided into two groups by gender. The following regression will be applied to both groups.

$$CI = \beta_0 + \beta_1 heduc + \beta_2 age + \beta_3 age^2 + \beta_4 extraversion + \beta_5 agreeableness + \beta_6 conscientiousness + \beta_7 neuroticism + \beta_8 openness + \varepsilon$$

Table 6 presents the results

Table 6: the comparison of relationships between personality and CI across gender

	male			female		
	CI			CI		
		t-value	p-value		t-value	p-value
heduc	0.315** (0.125)	2.53	0.014	0.154 (0.120)	1.28	0.203
age	-0.0431 (0.0550)	-0.78	0.436	-0.0115 (0.0551)	-0.21	0.835
age2	0.000779 (0.000757)	1.03	0.307	3.73e-05 (0.000737)	0.05	0.960
extraversion	0.233** (0.107)	2.17	0.033	0.237*** (0.0831)	2.85	0.005
agreeableness	-0.286*** (0.103)	-2.77	0.007	-0.325*** (0.110)	-2.96	0.004
conscientiousness	0.125 (0.120)	1.05	0.229	0.226** (0.105)	2.15	0.034
neuroticism	-0.192** (0.0923)	-2.08	0.041	-0.330*** (0.0974)	-3.39	0.001
openness	0.0529 (0.102)	0.52	0.606	0.0976 (0.0934)	1.04	0.299
Constant	3.578*** (1.296)	2.76	0.007	3.355** (1.343)	2.50	0.014
Observations	84			106		
R-squared	0.366			0.360		

Notes: \*\*\*, \*\*, \* indicates the significant level of 1%, 5% and 10%, respectively

The data from table 6 presents very interesting comparison between males and females. Firstly, higher education casts stronger effect on males than on females. Males who experienced higher education score 0.315 higher on CI and the education effect for females is, however, only 0.154. The possible explanation may be connected with gender difference on competitive

attitude. Because males on average have stronger attitude towards competition, after experiencing higher education, males may also show much greater increase on CI than do females. Because the double effects of education make individuals more competitive, as a result, education magnifies males' competitive attitude. Next, the results in table 6 shows some very interesting differences of the relationships between personality and CI across gender. The personality type has stronger impact on competitive attitude for females than for males. Except for the dimension extraversion which shows about the same impact for both males and females and the dimension openness which is insignificant for both sexes under 5% confidence level, other three personality dimensions show stronger impact on CI for females than for males. For personality dimension agreeableness conscientiousness and neuroticism,  $\beta = -0.325, 0.226$  and  $0.330$ , respectively for females and  $\beta = -0.286, 0.125$  and  $0.192$ , respectively for males. Of these three personality dimensions, the personality dimension conscientiousness becomes insignificant for males under 5% confidence level. A possible explanation would be that most males who are sorted under conscientiousness in this sample have strong will to achieve and attitude towards competition even when they score differently on this personality dimension. However, this result can be challenged by using other samples. Overall, the phenomenon that there exists differences on the relationships between personality type and CI across gender is not surprising. Given females are more sentimental than males, they may react emotionally stronger on personality facets. For intense, for all individuals who are sorted under personality dimension agreeableness, females may have much stronger preference on cooperation and altruism compared to their male counterparts. Above results and phenomena demonstrate the differences of the relationships between personality type and CI across gender.

To sum up, an individual's competitive attitude indeed shows significant relationship with his personality type. And both gender and education have remarkable impact on one's competitive

attitude. However, the sample doesn't provide significant relationship between age and one's attitude towards competition.

## 5. Conclusion and limitation

In this paper, how individuals' competitive attitude different with personality is tested by a sample drawn from a real working environment. The relationship between personality and competitive attitude is in line with the hypothesis. Higher score on extraversion and conscientiousness leads to stronger competitive attitude. And extraversion has the strongest positive impact of these two dimensions. The personality dimension Openness turns out to be irrelevant with individuals' competitive attitude. The negative impact on competitive attitude are shared by agreeableness and neuroticism. Of these two personality dimensions, agreeableness shows the strongest negative impact. The empirical results have also shown that gender and education have significant impact on individuals' competitive attitude. Age, on the contrary, shows insignificant relationship with competitive attitude in this study. Future research about age effect is needed.

In many job profile descriptions, qualities such as figures and targets oriented, and commercially-driven individuals, are often directly required. What is hidden behind those words is the information that the potential employee has to have strong competitive attitude. Hiring someone whose personality is against competition can bring damages to both the employee and the company. For the company, the employee may not be able to fulfill all expectations and make profit. And sometime this mismatch even very costly if the employee calls in sick or burnout because of the stress. And for the employee, the damage can be even deeper and more profound. In a short term, the employee may have a great amount of stress

from worrying about bad job performance. And in a long term, such stress can lead to job dissatisfaction, depression and even loosing confidence in his capability. Therefore, when making the decision of hiring someone, recruiters should also take one's personality into account. For instance, when choosing between two potential candidates with close background except for personality type, one is extraversion and the other is agreeableness, recruiters may also consider that the achievement- and competitive oriented nature of extraverted individuals may bring better performance later in a highly competitive working environment. Moreover, besides personality, what can also give recruiters some clues are factors such as, gender, education and age. Males on average have stronger competitive attitude than females. Besides difference in natural psychological response towards competition, different values to promotion, higher salaries and responsibilities can maintain males on a high level of competitive attitude. Next, given the double effects of education, individuals experience more and higher education are also expected to handle competitive situations better. Moreover, it is still worthy to be mentioned that age should also be considered during a hiring process, although it shows insignificant relation with competitive attitude in this study. Age, however, can be a good predictor of one's competitive attitude. It is not difficult to imagine that during the early period of one's career life, the urge to climb up and prove his ability is a very strong booster for one's competitive attitude.

This paper provides the evidence that people are different in their competitive attitude. A success match between a job and a employee sometimes might highly depend on if the employee shows strong interest in competition. As the bridge between a employee and a employer, recruiters should not only take someone's competence as the only criteria, but also take one's personality into consideration. A right match between job requirements and an employee's personality can stimulate his potential and reinforce his job performance. When

analyzing someone's competitive attitude, some simple factors such as, gender, education and age can also provide recruiters a quick evaluation. Combining with personality analyzing, better recruiting results can be achieved.

This study focuses on one job quality, competitive attitude, and how it is related with one's personality type. In reality, many jobs require employees to have high competitive attitude during work. Therefore, for delivering high quality employees, recruiters should understand the job requirements that are hidden behind the job description and take one's personality type into consideration. However, it is worthy to be mentioned that although the results in this paper show significant relationship between one's personality type and competitive attitude, more factors have to be analyzed during the recruiting process, such as work experience in similar professions, overall working environment of the company and one's professional ability. It is possible that one's attitude against competition can be weaken due to high professional ability. Because higher professional ability generates greater chance of winning, which may decrease the stress from competition. And the working experience in similar professions can also prepare individuals to be familiar with the competitive environment. This paper aims to provide recruiters some ideas how one's competitive attitude relates to his personality type, gender, age and education level. Those starting points of analyzing one's competitive attitude can be applied to many situations. However, when making the decision of hiring someone, more factors have to be analyzed.

Other limitations of this paper are as follow. Firstly, the age effect is still need to be purified. Because the sample is drawn from a real working environment, age may capture effects from other factors, such as pressure of getting fired and fighting for a better pension, etc. This might explain why individuals keep high competitive attitude even as they getting old. Future research can purify the age effects by design more questions around this factor and include also

students to make the age range even wider to test the age effects. Secondly, although in this study, education shows positive relationship with one's professional ability. However, the variable ability itself has not been discussed in this paper. A more able individual may have stronger preference over competition due to higher chance of winning. This impact from ability can also influence one's competitive attitude. Future research can include this variable and measure it by measuring grades of job-related professional knowledge and targets achievements, etc.

## Reference

Maslach, Christina, Wilmar B. Schaufeli, and Michael P. Leiter. "Job burnout." *Annual review of psychology* 52.1 (2001): 397-422.

Arvey, Richard D., and James E. Campion. "THE EMPLOYMENT INTERVIEW: A SUMMARY AND." *Personnel Psychology* (1982): 35.

Behling, Orlando. "Employee selection: will intelligence and conscientiousness do the job?" *The Academy of Management Executive* (1993-2005) (1998): 77-86.

Barrick, Murray R., and Michael K. Mount. "Effects of impression management and self-deception on the predictive validity of personality constructs." *Journal of applied psychology* 81.3 (1996): 261.

Hurtz, Gregory M., and John J. Donovan. "Personality and job performance: the Big Five revisited." *Journal of applied psychology* 85.6 (2000): 869.

Barrick, Murray R., and Michael K. Mount. "The Big Five personality dimensions and job performance: A meta-analysis." (1991).

Abouserie, Reda. "Self-esteem and achievement motivation as determinants of students' approaches to studying." *Studies in Higher Education* 20.1 (1995): 19-26.

Shwalb, David W., and Barbara J. Shwalb. "Japanese Cooperative and Competitive Altitudes: Age and Gender Effects." *International Journal of Behavioral Development* 8.3 (1985): 313-328.

Ahlgren, Andrew, and David W. Johnson. "Sex Differences in Cooperative and Competitive Attitudes From the 2nd Through the 12th Grades." *Developmental Psychology* 15.1 (1979): 45.

HERNDON, BARBARA K., and MARY D. CARPENTER. "Sex differences in cooperative and competitive attitudes in a northeastern school." *Psychological Reports* 50.3 (1982): 768-770.

Niederle, Muriel, and Lise Vesterlund. "Gender and competition." *Annu. Rev. Econ.* 3.1 (2011): 601-630.

Kaur, Kiranjeet. "Do Personality Factors Differentiate Between High Achievers And Low Achievers Among Engineering Students?." *EDUCATIONIA CONFAB*: 2.

Siegel, Carole, and Michael F. Shaughnessy. "Personality of college students in calculus courses." *Psychological reports* 71.3f (1992): 1309-1310.

Gosling, Samuel D., Peter J. Rentfrow, and William B. Swann. "A very brief measure of the Big-Five personality domains." *Journal of Research in personality* 37.6 (2003): 504-528.

Costa Jr, Paul T., and Robert R. McCrae. "Domains and facets: Hierarchical personality assessment using the Revised NEO Personality Inventory." *Journal of personality assessment* 64.1 (1995): 21-50.

John, Oliver P., and Sanjay Srivastava. "The Big Five trait taxonomy: History, measurement, and theoretical perspectives." *Handbook of personality: Theory and research* 2.1999 (1999): 102-138.

Leung, Doris YP, et al. "Psychometric properties of the Big Five Inventory in a Chinese sample of smokers receiving cessation treatment: A validation study." *Journal of Nursing Education and Practice* 3.6 (2012): p1.

Denissen, Jaap JA, et al. "Development and validation of a Dutch translation of the Big Five Inventory (BFI)." *Journal of personality assessment* 90.2 (2008): 152-157.

Murray, Henry Alexander. "Explorations in personality." (1938).

McClelland, David C., et al. "The achievement motive." (1976).

Houston, John M., Danielle M. Farese, and Terence J. La Du. "Assessing competitiveness: A validation study of the competitiveness index." *Personality and Individual Differences* 13.10 (1992): 1153-1156.

Smith, Robert D., and John M. Houston. "The nature of competitiveness: The development and validation of the competitiveness index." *Educational and Psychological Measurement* 52.2 (1992): 407-418.

Houston, John, et al. "Revising the competitiveness index using factor analysis." *Psychological Reports* 90.1 (2002): 31-34.

Beutell, Nicholas J., and Otto C. Brenner. "Sex differences in work values." *Journal of Vocational Behavior* 28.1 (1986): 29-41.

De Fruyt, Filip, and Ivan Mervielde. "Personality and interests as predictors of educational streaming and achievement." *European journal of personality* 10.5 (1996): 405-425.

Jackson, Chris J., and Philip J. Corr. "Personality-performance correlations at work: Individual and aggregate levels of analyses." *Personality and Individual Differences* 24.6 (1998): 815-820.

Spence, Janet T., and Robert L. Helmreich. "Achievement-related motives and behaviors." *Achievement and achievement motives: Psychological and sociological approaches* (1983): 7-74.

Horney, Karen. *The neurotic personality of our time*. WW Norton & Company, 1937.

Lynn, Richard, and Terence Martin. "National differences for thirty-seven nations in extraversion, neuroticism, psychoticism and economic, demographic and other correlates." *Personality and Individual Differences* 19.3 (1995): 403-406.

Kirkcaldy, Bruce D., Adrian Furnham, and Richard Lynn. "Individual differences in work  
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attitudes." *Personality and Individual Differences* 13.1 (1992): 49-55.

Ross, Scott R., M. Karega Rausch, and Kelli E. Canada. "Competition and cooperation in the five-factor model: Individual differences in achievement orientation." *The Journal of psychology* 137.4 (2003): 323-337.

Gneezy, Uri, and Aldo Rustichini. "Gender and competition at a young age." *American Economic Review* (2004): 377-381.

Buser, Thomas, Muriel Niederle, and Hessel Oosterbeek. Gender, competitiveness and career choices. No. w18576. National Bureau of Economic Research, 2012.

Niederle, Muriel, and Lise Vesterlund. "Gender and competition." *Annu. Rev. Econ.* 3.1 (2011): 601-630.

Furnham, Adrian. "Many sides of the coin: The psychology of money usage." *Personality and individual Differences* 5.5 (1984): 501-509.

Lynn, Richard. "Sex differences in competitiveness and the valuation of money in twenty countries." *The Journal of social psychology* 133.4 (1993): 507-511.

Kirkcaldy, Bruce D., Adrian Furnham, and Richard Lynn. "Individual differences in work attitudes." *Personality and Individual Differences* 13.1 (1992): 49-55.

Knight, Jonathan. "Sexual stereotypes." *Nature* 415.6869 (2002): 254-256.

Colarelli, Stephen M., Jennifer L. Spranger, and Ma Hechanova. "Women, power, and sex composition in small groups: An evolutionary perspective." *Journal of Organizational Behavior* 27.2 (2006): 163-184.

Wise, David A. "Academic achievement and job performance." *The American Economic Review* (1975): 350-366.

Messerschmidt, James W. *Masculinities and crime: Critique and reconceptualization of theory*. Rowman & Littlefield Publishers, 1993.

Zeng, Kangmin, and Gerald Le Tendre. "Adolescent suicide and academic competition in East 38

Asia." Comparative education review (1998): 513-528.

Kaufman, H. G. "Continuing education and job performance: A longitudinal study." Journal of Applied Psychology 63.2 (1978): 248.

Ng, Thomas WH, and Daniel C. Feldman. "How broadly does education contribute to job performance?." Personnel Psychology 62.1 (2009): 89-134.

Rosen, Benson, and Thomas H. Jerdee. "The nature of job-related age stereotypes." Journal of applied psychology 61.2 (1976): 180.

Wolfe, Raymond N., and Scott D. Johnson. "Personality as a predictor of college performance." Educational and psychological measurement 55.2 (1995): 177-185.

## Appendix

This survey is anonymous and the results generated from this survey will be used only for academic purpose.

Female /  Male,  Age,  Education level

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please write a number next to each statement to indicate the extent to which **you agree or disagree with that statement.**

1 Disagree Strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree strongly
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### I am someone who...

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

- 39. \_\_\_\_\_ Gets nervous easily
- 40. \_\_\_\_\_ Likes to reflect, play with ideas
- 41. \_\_\_\_\_ Has few artistic interests
- 42. \_\_\_\_\_ Likes to cooperate with others
- 43. \_\_\_\_\_ Is easily distracted
- 44. \_\_\_\_\_ Is sophisticated in art, music, or literature

The questions that are used to construct each item are listed below (where R indicates using the reverse-scored item).

Extraversion: 1, 6R, 11, 16, 21R, 26, 31R, 36

Agreeableness: 2R, 7, 12R, 17, 22, 27R, 32, 37R, 42

Conscientiousness: 3, 8R, 13, 18R, 23R, 28, 33, 38, 43R

Neuroticism: 4, 9R, 14, 19, 24R, 29, 34R, 39

Openness: 5, 10, 15, 20, 25, 30, 35R, 40, 41R, 44

Here are a number of characteristics that may or may not apply to you. Please write a number next to each statement to indicate the extent to which **you agree or disagree with that statement.**

1 Disagree Strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree strongly
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1.  I like competition.
2.  I am a competitive individual.
3.  I enjoy competing against an opponent.
4.  I don't like competing against other people.\*
5.  I get satisfaction from competing with others.
6.  I find competitive situation unpleasant.\*
7.  I dread competing against other people.\*
8.  I try to avoid competing with others.\*
9.  I often try to out perform others.
10.  I don't like games that are winner-take-all.\*
11.  competition destroys friendships.\*
12.  I try to avoid arguments.\*
13.  I will do almost anything to avoid an argument\*
14.  I often remain quiet rather than risk hurting another person.\*
15.  I don't enjoy challenging others even when I think they are wrong.\*
16.  In general, I will go along with the group rather than create conflict.\*
17.  Games with no clear cut winners are boring.
18.  It's usually not important to me to be the best.\*
19.  When I play a game I like to keep score.
20.  I would like to be on a debating team.

***Please check: Did you write a number in front of each statement?***