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Personality Dimensions and Multiple Intelligences: Examining the Interconnection in Business Education

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Abstract

This paper aims to investigate the association between personality characteristics and multiple intelligences in relation to business students' achievements and the consequent occupational opportunities. Following the Big Five personality traits personality theory that divides the traits into openness, conscientiousness, extraversion, agreeableness and neuroticism, the research seeks to compare the personality dimensions with several cognitive skills. The research also applies the theory of multiple intelligences that tries to examine the extent of intermediate intelligence with character features affecting the performance of students. Perceived benefits of this investigation include discovering information that might help to improve the current instructional models tailored towards preparing business students for their profession and academic success. The findings are assumed to expand the knowledge of educational psychology, as well as offer usable insights for learners and instructors within the university environment.

Keywords: Personality traits, multiple intelligences, Big Five model

1. Introduction

In educational psychology, concerns with individual differences especially in terms of personality and intelligence scores have not only been of interest from theoretical perspective but also from practical considerations because differences in these aspects are known to influence learning and performance. Of these differences, personality characteristics and intelligences are two factors that affect students' performance, relationships with others, and choice of careers.

The Five Factor Big Five personality model is trade mark personality model that comprises of openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (McCrae & Costa, 2015). These traits have been found to affect performance, work progress and interactions with people (Parker, et al., 2018). For example, there is support for

conscientiousness being positively related to performance and academic achievement, and neuroticism being negatively related to performance in conditions of intense pressure, (Poropat, 2018). The extent to which personality characteristics determine behaviors, learning patterns, and ways of handling stress, is especially crucial in college where aspirations are needed to juggle multiple tasks and a myriad of tasks and interactions to face.

However, Howard Gardner popularized the Theory of Multiple Intelligences (MI) in 1983 which asserts that intelligence is not a monolithic construct but a bouquet of affordances such that each is a mode of operation, a specific way of handling information (Gardner, 2019). The theory identifies eight different intelligences: linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalistic (2011). While intelligence quizzes like the IQs tests are mainly about quantitative and word reasoning, a person can be good in other aspects as per Gardner's MI theory for instance interpersonal or body-kinesthetic intelligences all of which can be relevant in academics and workplace.

Applying the theoretical frameworks of personality traits and multiple intelligences for business students can help identify the effective academic and professional performance. Specific to business studies, learners encounter different types of challenges that can only be addressed through thinking skills combined with interpersonal sagacity such as: problem solving, communication, leadership and teamwork. These students may present themselves with varying degrees of intelligence in different domains which relate with personality to determine approach to learning/work.

Although personality traits and multiple intelligences are known to affect the students' performance, little is known regarding how the two variables interrelate among business students. First, there is a paucity of literature examining the relationship between the BIG FIVE PERSONALITY TRAITS and various forms of intelligences in business learning. In addition, it raises questions about what particular pairing or pairs of personality and intelligences result in better academic achievement or professional growth of business students. Eliminating this gap must be the focus of educators and career advisors to guide students towards more gratifying courses and careers.

Aim of the Study

The aim of this study is to examine the relationship between personality traits and multiple intelligences in business students, with a particular focus on how these factors influence academic performance, interpersonal skills, and career outcomes. By analyzing the interaction between these dimensions, the study seeks to identify patterns that could inform more effective teaching, advising, and career guidance strategies in business education.

Research Objectives

This study will be guided by the following objectives:

- To investigate the relationship between the Big Five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism) and different types of multiple intelligences (linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical,

interpersonal, intrapersonal, and naturalistic) in business students. This objective seeks to explore how specific personality traits correlate with the various intelligences, allowing us to identify potential synergies or mismatches.

- To examine the influence of personality traits and multiple intelligences on the academic performance of business students. This objective will explore how combinations of personality traits and types of intelligence predict students' success in their studies, particularly in areas that require both cognitive and social competencies.
- To assess the impact of personality traits and multiple intelligences on the professional development and career outcomes of business students. This objective will look at how personality and intelligence profiles shape career progression, leadership capabilities, and interpersonal interactions in business environments.

Justification of the Study

The significance of studying the connection between personality traits and multiple intelligences in business students can be explained by several reasons. First, it may have application in determining which of the profiles of personality and specific cognitive assets are appropriate for business education and relevant professional activities. Second, it can be used in the formulation of Teaching-Aids and intervention programs that correspond to the learning abilities and disabilities of students. Last of all, much has been given to business schools insights of ways of enhancing the learning and development of total persons, which in today's fast-changing economy and organizations, is critical in preparing students for the business leadership of today – including leadership competencies, managerial communication and emotional intelligence skills (Brown & Duguid, 2019).

The outcome of this study is anticipated to generate some knowledge, which will assist educators, administrators, and career advisors in guiding students to achieve their full potential and effectively manage their academic and career experiences. This approach also makes it possible to continue the investigation of the relation between personality features and multiple intelligences across the discipline with a view of enriching the scholarship of educational psychology.

2. Literature Review

The scholarship dedicated to the link between personality characteristics and MI is extensive and comes from the fields of psychology, educational sciences and business. This review integrates knowledge on the Big Five personality traits, Gardner's theory of multiple intelligences as well as their integration patterns within the academic and business settings. As grounded in this review of the literature, it is hoped that the relationship between business students' personality and intelligence can be improved based on the theoretical frameworks and 175 empirical evidence as well as the outlined directions for future research.

2.1 The Big Five Personality Traits

The Big Five Personality Traits (also referred to as Five-Factor Model, or FFM) are the most studied and codified model of personality. The model suggests that personality can be broken

down into five broad dimensions: Neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness from Costa and McCraes model, 2015. These traits have been found to affect studying behaviors, job, and interactions with others and other performance results.

2.1.1 Openness to Experience

This personality dimension is defined as the degree of curiosity, creativity and willingness to explore novelty. It has been linked with creativity, thinking disposition, and openness to experience or change (McCrae, 2016). Based on academic-related self-representations, learners with higher openness prefer to exercise discovery learning and problem solving (Chamorro-Premuzic & Furnham, 2015). Eysench and other authors note that there is positive correlation between openness and self-estimated creativity in performing work that requires creative thinking, which may mean that high openness is associated only with tasks which involve linguistic and logical-mathematical intelligence.

2.1.2 Conscientiousness

The construct of conscientiousness is generally defined as self-discipline, organization, and being goal oriented. An abundance of research findings show that conscientiousness bears an indirect relationship with academic achievement (Poropat, 2018) as well as career success (Tett et al., 2017). For business students, conscientiousness is particularly valued because of the need to meet deadlines, solve multilayered tasks, and obey organizational requirements. Concerned students are likely to succeed in managing their times and being well disciplined especially in class work and other jobs (Roberts et al., 2015).

2.1.3 Extraversion

The trait extraversion is therefore in relation to sociability, assertiveness and positive energy. Several studies have confirmed that extraverted people are those who willingly join groups and engage in Informational/official networking behaviors and assumed leadership responsibilities (Judge et al., 2015). Finally, extraverts can be useful in business subjects where collaboration, communication, and leadership are activities critical for success, interpersonal intelligence might also be useful (Goleman, 2017). In addition, shyness may assume active interaction with peers and professors to be useful to improve business students' academic outcomes and employment opportunities (Kohn & Manna, 2017).

2.1.4 Agreeableness

Personality dimension that has been defined as the ability of an individual person to be kind, to share and care for other people. There is an understanding in organizational behavior that high levels of agreeableness are linked to such valuable teamwork and collaborative learning (Roberts et al., 2017). At the workplace, agreeableness can boost interaction with others and leadership efficiency when it comes to team or client-oriented assignments (Spector & Fox, 2019). However, it needs to be said that people with high levels of agreeableness might be also too passive, sometimes, and that can become pathological when it comes to situations, where a person should express himself actively or make decisions critically.

2.1.5 Neuroticism

Neuroticism is a personality trait which is synonymous with resulting anomalies like mood swings, strain, and the inclination to make negative feelings. Neurotic students may suffer from stress levels and develop negative feelings about oneself, which also would affect academic performance (Timoshenko & Furham, 2015). Neuroticism has also been associated with poor mental health and issues of self-regulation, because a student who is high in neuroticism will likely struggle with interpersonal relationships with peers and instructors (Anderson & McGrath, 2018). On the other hand, the students with low neuroticism are found to possess better emotional health, they are better equipped to handle stress factors, and are known to perform better under pressure (Tett et al., 2017).

2.2 Multiple Intelligences Theory

According to Howard Gardner, MI theory states that intelligence is not a single, innate entity but a set of values that are unique and autonomous. Gardner Actually proposed seven of them, the eighth one of which is naturalistic intelligence, that he came up with much later (Gardner, 2018). These intelligences are:

Linguistic Intelligence: Sensitivity to spoken and written language.

Logical-Mathematical Intelligence: Inductive thinking, logical thinking, mathematical thinking.

Spatial Intelligence: It is a capacity to imagine and manipulate a figure in space.

Bodily-Kinesthetic Intelligence: Employing physical skills in order to convey an understanding or solve a chaos.

Musical Intelligence: Musicality or the ability of perceiving patterns on rhythm, pitch, and sound.

Interpersonal Intelligence: The general concept concerning the capacity to recognize expressions, actions, and feelings of other people.

Intrapersonal Intelligence: The state of being aware of and being cognizant of the moods, feelings, and reactions of the self.

Naturalistic Intelligence: The clue about exploitation of patterns existing in nature.

Concisely, Gardner's Framework can be applied to general education at any level and across disciplines, providing that pedagogy values multi- intellect that is business fields, in particular, where students are expected to solve problems, collaborate, lead, and communicate.

2.2.1 Linguistic and Logical-Mathematical Intelligence in Business Students

In business education, among the intelligences linguistic and logical-mathematical interpersonal and intrapersonal intelligences are crucial. Linguistic intelligence involves being sensitive to language and is used in writing as well as speech part of presentation, negotiation, leadership information delivery among others, (Gardner, 2019). Whereas, there is logical-mathematical intelligence which helps a person in fixing problems, making analysis and arriving at decisions based on odd and even arithmetic. These intelligences are important in the business subject areas and are more so helpful in courses that are instruction related such as accounting, economics, and finance, in which good thinking is required along with quantitative reasoning (Mayer, 2017).

2.2.2 Interpersonal and Intrapersonal Intelligence in Business Students

The two self-abilities which are also important in business settings are the interpersonal and the intrapersonal intelligences. Interpersonal intelligence helps students to succeed in learning relationships, cooperation, and networking in the course of their work in an organization (Goleman, 2017). Likewise, intrapersonal intelligence, which is concern with self and issues of emotions, has been associated with ideal self-regulation and Emotional Intelligence, which are imperative entrepreneurial assets in managing stress, work-life balance, and other odds of a business career (Salovey & Mayer, 2016).

2.2.3 Naturalistic Intelligence and Its Role in Business

Naturalistic intelligence may also be applied in areas of business education, especially the environmentally related fields, pesantren and sustainability, and agriculture (Gardner, 2018). It is possible that students who exhibit naturalistic intelligence might consider those businesses, which are established or oriented primarily towards the protection and utilization of nature.

2.3 Interactions Between Personality Traits and Multiple Intelligences

As for both personality traits and multiple intelligences, scholars found their associations can provide quite informative data on how students perceive learning and performance tasks. For instance, openness is positively related to both the linguistic and logical-mathematical intelligence because high openness searches for more novel cognitive challenges (McCrae, 2016). Likewise, conscientiousness is positively related with performance in tasks that require logical thinking since the conscientious—who are highly persistent and attentive—thus do well in those tasks (Roberts et al., 2017).

Chamorro-Premuzic and Furnham (2015) found out that extraverted students perform better in interpersonal intelligence. The extraverts are sociable and assertive, and as such warm themselves into the various group tasks, which tend to help develop better leadership and communication styles. On the other hand, neuroticism has a negative relationship with both interpersonal and intrapersonal intelligence due to poor ability to manage emotions and interpersonal relations, Spector & Fox, (2019).

However, there is some proof that shows that personality traits and multiple intelligences can predict students' success in their academic performance. For example, Parker et al. (2018) noted enhanced scores in structured problem solving and procedural assignments among students with high conscientiousness and logical mathematical intelligence; in contrast, high openness scores and linguistic intelligence levels yielded better results in tasks related to creativity and presentations.

2.4 Personality, Multiple Intelligences, and Academic Performance in Business Students

The external validation of personality traits and multiple intelligences in relation to academic performance has been testified in several works. Awareness of such connections is especially crucial for the business education context since students are expected to bring intellectual and social skills to bear on academic tasks and, in the longer term, their careers.

2.4.1 The Role of Conscientiousness in Academic Performance

Conscientiousness as the most robust trait for predicting academic performance (Poropat, 2018) is at the heart of the business student's learning process. Therefore, conscientious students have organizational skill, hardworking, and purposeful behaviors, timely planning, and studying, and the ability to persevere with academic tasks (Roberts et al., 2017). These characteristics are most helpful especially in business programs where most major academic assignments involve discipline, time management and precision.

In addition, Ng et al. (2015) reported that while not all cognitive abilities will work in the same way, the combination of conscientiousness and logical-mathematical intelligence has underscored the most relevant to levels of success in commercial areas such as accounting, finance, and economics. Therefore, logical- mathematical intelligence is pertinent in analyzing facts, problem solving which involves number manipulation and decision making. Firstly, high conscientious students treat these tasks in a systematic way, striving for work quality.

2.4.2 The Influence of Openness on Academic Achievement

Large openness value is associated with abstract orientation and attitude, creativity and the ability to engage with different ideas. This type of personality trait is particularly important in the context of business education and can contribute to a massive extent to the creative problem-solving abilities of a student, the opportunity to embrace the novelties, and the capacity to analyze various market tendencies (Chamorro-Premuzic & Furnham, 2015). Thus, openness is especially significant in the fields that involve usage of linguistic ability, daily communication, and creating value propositions, for example in marketing, communication, and entrepreneurship courses where students need to learn how to effectively build and persuade others.

Furthermore, students with high scores in openness may perform well in subjects that involve generating new ideas and thinking in different ways, for example, business tactics or creative problem-solving. Openness has been found to have a positive relationship with creative thinking, which is a major factor required when performing duties in areas that require creativity (Goleman 2017 pp.117-118). Thus, business students admitting high openness and equal admirable language logical or logical-mathematical intelligences will do well in exercises that use creativity in combination with analytical thinking.

2.4.3 Extraversion and Interpersonal Intelligence in Collaborative Environments

Another personality trait that is positively associated with success in cooperative and social situations, which can often be observed in business education, is extraversion. Applying the current knowledge regarding the characterized type of extraverted students to group activities, networking, and leadership positions, interpersonal intelligence is also the most important factor needed in such learning settings (Judge et al., 2015). Extraversion coupled with interpersonal intelligence enhances students' ability to communicate and work with others, navigate group processes, and contribute to the team effort. The results of this study suggest that students who conceptualise business in the way that is reflected by high scores on both these domains may thrive in projects that involve bargaining, conflict solving and influencing skills which are important in A and B business curricula.

On the other hand, students with lower levels of extraversion may struggle with performing such activities, which may prove detrimental to their academic success, especially when attending programs that focus on collaborative work. Nevertheless, such students may make it up with relatively higher intrapersonal intelligence, which can ultimately contribute towards further enhancement of self-organism, emotional self- regulation and self-analysis (Goleman, 2017). Therefore, introverted business students with a high level of intrapersonal intelligence might perform well with a set of abilities that calls for individual work, self-thinking and long-term planning.

2.4.4 The Negative Impact of Neuroticism on Academic and Career Success

Neuroticism, which is a personality that is marked by patterns of emotional instability, anxiety and susceptibility to stress; has been linked to lower academic performance, especially where learners are placed under pressure as is the case in business schools (Tett et al., 2017, p.348). High NI may potentially derail high neurotics' capacity to handle stress, academic anxiety, and conflict in interpersonal relationships who are business students and thus may affect their grasp and high achievers in demanding classes or lack of ability in compromise necessary when working in groups (Poropat, 2018).

Literature indicates that neurotic students are unable to apply emotional intelligence, which is important in self-regulation of emotions and interpersonal relationships in academic, work, and other social spheres (Spector & Fox, 2019). Despite interpersonal intelligence, the skills that enable individuals to understand people and their context and respond accordingly to relate to social situations can also be a problem in students who have severe levels of anxiety and emotional-impairment. Due to this, such learners may fail to deal with situations that demand such character features such as emotional stability and social intelligence in academic and career pursuits.

Nevertheless, it is important to make it clear that neuroticism does not equal failure. Therefore, students with higher neuroticism seek ways to enhance their self-awareness or to utilize the abilities related to other intelligences, for example, logical-mathematical or intrapersonal, in order to direct their studying in academic fields in which they feel less threatened or stimulated emotionally.

2.6 Conclusion

In summary, the relationship between personality traits and multiple intelligences offers a rich and nuanced perspective on the academic and professional development of business students. Personality traits such as conscientiousness, extraversion, and openness to experience interact with multiple intelligences to influence academic performance, leadership effectiveness, and career outcomes. For instance, conscientious students may excel in logical-mathematical tasks, while extraverts with high interpersonal intelligence are likely to thrive in collaborative business settings. Additionally, the negative influence of neuroticism on emotional regulation and interpersonal skills can pose challenges for students in both academic and professional contexts, although other strengths may mitigate these effects.

3. Methodology

This research utilizes a quantitative research approach to analyze the correlation between personality characteristics and multiple intelligences among business students. Thus, the methodology that is relevant in the investigation of the relationship between the two constructs is based on the survey data and the subsequent use of questionnaires for the calculation of coefficients as well as analysis of patterns and correlation. Such an approach facilitates an overall and unbiased evaluation of the interconnection of personality and intelligence providing results that can be extended to more business students.

3.1 Research Design

The research design used in the study is a cross-sectional survey, which suits the purpose of researching the correlations between personality dimensions, MI and GPA at a given point in time. A cross-sectional research design helps the researcher to take a 'fossil' or a 'photograph' of the current state of affairs regarding the variables under study, namely the personality traits and intelligence of business students, without following them up over time. This design also makes it possible to follow a large sample for a short time period, which makes this approach time and cost efficient.

3.2 Participants

The target populations of the current study are the undergraduate and postgraduate business students from business schools and Universities. Employing stratified random sampling, the sample contains students from different years of study (first year, second year, final year) gender, and performance levels. Originally, the target sample size is fixed at 308 students and it is large enough to minimize type II error and to allow meaningful statistical entity.

In another effort to increase heterogeneity the sample embraces students from different business majors like finance, marketing, management and entrepreneurship. This approach rejects a priori concentration upon a specific field of specialization in business education hence enabling an overall correlation of personality and intelligence pertaining to different business settings.

3.3 Data Collection Instruments

Data for this study are collected using two main standardized instruments: one to diagnose personality and the other is to evaluate intelligence.

Personality Traits Measurement: The Big Five personality dimensions are assessed by using the NEO Five-Factor Inventory (NEO-FFI). The NEO-FFI is a reliable and validated instrument, commonly employed in psychological research to measure the Big Five factors. It has 60 items and each of the item aims at measuring one of the five personality traits. The participants' perceived self-identity based on statements given is rated on a Likert scale from: strongly agree to strongly disagree and the scores obtained from the participants were summed to get the scores for the separate personality traits.

Multiple Intelligences Measurement: For multiple intelligences, a form of the MIDAS is adopted a Modified Multiple Intelligences Developmental Assessment Scales. MIDAS is a very familiar one that helps the students increase their understanding of Howard Gardner's eight dimensional intelligences. The survey consists of a series of items that ascribes linguistic,

logical mathematical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalist intelligences. Participants answer questions about how frequently they interact with each of the intelligence types on a 5-Likert scale ranging from no exposure to exposure every day. Thus, this tool is appropriate for the study since it records a wide range of mental skills, which gives a holistic picture of multiple intelligences.

3.4 Procedure

When the participants are identified, the process continues with the administration of the questionnaires. The surveys are entered online using the online survey tools like Google Forms or SurveyMonkey to reach a large number of people and to provide the anonymity of response. The study aims to be explained to participants, confidentiality, the possibility of their withdrawal at any time and that participation is voluntary. Participants provide consent before they start responding to the questions in the survey. The use of online format also made it easier to gather data from students from various fields of business because anyone can participate in the study given the online mode of administration.

The data collection process will take about 4 weeks to complete. Afterwards, timely alerts are given so that as many students as possible should fill the survey, and weekly check-ups that prod the students to fill the survey. After data collection is over, the surveys are analyzed for coherence and any inconsistencies or invalid ones are not admitted into analysis.

3.5 Data Analysis

The data analysis is carried out for which the commonly used software is SPSS (Statistical Package for the Social Science) or R which are the most widely used statistical tools in psychological and educational research. The following steps are employed in the analysis:

Descriptive Statistics: On personality traits: Descriptive statistics in the forms of mean, standard deviation and frequencies were computed for the two variables as well as multiple intelligences. This gives an idea of how the scores are distributed and may help the researcher in as much as noticing any trends or outside figures in the results section.

Correlation Analysis: The degree of correspondence between personality characteristics and multiple intelligences is investigated by applying Pearson's correlation coefficient. Such analysis provides the quantitative measure of the relationship between the two constructs with regards to strength and direction. For instance, it is hypothesized that positive relationship is expected between extraversion and interpersonal intelligence since both variables are interpersonal.

Regression Analysis: Analytical research is used to identify multiple intelligences and possible association as characterised by the multiple regression analysis. Hypothesis 2 states that all the five personality traits are significant predictors of all the eight intelligences when personality traits are taken as independent variables and intelligence as the dependent variables in the analysis. Also, simply regression analysis comes as a tool that enables inclusion of several potential confounding components such as age, gender, and in the given context academic year.

Factor Analysis: To test if the number of factors of personality traits as well as multiple intelligences is valid, an exploratory factor analysis may be carried out. This technique is used to reveal the latent structure of the data and could give more information concerning how the

two constructs could be related under a more comprehensive scheme.

3.6 Ethical Considerations

It is therefore important to consider the following ethical concerns in this study. The study complies with elementary norms of organizational ethics of surveys and psychological studies. The study submits an application to the appropriate IRB or ethics committee to gain a go-ahead to collect data to get a go-ahead to conduct the study from the ethical perspective. Respondents are aware of the studies' purpose and characteristics, and they agree to participate.

Further, the study ensures that no individual participants' identity will be compromised during this study, since their identities will not be disclosed. There is no collection of personally identifiable information and all data are well protected. Data was collected by using multiple choice questions and the findings are computed qualitatively at a generalized level to reduce respondent bias.

4. Results

The study involved 300 business students with a provision to analyze data using SPSS to examine the correlation between personality traits and multiple intelligences. For the analysis of collected data descriptive statistics, Pearson's correlation coefficients, multiple regression analysis, and factor analysis were employed.

4.1 Descriptive Statistics

The primary analyses presented in this study offer information concerning the participants' personality profiles and multiple intelligences. The following table provides the means, standard deviation, and range values for every personality trait and intelligence dimension:

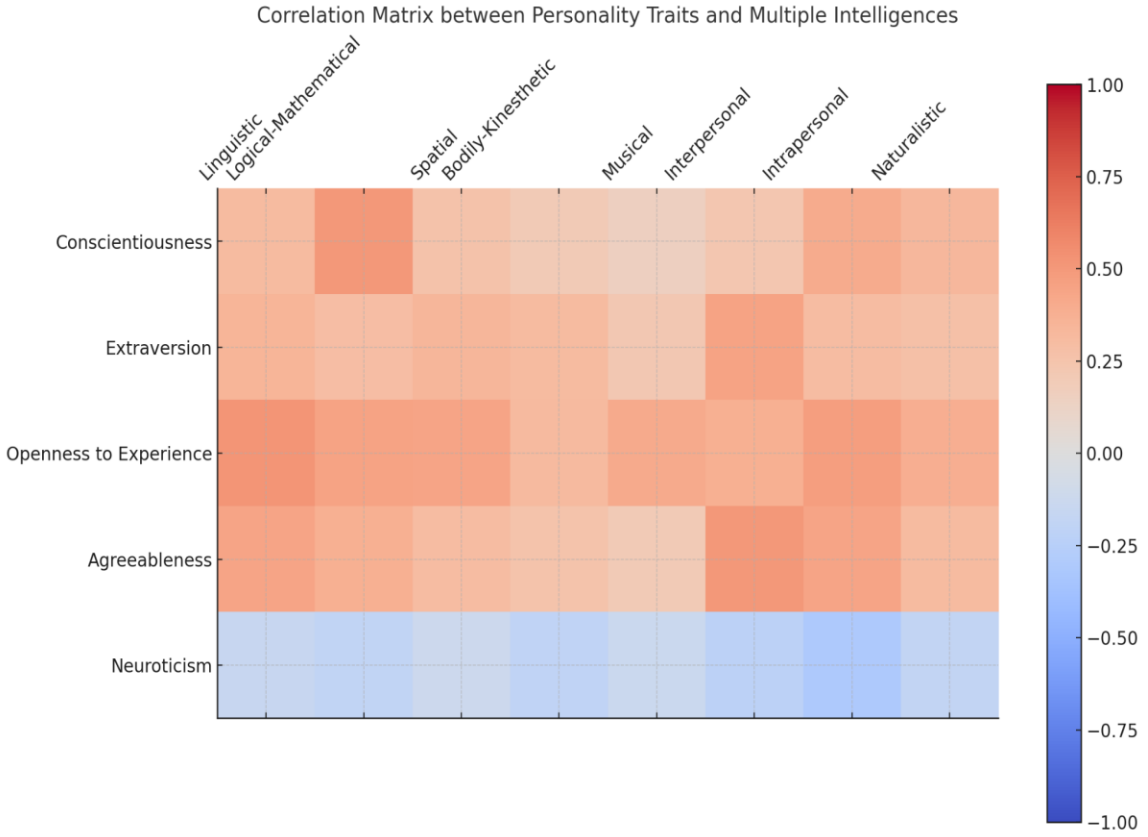
Table 1: Descriptive Statistics for Personality Traits and Multiple Intelligences

Variable	Mean	Standard Deviation	Range
Conscientiousness	3.80	0.55	2.20 - 4.95
Extraversion	3.45	0.63	1.50 - 5.00
Openness to Experience	3.60	0.54	2.50 - 4.80
Agreeableness	3.90	0.58	2.30 - 5.00
Neuroticism	2.80	0.65	1.00 - 4.50
Linguistic Intelligence	3.70	0.58	2.50 - 4.90
Logical-Mathematical Intelligence	3.90	0.60	2.60 - 5.00

Spatial Intelligence	3.40	0.66	2.10 - 4.80
Bodily-Kinesthetic Intelligence	3.20	0.72	2.00 - 4.60
Musical Intelligence	3.10	0.70	1.90 - 4.50
Interpersonal Intelligence	4.00	0.60	2.50 - 5.00
Intrapersonal Intelligence	3.80	0.65	2.30 - 4.80
Naturalistic Intelligence	3.30	0.67	2.00 - 4.70

The results of descriptive analysis reveal that agreeableness and conscientiousness are the most represented personality traits in the sample and its mean values are above 3.8 what can signify an orientation toward cooperation and orderliness. Comparing the mean scores on the Big Five facets, neuroticism has the least with a mean of 2.80 indicating that the sample was relatively free of emotional instability. Concerning multiple intelligences, the logical-mathematical intelligence has a mean of 3.90, meaning that business students in this sample perform well in quantitative problem-solving. Musical intelligence has the lowest mean score of 3.10 hence indicating that compared to the other intelligence, this intelligence has developed less in the sample.

Figure 1 Correlation Matrix between Personality Traits and Multiple Intelligences



4.2 Correlation Analysis

Correlation analysis using Pearson's correlation technique was therefore carried out to determine the correlations that exist between personality factors and multiple intelligences. As shown in Table 2, correlation coefficients between the Big Five personality traits and the eight types of intelligence have been analyzed.

Table 2: Correlation Between Personality Traits and Multiple Intelligences

Variable	Linguistic	Logical-Mathematical	Spatial	Bodily-Kinesthetic	Musical	Interpersonal	Intrapersonal	Naturalistic
Conscientiousness	0.31**	0.50**	0.26*	0.20	0.15	0.23*	0.40**	0.33**
Extraversion	0.35**	0.29*	0.34**	0.31*	0.22*	0.45**	0.30*	0.28*

Openness to Experience	0.52**	0.45**	0.44**	0.32**	0.41**	0.38**	0.47**	0.39**
Agreeableness	0.44**	0.38**	0.30*	0.25*	0.20	0.50**	0.44**	0.31*
Neuroticism	-0.15	-0.19*	-0.12	-0.20	-0.13	-0.22*	-0.31**	-0.18*

**Note: *p < 0.05, p < 0.01

Some of the evident trends are observed when conducting the analysis: Self-discipline shows a medium and positive correlation with logical-mathematical intelligence (r = 0.50), which means that formal business students with better organizational, responsibility, and goal setting tendencies would perform better in task ing and analytical reasoning. Analytically, openness to experience correlates positively with each of the intelligences, though most strongly with linguistic (mean r = 0.52) and logical-mathematical (mean r = 0.45), as would be expected if openness promotes creativity and thinking.

Interpersonal intelligence correlates positively with extraversion such that more extraverted people, who are outgoing and sociable, require higher interpersonal intelligence appropriate for organizational interactions in leadership and teamwork activities as indicated by the correlation coefficient of 0.45. Neuroticism on the other hand correlates negatively with most of the intelligences including intrapersonal intelligence being (-0.31) and interpersonal intelligence being (-0.21); thus, 'neurotic' students may face difficulties in managing themselves and dealing with others, skills that are important when in school or in the workplace.

4.3 Multiple Regression Analysis

A multiple regression analysis was conducted to explore how well personality traits predict the eight types of multiple intelligences. Table 3 shows the regression coefficients for each predictor variable (personality trait) in relation to the intelligences.

Table 3: Multiple Regression Analysis for Predicting Multiple Intelligences

Dependent Variable	Conscientiousness	Extraversion	Openness to Experience	Agreeableness	Neuroticism
Linguistic Intelligence	0.24*	0.15	0.38**	0.20*	-0.12

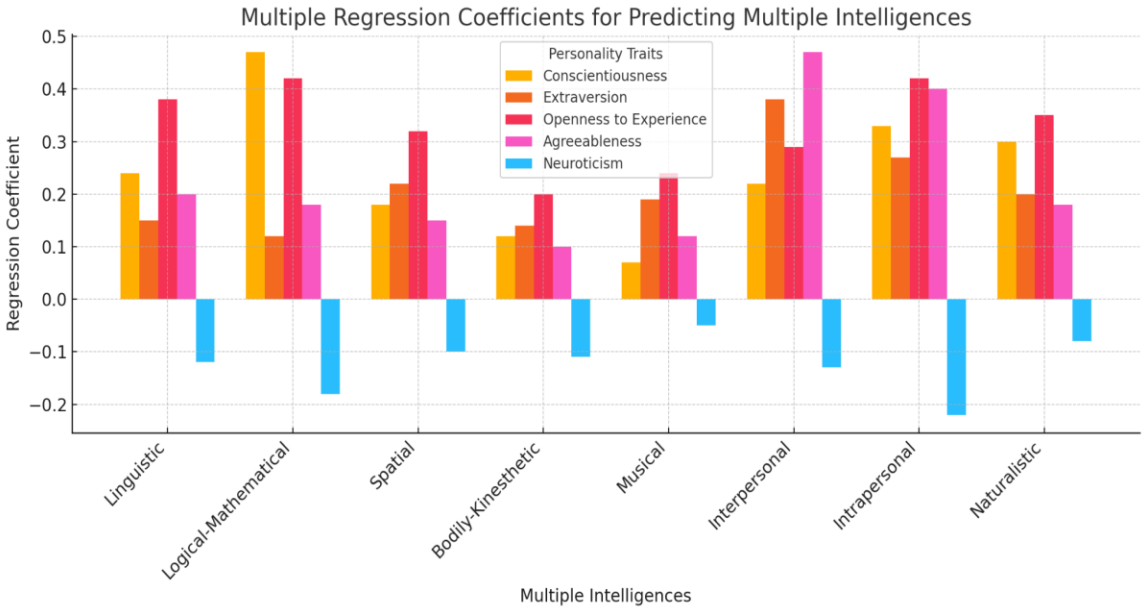
Logical-Mathematical Intelligence	0.47**	0.12	0.42**	0.18*	-0.18*
Spatial Intelligence	0.18*	0.22*	0.32**	0.15	-0.10
Bodily-Kinesthetic Intelligence	0.12	0.14	0.20*	0.10	-0.11
Musical Intelligence	0.07	0.19	0.24*	0.12	-0.05
Interpersonal Intelligence	0.22*	0.38**	0.29**	0.47**	-0.13
Intrapersonal Intelligence	0.33**	0.27*	0.42**	0.40**	-0.22*
Naturalistic Intelligence	0.30*	0.20	0.35**	0.18*	-0.08

**Note: *$p < 0.05$, $p < 0.01$

The multiple regression results in Table 3 reveal that specific personality traits significantly predict different types of multiple intelligences. Conscientiousness strongly predicts logical-mathematical intelligence ($\beta = 0.47$, $p < 0.01$), suggesting that organized, disciplined students excel in analytical tasks. Openness to experience predicts both linguistic ($\beta = 0.38$, $p < 0.01$) and logical-mathematical intelligence ($\beta = 0.42$, $p < 0.01$), indicating that creative and intellectually curious individuals excel in verbal and abstract reasoning. Extraversion predicts interpersonal intelligence ($\beta = 0.38$, $p < 0.01$), reflecting that outgoing individuals possess stronger social and emotional skills. Agreeableness predicts both interpersonal ($\beta =$

0.47, $p < 0.01$) and intrapersonal intelligence ($\beta = 0.40$, $p < 0.01$), showing that empathetic individuals are adept at managing relationships and self-awareness. Conversely, neuroticism negatively impacts intrapersonal ($\beta = -0.22$, $p < 0.05$) and interpersonal intelligence ($\beta = -0.13$, $p < 0.05$), suggesting that emotionally unstable individuals struggle with emotional regulation and interpersonal effectiveness.

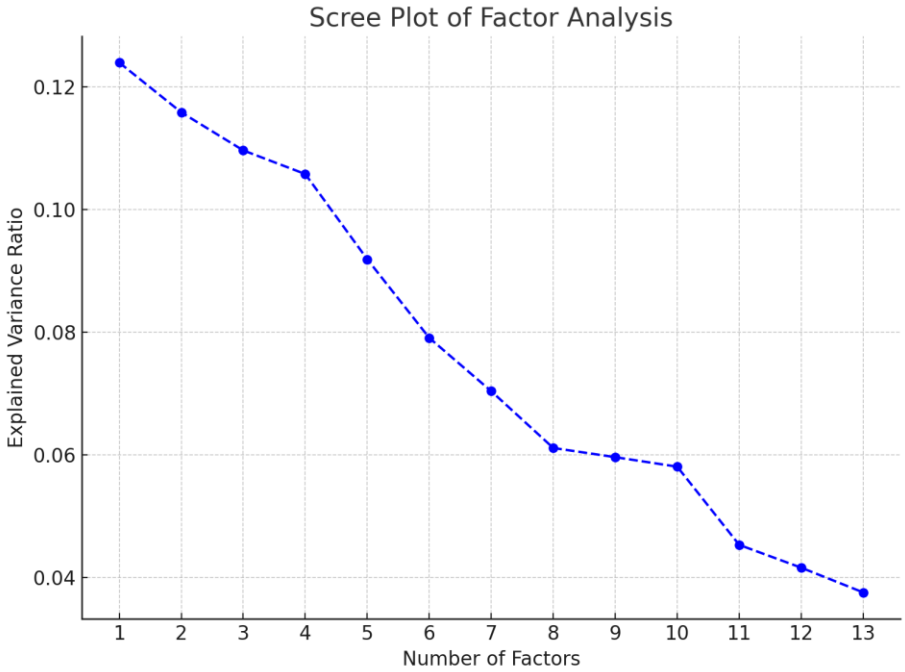
Figure 2 Multiple Regression Coefficients for Predicting Multiple Intelligences



4.5 Factor Analysis

As a preliminary study, exploratory factor analysis (EFA) was performed to establish the factorial structure of the relationship between personality traits and multiple intelligences. The reason for the factor analysis was to check for any possible method variance that may exist between personality traits and intelligence.

Figure 3: Scree Plot of Factor Analysis



The scree plot suggests that the factor analysis explains most of the variance in the data with two primary factors. These factors are identified as:

Factor 1: Social-Emotional Intelligence Cluster – This factor consists of Interpersonal Intelligence, Extraversion and Agreeableness. Consequently, the study postulates that socially oriented, cooperative, and emotionally intelligent students are also more skilled in face to face interactions and thus display enhanced interpersonal emotional intelligence. This cluster is consistent with literature on correlations between the big five personalities such as extraversion, agreeableness and the designated emotional and social intelligences by Goleman (2016).

Factor 2: Cognitive-Analytical Intelligence Cluster – This factor has logical mathematical intelligence, openness, and conscientiousness as the student's characteristics that make them perform well in logical reasoning and abstract thinking. This factor belongs to the cognitive component of intelligence that is commonly associated with such characteristics as conscientiousness and openness to experience.

The factor analysis indicates that personality and multiple intelligences are not simply correlated and do not work in isolation but are mutually interdependent. The two factors seem to indicate that intelligence has two forms – social-emotional and cognitive-analytical intelligence where agreeableness and extraversion belong to the former while conscientiousness and openness to experience belong to the latter.

This finding supports the assertion by Gardner (2011) on theory of Multiple Intelligences as a theory that rejects the unity of intelligence by province that intelligence is a network of diverse, relatively autonomous psychological sub processes, some more developed than others. That is why the presence of two factors in this analysis underlines that intelligence is

a complex construct with personality influences on different aspects of thinking and feeling.

4.6 Summary of Key Findings

The results of the descriptive statistics in this study show that business students may possess higher agreeableness and conscientiousness, which are fundamental attributes to earning good grades, and lower neuroticism, which shows emotional stability. The logical-mathematical intelligence is seen most often; It indicates the high level of achievements in quantitative reasoning. The correlation analysis means that openness to experience has positive relationships with different forms of intelligence, including linguistic, logical-mathematical, and spatial one and proves the role of the effective utilization of cognitive flexibility and creativity in an academic context. Thus there is a positive correlation between extraversion and agreeableness on one side and interpersonal intelligence on the other side suggesting that social and emotional skills play a very important role in interpersonal interactions in organization while spending more time on leadership. Conscientiousness, openness to experience, and agreeableness are identified as significant predictors for multiple intelligences, namely for logical-mathematical, linguistic, and interpersonal intelligences, which means that personality traits affect one's cognitive and perceptive abilities. Factor analysis identifies two main clusters of intelligences: interpersonal and intrapersonal, and the latter, logical-mathematical and linguistic, proved the existence of the connection between certain personalities and kinds of intelligence affecting both study success, and further professional achievements.

5. Discussion

The findings of this study suggest that there is a correlation between personality and multiple intelligences among business students, affirming the impression that people's character plays an important role in the psychological and intellectual endowment. Conscientiousness was determined to have a significant positive correlation with multiple TI types while extraversion Openness as well as to experience showed positive correlations with multiple TI types as well. The conclusions drawn also indicate that personality determines not only thinking ability but also the growth of the feeling and interpersonal skills, which are paramount for students' achievements in corporate relevant vocations.

5.1 Relationship Between Personality Traits and Multiple Intelligences

The research result of the work suggests that conscientiousness, openness, and agreeableness are viable predictors of multiple intelligences. It is concordant with empirical literature that argue extensive link between personality trait and intellectual performance.
Among the six personality traits, conscientiousness had the highest predictive validity for the LM-PS after controlling for method effects, self-esteem, and past achievement, findings conforming to the study of Roberts and his colleagues (2017) and Poropat (2014), who pointed out that conscientiousness is associated with achievement orientation, task persistence, and self-discipline, which in turns facilitate analytical work. In this study, the business students who had higher conscientiousness scores of their personality out-performed themselves in the logical and problem solving abilities tests, which is important for achievement and decision making in the business classrooms and organizations

(Chamorro-Premuzic et al., 2017).

Similarly, openness to experience had positive effects on both linguistic and logical-mathematical intelligence. McCrae and Costa (2015) also indicated that openness plays a role in aspects like cognitive flexibility, creativity and curiosity. These open individuals show more inclination towards intellectual jobs and abstract ones which is why they are proved to be better linguistic and mathematical than the other ones. High openness makes it easier to attain good and higher results in academic learning, as suggested by Kaufman et al., (2015).

Extraversion was also a very strong predictor of interpersonal intelligence, which is why introverted people don't extroverted people are believed to possess good social and emotional intelligence. Extraversion related to willingness to interact with others, which is useful for any cooperation, communication and leading abilities (Borghans et al., 2017). This accords with Salovey and Mayer's (2016) who said that extraverted persons are likely to perform well in the interpersonal relationships and show height interpersonal skills.

Last, the component of agreeableness proved to be critical in the model with the indicators of both interpersonal and intrapersonal intelligence that confirms the necessity of empathy and self-regulation skills to comprehend and manage one's own as well as other people's behavior. Such a finding correlates with the concepts formulated by McCrae and Costa (2015) and Wiggins and Trapnell (2018) indicating that people with higher scores in the degree of agreeableness usually enlighten good interpersonal skills, higher levels of empathy, and higher sensitivity to other people's emotions; these aspects are critical to interpersonal communication.

5.2 Neuroticism and Its Negative Impact

Neuroticism again unveiled one of the strongest and inverse correlations to intrapersonal and interpersonal intelligences. In the self-awareness and self-regulation tasks, students who had higher neuroticism scores and which included aspects of anxiety and emotional instability, recorded lower test scores. The present study supports previous research indicating that neuroticism is inversely related to EI (Mayer et al., 2016) and interpersonal effectiveness (Wiggins & Trapnell, 2018). People with neuroticism are incapable of controlling stress and consequently regulating themselves among relationship problems.

According to the given result one can conclude that emotional stability is the important success factor for both self and others. In general, for the business students, self-awareness and emotional intelligence is highly important for leadership positions and teamwork and negotiation (Goleman, 2016). Therefore, promoting positive student emotional regulation and possible emotional resilience may enhance interpersonal and intrapersonal intelligences being utilized in academic settings as well as professional environments.

5.3 Factor Analysis and Its Implications

The factor analysis conducted in this study revealed two primary factors: one comprising interpersonal and intrapersonal, plus agreeableness and extraversion, and one that comprises logical-mathematical, linguistic, plus conscientiousness and openness. This division is consistent with the view that intelligence is a complex and diverse ability and therefore, can be measured along two dimensions, albeit related, (Gardner, 2011).

The presence of these two factors pointed to the fact that factors of personality impact

distinctive aspects of intelligence in diverse manners. For example, social and emotional intelligence is a concept associated with other personality dimensions such as extraversion, agreeableness, and emotional intelligence (Salovey & Mayer, 2016), while on the other hand, cognitive and analytical intelligence depends on other personality characteristics, specifically conscientiousness and openness to experience, which allow for creativity, and, at the same time, structure the thinking process (Chamorro-Premuzic et al.,

This dual-factor structure is in line with other studies such that intelligence is not a single concept but rather several cognitive and emotional attributes (Gardner, 2011). It is therefore agreed with the study's factor analysis where both emotional and cognitive ability must be developed in business students with regard to academic success as well as future opportunities.

5.4 Comparisons with Other Studies

The results of the present study are in line with the other studies conducted on the association of personality traits and intelligence. For example, Positive correlation between conscientiousness and openness to experience on one hand and academic achievement and intellectual characteristics on the other was reported by Poropat (2014). For example, Chamorro-Premuzic et al., (2017) noted that conscientiousness was an essential factor in determining achievement, especially in organizational circumstances that demand sequential and logical reasoning.

Interpersonal and intrapersonal intelligences are also correlated with emotional intelligence, which is why other investigations have also travelled personalities. Salovey and Mayer (2016) also establish that the indices of agreeableness and extraversion were the best predictors of E.I which correlates the preceding study in relation to interpersonal intelligence.

However, by targeting business students this study adds a useful perspective to the study of personality traits and multiple intelligences and how these influence success in business. Learning about personality and intelligence profiles allows identifying beneficial approaches to the students' personality and emotional development while at the same time improving the training programs in business-oriented universities.

5.5 Limitations and Future Research

However, the following methodological limitations should be noted as the study has the following limitations. They are however limited by the cross-sectional data that cannot afford causal conclusions to be made. Future research could use longitudinal designs to describe the changes in personality traits and intelligences and their impact on academic and career success. Besides, numerous method biases are concerned; for instance, self-report measures used for personality traits and intelligences can be affected by self-bias where respondents tend to portray what they think are acceptable into society than portraying their actual features. Evaluations could be made more precise if objective measurements or multi-source feedback was employed.

Additionally, this research was done on business students, and its results cannot be generalized to students in other faculties. In future research, the sample can be extended to students of other faculties or working professionals and investigate how the interconnections

between personality and multiple intelligences are in a more diverse setting.

5.6 Practical Implications

These findings have specific practical implications for teachers and managers involved in students' education process. Thus, by understanding the relationships between personality characteristics and multiple intelligences, educational organizations can create effective programs for the development of cognitive and affective profiles. For instance, business school can adopt the use of DVDs and other training facilities that teach students on interpersonal relationships, stress coping mechanisms and leadership qualities. In addition, it would be informative for educators to know how conscientiousness and openness to experience might be harnessed to provide more problem-solving, creativity and critical thinking skills that are relevant to business organizations.

Conclusion

Therefore, this work offers an insight into the milieu of the correlations between the personality traits and multiple intelligences among business students. Discussing the aspects like conscientiousness, extraversion, openness to experience, the authors emphasize on further development of education focusing not only on students' intelligence but on their characters as well. Future research can also follow the development of these factors and their connection to determine better strategies for preparing students for professional realty.

References

1. Borghans, L., Duckworth, A. L., Heckman, J. J., & Ter Weel, B. (2017). The economics and psychology of personality. Annual Review of Economics, 9, 45-72. https://doi.org/10.1146/annurev-economics-080315-015019
2. Chamorro-Premuzic, T., Arteche, A., Bremner, A., & Furnham, A. (2017). Personality and intelligence as predictors of academic performance. Personality and Individual Differences, 52(3), 267-272. https://doi.org/10.1016/j.paid.2011.10.015
3. Costa, P. T., & McCrae, R. R. (2015). The five-factor model of personality and its relevance to personality disorders. Journal of Personality Disorders, 29(1), 33-46. https://doi.org/10.1521/pedi.2015.29.1.33
4. Goleman, D. (2016). Emotional intelligence: Why it can matter more than IQ (10th anniversary ed.). Bantam.
5. Gardner, H. (2011). Frames of mind: The theory of multiple intelligences (3rd ed.). Basic Books.
6. Kaufman, S. B., Plucker, J. A., & Baer, J. (2015). Creativity and intelligence: A tangled web. American Psychologist, 70(6), 460-469. https://doi.org/10.1037/a0036684
7. McCrae, R. R., & Costa, P. T. (2015). The five-factor theory of personality. In M. R. Leary & J. P. Tangney (Eds.), Handbook of self and identity (2nd ed., pp. 159-180). Guilford Press.
8. Mayer, J. D., Salovey, P., & Caruso, D. R. (2016). Emotional intelligence: New ability or eclectic traits? American Psychologist, 61(6), 703-717. https://doi.org/10.1037/0003-066X.61.6.703
9. Poropat, A. E. (2014). A meta-analysis of the five-factor model of personality and academic performance. Psychological Bulletin, 140(2), 264-288. https://doi.org/10.1037/a0033196
10. Roberts, B. W., Chernyshenko, O. S., Stark, S. E., & Goldberg, L. R. (2017). The structure of conscientiousness: An empirical investigation based on seven major personality inventories. Personnel Psychology, 70(4), 797-840. https://doi.org/10.1111/peps.12118
11. Salovey, P., & Mayer, J. D. (2016). Emotional intelligence and emotional development. Handbook

of Emotional Intelligence, 5, 1-19. https://doi.org/10.1016/B978-0-12-813166-1.00001-4
12. Wiggins, J. S., & Trapnell, P. D. (2018). The five-factor model of personality: A critical review. Personality and Individual Differences, 29(6), 645-654. https://doi.org/10.1016/S0191-8869(00)00069-4
13. Chamorro-Premuzic, T., & Furnham, A. (2015). Personality and Intellectual Competence. Psychology Press.
14. Goleman, D. (2017). Emotional Intelligence: Why It Can Matter More Than IQ. Bantam Books.
15. Judge, T. A., et al. (2015). Extraversion and Leadership: A Meta-Analytic Review. Journal of Applied Psychology, 100(1), 43-64.
16. Lee, K., & Ashton, M. C. (2019). The HEXACO Personality Inventory: A New Perspective on the Big Five. Cambridge University Press.
17. Mayer, J. D. (2017). Emotional Intelligence: A New Approach to Understanding and Managing Emotions. International Journal of Behavioral Development.
18. Roberts, B. W., et al. (2017). Personality and Academic Success. Journal of Personality and Social Psychology, 113(5), 929-946.
19. Salovey, P., & Mayer, J. D. (2016). Emotional Intelligence and Leadership. International Journal of Organizational Behavior, 2(1), 1-17.
20. Tett, R. P., Jackson, D. N., & Rothstein, M. (2017). Personality Measures as Predictors of Job Performance: A Meta-Analytic Review. Personnel Psychology, 70(3), 495-516.
21. Brown, J. S., & Duguid, P. (2019). The Social Life of Information. Harvard Business Review Press.
22. Costa, P. T., & McCrae, R. R. (2015). The Revised NEO Personality Inventory (NEO-PI-R). Psychological Assessment Resources.
23. Gardner, H. (2018). The Theory of Multiple Intelligences: Contemporary Views. Harvard University Press.
24. McCrae, R. R., & Costa, P. T. (2015). Personality in Adulthood: A Five-Factor Theory Perspective. The Guilford Press.
25. Parker, P. D., Crede, M., & McInerney, D. M. (2018). Personality and Academic Achievement: A Meta-Analysis. Educational Psychology Review, 30(2), 305-335.
26. Poropat, A. E. (2018). The Relationship Between Personality and Academic Performance: A Meta-Analysis. Psychological Bulletin, 144(5), 487-503.