

St. Petersburg University
Graduate School of Management

Master in Management Program

**The role of Dark Triad personality traits in the formation of entrepreneurial intentions
among students and recent graduates**

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ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ
ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ

Я, Орехова Юлия Александровна, студент второго курса магистратуры направления «Менеджмент», заявляю, что в моей магистерской диссертации на тему «Роль черт "темной триады" личности в формировании предпринимательских намерений у студентов и недавних выпускников», представленной в службу обеспечения программ магистратуры для последующей передачи в государственную аттестационную комиссию для публичной защиты, не содержится элементов плагиата.

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Юрехов (Подпись студента)
24.05.2021 (Дата)

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АННОТАЦИЯ

Автор	Орехова Юлия Александровна
Название ВКР	Роль черт «темной триады» личности в формировании предпринимательских намерений у студентов и недавних выпускников
Образовательная программа	Менеджмент
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Описание цели, задач и основных результатов	<p>Целью исследования является выявление механизма влияния черт Тёмной триады: нарциссизма, психопатии и макиавеллизма, на предпринимательские намерения студентов и недавних выпускников.</p> <p>Для достижения цели выполнены следующие задачи:</p> <ol style="list-style-type: none">1. Анализ литературы о роли Тёмной триады в предпринимательстве и в формировании предпринимательских намерений.2. Построение теоретической модели исследования на основе теории запланированного поведения.3. Разработка и обоснование исследовательских гипотез.4. Создание опроса и сбор данных.5. Формирование выводов о механизме влияния черт Тёмной триады на предпринимательские намерения на основе анализа данных.

	<p>6. Разработка практических рекомендаций.</p> <p>Выявлено, что существует положительная значимая связь между отношением к предпринимательству и предпринимательскими намерениями. Среди черт Темной триады нарциссизм демонстрирует значительную положительную связь с отношением к предпринимательству и воспринимаемым поведенческим контролем. Более того, отношение к предпринимательству и воспринимаемый поведенческий контроль являются медиаторами в отношениях между чертами Темной триады и предпринимательскими намерениями. Теоретический вклад заключается в уточнении теории запланированного поведения в контексте предпринимательских намерений среди молодежи и расширении знаний о чертах личности, обычно воспринимаемых как негативные, а именно о чертах Темной триады в контексте предпринимательства. Практические результаты могут быть использованы бизнес-школами и грантовыми программами.</p>
<p>Ключевые слова</p>	<p>Предпринимательские намерения, Тёмная триада личности, Нарциссизм, Теория запланированного поведения</p>

ABSTRACT

Master Student's Name	Orekhova Iuliia
Master Thesis Title	The role of Dark Triad personality traits in the formation of entrepreneurial intentions among students and recent graduates
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Научный руководитель	Karina A. Bogatyreva, Senior Lecturer, Strategic and International Management Department
Описание цели, задач и основных результатов	<p>The research goal of the study is to determine the mechanism of the influence of Dark Triad traits, namely narcissism, psychopathy and Machiavellianism, on entrepreneurial intentions among students and recent graduates.</p> <p>To achieve a goal the following tasks are done:</p> <ol style="list-style-type: none">1. Analysis of the literature about the role of Dark Triad in entrepreneurship and the formation of entrepreneurial intentions.2. Construction of the theoretical model of the research based on Theory of planned behavior.3. Research hypotheses development and justification.4. Formation of the survey and collection of the data.5. Provision of conclusions about the mechanism of the impact of Dark Triad traits on entrepreneurial intentions based on

	<p>the data analysis.</p> <p>6. Development of practical recommendations.</p> <p>It is revealed that there is a positive significant relationship between attitude to entrepreneurship and entrepreneurial intentions. Among Dark Triad traits, narcissism shows significant positive relationship with attitude towards entrepreneurship and perceived behavioral control. Moreover, attitude to entrepreneurship and perceived behavioral control work as mediators in the relationships between Dark Triad traits and entrepreneurial intentions. Theoretical contribution consists in the clarification of theory of planned behavior in the context of the entrepreneurial intentions among the youth and the expansion of knowledge about personality traits generally perceived as negative, namely Dark Triad traits. Practical contribution can be important for business schools and grant programs.</p>
<p>Ключевые слова</p>	<p>Entrepreneurial intentions, Dark Triad personality traits, Narcissism, Theory of planned behavior</p>

INTRODUCTION

Entrepreneurship is a crucial mechanism connected with economic growth (Burns, 2016). There are several reasons for that, firstly, it stimulates knowledge transfer, not only inside an organization, but also outside. This mechanism is named as a knowledge spillover. Secondly, the more new enterprises appear, the more intensive competition is. This competition, consequently, becomes an incentive for firms to develop and create and apply new ideas. Moreover, the more firms are in the region, the more diversity is there due to the fact that all firms are unique in some way (Tom et al., 2014).

Whereas the role of entrepreneurial firm in the development of the economy is highlighted by a lot of research, the role of the individual, namely, entrepreneur and his personality is less discussed. Nevertheless, the personality of the person who starts and operates the business is important to consider as it is inevitably linked to the business itself, results it obtains and, moreover, primarily, with the formation of entrepreneurial intentions and further involvement into entrepreneurial activity.

As actions tend to start with an intention to do it (Ajzen, 1991), businesses start with an intention of a person or of a group of people to start it. Currently researchers investigate personality traits of people that can possibly be linked with the formation of entrepreneurial intentions, predisposition to entrepreneurship, in other words, the probability of the becoming an entrepreneur, or with the probability of the success in entrepreneurial activity or high performance of the firm (Kerr et al., 2017). For instance, personality traits from Big-5 model, which consists of openness to experience, conscientiousness, extraversion, agreeableness, neuroticism, are widely discussed in the context of entrepreneurship (Zhao & Seibert, 2006; Leutner et al., 2014). Other traits under the consideration include self-efficacy (Chen et al., 1998; Newman et al., 2019), internal locus of control (Littunen, Storhammer, 2000), motivation (DeTienne et al., 2008). However, just a limited number of research exist that takes into account ambiguous personality traits, usually perceived as negative ones (Wiklund et al., 2018), for instance, attention deficit hyperactivity syndrome (Lerner et al., 2018).

Therefore, the *research gap* consists in the lack of the studies investigating the link between traits that are commonly perceived as negative ones, but at the same time can potentially be the drivers of entrepreneurial intentions. The traits that are going to be considered is a set of 3 traits - narcissism, psychopathy and Machiavellianism that are known as Dark Triad personality traits.

The *research goal* of the study is to determine the mechanism of the influence of Dark triad traits to entrepreneurial intentions among students and recent graduates.

Research question that is to be enlightened in this work is the following: What is the influence of Dark Triad psychological traits on entrepreneurial intentions among students and recent graduates?

Investigation of entrepreneurial intentions of students and recent graduates is justified by the fact that popularity of entrepreneurial career path is growing among the youth. Moreover, students are on the eve of the career choice and career start, so it is appropriate audience for exploring entrepreneurial intentions, as entrepreneurship is one of the potential career ways. The significance of youth entrepreneurship is connected with the contribution to the solution of youth employment problem: young entrepreneurs tend to hire other young people and they are more open to new trends and economic opportunities (Kew et al., 2013). According to 2013 GEM Youth Entrepreneurship report people between 18 and 24 years old are more inclined to choose career path as an entrepreneur than people from other age groups.

To achieve a goal and to answer a stated research question the following tasks are to be done:

- 1) Analysis of the literature about the role of Dark Triad in entrepreneurship and the formation of entrepreneurial intentions.
- 2) Construction of the theoretical model of the research based on Theory of Planned Behavior.
- 3) Research hypotheses development and justification.
- 4) Formation of the survey and the following collection of the data.
- 5) Provision of conclusions about the mechanism of the influence of Dark triad traits to entrepreneurial intentions based on the data analysis.
- 6) Development of practical recommendations based on the research.

The Master's Thesis has the following structure: introduction includes the relevance and motivation of the study, research gap, research goal and research question. The first chapter is devoted to the literature overview of the role of Dark Triad in entrepreneurship and in the formation of entrepreneurial intentions, as well as, to the construction of theoretical model and hypotheses of the research. The second chapter includes the methodology of the research, survey and data description. The third chapter contains results of hypotheses and mediation testing, as

well as the discussion of main findings, theoretical and practical contributions. Conclusion summarizes the research and includes limitations of the current research and suggestions for the further research.

CHAPTER 1. ENTREPRENEURIAL INTENTIONS AND DARK TRIAD TRAITS

1.1. Entrepreneurship and psychological traits

Quite a long time ago entrepreneurship and entrepreneur in particular started to be considered through the lens of psychology and psychological traits. In the middle of 20th century Grins G. C. described entrepreneur as a person, who possesses specific psychological traits, namely, as a person who is proactive and ready to risk his own money (Егоров, 2009).

Economic psychology is quite a new scientific direction, which has both scientific and practical significance. It is situated on the border between economics and psychology. The focus of it is the human factor of the economy (Дейнека, 2006; Журавлев & Поздняков, 2012).

The psychology of entrepreneurship is one of the directions of research in economic psychology. For instance, it investigates what psychological traits entrepreneurs tend to possess and if there are any specific traits that successful entrepreneurs possess (Журавлев & Поздняков, 2012). Moreover, there is a pile of research on the topic of motivation to become an entrepreneur. One of the first attempts to study psychology and economics simultaneously was the study of achievement motivation, where it was revealed that people with a high level of achievement motivation are able to get success in entrepreneurial activities (McClelland & Mac Clelland, 1961; Журавлев & Поздняков, 2012).

The concepts of entrepreneurship and risk are often discussed together, but the difference of willingness to take risks by entrepreneurs and, for example, gamblers, is highlighted as significant one (Zadorozhnyuk, 1991). Moreover, entrepreneurs tend to be optimistic when they are at the planning process, which is expressed in a high assessment or overestimation of their chances of success. The entrepreneur is emotionally and passionately attached to his business.

The role of psychological and emotional factors in the study of entrepreneurship should not be underestimated or avoided. The lack of inclination to feel frustrated too much is an example of such an emotional factor (Kets de Vries, 1985; Zadorozhnyuk, 1991). Thus, it is worth conducting further research on entrepreneurship in the context of psychological aspects of the person (Zadorozhnyuk, 1991).

1.2. Role of Dark Triad in entrepreneurship

Entrepreneurial activity is the foundation of the country's economic well-being (Van Praag, Versloot, 2008). That is why the predominance of entrepreneurship as a positive

phenomenon is explainable and reasonable. However, recently there is a wave of research of entrepreneurship in more negative context with the scrutiny of some negative aspects of it. For instance, Shepherd (2019) points out the necessity to pay more scientific research to the negative aspects of entrepreneurship as it can help to have the broad picture of it and, consequently, to make a significant contribution to dealing with these negatives. The negative points are divided into 3 concepts: dark side, downside and destructive side of entrepreneurship. Dark side involves negative responses of the individual, such as depression, anxiety and stress to the involvement into entrepreneurship, especially when failure or other type of problems happens. Downside is connected to the deprivation of physical or social capital in a result of involvement into entrepreneurial activity. Finally, destructive side relates to the loss or harm of other members of society, including environment and nature (Shepherd et al, 2013). Destructive side can occur, for example, because of the unproductive motives to start and run a business that may include, for instance, aspiration to appropriate economic or social value (Hmieleski & Lerner, 2016).

Since a long time ago many authors reflected on the reasons of choosing the way of becoming an entrepreneur. «The entrepreneur who starts his own business generally does so because he is a difficult employee» (DuToit, D. F., 1980, p. 44). Kets de Vries M.F.R (1985) connects the impossibility to obey to authority and agree with rules of organizations as a factor of becoming an entrepreneur.

To the stated stream of research studies on investigating psychological traits in the context of entrepreneurship can be included. Personality trait is a characteristic of an individual that influences on a broad range of trait-relevant responses (Ajzen, 2005).

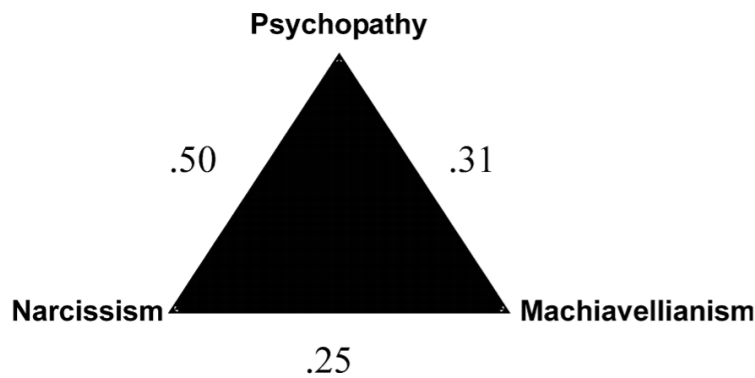
Actually, the research of entrepreneurship can be rather interdisciplinary, as there are contributions added to the interpretation of this phenomenon made from various domains, not only from psychology, but also from sociology and even anthropology (Kets de Vries, M. F., 1996). As it is already stated the emphasis on positive psychological traits of entrepreneurs is more common, for example, self-confidence, energy, self-efficacy, self-esteem, need for achievement and independence. However, these positive traits are Janus-faced, or duplicitous, as they have an extreme state that can be less virtuous (Miller, 2015). For example, when the need for achievement degrades to the extreme, the behavior and actions may become too aggressive, that in turn, may result in long-term drawbacks to the firm or even society. Even optimism, which is commonly perceived as something positive, when taken in extreme may get problematic as it can be linked with the biased perception of the reality and the future and can lead to wrong decisions.

Another reason for investigating psychological traits of entrepreneurs is connected with the fact that starting a new business is an action that requires a significant power and effort to overcome challenges and to create something new (Hisrich, R. D. et al., 2017). It supports the belief that personality of the entrepreneur is outstanding, out of ordinary and is required more research.

Recently special attention among negative psychological traits in the context of entrepreneurship and organizational research is devoted to the Dark Triad (Hmieleski & Lerner, 2016), that is a construct of 3 subclinical or nonpathological personality traits: narcissism, psychopathy and Machiavellianism. Dark Triad is vastly investigated in psychology (Furnham et al., 2013; Paulhus & Williams, 2002), but research in the context of entrepreneurship is still rather new and promising.

The Dark Triad consists of “conceptually distinct, but empirically overlapping constructs” (Jones & Paulhus, 2011, p. 249). The certain overlaps concern underlying inclinations for unsympathetic, exploitative, self-centered behavior (Hmieleski & Lerner, 2016). They have particular characteristics in common such as aggressiveness, self-promotion, hypocrisy, and emotional coldness. Nevertheless, Rauthmann and Kolar (2012, p. 888) suggest that “it might be wise to study the Dark Triad in concert, but not equate them”.

Additional confirmation of distinct, but overlapping nature of this structure is the result of the correlation analysis between Dark Triad personality traits performed by Paulhus and Williams (2002). The maximum correlation is between psychopathy and narcissism and it is equal to 0.5 (Figure 1). Therefore, all elements of Dark Triad should not be regarded as counterparts or analogues.



N = 245. All correlations significant at $p < .001$, two-tailed.

Figure 1. Dark Triad personality traits

Source: Paulhus & Williams, 2002

Whereas Dark Triad is the set of three personality characteristics that are generally not considered as positive ones (Jonason & Webster, 2010), people with these marked traits could be characterized as goal and achievement-oriented, competitive and good at resources retrieving and power accumulation (Jones & Figuerdo, 2013). Moreover, it was noticed by many authors that Dark Triad traits are commonly seen among the powerful people, such as chief executive officers, politicians and so on (Chatterjee & Hambrick, 2007). As already was mentioned these traits have some peculiarities that will be discussed further.

First of all, *narcissism* is the trait of personality which describes self-orientation, selfishness and desire to get a maximum of attention and admiration from others. The word itself is originated from Ancient Greek myths, namely from the character called Narcissus, who loved himself too much and the term was introduced into psychology in 1898 by Havelock Ellis (Chatterjee & Hambrick, 2007). It was found out that representatives of generation of millennials more tend to be narcissistic and have a higher self-esteem than previous generations (Macky, K. et al, 2008). Being an entrepreneur is considered to be a highly respectful role that can be one more reason why people with a high level of narcissism, who are seeking for admiration, tend to become entrepreneurs. In the case of investing people with high narcissism tend to behave as risk-takers (Foster, 2011).

Secondly, *psychopathy* is the trait of person who is not able to experience affective empathy, but at the same time, who is able to experience cognitive empathy. Cognitive empathy helps to read people's minds and determine stakeholders and opportunities for development of business through creation of new services and products (Humphrey, 2013). People with a high level of psychopathy are good at facing and coping with stressful situations (Dutton, 2012). Fear

of failure, which is not common for psychopaths, is negatively connected with setting up a business (Morgan & Sisack, 2016) and that is why fearless and easily coping with stress psychopaths do not have such problems when creating a start-up.

Last but not least, *Machiavellianism* is the third member of Dark Triad. The characteristics of Machiavellianism include aspiration for control and even manipulation of others, which is combined with the desire for status, power and distrust of others (Zettler & Solga, 2013). People that are high in Machiavellianism do not have doubts whether to use social deviant actions, such as cheating, manipulation, lying and stealing, to achieve their aim. They want to be the best, no matter what, no matter how badly it can influence on others (Buckels, Jones, Paulhus, 2013). Personal benefit and short-term profits are priorities for person high in Machiavellianism when making decisions (Sherman, Figueredo, Funder, 2013).

These traits can be also called “James Bond” type of personality, as people who have strong manifestation of Dark Triad are confident and good at adopting to challenging circumstances (Hmieleski & Lerner, 2016).

Analysis of the existing research on dark triad in the context of entrepreneurship allows dividing it into two main directions. The division into these directions happens according to the dependent variable of the research. For instance, the meta-analysis by Zhao et al. (2010) points out on entrepreneurial intentions and entrepreneurial performance as the most common and the most meaningful dependent variables of research relating to personality traits of entrepreneurs.

First of all, there is a research of the influence of the complex or elements of Dark Triad traits of entrepreneurs on the firm performance. For example, Engelen (2016) found out that narcissism of CEO generally makes the link between entrepreneurial orientation and entrepreneurial performance weaker, whereas under particular circumstances it makes it stronger. Other research did not show significant impact of any Dark Triad trait on the same relationship (Kraus et al., 2018). Multifaceted nature of the construct can be the reason to so controversial results, as well as the specifics of the samples used in the analysis.

The second direction of the research is connected with the identification how Dark Triad personality traits influence on entrepreneurial intentions. This study also relates to this type. There are piles of research of entrepreneurial intentions of students (Kramer et al., 2011; Hmieleski & Lerner, 2016; Do & Dadvari, 2017; Iyayi & Obeiki, 2018), working adults (Akhtar et al., 2013), and Mathiey & St-Jean (2013) examined both of these groups of people. Some of these studies have rather contradictory, ambiguous and intriguing results especially concerning

psychopathy and Machiavellianism. However, narcissism has a positive relationship with entrepreneurial intentions in majority of studies.

Some of the studies investigated the link between all Dark Triad traits and entrepreneurial intentions (Table 1), whereas some of them paid attention only to specific items, for instance, only to narcissism (Mathiey & St-Jean, 2013) or only to psychopathy (Akhtar et al., 2013). Discrepancy in the results (Table 1), especially concerning Machiavellianism and psychopathy suggests the necessity of further research.

	Relationship between narcissism and entrepreneurial intentions	Relationship between psychopathy and entrepreneurial intentions	Relationship between Machiavellianism and entrepreneurial intentions
Kramer et al., 2011	+	+	n.s.
Akhtar et al., 2013	N/A	+	N/A
Mathiey & St-Jean, 2013	+	N/A	N/A
Hmieleski & Lerner, 2016	+	n.s.	n.s.
Do & Dadvari, 2017	+	+	+
Iyayi & Obeki, 2018	n.s.	n.s.	n.s.

+ positive relationship; n.s.nonsignificant effect; - negative relationship; N/A was not assessed;

Table 1. Comparison of results of different research

1.3. Theory of Planned Behavior and entrepreneurship

As it is known from psychology, describing and clarifying behavior of human being is not an easy task, instead it is a challenge. This research is based on one of the key theories explaining the process of the formation of intentions to commit a particular action. It is the theory of planned behavior (Figure 2) developed by Ajzen (1991). It is an extended version of the previous model called the theory of reasoned action, which lacks one crucial element - perceived behavioural control (Fishbein & Ajzen, 1977). The similarity of these models is the fact that intention is the central element in both of them.

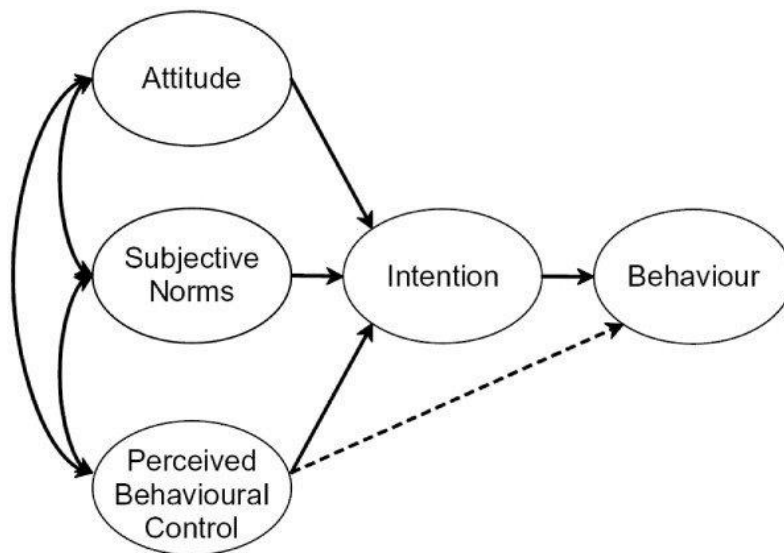


Figure 2. Theory of planned behavior

Source: Ajzen, 1991

According to the theory of planned behavior intentions are formed if the action is both desirable and feasible to accomplish. The following factors of intentions formation are proposed: attitude towards the behavior, subjective norms and perceived behavioral control. Behavior itself depends not only on intentions of the individual, but also on perceived behavioral control, which is shown on the Figure 2.

Attitude towards the behavior measures the level of the person's self-evaluation of the behavior as preferable or not preferable. Actually there are specific beliefs that are antecedents of these 3 factors of intention formation. For attitude the antecedents are behavioral beliefs. Thus, attitude to the behavior is formed according to the assessment of the outcomes of the behavior (or any other attribute that occurs as a result of performing the behavior), how favorable these consequences for the person are.

Subjective norms are measured as a perception of the individual what his or her environment thinks about the committing or not committing the particular behavior. This environment consists of people whose opinion is important for the individual, for example, relatives, friends, colleagues, etc (Ajzen, 2002). For subjective norms the antecedents are normative beliefs, which are connected with the probability that people or groups of people, whose opinion is valuable for the person, endorse or not endorse the conducting of certain behavior.

Perceived behavioural control (PBC) is expressed in terms of the perceived simplicity or difficulty to conduct the behavior. This perception may be based on the past experience of

performing the behavior and on the anticipation of the challenges. PBC is not only one of the factors of intention formation, but also makes an impact on the behavior. For PBC the antecedents are control beliefs, which are about the existence or nonexistence of necessary opportunities or resources.

There is another similar term, namely perceived self-efficacy that is connected with the confidence of people about their capacity to make an impact on events that are important for their lives (Bandura, 2010), or self-assessment of personal competences (Shirokova et al., 2015). Self-efficacy is widely used as an analogue of perceived behavioral control in research of entrepreneurship (Miao et al., 2017; Sabah, 2016; Shirokova et al., 2015).

Therefore, on the basis of the theory of planned behavior, the first hypothesis is formulated in the following way:

H1. Positive attitude to entrepreneurship (H1a), subjective norms (H1b) and self-efficacy are positively related to the formation of entrepreneurial intentions of young people.

The next hypotheses of the research are connected with Dark Triad personality traits that may influence the formation of entrepreneurial intentions. Elements of theory of planned behavior, namely attitude to entrepreneurship, subjective norms and self-efficacy, come as mediators in this relationship.

Attitude to entrepreneurship, or in other words perception of the behavior by person, can be affected by Dark Triad traits. For instance, narcissistic people are confident, even overconfident, rate themselves highly, tend to be leaders, but at the same time they need constant confirmation of their superiority, they seek for admiration from others (Chatterjee & Hambrick, 2007). Being an entrepreneur seems as an attractive career path for narcissists as it can provide them with a prestige and a high status (Wu et al., 2019), which can add more admiration from others.

Psychopaths do not have an inclination to report and to obey others, but if they create their own business, they can avoid doing it (Rindova et al., 2009). Another reason why psychopaths have a positive attitude towards entrepreneurship is the fact that they do not like typical, boring tasks, routine. Entrepreneurship can help them to avoid boredom due to the variety and diversity of tasks to perform (Nicolaou et al., 2011). Moreover, psychopaths are not afraid of risks or losses and that is why they are not afraid of starting their own business, which is a risky deal (Morgan & Sisak, 2015). Therefore, psychopaths are prone to the formation of positive attitude to the entrepreneurship.

Finally, people who are high in Machiavellianism value power, money and competition a lot (Zettler & Solga, 2013). They may associate these values with entrepreneurship. They tend to control others and to increase their own benefit. They are able to think strategically, which is a good point in making decisions (Max et al., 2018), but sometimes these decisions tend to be immoral, as they behave for their own benefit only (Wu et al., 2019). Thus, there is an assumption that people with traits of Machiavellianism do have a positive attitude towards entrepreneurship.

According to all abovementioned the second hypothesis is following:

H2. Narcissism (H2a), psychopathy (H2b) and Machiavellianism (H2c) are positively related to the formation of positive attitude to entrepreneurship.

Another element of theory of planned behavior is subjective norms that involve the perception about what other people think about conducting the particular behavior. As well as attitudes, subjective norms may be influenced by Dark Triad personal traits.

For narcissists it is important to feel admiration from others (Twenge et al. 2008). They would prefer others to see their business from exceptionally good side, whereas at the same time they can behave unethically, but just behind closed doors (Hmieleski & Lerner, 2016). So the side that is visible for others is important for them.

It is known that psychopaths have a lack of emotional empathy, and overall, they have problems from emotional point of view and are insensitive (Jonason and Krause 2013). But they are sometimes perceived as interesting and even charming people (Boddy, 2015). As a result psychopaths tend to perceive thoughts by other people about them in a positive way.

As for Machiavellians it is highly important to achieve what they want, they will do whatever is possible to get it. They are aware of the fact that good reputation can help them, and that is why they do all possible to have a good image (Jones & Paulhus, 2009). Also they are good at convincing others in their ideas (Do & Dadvari, 2017). All of that contributes to positive subjective norms of Machiavellians.

According to all abovementioned the third hypothesis is following:

H3. Narcissism (H3a), psychopathy (H3b) and Machiavellianism (H3c) are positively related to the formation of positive subjective norms about the entrepreneurship.

The third element of theory of planned behavior is self-efficacy. When talking about

entrepreneurship, self-efficacy describes self-assessment by the individual of the possibility to start a business. The criteria of this self-assessment are special skills, abilities and resources to become an entrepreneur (Zampetakis et al., 2015). As well as attitudes and subjective norms, self-efficacy may be affected by personal traits, namely Dark Triad traits.

It is known that narcissists are overconfident about their skills and abilities, they think they are better than others in general, and it can be assumed that it can be true for entrepreneurial activity as well. Moreover, they are really good at gathering resources, which is one of the crucial skills for entrepreneurs (Hmieleski & Lerner, 2016). That is why they have a high level of self-efficacy concerning entrepreneurship.

Despite of the fact that psychopaths lack emotional empathy, they are good at cognitive empathy, namely they understand people and their motives, and consequently, are able to use people to achieve their own goals (Jonason & Krause, 2013) and determine the best stakeholders and opportunities (Humphrey, 2013). All abovementioned and lack of fear of loss or failure (Morgan & Sisak, 2016) make the self-efficacy of psychopaths high.

People high in Machiavellianism are good at strategic thinking (Ricciardi et al., 2018) and manipulating others (Al Ain et al., 2013). Consequently, they have a strong feeling of control. It is not a challenge for them to hide true emotions, thoughts and ideas and adapt to a situation (Nelson & Gilbertson, 1991). All of that contributes to high self-efficacy of Machiavellians.

According to all abovementioned the fourth hypothesis is following:

H4. Narcissism (H4a), psychopathy (H4b) and Machiavellianism (H4c) are positively related to the formation of perceived behavioral control in entrepreneurship.

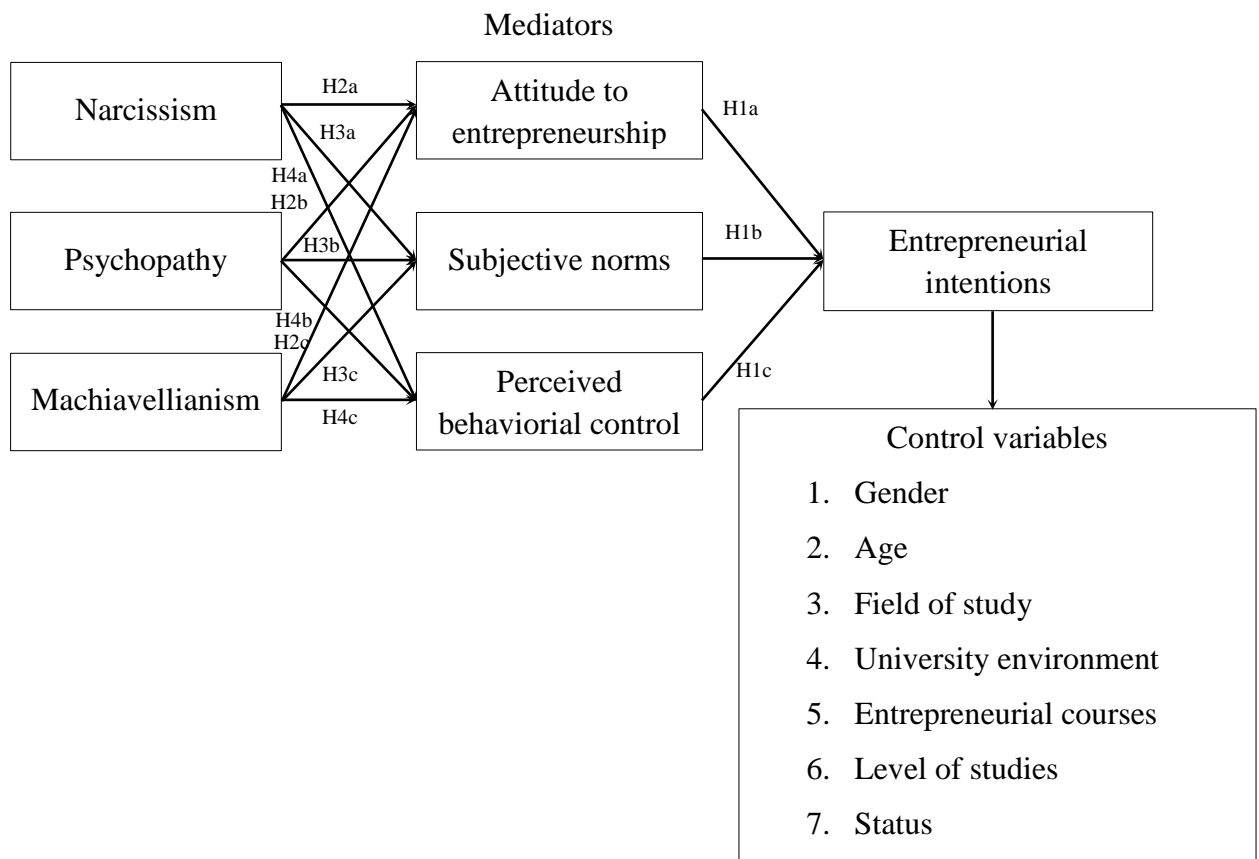


Figure 3. Theoretical model of the research

Overall, there are 4 hypotheses that are to be tested in the research, and hypotheses H2-H4 are subdivided for each of three constructs of Dark Triad: narcissism (a), psychopathy (b) and Machiavellianism (c). Theoretical model represents all these hypotheses (Figure 3). Moreover, control variables of the research are stated: gender, age, field of study, university environment, entrepreneurial courses, level of studies, status (student or graduate).

H1. Positive attitude to entrepreneurship (H1a), subjective norms (H1b) and self-efficacy are positively related to the formation of entrepreneurial intentions of young people.

H2. Narcissism (H2a), psychopathy (H2b) and Machiavellianism (H2c) are positively related to the formation of positive attitude to entrepreneurship.

H3. Narcissism (H3a), psychopathy (H3b) and Machiavellianism (H3c) are positively related to the formation of positive subjective norms about the entrepreneurship.

H4. Narcissism (H4a), psychopathy (H4b) and Machiavellianism (H4c) are positively related to the formation of perceived behavioral control in entrepreneurship.

CHAPTER 2. METHODOLOGY OF THE RESEARCH

2.1. Survey

Data for conducting a research and testing hypotheses were collected via online survey. It was distributed via multiple channels, such as graduate and student chats and groups of various Russian prominent universities in social media and via mailing lists amid SPbU students. Data collection period lasted since September 2020 until February 2021. 242 students from 14 Russian universities participated in the survey, answering the variety of questions about entrepreneurship and about their willingness to become the entrepreneurs (Appendix 1). Moreover, via special scales consisting of specific statements Dark Triads traits of the participants are assessed.

Respondents who already participate in entrepreneurial activities are excluded from the sample as this research is devoted to the investigation of entrepreneurial intentions, not actions yet. As a result, the sample that is used in the following research is shrunk from 242 to 203 respondents. The average age of the people from the primary sample was equal to 21.9 years, but the average age of the final sample is lower and it is equal to 21.6 years. It is not surprising as people who already have their businesses tend to be older on average. Final answers are given by mostly young people from 17 to 25 years old (approximately 92%). Therefore, the sample corresponds to the idea of the research, as the audience is supposed to consist of students and recent graduates.

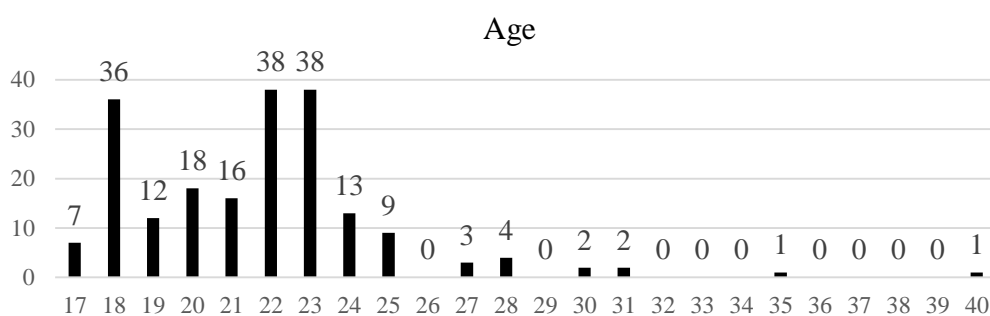


Figure 4. Distribution of respondents by age

The answers for this self-reported survey were received from 148 females and 94 males. Final sample consists of answers of 131 females and 72 males (Figure 5). The audience consists of students and graduates of Russian prominent universities, such as Saint-Petersburg State University, Higher School of Economics (Saint-Petersburg, Moscow, Perm campuses), The

Russian Presidential Academy of National Economy and Public Administration and ITMO University (Appendix 2). The majority of respondents are current students, namely 157 students, whereas there are 46 graduates who have also taken part in the survey (Figure 5). 173 of them are students or graduates of business or economics related specialties, whereas just 30 people have a distinct major of the studies.



Figure 5. Distribution of respondents by gender and status

It turned out that approximately half of the respondents have had at least one entrepreneurial course during their studies at the university (96 people from the final sample). Therefore, another half has never had such experience.

2.2. Data description

This part is devoted to the description of all variables, including dependent variable, control variables and independent variables used in the research.

Entrepreneurial intentions work as a dependent variable in the research. Entrepreneurial intentions were measured using 7-level Likert scale with the usage of 6 statements (Liñán, Chen, 2009), for example “I am ready to do anything to be an entrepreneur”. (Table 2) Likert scale consists of 7 options to choose, from “disagree strongly” to “agree strongly”. Originally Likert scale was created as a 5-point scale, but 7-point scale is used here as it is believed to be the most accurate Likert scale.

Dependent Variable	Statements	Reliability statistics - Cronbach's alpha
Entrepreneurial intentions "intentio"	<ul style="list-style-type: none"> • I am ready to do anything to be an entrepreneur. • My professional goal is to become an entrepreneur. • I will make every effort to start and run my own business. • I am determined to create a business in the future. • I have very seriously thought of starting a business. • I have a strong intention to start a business someday. 	0,969

Table 2. Dependent variable

Source: Linan & Chen, 2009, p. 40

The average result was calculated for each of the respondents according to their assessment of the 6 abovementioned statements.

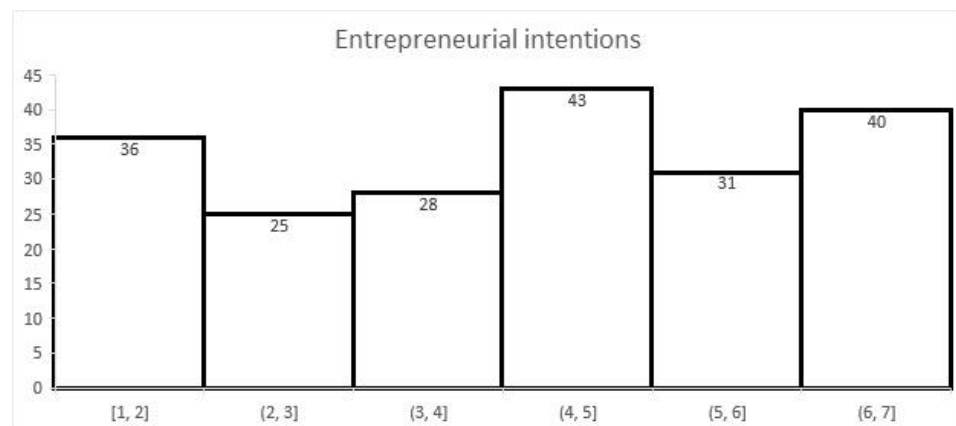


Figure 6. Distribution of entrepreneurial intentions values in the sample

The average measurement of entrepreneurial intentions is equal to 4.22 and there is no considerable difference between this index calculated for men and for women. Moreover, there are as many people with very high entrepreneurial intentions as with extremely low or the absence of entrepreneurial intentions (Figure 6).

Entrepreneurial intentions, like all other scales of subjective assessment that are used in this research, are checked using reliability statistics. Namely, Cronbach's alpha is calculated. Cronbach's alpha shows how tightly a set of items is connected as a whole, in other words, it is a measure of internal coherence. If Cronbach's alpha is higher than 0.7, it is considered as

acceptable value. For entrepreneurial intentions this coefficient is equal to 0.969, thus it is a reliable scale (Table 2).

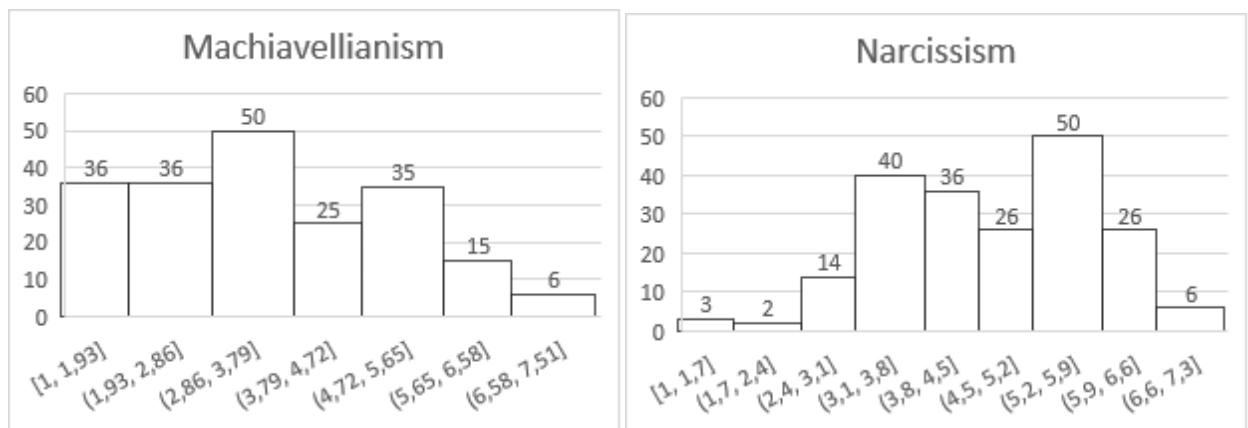
Independent variables

There are several measures developed to measure Dark Triad properties of the respondents when conducting a research. A good measure should be concise as it helps coping with the issue of time-consuming and inefficient assessing that can happen if measure of the Dark Triad contains of too many items and consequently leads to the respondent fatigue. The Dirty Dozen is really concise, as it is just a 12-item version of Dark Triad (Jonason, Webster, 2010). Due to its structure and size the usage of such method saves time and effort for both respondents and researchers.

Another measure of Dark Triad, called Short Dark Triad (SD3), consists of 27 items, 9 items per construct. It is still rather brief, but wider comparative to Dirty Dozen (Jones & Paulhus, 2013).

For this research the Dirty Dozen is chosen to measure Dark Triad. Dark triad personality traits are determined by subjective assessment made by respondents. Four statements in the survey are devoted to each of the elements of Dark triad, namely narcissism, psychopathy and Machiavellianism. For example, one of the statements to assess narcissism is “I tend to want others to admire me”.

It is worth mentioning that there are more respondents high in narcissism than in other Dark Triad traits (Figure 7). The distributions of Machiavellianism and psychopathy are skewed to the left, implying that there are more people who self-assessed themselves low in these psychological traits.



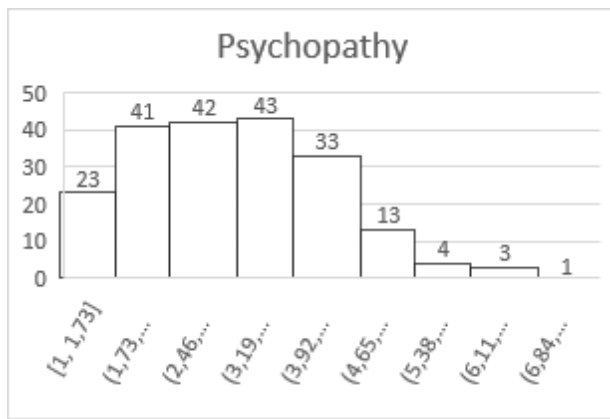


Figure 7. Distribution of Dark Triad values in the sample

There are 3 mediators in the theoretical model of the research, namely attitudes, subjective norms and perceived behavioral control. Self-efficacy is used as a tool of operationalization of perceived behavioral control.

Attitude to entrepreneurship is measured with the usage of 5 statements, such as “Being an entrepreneur implies more advantages than disadvantages to me” (Liñán & Chen, 2009). The 7-point Likert scale was used by respondents as well. Afterwards, the average result was calculated for each survey participant.

For defining the level of self-efficacy participants are asked to assess 7 their skills that are significant for successful entrepreneurial activity, such as identifying new business opportunities or commercializing a new idea or development. The average value is taken into account for the model.

To determine subjective norms the following question is suggested: “If you would pursue a career as an entrepreneur, how would people in your environment react?”. The value of subjective norms is the average between the given answers about such people of the environment as the close family, friends and fellow students of respondents.

All variables that are measured according to subjective scales are reliable according to the values of Cronbach’s alpha.

Independent Variable	Statements	Reliability statistics - Cronbach's alpha
Narcissism	<ul style="list-style-type: none"> • I tend to want others to admire me. • I tend to want others to pay attention to me. • I tend to expect special favors from others. • I tend to seek prestige or status. 	0,727
Psychopathy	<ul style="list-style-type: none"> • I tend to lack remorse. • I tend to be callous or insensitive. • I tend to be unconcerned with the morality of my actions. • I tend to be cynical. 	0,757
Machiavellianism	<ul style="list-style-type: none"> • I have used deceit or lied to get my way. • I tend to manipulate others to get my way. • I have used flattery to get my way. • I tend to exploit others towards my own end. 	0,848
Attitudes	<ul style="list-style-type: none"> • Being an entrepreneur implies more advantages than disadvantages to me. • A career as an entrepreneur is attractive to me. • If I had the opportunity and resources, I would become an entrepreneur. • Being an entrepreneur would entail great satisfaction for me. • Among various options, I would rather become an entrepreneur. 	0,941
Subjective norms	<ul style="list-style-type: none"> • family reaction. • friends' reaction. • fellow students' reaction. 	0,811

Self-efficacy	<ul style="list-style-type: none"> • Your skills: Identifying new business opportunities. • Your skills: Creating new products and services. • Your skills: Managing innovation within a business. • Your skills: Being a leader and communicator. • Your skills: Building up a professional network. • Your skills: Commercializing a new idea or development. • Your skills: Successfully managing a business. 	0,876
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Table 3. Independent variable

Sources: Jones & Paulhus, 2013; Liñán & Chen, 2009; Zhao et al., 2005

In a row of research it was stated that some individual factors have an impact to entrepreneurial intentions. That is why in this research as control variables are taken gender, age, field of study, level of education, participation in entrepreneurial courses, entrepreneurial climate in university, perceived behavioral control. Gender is a binary variable, where 1 = “female”, 0 = “male”. Field of study is deciphered in the following way: 1 = ”business or economics”, 0 = ”other”. Level of education: 1 = ”bachelor”, 0 = “master, PhD or other”. Courses on entrepreneurship: 1 = “participation at, at least, 1 entrepreneurial course”, 0 = “no experience in the participation at course on entrepreneurship”. Entrepreneurial climate in university is measured as an average score for assessing 3 statements about university environment, such as “The atmosphere at my university inspires me to develop ideas for new businesses”. Last but not least, variable Status defines if the respondent is a “student” = 0 or a “graduate” = 1.

Control Variable	Statements	Reliability statistics - Cronbach's Alpha
Entrepreneurial environment in university “unienv”	<ul style="list-style-type: none"> • The atmosphere at my university inspires me to develop ideas for new businesses • There is a favorable climate for becoming an entrepreneur at my university • At my university, students are encouraged to engage in entrepreneurial activities 	0,832

Table 4. Control variable

Source: Franke & Lüthje, 2004

	Variables	Mean	Standard Deviation	Minimum	Maximum
Dependent variable					
Entrepreneurial intentions	Intention	4.221675	1.815957	1	7
Control variables					
Gender	Gender	.6453202	.4795989	0	1
Age	Age	21.62562	3.23161	17	40
Field of study	Field	.8522167	.3557623	0	1
Level of education	Level	.5665025	.4967828	0	1
Entrepreneurial courses	Entreduc	.4729064	.5004997	0	1
Entrepreneurial environment in university	Unienv	5.392447	1.234723	1	7
Status of a student or a graduate	Status	.2019704	.4024628	0	1
Independent variables					
Attitude to entrepreneurship	Attitude	4.838424	1.56746	1	7
Subjective norms	Subjnorm	5.510673	1.284275	2	7
Self-efficacy (perceived behavioral control)	Selfeffi	4.710767	1.155293	1	7
Narcissism	Narcissi	4.669951	1.181042	1	7
Psychopathy	Psychopa	3.094828	1.231018	1	7
Machiavellianism	Machiave	3.552956	1.557866	1	7

Table 5. Descriptive statistics

Correlation analysis was conducted, and, consequently, it was found out that highest correlation power exists between attitude to entrepreneurship and dependent variable - entrepreneurial intentions as it is equal to 0,872 (Appendix 3).

There is no problem of multicollinearity in the data. It is proved by the assessment of variance inflation factor in the regression of dependent variable on all independent variable. Average VIF is equal to 1.419 which is much less than acceptable VIF level of 5 or 10 (James et al., 2013).

CHAPTER 3. RESULTS OF THE RESEARCH

3.1. Hypotheses testing

The regression analysis is conducted to test hypotheses of the research. Several models with robust standard errors are constructed (Appendix 4). In models 1, 2 and 3 dependent variable is entrepreneurial intention. In model 4 an attitude to entrepreneurship plays a role of dependent variable, in model 5 – subjective norms, in model 6 – self-efficacy (perceived behavioral control). Direct effects of control variable (model 1), Dark Triad psychological traits (model 2) and elements of theory planned behavior, namely attitudes to entrepreneurship, subjective norms and perceived behavioral control (model 3) on dependent variable – entrepreneurial intentions are assessed. In models 4, 5 and 6 direct effects of Dark Triad traits on mediators (attitudes to entrepreneurship, subjective norms and perceived behavioral control) are estimated.

The first hypothesis, that is about the positive link between attitude to entrepreneurship, subjective norms and perceived behavioral control and entrepreneurial intentions, is partly confirmed, namely, the positive relation between attitude and intentions is revealed (H1a, $b=0.964$, $p<0.001$). The link between both subjective norms and intentions and perceived behavioral control and intentions is insignificant, therefore, these hypotheses cannot be confirmed.

The second hypothesis, that consists of three parts: positive link between three Dark Triad traits and entrepreneurial intentions, is also confirmed only for one element of Dark Triad. The positive relation between narcissism and intentions is revealed (H2a, $b=0.313$, $p<0.05$). However, this hypothesis in terms of Machiavellianism is rejected, as the relation between Machiavellianism and entrepreneurial intentions is negative (H2c, $b=-0,168$, $p<0.1$). The link between psychopathy and intentions is insignificant, therefore, this element of hypothesis cannot be confirmed.

The third hypothesis suggests positive relation between Dark Triad traits and subjective norms about entrepreneurship. It was rejected in terms of psychopathy because there is a negative relation between subjective norms and entrepreneurial intentions (H3b, $b=-0.163$, $p<0.1$). Hypotheses H3a and H3b are not confirmed, as the link between narcissism and intentions, as well as between Machiavellianism and intentions, is not significant.

The fourth set of hypotheses is about positive relation between Dark Triad traits and entrepreneurial intentions. The positive relation between narcissism and intentions is revealed

(H4a, $b=0.205$, $p<0.05$), whereas the negative relation between psychopathy and entrepreneurial intentions is rejected (H4b, $b=-0.186$, $p<0.05$). There is no significant positive link between Machiavellianism and entrepreneurial intentions.

Variables	Model 1	Model 2	Model 3
Control variables			
gender	-.3476996	-.620526**	-.0986167
age	.0451475	.0588669	.0257837
field of study	-.3298656	-.271691	-.19132
level	.7159554**	.8529113**	.338442*
entreduc	.3287327	.4273399*	.1121865
unienv	.3117776**	.2652703**	.1257503**
status	-.65102658	-.6291875**	-.3394153*
Independent variables			
Attitudes			.9638379****
Subjective norms			-.0518352
Self-efficacy (Perceived behavioral control)			.0949135
Narcissism		.3822923**	.0619159
Psychopathy		-.1039844	-.000698
Machiavellianism		-.0823065	.0843699
Constant	1.64002	.4209318	-2.375231**
Fit statistics			
R^2	0.0965	0.1569	0.7812
Model F	3.37	4.04	92.55

N=203, **** $p<0.001$; ** $p<0.05$; * $p<0.1$, dependent variables in models 1-3 – entrepreneurial intentions

Variables	Model 4	Model 5	Model 6
Control variables			
gender	-.5090746**	-.1127412	-.390754**
age	.0267943	-.0335698	.0581341**
field of study	-.059059	.35388	-.0537775
level	.4937078*	.14767	.4874907**
entreduc	.3255865	.2889121	.1719097
unienv	.1450982	.2483946**	.1321666*
status	-.3018316	-.5411567*	-.2834839
Independent variables			
Attitudes			
Subjective norms			
Self-efficacy (Perceived behaviorial control)			
Narcissism	.3126981**	.008817	.2048512**
Psychopathy	-.0975624	-.162709*	-.1863389**
Machiavellianism	-.1679994*	.0643285	-.0149367
Constant	2.921244**	4.791197***	2.411775**
Fit statistics			
R^2	0.1205	0.1784	0.1320
Model F	2.69	5.05	2.91

N=203, ***p<0.001; **p<0.05; *p<0.1, dependent variable in model 4 – attitude to entrepreneurship, in model 5 – subjective norms, in model 6 – self-efficacy

Table 6. Results of regression analysis

3.2. Mediation testing

Mediation is tested with macros PROCESS in SPSS, that is specially developed to analyze direct and indirect effects in multiple and single mediator models (Hayes, 2017). This tool is widely used in business and social science.

Macros PROCESS implies using of bootstrapping, that is a resampling method, that has been used for many years, especially usage increased with the development of high-speed computing technologies. In mediation analysis, bootstrapping is used to generate an empirically derived representation of the sampling distribution of the indirect effect, and this empirical representation is used for construction of confidence interval (Hayes, 2017, p. 98). The process can be repeated for thousands of times, for example, in this research it is set to 5000 times. Bootstrapping is method highly recommended by (Preacher, Hayes, 2008) to use when obtaining confidence intervals (CI) for specific indirect effects as it enhances the reliability of the results.

Therefore, for testing mediation effects of attitude to entrepreneurship, subjective norms and perceived behavioral control in the relation of Dark Triads traits on entrepreneurial intentions, bootstrapping with 95% confidence intervals and 5000 iterations is implemented (Appendix 5). The results of this testing is presented in the Table.

Independent variable	Bootstrapping results (indirect effects)				Direct effect of IV on DV	Effect of IV on Mediator	Direct effect that is left after adding all mediators	Result
	Mean	Stand ard error	LL: 95% CI	UL: 95% CI				
Mediator – attitude to entrepreneurship								
Narcissism	0,2416	0,0976	0,0417	0,4228	.3493264* *	0,2522**	.0951856*	Mediation
Psychopathy	-0,2015	0,0983	-0,3865	-0,0092	-.1453274	-0,2058**	.0682672 (n.s.)	Mediation
Machiavellianism	-0,1560	0,0750	-0,3062	-0,0097	-.0632606	-0,1582**	.0968464**	Mediation
Mediator – subjective norms								
Narcissism	0,0044	0,0186	-0,0318	0,0448	.3493264* *	0,0201 (n.s.)	.0951856*	No
Psychopathy	-0,0241	0,0226	-0,0810	0,0051	-.1453274	-0,1147 (n.s.)	.0682672 (n.s.)	No
Machiavellianism	-0,0020	0,0155	-0,0395	0,0241	-.0632606	-0,0090 (n.s.)	.0968464**	No
Mediator – perceived behavioral control								
Narcissism	0,0835	0,0488	0,0053	0,1960	.3493264* *	0,1890**	.0951856*	Mediation
Psychopathy	-0,0896	0,0411	-0,1791	-0,0198	-.1453274	-0,1869**	.0682672 (n.s.)	Mediation
Machiavellianism	-0,0316	0,0292	-0,0943	0,0225	-.0632606	-0,0649	.0968464**	No

N=203, 500 iterations, ***p<0.001; **p<0.05;*p<0.1; n.s. nonsignificant effect, CI – confidence interval, LL – lower level, UL – upper level

Table 7. Testing of mediation effects

Indirect effects of independent variables on entrepreneurial intentions are significant for 2 mediators out of 3 – attitude to entrepreneurship and perceived behavioral control. There is no significant mediation revealed through subjective norms.

For narcissism and psychopathy mediation is revealed through 2 mediators - the attitude and perceived behavioral control. For Machiavellianism it is revealed only through attitude to entrepreneurship. 73% of the effect of narcissism and 64% of the effect of psychopathy on entrepreneurial intentions is connected with attitude.

Attitude to entrepreneurship mediates effects of all Dark Triad traits on entrepreneurial intentions, and perceived behavioral control partially mediates these effects. In the case of perceived behavioral control the mediation is partial due to the fact that only perceived behavioral control mediate not all Dark Triad traits, but only narcissism and psychopathy.

As a result, it can be stated that attitude to entrepreneurship mediates and perceived behavioral control partly mediate effects of Dark Triad personality traits on entrepreneurial intentions of young people.

3.3. Main findings

This research contributes to the investigation of the effect of personal traits of entrepreneur in the process of formation of entrepreneurial intentions. More precisely, Dark Triad personality traits are explored in the context of formation of entrepreneurial intentions through the mechanism suggested by theory of planned behavior, namely via attitude to entrepreneurship, subjective norms and perceived behavioral control.

As one of the results of the research it is revealed that there is a positive significant relationship between attitude to entrepreneurship and entrepreneurial intention, whereas two other elements of theory of planned behavior, namely subjective norms and perceived behavioral control, have insignificant relationship with intentions to be involved in entrepreneurship. Thus, theory of planned behavior within this research is partly confirmed in the context of entrepreneurship, namely in regards to attitude. The participants of the research are young people, mainly current students, and possibly it can be a reason why their own perception towards entrepreneurship is more significant than what others think about that (subjective

norms), as well as the self-assessment of their skills and capabilities necessary for entrepreneurship (self-efficacy).

Among Dark Triad traits, narcissism shows the significant positive relationship with attitude towards entrepreneurship and perceived behavioral control. They strive for success and for achieving their goals, moreover, they are highly motivated. Aspirations may lead them to the positive attitude to creating their own business, as this way can become a way to get attention and respect from others. Big 5 model of personality states high extraversion and openness and low in agreeableness and neuroticism constitutes the entrepreneurial personality profile (Zhao & Siebert, 2006). It is proved that narcissism has a lot in common with these traits of Big 5 (Mathieu & St-Jean, 2013). It explains the positive relationship between narcissism and perceived behavioral control.

In contradiction to the stated hypotheses psychopathy shows negative significant relationship with subjective norms and perceived behavioral control. It means psychopaths tend to think that people around will not support their inclination to become an entrepreneur. Moreover, they may think that they do not possess skills and knowledge in a sufficient amount to become an entrepreneur.

Last but not least, Machiavellianism has significant negative relationship with attitude to entrepreneurship that contradicts the stated hypothesis. Probably, the reason is the fact that Machiavellians are not able get as much control, power and influence as they want when they start a new business. Instead they can get it by entering already existing well-known firm, for example by getting a managerial position there.

Moreover, it is found out that attitude to entrepreneurship and perceived behavioral control works as mediators in the relationships between Dark Triad traits and entrepreneurial intentions. In particular, the impact of all Dark Triad traits – narcissism, psychopathy and Machiavellianism on formation of intention to create a business happens via formation of attitude to entrepreneurship. Furthermore, the influence of narcissism and psychopathy on formation of entrepreneurial intention occurs via formation of self-perception of the presence of skills and knowledge that is necessary for entrepreneurial activity, or in other words, self-efficacy. The fact that attitude to entrepreneurship is a mediator for all Dark Triad traits highlights the importance of this element of theory of planned behavior.

3.4. Theoretical and practical contribution

Theoretical contribution consists in the clarification of theory of planned behavior in the

context of the entrepreneurial intentions among the youth: exploration of factors influencing on attitudes to entrepreneurship, subjective norms and perceived behavioral control, which includes the expansion of knowledge about personality traits generally perceived as negative, namely Dark Triad traits.

Concerning practical implication of the research, it is important to mention the significance of the results for business schools. Students high in Dark Triad traits have an inclination towards an entrepreneurial activity. Business schools may help them by providing an appropriate environment, where students will enhance their strengths while avoiding socially counter-productive aspects of their personality so as to be able not only to start a business but be able to operate it successfully, with social responsibility. One of such unwelcome, counter-productive aspects of Dark Triad, narcissism in particular, is the worldview in which “I” dominates “we” (Twenge & Campbell, 2010). Moreover, people high in narcissism tend not only to belittle others and their ability to do tasks successfully, but also to believe that only they and nobody else can implement the task in the best way (Martin et al., 2016). This inclination leads to the lack of delegation in the behavior of the leader high in narcissism. It is known that delegation is of high importance being a significant part of efficient management, due to the variety of reasons, for instance, it is related to employee’s job satisfaction and motivation, quality and speed of actions and decisions (Yukl & Fu, 1999). Overall, successful and long-lasting entrepreneurial activity, as many others, supposes team collaboration, “we” mindset. Business schools can contribute to the solution of this issue by emphasizing the role of team, collaboration and delegation, by providing opportunities to participate in practical team projects.

For investors the knowledge about Dark Triad personality traits of the entrepreneurs can be an additional factor when choosing what business to invest in. For instance, Machiavellians are known for little reciprocation, their appropriative strategy may result in success in short-term investments, but in failure in long-term ones, whereas narcissists may operate successfully in long-term (Hmieleski & Lerner, 2016). For the same reason, grant programs should take into account Dark Triad traits when giving money to young entrepreneurs high in psychopathy and Machiavellianism. For instance, the prize money can be used in a manner that will not bring long-lasting social benefits. Negative aspects of personality can be revealed by interviews with employees, customers’ opinion can be included as one of the criteria for choosing a grant winner. Some of the solutions to giving a prize: providing with money gradually, not the whole sum simultaneously; non-monetary prize; moreover, the prize can be handed to the team of start-up.

CONCLUSION

Research conducted in the Master thesis gave the insight into the stated research question, which was to define the impact of Dark Triad traits on entrepreneurial intentions among students and recent graduates. The research is based on the theory of planned behavior, which, moreover, has been clarified in the context of entrepreneurship, namely, only one of three elements of the mechanism suggested by theory of planned behavior – attitude or, more precisely, attitude to entrepreneurship has a positive significant effect on entrepreneurial intentions.

Considering Dark Triad traits, it was revealed that narcissism has the significant positive relationship with attitude towards entrepreneurship and perceived behavioral control. Another important finding is that attitude to entrepreneurship and perceived behavioral control work as mediators in the relationships between Dark Triad traits and entrepreneurial intentions.

All findings of the research are based on the quantitative analysis of the data collected by survey that was spread among specified audience: current students or recent graduates of Russian universities.

This research contributes to the range of studies concerning student entrepreneurship, which is believed to be one of the relevant ones for consideration (Широкова et al., 2015; Hmieleski & Lerner, 2016) as students are the basis of not only current but also of future entrepreneurial activity in the country. Despite of that, future research can be extended by choosing another sample of respondents, namely graduates with a more significant number of years of working experience.

Moreover, apart from intentions and initiation of the business, some other steps of entrepreneurial process should also be taken into account, for example, management of the growing firm.

Undeniably, analysis of Dark Triad traits is popular nowadays in the context of not positive personality traits affecting entrepreneurial intentions, but the research can be done also with other traits such as overconfidence, attention deficit hyperactivity disorder (ADHD) (Wiklund et al., 2017), bipolar traits (Johnson et al., 2018), mood disorders (Bogan et al., 2013) and others. It is worth finding out, as the heading of one of the articles by Wiklund (2018) says, when different can be an advantage.

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APPENDIX

Appendix №1. Survey questions

Research on entrepreneurial intentions of students and graduates

* Compulsory question

Information about you and your education

Your gender *

- Male
- Female

Your age *

Мой ответ _____

Your university *

- Saint-Petersburg State University
- National Research University Higher School of Economics, Moscow
- National Research University Higher School of Economics, Saint-Petersburg
- Russian Presidential Academy of National Economy and Public Administration under the President of the Russian Federation
- Другое: _____

Your speciality *

- Business Administration, Management
- Economics
- Другое: _____

Please indicate which of the following applies to you *

- I have not attended a course on entrepreneurship so far.
- I have attended at least one entrepreneurship course as elective.
- I have attended at least one entrepreneurship course as compulsory part of my studies.
- I am studying in a specific program on entrepreneurship.
- I chose to study at this university mainly because of its strong entrepreneurial reputation.

University environment

Please indicate the extent to which you agree with the following statements about the university environment.

The atmosphere at my university inspires me to develop ideas for new businesses. *

	1	2	3	4	5	6	7	
not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very much

There is a favorable climate for becoming an entrepreneur at my university. *

	1	2	3	4	5	6	7	
not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very much

At my university, students are encouraged to engage in entrepreneurial activities. *

	1	2	3	4	5	6	7	
not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very much

Are you a student or a graduate?

- Student
- Graduate

Questions for students

On what level are you studying? *

- Undergraduate (Bachelor)
- Graduate (Master)
- PhD
- Другое: _____

Are you a full-time student? *

- Yes
- No

Are you an international exchange student? *

- Yes
- No

Questions for graduates

Level of your education *

- Undergraduate (Bachelor)
- Graduate (Master)
- PhD
- Другое: _____

Graduation year *

Выбрать ▼

Your work experience *

- less than 1 year
- 1 - 3 years
- 3 - 5 years
- more than 5 years

You and Entrepreneurship

Please indicate your level of agreement with the following statements. Entrepreneur refers to someone who creates a new business.

Are you currently trying to start your own business? *

- Yes
- No

Are you already running your own business? *

- Yes
- No (I do not want to/ I do not plan to)
- No, but I would love to

I am ready to do anything to be an entrepreneur. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

My professional goal is to become an entrepreneur. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

I will make every effort to start and run my own business. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

I am determined to create a business in the future. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

I have very seriously thought of starting a business. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

I have a strong intention to start a business someday. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

Being an entrepreneur implies more advantages than disadvantages to me. *

1 2 3 4 5 6 7

disagree strongly agree strongly

A career as an entrepreneur is attractive to me. *

1 2 3 4 5 6 7

disagree strongly agree strongly

If I had the opportunity and resources, I would become an entrepreneur. *

1 2 3 4 5 6 7

disagree strongly agree strongly

Being an entrepreneur would entail great satisfaction for me. *

1 2 3 4 5 6 7

disagree strongly agree strongly

Among various options, I would rather become an entrepreneur. *

1 2 3 4 5 6 7

disagree strongly agree strongly

Subjective norms

If you would pursue a career as an entrepreneur, how would people in your environment react (1=very negatively, 7=very positively)? *

	1	2	3	4	5	6	7
Your close family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your fellow students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Psychological traits

Please indicate your level of agreement with the following statements (1 = disagree strongly, 9 = agree strongly).

I tend to want others to admire me. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

I tend to want others to pay attention to me. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

I tend to expect special favors from others. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

I tend to seek prestige or status. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

I tend to lack remorse. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

I tend to be callous or insensitive. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

I tend to be unconcerned with the morality of my actions. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

I tend to be cynical. *

	1	2	3	4	5	6	7	
disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	agree strongly

I have used deceit or lied to get my way. *

1 2 3 4 5 6 7

disagree strongly agree strongly

I tend to manipulate others to get my way. *

1 2 3 4 5 6 7

disagree strongly agree strongly

I have used flattery to get my way. *

1 2 3 4 5 6 7

disagree strongly agree strongly

I have used flattery to get my way. *

1 2 3 4 5 6 7

disagree strongly agree strongly

I tend to exploit others towards my own end. *

1 2 3 4 5 6 7

disagree strongly agree strongly

Your skills

Please indicate your level of competence in performing the following tasks (1=very low competence, 7=very high competence).

Identifying new business opportunities *

1 2 3 4 5 6 7

very low competence very high competence

Creating new products and services *

1 2 3 4 5 6 7

very low competence very high competence

Managing innovation within a business *

1 2 3 4 5 6 7

very low competence very high competence

Being a leader and communicator *

1 2 3 4 5 6 7

very low competence very high competence

Building up a professional network *

1 2 3 4 5 6 7

very low competence very high competence

Commercializing a new idea or development *

1 2 3 4 5 6 7

very low competence very high competence

Successfully managing a business *

1 2 3 4 5 6 7

very low competence very high competence

Appendix №2. Universities of respondents

	University	Number of respondents
1	Saint-Petersburg State University	133
2	Higher School of Economics - Saint Petersburg	36
3	Higher School of Economics – Moscow	34
4	The Russian Presidential Academy of National Economy and Public Administration	16
5	ITMO University	14
6	Higher School of Economics – Perm	1
7	Moscow State Institute of International Relations	1
8	Novosibirsk State University	1
9	Baltic State Technical University "Voenmeh"	1
10	Saint Petersburg Electrotechnical University	1
11	Pskov State University	1
12	Peter the Great St. Petersburg Polytechnic University	1
13	Astrakhan State University	1
14	Dagestan State University of National Economy	1
	Total	242

Appendix №3. Correlation matrix

		Correlations													
		gender	age	field	level	entreduc	unienv	status	intentio	attitude	subjnorm	selfeffi	narcissi	psychopa	machiave
gender	Pearson Correlation	1	-.064	.039	-.046	.022	.211**	.040	-.067	-.057	.025	-.074	.264**	-.123	-.091
	Sig. (2-tailed)		.366	.576	.515	.759	.002	.575	.339	.420	.724	.296	.000	.080	.198
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
age	Pearson Correlation	-.064	1	.016	-.586**	.208*	-.136	.352**	-.090	-.074	-.189**	-.013	-.032	.081	.074
	Sig. (2-tailed)	.366		.818	.000	.003	.053	.000	.200	.294	.007	.856	.652	.248	.294
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
field	Pearson Correlation	.039	.016	1	-.056	.144*	.050	-.136	-.035	.012	.115	-.027	-.058	.089	-.171*
	Sig. (2-tailed)	.576	.818		.426	.040	.478	.053	.624	.865	.101	.701	.413	.208	.015
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
level	Pearson Correlation	-.046	-.586**	-.056	1	-.127	-.055	.044	.127	.090	.054	.070	-.093	.064	-.047
	Sig. (2-tailed)	.515	.000	.426		.071	.437	.534	.071	.201	.445	.321	.186	.368	.506
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
entreduc	Pearson Correlation	.022	.208**	.144*	-.127	1	.035	.089	.066	.055	.097	.051	-.086	.009	.068
	Sig. (2-tailed)	.759	.003	.040	.071		.624	.208	.352	.436	.167	.473	.220	.896	.337
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
unienv	Pearson Correlation	.211**	-.136	.050	-.055	.035	1	-.240**	.205**	.136	.298**	.150	.194**	-.055	.004
	Sig. (2-tailed)	.002	.053	.478	.437	.624		.001	.003	.053	.000	.032	.005	.436	.951
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
status	Pearson Correlation	.040	.352**	-.136	.044	.089	-.240**	1	-.145*	-.096	-.277**	-.097	-.047	.119	.010
	Sig. (2-tailed)	.575	.000	.053	.534	.208	.001		.039	.175	.000	.167	.510	.092	.882
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
intentio	Pearson Correlation	-.067	-.090	-.035	.127	.066	.205**	-.145*	1	.866**	.231**	.367**	.200**	-.097	-.030
	Sig. (2-tailed)	.339	.200	.624	.071	.352	.003	.039		.000	.001	.000	.004	.170	.673
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
attitude	Pearson Correlation	-.057	-.074	.012	.090	.055	.136	-.096	.866**	1	.256**	.338**	.162*	-.151*	-.140*
	Sig. (2-tailed)	.420	.294	.865	.201	.436	.053	.175	.000		.000	.000	.021	.032	.046
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
subjnorm	Pearson Correlation	.025	-.189**	.115	.054	.097	.298**	-.277**	.231**	.256**	1	.218**	.050	-.135	-.021
	Sig. (2-tailed)	.724	.007	.101	.445	.167	.000	.000	.001	.000		.002	.479	.055	.771
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
selfeffi	Pearson Correlation	-.074	-.013	-.027	.070	.051	.150	-.097	.367**	.338**	.218**	1	.165*	-.184**	-.061
	Sig. (2-tailed)	.296	.856	.701	.321	.473	.032	.167	.000	.000	.002		.019	.009	.386
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
narcissi	Pearson Correlation	.264**	-.032	-.058	-.093	-.086	.194**	-.047	.200**	.162*	.050	.165*	1	-.004	.206**
	Sig. (2-tailed)	.000	.652	.413	.186	.220	.005	.510	.004	.021	.479	.019		.956	.003
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
psychopa	Pearson Correlation	-.123	.081	.089	.064	.009	-.055	.119	-.097	-.151*	-.135	-.184**	-.004	1	.547**
	Sig. (2-tailed)	.080	.248	.208	.368	.896	.436	.092	.170	.032	.055	.009	.956		.000
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203
machiave	Pearson Correlation	-.091	.074	-.171*	-.047	.068	.004	.010	-.030	-.140*	-.021	-.061	.206**	.547**	1
	Sig. (2-tailed)	.198	.294	.015	.506	.337	.951	.882	.673	.046	.771	.386	.003	.000	
	N	203	203	203	203	203	203	203	203	203	203	203	203	203	203

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Appendix №4. Regression outputs from Stata

```
. reg attitude gender age field level entreduc unienv status narcissi psychopa machiave , robust
```

```
Linear regression                               Number of obs =      203
                                                F( 10,   192) =      2.69
                                                Prob > F       =    0.0041
                                                R-squared     =    0.1205
                                                Root MSE     =    1.5078
```

attitude	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
gender	-.5090746	.248705	-2.05	0.042	-.9996196	-.0185297
age	.0267943	.0391656	0.68	0.495	-.0504558	.1040445
field	-.059059	.3001927	-0.20	0.844	-.6511581	.5330401
level	.4937078	.2925154	1.69	0.093	-.0832485	1.070664
entreduc	.3255865	.2233794	1.46	0.147	-.1150063	.7661793
unienv	.1450982	.0934892	1.55	0.122	-.0392996	.3294961
status	-.3018316	.309882	-0.97	0.331	-.9130418	.3093787
narcissi	.3126981	.0971478	3.22	0.002	.1210841	.504312
psychopa	-.0975624	.115725	-0.84	0.400	-.3258179	.1306931
machiave	-.1679994	.0857648	-1.96	0.052	-.3371615	.0011627
_cons	2.921244	1.248725	2.34	0.020	.4582624	5.384225

```
. reg subjnorm gender age field level entreduc unienv status narcissi psychopa machiave , robust
```

```
Linear regression                               Number of obs =      203
                                                F( 10,   192) =      5.05
                                                Prob > F       =    0.0000
                                                R-squared     =    0.1784
                                                Root MSE     =    1.194
```

subjnorm	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
gender	-.1127412	.1859677	-0.61	0.545	-.4795432	.2540609
age	-.0335698	.0480383	-0.70	0.486	-.1283204	.0611808
field	.35388	.2684663	1.32	0.189	-.175642	.883402
level	.14767	.2458447	0.60	0.549	-.3372332	.6325733
entreduc	.2889121	.1783602	1.62	0.107	-.062885	.6407092
unienv	.2483946	.0776236	3.20	0.002	.09529	.4014992
status	-.5411567	.3025078	-1.79	0.075	-1.137822	.0555087
narcissi	.008817	.0752671	0.12	0.907	-.1396395	.1572735
psychopa	-.162709	.0892517	-1.82	0.070	-.3387487	.0133306
machiave	.0643285	.068502	0.94	0.349	-.0707847	.1994417
_cons	4.791197	1.287159	3.72	0.000	2.252409	7.329985

. reg selfeffi gender age field level entreduc unienv status narcissi psychopa machiave , robust

Linear regression

Number of obs = 203
 F(10, 192) = 2.91
 Prob > F = 0.0020
 R-squared = 0.1320
 Root MSE = 1.104

selfeffi	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
gender	-.390754	.1783244	-2.19	0.030	-.7424805	-.0390276
age	.0581341	.0272657	2.13	0.034	.0043553	.111913
field	-.0537775	.2534503	-0.21	0.832	-.553682	.4461271
level	.4874907	.1851626	2.63	0.009	.1222767	.8527047
entreduc	.1719097	.1659803	1.04	0.302	-.1554692	.4992886
unienv	.1321666	.0701556	1.88	0.061	-.006208	.2705412
status	-.2834839	.201122	-1.41	0.160	-.6801762	.1132084
narcissi	.2048512	.0917746	2.23	0.027	.0238353	.385867
psychopa	-.1863389	.0824547	-2.26	0.025	-.3489723	-.0237056
machiave	-.0149367	.0711412	-0.21	0.834	-.1552553	.125382
_cons	2.411775	.8865352	2.72	0.007	.6631766	4.160374

reg intentio gender age field level entreduc unienv status narcissi psychopa machiave attitude subjnorm selfeffi

Source	SS	df	MS	Number of obs =	203
Model	520.384748	13	40.029596	F(13, 189) =	51.91
Residual	145.750762	189	.771168053	Prob > F =	0.0000
Total	666.13551	202	3.29770055	R-squared =	0.7812
				Adj R-squared =	0.7661
				Root MSE =	.87816

intentio	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
gender	-.0986167	.1417522	-0.70	0.487	-.3782365	.1810031
age	.0257837	.0277886	0.93	0.355	-.029032	.0805994
field	-.19132	.188671	-1.01	0.312	-.5634916	.1808515
level	.338442	.1693101	2.00	0.047	.0044617	.6724224
entreduc	.1121865	.1313427	0.85	0.394	-.1468994	.3712724
unienv	.1257503	.0556901	2.26	0.025	.0158963	.2356044
status	-.3394153	.1840857	-1.84	0.067	-.7025419	.0237112
narcissi	.0619159	.0597178	1.04	0.301	-.0558831	.1797149
psychopa	-.000698	.0651627	-0.01	0.991	-.1292376	.1278416
machiave	.0843699	.05255	1.61	0.110	-.0192901	.1880298
attitude	.9638379	.044122	21.84	0.000	.8768031	1.050873
subjnorm	-.0518352	.0545118	-0.95	0.343	-.1593649	.0556946
selfeffi	.0949135	.0597037	1.59	0.114	-.0228577	.2126846
_cons	-2.375231	.835156	-2.84	0.005	-4.022656	-.7278066

. reg attitude gender age field level entreduc unienv status narcissi psychopa machiave

Source	SS	df	MS	Number of obs =	203
Model	59.7913496	10	5.97913496	F(10, 192) =	2.63
Residual	436.508953	192	2.27348413	Prob > F =	0.0051
Total	496.300302	202	2.45693219	R-squared =	0.1205
				Adj R-squared =	0.0747
				Root MSE =	1.5078

attitude	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
gender	-.5090746	.2387045	-2.13	0.034	-.9798946	-.0382547
age	.0267943	.0471855	0.57	0.571	-.0662742	.1198628
field	-.059059	.3220516	-0.18	0.855	-.6942725	.5761544
level	.4937078	.285679	1.73	0.086	-.0697644	1.05718
entreduc	.3255865	.2230217	1.46	0.146	-.1143007	.7654737
unienv	.1450982	.0923143	1.57	0.118	-.0369821	.3271786
status	-.3018316	.3114309	-0.97	0.334	-.9160967	.3124336
narcissi	.3126981	.0987494	3.17	0.002	.1179252	.507471
psychopa	-.0975624	.1096932	-0.89	0.375	-.3139209	.118796
machiave	-.1679994	.0890023	-1.89	0.061	-.3435471	.0075484
_cons	2.921244	1.352041	2.16	0.032	.2544821	5.588006

. reg subjnorm gender age field level entreduc unienv status narcissi psychopa machiave

Source	SS	df	MS	Number of obs =	203
Model	59.430398	10	5.9430398	F(10, 192) =	4.17
Residual	273.740989	192	1.42573432	Prob > F =	0.0000
Total	333.171387	202	1.6493633	R-squared =	0.1784
				Adj R-squared =	0.1356
				Root MSE =	1.194

subjnorm	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
gender	-.1127412	.1890314	-0.60	0.552	-.4855861	.2601037
age	-.0335698	.0373665	-0.90	0.370	-.1072713	.0401317
field	.35388	.2550344	1.39	0.167	-.149149	.856909
level	.14767	.2262307	0.65	0.515	-.2985467	.5938867
entreduc	.2889121	.1766121	1.64	0.104	-.059437	.6372612
unienv	.2483946	.0731042	3.40	0.001	.1042042	.392585
status	-.5411567	.2466238	-2.19	0.029	-1.027597	-.0547168
narcissi	.008817	.0782002	0.11	0.910	-.1454247	.1630587
psychopa	-.162709	.0868666	-1.87	0.063	-.3340445	.0086264
machiave	.0643285	.0704814	0.91	0.363	-.0746887	.2033457
_cons	4.791197	1.070689	4.47	0.000	2.679374	6.90302

. reg selfeffi gender age field level entreduc unienv status narcissi psychopa machiave

Source	SS	df	MS	Number of obs =	203
Model	35.5793072	10	3.55793072	F(10, 192) =	2.92
Residual	234.030335	192	1.21890799	Prob > F =	0.0020
Total	269.609642	202	1.3347012	R-squared =	0.1320
				Adj R-squared =	0.0868
				Root MSE =	1.104

selfeffi	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
gender	-.390754	.1747834	-2.24	0.027	-.7354961 -.0460119
age	.0581341	.03455	1.68	0.094	-.0100122 .1262804
field	-.0537775	.2358115	-0.23	0.820	-.5188912 .4113363
level	.4874907	.2091788	2.33	0.021	.0749071 .9000743
entreduc	.1719097	.1633002	1.05	0.294	-.150183 .4940023
unienv	.1321666	.067594	1.96	0.052	-.0011556 .2654888
status	-.2834839	.2280348	-1.24	0.215	-.733259 .1662912
narcissi	.2048512	.0723059	2.83	0.005	.0622352 .3474671
psychopa	-.1863389	.0803191	-2.32	0.021	-.3447601 -.0279177
machiave	-.0149367	.0651689	-0.23	0.819	-.1434756 .1136023
_cons	2.411775	.989987	2.44	0.016	.4591286 4.364422

. reg intentio gender age field level entreduc unienv status, robust

Linear regression

Number of obs = 203
 F(7, 195) = 3.37
 Prob > F = 0.0020
 R-squared = 0.0965
 Root MSE = 1.7568

intentio	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]
gender	-.3476996	.2625404	-1.32	0.187	-.8654829 .1700837
age	.0451475	.0478347	0.94	0.346	-.0491922 .1394873
field	-.3298656	.304679	-1.08	0.280	-.9307548 .2710236
level	.7159554	.331819	2.16	0.032	.0615406 1.37037
entreduc	.3287327	.2565699	1.28	0.202	-.1772756 .834741
unienv	.3117776	.1077358	2.89	0.004	.0993006 .5242545
status	-.6510265	.3370062	-1.93	0.055	-1.315672 .0136186
_cons	1.64002	1.37173	1.20	0.233	-1.065311 4.345351

. reg intentio gender age field level entreduc unienv status narcissi psychopa machiave , robust

Linear regression

Number of obs = 203
 F(10, 192) = 4.04
 Prob > F = 0.0000
 R-squared = 0.1569
 Root MSE = 1.7103

intentio	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
gender	-.620526	.2748058	-2.26	0.025	-1.162552	-.0785001
age	.0588669	.0443639	1.33	0.186	-.0286363	.1463701
field	-.271691	.3138842	-0.87	0.388	-.8907951	.3474131
level	.8529113	.3254335	2.62	0.009	.2110274	1.494795
entreduc	.4273399	.2558211	1.67	0.096	-.0772407	.9319205
unienv	.2652703	.105653	2.51	0.013	.0568808	.4736598
status	-.6291875	.3186832	-1.97	0.050	-1.257757	-.0006178
narcissi	.3822923	.1110067	3.44	0.001	.1633429	.6012416
psychopa	-.1039844	.1282396	-0.81	0.418	-.3569238	.1489549
machiave	-.0823065	.0960134	-0.86	0.392	-.2716829	.10707
_cons	.4209318	1.368656	0.31	0.759	-2.2786	3.120464

. reg intentio gender age field level entreduc unienv status narcissi psychopa machiave attitude subjnorm selfeffi , robust

Linear regression

Number of obs = 203
 F(13, 189) = 92.55
 Prob > F = 0.0000
 R-squared = 0.7812
 Root MSE = .87816

intentio	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
gender	-.0986167	.1460102	-0.68	0.500	-.3866358	.1894024
age	.0257837	.0269649	0.96	0.340	-.0274071	.0789746
field	-.19132	.169713	-1.13	0.261	-.5260951	.1434551
level	.338442	.1838581	1.84	0.067	-.0242355	.7011196
entreduc	.1121865	.1312215	0.85	0.394	-.1466603	.3710334
unienv	.1257503	.0614174	2.05	0.042	.0045986	.246902
status	-.3394153	.1991228	-1.70	0.090	-.7322039	.0533733
narcissi	.0619159	.0645625	0.96	0.339	-.0654398	.1892715
psychopa	-.000698	.0634565	-0.01	0.991	-.125872	.124476
machiave	.0843699	.0469481	1.80	0.074	-.0082397	.1769794
attitude	.9638379	.0400901	24.04	0.000	.8847563	1.04292
subjnorm	-.0518352	.0565649	-0.92	0.361	-.1634149	.0597445
selfeffi	.0949135	.0651553	1.46	0.147	-.0336117	.2234386
_cons	-2.375231	.869519	-2.73	0.007	-4.09044	-.6600222

Appendix № 5. Mediation testing in SPSS using macros PROCESS

```

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 3.5.3 *****

          Written by Andrew F. Hayes, Ph.D.      www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

*****
Model   : 4
  Y     : intentio
  X     : narcissi
  M     : attitude

Covariates:
  gender  age      field  level  entreduc  unienv  status

Sample
Size: 203

*****
OUTCOME VARIABLE:
  attitude

Model Summary
           R      R-sq      MSE      F      df1      df2      p
           ,2759    ,0761    2,3635    1,9985    8,0000    194,0000    ,0485

Model
      coeff      se      t      p      LLCI      ULCI
constant    2,4358    1,3693    1,7789    ,0768    -,2648    5,1365
narcissi     ,2522    ,0972    2,5943    ,0102     ,0605    ,4439
gender     -,3975    ,2406   -1,6522    ,1001    -,8721    ,0770
age         ,0161    ,0479     ,3368    ,7366    -,0784    ,1107
field       ,0270    ,3122     ,0863    ,9313    -,5887    ,6426
level       ,4512    ,2892    1,5601    ,1204    -,1192    1,0217
entreduc    ,2739    ,2250    1,2173    ,2250    -,1698    ,7176
unienv     ,1458    ,0941    1,5496    ,1229    -,0398    ,3315
status     -,3086    ,3149   -,9799    ,3283    -,9296    ,3125
  
```

```

*****
OUTCOME VARIABLE:
  intentio

Model Summary
      R      R-sq      MSE      F      df1      df2      p
    ,8797    ,7738    ,7807    73,3603    9,0000    193,0000    ,0000

Model
      coeff      se      t      p      LLCI      ULCI
constant  -2,2307    ,7934  -2,8116    ,0054  -3,7955  -,6659
narcissi   ,1078    ,0568   1,8964    ,0594  -,0043   ,2199
attitude   ,9578    ,0413  23,2118    ,0000   ,8764   1,0392
gender    - ,1659    ,1393  -1,1917    ,2349  -,4406   ,1087
age        ,0356    ,0276   1,2912    ,1982  -,0188   ,0899
field     - ,2783    ,1794  -1,5513    ,1225  -,6322   ,0755
level      ,3812    ,1673   2,2787    ,0238   ,0513   ,7111
entreduc   ,1420    ,1298   1,0944    ,2752  -,1140   ,3980
unienv     ,1257    ,0544   2,3101    ,0219   ,0184   ,2331
status    - ,3535    ,1814  -1,9484    ,0528  -,7113   ,0043

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y
      Effect      se      t      p      LLCI      ULCI
    ,1078    ,0568   1,8964    ,0594  -,0043   ,2199

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
attitude   ,2416    ,0976    ,0417    ,4228

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

----- END MATRIX -----

```


***** PROCESS Procedure for SPSS Version 3.5.3 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2018). www.guilford.com/p/hayes3

Model : 4
Y : intentio
X : psychopa
M : attitude

Covariates:

gender age field level entreduc unienv status

Sample

Size: 203

OUTCOME VARIABLE:

attitude

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2623	,0688	2,3822	1,7923	8,0000	194,0000	,0806

Model

	coeff	se	t	p	LLCI	ULCI
constant	3,8954	1,3149	2,9625	,0034	1,3020	6,4888
psychopa	-,2058	,0907	-2,2702	,0243	-,3846	-,0270
gender	-,3172	,2367	-1,3399	,1819	-,7840	,1497
age	,0212	,0483	,4402	,6603	-,0739	,1164
field	,0526	,3147	,1670	,8675	-,5681	,6732
level	,4461	,2905	1,5356	,1263	-,1269	1,0191
entreduc	,2081	,2249	,9250	,3561	-,2356	,6517
unienv	,1817	,0936	1,9411	,0537	-,0029	,3663
status	-,2495	,3172	-,7866	,4325	-,8752	,3761

OUTCOME VARIABLE:

intentio

Model Summary

R	R-sq	MSE	F	df1	df2	p
,8780	,7709	,7906	72,1703	9,0000	193,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-1,9276	,7745	-2,4889	,0137	-3,4551	-,4001
psychopa	,0562	,0529	1,0623	,2894	-,0482	,1606
attitude	,9792	,0414	23,6741	,0000	,8976	1,0608
gender	-,0818	,1370	-,5973	,5510	-,3520	,1884
age	,0310	,0278	1,1126	,2673	-,0239	,0858
field	-,3238	,1813	-1,7859	,0757	-,6814	,0338
level	,3252	,1684	1,9310	,0549	-,0070	,6573
entreduc	,1171	,1299	,9016	,3684	-,1391	,3732
unienv	,1355	,0544	2,4895	,0136	,0282	,2429
status	-,3640	,1831	-1,9884	,0482	-,7250	-,0029

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
,0562	,0529	1,0623	,2894	-,0482	,1606

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
attitude	-,2015	,0983	-,3865	-,0092

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

***** PROCESS Procedure for SPSS Version 3.5.3 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2018). www.guilford.com/p/hayes3

Model : 4
Y : intentio
X : machiave
M : attitude

Covariates:

gender age field level entreduc unienv status

Sample

Size: 203

OUTCOME VARIABLE:

attitude

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2599	,0675	2,3854	1,7568	8,0000	194,0000	,0878

Model

	coeff	se	t	p	LLCI	ULCI
constant	4,0978	1,3304	3,0800	,0024	1,4738	6,7217
machiave	-,1582	,0716	-2,2095	,0283	-,2994	-,0170
gender	-,2982	,2361	-1,2630	,2081	-,7638	,1674
age	,0168	,0482	,3484	,7279	-,0782	,1118
field	-,1588	,3184	-,4989	,6184	-,7867	,4690
level	,3759	,2893	1,2993	,1954	-,1947	,9465
entreduc	,2607	,2258	1,1544	,2498	-,1847	,7060
unienv	,1851	,0937	1,9754	,0496	,0003	,3699
status	-,3310	,3165	-1,0459	,2969	-,9552	,2932

OUTCOME VARIABLE:

intentio

Model Summary

R	R-sq	MSE	F	df1	df2	p
,8806	,7755	,7750	74,0583	9,0000	193,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-2,1819	,7767	-2,8093	,0055	-3,7137	-,6501
machiave	,0928	,0413	2,2458	,0258	,0113	,1743
attitude	,9865	,0409	24,1071	,0000	,9058	1,0672
gender	-,0713	,1351	-,5274	,5985	-,3378	,1952
age	,0305	,0275	1,1122	,2674	-,0236	,0847
field	-,2251	,1816	-1,2400	,2165	-,5833	,1330
level	,3431	,1656	2,0717	,0396	,0165	,6698
entreduc	,0881	,1291	,6825	,4958	-,1666	,3429
unienv	,1315	,0539	2,4375	,0157	,0251	,2379
status	-,3329	,1809	-1,8402	,0673	-,6897	,0239

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
,0928	,0413	2,2458	,0258	,0113	,1743

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
attitude	-,1560	,0750	-,3062	-,0097

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

***** PROCESS Procedure for SPSS Version 3.5.3 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2018). www.guilford.com/p/hayes3

Model : 4
Y : intentio
X : narcissi
M : subjnorm

Covariates:

gender age field level entreduc unienv status

Sample

Size: 203

OUTCOME VARIABLE:

subjnorm

Model Summary

R	R-sq	MSE	F	df1	df2	p
,4039	,1631	1,4372	4,7270	8,0000	194,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	4,6895	1,0678	4,3917	,0000	2,5835	6,7955
narcissi	,0201	,0758	,2658	,7907	-,1294	,1697
gender	-,0872	,1876	-,4646	,6427	-,4572	,2829
age	-,0388	,0374	-1,0377	,3007	-,1125	,0349
field	,2392	,2434	,9825	,3271	-,2410	,7193
level	,0972	,2256	,4311	,6669	-,3476	,5421
entreduc	,3171	,1754	1,8073	,0723	-,0289	,6631
unienv	,2474	,0734	3,3703	,0009	,1026	,3921
status	-,5974	,2455	-2,4331	,0159	-1,0817	-,1132

OUTCOME VARIABLE:

intentio

Model Summary

R	R-sq	MSE	F	df1	df2	p
,4030	,1624	2,8910	4,1572	9,0000	193,0000	,0001

Model

	coeff	se	t	p	LLCI	ULCI
constant	-,9235	1,5879	-,5816	,5615	-4,0555	2,2084
narcissi	,3449	,1075	3,2076	,0016	,1328	,5570
subjnorm	,2188	,1018	2,1484	,0329	,0179	,4196
gender	-,5276	,2663	-1,9817	,0489	-1,0528	-,0025
age	,0595	,0532	1,1199	,2642	-,0453	,1644
field	-,3048	,3461	-,8808	,3795	-,9875	,3778
level	,7921	,3200	2,4749	,0142	,1609	1,4233
entreduc	,3350	,2509	1,3351	,1834	-,1599	,8298
unienv	,2113	,1071	1,9731	,0499	,0001	,4225
status	-,5183	,3535	-1,4661	,1442	-1,2156	,1789

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
,3449	,1075	3,2076	,0016	,1328	,5570

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
subjnorm	,0044	,0186	-,0318	,0448

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

Model : 4
 Y : intentio
 X : psychopa
 M : subjnorm

Covariates:

gender age field level entreduc unienv status

Sample

Size: 203

OUTCOME VARIABLE:

subjnorm

Model Summary

R	R-sq	MSE	F	df1	df2	p
,4175	,1743	1,4181	5,1178	8,0000	194,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	4,9729	1,0145	4,9017	,0000	2,9720	6,9738
psychopa	-,1147	,0700	-1,6396	,1027	-,2527	,0233
gender	-,1110	,1826	-,6076	,5442	-,4712	,2492
age	-,0339	,0372	-,9107	,3636	-,1074	,0395
field	,2801	,2428	1,1535	,2501	-,1988	,7590
level	,1280	,2242	,5708	,5688	-,3141	,5701
entreduc	,3065	,1735	1,7659	,0790	-,0358	,6487
unienv	,2514	,0722	3,4804	,0006	,1089	,3938
status	-,5638	,2448	-2,3036	,0223	-1,0466	-,0811

OUTCOME VARIABLE:

intentio

Model Summary

R	R-sq	MSE	F	df1	df2	p
,3522	,1240	3,0234	3,0363	9,0000	193,0000	,0020

Model

	coeff	se	t	p	LLCI	ULCI
constant	,8397	1,5704	,5347	,5935	-2,2577	3,9371
psychopa	-,1212	,1028	-1,1783	,2401	-,3240	,0817
subjnorm	,2106	,1048	2,0085	,0460	,0038	,4173
gender	-,3690	,2669	-1,3825	,1684	-,8955	,1574
age	,0589	,0545	1,0808	,2811	-,0486	,1664
field	-,3313	,3558	-,9314	,3528	-1,0330	,3703
level	,7351	,3276	2,2440	,0260	,0890	1,3812
entreduc	,2563	,2554	1,0034	,3169	-,2475	,7601
unienv	,2605	,1087	2,3969	,0175	,0462	,4749
status	-,4896	,3622	-1,3516	,1781	-1,2041	,2249

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-,1212	,1028	-1,1783	,2401	-,3240	,0817

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
subjnorm	-,0241	,0226	-,0810	,0051

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

***** PROCESS Procedure for SPSS Version 3.5.3 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2018). www.guilford.com/p/hayes3

Model : 4
Y : intentio
X : machiave
M : subjnorm

Covariates:

gender age field level entreduc unienv status

Sample

Size: 203

OUTCOME VARIABLE:

subjnorm

Model Summary

R	R-sq	MSE	F	df1	df2	p
,4037	,1629	1,4375	4,7204	8,0000	194,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	4,8097	1,0328	4,6570	,0000	2,7728	6,8467
machiave	-,0090	,0556	-,1628	,8709	-,1187	,1006
gender	-,0782	,1833	-,4269	,6700	-,4397	,2832
age	-,0388	,0374	-1,0387	,3002	-,1126	,0349
field	,2273	,2471	,9196	,3589	-,2601	,7147
level	,0913	,2246	,4066	,6847	-,3516	,5343
entreduc	,3151	,1753	1,7974	,0738	-,0306	,6608
unienv	,2504	,0727	3,4419	,0007	,1069	,3938
status	-,5987	,2457	-2,4371	,0157	-1,0833	-,1142

```

OUTCOME VARIABLE:
  intentio

Model Summary
      R      R-sq      MSE      F      df1      df2      p
    ,3469    ,1203    3,0361    2,9339    9,0000   193,0000    ,0028

Model
      coeff      se      t      p      LLCI      ULCI
constant    ,7830    1,5826    ,4947    ,6213   -2,3385    3,9044
machiave   -,0612    ,0808   -,7581    ,4493   -,2205    ,0981
subjnorm    ,2241    ,1043    2,1475    ,0330    ,0183    ,4299
gender     -,3479    ,2665   -1,3056    ,1932   -,8735    ,1777
age         ,0558    ,0545    1,0241    ,3071   -,0517    ,1633
field      -,4328    ,3599   -1,2023    ,2307   -1,1427    ,2772
level       ,6935    ,3265    2,1238    ,0350    ,0495    1,3375
entreduc    ,2747    ,2569    1,0694    ,2862   -,2319    ,7813
unienv      ,2580    ,1089    2,3693    ,0188    ,0432    ,4728
status     -,5253    ,3625   -1,4491    ,1489   -1,2402    ,1896

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y
      Effect      se      t      p      LLCI      ULCI
    -,0612    ,0808   -,7581    ,4493   -,2205    ,0981

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
subjnorm    -,0020    ,0155    -,0395    ,0241

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

```

***** PROCESS Procedure for SPSS Version 3.5.3 *****

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Documentation available in Hayes (2018). www.guilford.com/p/hayes3

Model : 4
Y : intentio
X : narcissi
M : selfeffi

Covariates:
gender age field level entreduc unienv status

Sample
Size: 203

OUTCOME VARIABLE:
selfeffi

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,3001	,0901	1,2646	2,4003	8,0000	194,0000	,0172

Model

	coeff	se	t	p	LLCI	ULCI
constant	2,1133	1,0016	2,1099	,0362	,1378	4,0887
narcissi	,1890	,0711	2,6574	,0085	,0487	,3292
gender	-,3202	,1760	-1,8194	,0704	-,6673	,0269
age	,0489	,0351	1,3959	,1643	-,0202	,1181
field	-,1188	,2283	-,5201	,6036	-,5691	,3316
level	,4245	,2116	2,0063	,0462	,0072	,8417
entreduc	,1747	,1646	1,0617	,2897	-,1498	,4993
unienv	,1316	,0688	1,9111	,0575	-,0042	,2674
status	-,3363	,2303	-1,4603	,1458	-,7906	,1179

Model Summary

R	R-sq	MSE	F	df1	df2	p
,4629	,2143	2,7119	5,8485	9,0000	193,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-,8316	1,4835	-,5606	,5757	-3,7576	2,0943
narcissi	,2658	,1060	2,5075	,0130	,0567	,4749
selfeffi	,4420	,1051	4,2037	,0000	,2346	,6493
gender	-,4052	,2599	-1,5589	,1207	-,9178	,1075
age	,0294	,0516	,5701	,5693	-,0723	,1312
field	-,2000	,3346	-,5978	,5507	-,8600	,4599
level	,6258	,3130	1,9991	,0470	,0084	1,2431
entreduc	,3271	,2417	1,3535	,1775	-,1496	,8038
unienv	,2073	,1018	2,0369	,0430	,0066	,4080
status	-,5004	,3391	-1,4754	,1417	-1,1692	,1685

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
,2658	,1060	2,5075	,0130	,0567	,4749

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
selfeffi	,0835	,0488	,0053	,1960

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

 Model : 4
 Y : intentio
 X : psychopa
 M : selfeffi

Covariates:
 gender age field level entreduc unienv status

Sample
 Size: 203

 OUTCOME VARIABLE:
 selfeffi

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,3074	,0945	1,2584	2,5308	8,0000	194,0000	,0122

Model

	coeff	se	t	p	LLCI	ULCI
constant	3,2624	,9557	3,4136	,0008	1,3775	5,1473
psychopa	-,1869	,0659	-2,8367	,0050	-,3169	-,0570
gender	-,2700	,1720	-1,5696	,1181	-,6094	,0693
age	,0542	,0351	1,5464	,1236	-,0149	,1234
field	-,0866	,2287	-,3787	,7053	-,5378	,3645
level	,4310	,2112	2,0412	,0426	,0146	,8475
entreduc	,1236	,1635	,7563	,4504	-,1988	,4461
unienv	,1588	,0680	2,3342	,0206	,0246	,2930
status	-,2825	,2306	-1,2253	,2220	-,7373	,1722

 OUTCOME VARIABLE:

OUTCOME VARIABLE:

intentio

Model Summary

R	R-sq	MSE	F	df1	df2	p
,4359	,1900	2,7957	5,0297	9,0000	193,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	,3224	1,4667	,2198	,8262	-2,5703	3,2151
psychopa	-,0557	,1002	-,5556	,5791	-,2534	,1420
selfeffi	,4795	,1070	4,4809	,0000	,2684	,6906
gender	-,2629	,2581	-1,0188	,3096	-,7719	,2461
age	,0257	,0526	,4893	,6252	-,0780	,1295
field	-,2308	,3411	-,6768	,4994	-,9035	,4419
level	,5553	,3181	1,7458	,0824	-,0721	1,1827
entreduc	,2615	,2440	1,0717	,2852	-,2198	,7428
unienv	,2373	,1028	2,3080	,0221	,0345	,4401
status	-,4729	,3450	-1,3706	,1721	-1,1533	,2076

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-,0557	,1002	-,5556	,5791	-,2534	,1420

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
selfeffi	-,0896	,0411	-,1791	-,0198

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

***** PROCESS Procedure for SPSS Version 3.5.3 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2018). www.guilford.com/p/hayes3

Model : 4
Y : intentio
X : machiave
M : selfeffi

Covariates:

gender age field level entreduc unienv status

Sample

Size: 203

OUTCOME VARIABLE:

selfeffi

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2534	,0642	1,3005	1,6639	8,0000	194,0000	,1094

Model

	coeff	se	t	p	LLCI	ULCI
constant	3,1713	,9823	3,2283	,0015	1,2339	5,1088
machiave	-,0649	,0529	-1,2273	,2212	-,1691	,0394
gender	-,2307	,1743	-1,3236	,1872	-,5745	,1131
age	,0478	,0356	1,3427	,1809	-,0224	,1179
field	-,2139	,2351	-,9099	,3640	-,6775	,2497
level	,3697	,2136	1,7308	,0851	-,0516	,7910
entreduc	,1508	,1667	,9045	,3669	-,1780	,4796
unienv	,1590	,0692	2,2984	,0226	,0226	,2955
status	-,3460	,2337	-1,4808	,1403	-,8069	,1148

OUTCOME VARIABLE:

intentio

Model Summary

R	R-sq	MSE	F	df1	df2	p
,4352	,1894	2,7978	5,0100	9,0000	193,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	,3143	1,4790	,2125	,8319	-2,6029	3,2315
machiave	-,0316	,0778	-,4063	,6849	-,1851	,1219
selfeffi	,4876	,1053	4,6305	,0000	,2799	,6953
gender	-,2529	,2568	-,9848	,3260	-,7595	,2536
age	,0238	,0524	,4544	,6500	-,0796	,1272
field	-,2775	,3455	-,8033	,4228	-,9590	,4039
level	,5337	,3157	1,6903	,0926	-,0891	1,1564
entreduc	,2718	,2451	1,1089	,2688	-,2116	,7551
unienv	,2366	,1028	2,3000	,0225	,0337	,4394
status	-,4907	,3447	-1,4236	,1562	-1,1705	,1891

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-,0316	,0778	-,4063	,6849	-,1851	,1219

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
selfeffi	-,0316	,0292	-,0943	,0225

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000