Organizational behaviour model in management students: The Dark Triad traits

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Abstract. The paper touches upon the relationships between the psychological constitution of an individual and organizational behaviour of employees as a manifestation of the behavioural pattern shaped in the process of the university professional training. The research analyses the differences in the display of the Dark Triad (DT) traits in students of various specializations within the Economics and Management field. The research methods include the Short Dark Triad personality test by Jones and Paulhus, a comparative analysis of curricula and the content of discipline programmes, and the methods of descriptive statistics. The research results demonstrate that there is an association between the DT traits formed by the organizational behaviour model and the specialization, which confirms the hypothesis that there is a need for a differentiated approach to shaping the organizational behaviour model. The complete psychological DT profile indicator has the highest average "darkness" level for the Business Informatics (BI) students, and the lowest was found for the Financial Management (FM) students. Comparing the specializations by the proportion of students with "potentially harmful" DT traits and "extremely harmful general psychological profile" shows that among the FM students there are no persons with toxicity exceeding the psychometric norm. At the same time, the State and Municipal Administration specialization attracts persons with a higher narcissism level, and BI is attractive to students with an elevated level of Machiavellianism and psychopathy. The research has not revealed a statistically significant relationship between the manifestation of toxicity in management students of different specializations and the content of educational programmes for six semesters. The resulting conclusion about the presence of a relationship between toxic personality traits and the choice of the specialization by Russian students is consistent with the findings of studies in other countries. The authors believe that the management training programmes should include the disciplines that support the development of interpersonal communication skills and entrepreneurial thinking as key elements of the organizational behaviour model demanded by employers.

Keywords: Dark Triad; organizational behaviour; professional training; management student; employer requirements; academic curriculum.

Модель организационного поведения у студентов-менеджеров: черты «темной триады»

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Аннотация. Статья посвящена определению взаимосвязи между психологическими характеристиками личности и организационным поведением сотрудников предприятия как проявлением паттерна, сформированного в ходе университетской подготовки. Анализируются различия в проявлении черт «темной триады» у студентов разных специализаций направления «Экономика и менеджмент». Методологическую основу исследования составили теория личности, Я-концепция, теория социального обмена. Методы работы включали анкетирование студентов с использованием краткого опросника «темной триады» Д. Джонса и Д. Полхуса, сравнительный анализ учебных планов и программ дисциплин, методы описательной статистики. Установлено наличие связи между чертами «темной триады», моделью организационного поведения и выбранной специализацией, что свидетельствует о необходимости дифференцированного подхода к формированию указанной модели. Самый значительный «средний уровень темноты» по показателю полного психологического профиля «темной триады» оказался у осваивающих бизнес-информатику, самый низкий – у изучающих финансовый менеджмент. Сравнение соотношения студентов разных специализаций с «потенциально вредными» чертами и «крайне вредным общепсихологическим профилем» показало следующее: среди обучающихся по программам финансового менеджмента не выявлены лица с токсичностью, превышающей психометрическую норму; изучение государственного и муниципального управления привлекательно для личностей с высоким уровнем нарциссизма, бизнес-информатики – для студентов с наибольшим уровнем макиавеллизма и психопатии. Статистически значимая связь между проявлением токсичности студентов-менеджеров разных специализаций и содержанием образовательных программ шестисеместровой подготовки не выявлена. Общий вывод о наличии связи между токсичными характеристиками личности и выбором специализации согласуется с выводами других исследователей. Авторами статьи обоснована необходимость включения в программы подготовки менеджеров дисциплин, поддерживающих систематическое развитие навыков межличностного общения и предпринимательского мышления как ключевых элементов модели организационного поведения, востребованных работодателями.

INTRODUCTION

The onrush of technology prompts rapid changes in the labour market. New professions replace the existing ones, and the fundamental nature of professional engagement is currently changing. Along with hard skills, soft skills that are not related to domain knowledge become equally important for career achievements. These skills facilitate successful participation in the workflow and play a special part in efficient performance, creativity, ability to learn and adapt to changes. Hence, it is crucial to understand behavioural particularities of a personality, as well as to assess and acknowledge the extent of its mental rigidity. Mental rigidity, in contrast to mental flexibility, indicates the inability of a personality to change in situations calling for new behaviour patterns and a tendency to choose an inadequate way for task execution [Slotina, Nedoshivina, 2018].

It is crucial to know both virtues and vices of a personality. One of the ways to assess the negative traits of a personality is the use of the 'Dark Triad' symptom cluster. It includes the personality traits of narcissism, Machiavellianism, and psychopathy in their nonclinical manifestation. The Dark Triad (DT) traits correlate with each other, but each has a specific impact on the antisocial behaviour of a personality [Egorova, Sitnikova, Parshikova, 2015] and leads to erosion of interpersonal relationships and social disintegration. Therefore, a high level of the DT traits manifestation is called 'toxic'.

Paulhus and Williams [2002] discovered this cluster in a small sample of students and demonstrated that the Dark Triad affects the formation of the self-concept, the dynamics of interpersonal relationships, professional interests, and career progress. They also revealed that with one of the DT traits mildly manifested, the other two would show high values. Starting a career, the subject already possesses certain personality traits, and a number of them are professionally important [Shadrikov, 2008]. Various studies in the professional education domain show that the DT traits may influence the educational choices [Chen, 2017], as these traits draw people to the activities that offer opportunities to obtain power, status and social dominance, and "steer them away from other occupations" [Vedel, Thomsen, 2017, p. 87]. Other studies indicate that all constructs of a dark personality are associated with increased intent to manage beneficial impressions and with "self-reported altruistic goals" [Breeden et al., 2020, p. 5].

There is an opinion that "traits and dispositions like the Dark Triad and limited empathy could be adaptive so long as they afford individuals greater reproductive returns and access to resources." Moreover, these socially adverse qualities can "provide a competitive advantage by facilitating behaviour associated with the attainment of goals that require exploitation of conspecifics" [Jonason, Krause, 2013, p. 532].

The process of education at a university forms a student's personal, professionally important qualities – cognitive, emotional-volitional, and motivational. These qualities in a graduate largely determine the success rate of their activities and are among the keys to their professional efficiency.

According to Kharlamov, Kharlamova and Koroteeva [2017, p. 4270], "the interest of potential employers lies not only in getting good graduates" . Kay and Saucier [2020] note that the perception of job-fit varies as a function of the occupation in question and the person's levels of the DT traits.

Krick et al. [2016, p. 24] determine that "business and management students show higher levels of the Dark Triad but not of moral judgment competence". However, they do not apply this conclusion to advanced students.

Another research shows that Machiavellianism, narcissism, and psychopathy affect both job performance and stimulate counterproductive work behaviour. A higher level of Machiavellianism and psychopathy results in a decreased quality of job performance, although contextual factors such as authority and organizational culture can mitigate the negative effects of high-level of the DT traits [O'Boyle Jr. et al., 2012].

The degree of the DT traits' manifestation can serve as a predictor for building stochastic models of university graduates' behaviour with certain specialization field in their workplace. Taking into account the requirements of employers and professional standards, the education system can partially correct the behavioural pattern of a graduate and provide their "social successfulness" [Razinkina et al., 2020]. However, when a profession supports toxic personality traits, are there any differences in the manifestation of these traits in various specialization fields within one profession?

The purpose of the study is to develop an approach to taking into account the DT personality traits as factors in the formation of the organizational behaviour model

of future specialists in universities' professional training programmes. We state the following research *objectives*: to determine the level of manifestation of the DT traits in students of different Economics and Management specializations; to compare the research findings with the results of similar studies in other countries; to perform comparative analysis of specializations' curricula; and to formulate recommendations for including disciplines into curricula that form an individual's management skills.

LITERATURE REVIEW

The Dark Triad. Machiavellianism, narcissism and psychopathy comprise the Dark Triad and have repeatedly been identified as aversive personality traits [Jonason, Krause, 2013] and provoke distaste or disgust in wider public. The idea of Machiavellianism implies that a person is focused on controlling others. Znakov [2000] believes that the main elements of Machiavellianism include the inclination to manipulate others, on the one hand, and the specific skill of manipulation, on the other: the power to convince others, understand their intentions and the reasons of their actions. Naushirvanova and Nagumanova [2018] summarize the results of various psychological studies and characterize Machiavellians as smart, daring, ambitious, dominating, persistent, egocentrical, emotionally callous people, rigid in communication. Egorova and Sitnikova [2014] suggest that people with a high level of Machiavellianism are insensitive to violation of ethical norms, they are prone to self-praising, socially prescribed perfectionism, capable of tracking the impression made on others and adapting fast to what those who surround them like. The behavioural agility of Machiavellians can come across as an ability to cooperate honestly and conscientiously, when it suits them, with a simultaneous abrupt transition to strategies of coercion and harm [Wilson, Near, Miller, 1996; Naushirvanova, Nagumanova, 2018]. Machiavellians are extremely calculating in search of their own gain [James, 2013]. For people prone to Machiavellianism, analysing a new situation and accepting new people pose a challenge. It is easier for them to interact in situations that have already been explored and are easily effective for them, as well as to communicate with those they have already "figured out" [Slotina, Nedoshivina, 2018]. Machiavellians do not consider it necessary to change themselves, their habits and ways of behaviour [Bykov, 2014].

Wilson, Near and Miller [1996, p. 289] do not find any correlation between Machiavellianism and the variety of intellectual measures (such as IQ, grade point average, the Digital Span test, etc.), as well as more practical measures of success in the modern social environment (success in sales jobs, marketing jobs, among college professors) . However, there is a positive correlation between Machiavellianism and income for highly educated men, but a negative correlation for poorly educated

men. That way, the advantage of Machiavellianism is its context sensitivity.

Nonclinical narcissism as a personality trait that distorts the way of regulating one's self-perception, and affects interpersonal relationships and professional engagement destructively. The attributes of narcissism include one's conviction in superiority over others and the constant struggle to be in the spotlight, manipulation in interpersonal relationships, lack of empathy, insolence, arrogant behaviour, complete disinterest in the problems of others, hostility and even aggressiveness upon facing disagreement or criticism, low self-control, and behaviour that causes general irritation [Egorova, Sitnikova, 2014]. Narcissists are inclined to leadership, highly value their intellectual abilities, external attractiveness, achievements, even though there is a high risk of destroying interpersonal relationships [Derish, 2015]. James [2013] considers narcissists to be prone to delusions of grandeur and absolute conviction in their own rights and superiority over others. For narcissism, it is typical to have difficulties with recognizing feelings [Jonason, Krause, 2013]. A positive aspect of narcissism is associated with a favourable first impression. Such persons typically have charisma, attractive appearance, and intense facial expressions. They are not afraid of the audience and skilfully master it. They are often good at short-term tasks and willingly propel themselves into leaders, but they are usually not as efficient in the long term [Drovosekov, Nelyubina, Zhemchugova, 2018]. The inherent ability of narcissists to demonstrate themselves in a favourable light is helpful and appreciated when applying for a job, including senior positions, but narcissistic bosses rarely become informal leaders [Egorova, Sitnikova, 2014].

Narcissism "has the potential to influence organizational culture and control systems", and "increased levels of employee narcissism can affect the design and performance of management control systems" [Young et al., 2016, p. 39].

Psychopathy as a personality trait is characterized by a high level of impulsivity and craving for adrenaline rush, low empathy, and lack of guilt [James, 2013]. Derish [2015] associates psychopathy with an anomaly in the development of the emotional-volitional and motivational spheres of a personality, pathological character traits, the relative stability of their manifestations throughout life, and social maladjustment. Egorova and Sitnikova [2014] distinguish between three factors of nonclinical psychopathy: the style of interpersonal interaction (arrogance and a tendency to deceive); the style of emotional response (poor emotional life); and lifestyle (impulsivity and irresponsibility). They also add such characteristics as propensity to delinquency, extraversion, low benevolence, low consciousness, novelty seeking, and reward orientation. Drovosekov, Nelyubina and Zhemchugova [2018] note that psychopathy comprises attributes such as selfishness, coldness, low anxiety, fearlessness, ruth-

less exploitation of others, a tendency to manipulative behaviour, instability, and antisocial lifestyle. However, carriers of psychopathy can implement a variety of life scenarios; there are people with a successful professional life and successful business career among them. Each of the Dark Triad traits comes with unique emotional deficiencies, but psychopathy facilitates the greater number of emotional deficiencies than the other two [Jonason, Krause, 2013].

Brooks, Fritzon and Croom [2019] note that psychopathy and the Dark Triad can provide positive benefits in circumstances, where creativity and rapid responses to stressful and extreme situations are needed. If the DT traits level is moderate, the company can benefit through «the vision and charisma of narcissistic individuals», «the strategy and tactics of Machiavellian individuals» and «the creativity and good strategic thinking of psychopathic individuals» [D'Souza et al., 2019; Ten Brinke et al., 2018].

Personnel toxicity and business operation. The academic research shows that the Dark Triad traits in employees are associated with their counterproductive work behaviour [Palmer et al., 2017], or with behaviour that is counterproductive in relation to organizational goals [Kay, Saucier, 2020]. Bogdanovic and Cingula [2015] argue that this behaviour is a way to assert their dominance in a social context and to obtain resources. The forms of manifestation of toxic behaviour are stealing, abusing other employees, sabotage, production deviance, abuse, absenteeism, reduced productivity and responsibility, leader derailment, politicking in the organization, mobbing, manipulation, and sadism.

The presence of toxic employees affects the behaviour of other workers in the company. Esaulova and Nagibina [2017, p. 59] refer to the research by Housman and Minor from Harvard Business School and argue that valuable employees are 54 % more likely to resign voluntarily if the ratio of toxic to decent workers reaches 1:20.

Toxic personnel comprises those who demonstrate an ongoing pattern of counterproductive and unethical work behaviour, annoyance and cynicism towards their work, company and other employees; a source of daily stress and strife among their colleagues [Esaulova, Nagibina, 2017, p. 59].

High rate of change of the environment, its growing complexity and competitiveness call for the active use of the project management methods in the companies to introduce adequate changes and maintain their market standing. The research by Mutlu [2017, p. 277] reveals a statistically significant relationship between personality traits and innovation-related team processes, direct associations between personality traits and team member satisfaction, and collective cooperativeness and general team performance. Barykin et al. [2020, p. 1] believe that the level of communication compatibility acts as the criterion for the potential effectiveness of the work team. However, just one toxic employee might cause a decrease

in labour productivity of the entire team by 30–40 % [Esaulova, Nagibina, 2017, p. 59].

Competition prompts organizations to invest a lot of money into knowledge management. Yet, knowledge sharing efficiency in the organization depends largely on the trust between co-workers, and the quality of their social interaction. Counterproductive behaviour of employees with Machiavellianism, narcissism and psychopathy traits creates discrepancy between the desired task-related trust and actual task-related trust among employees, and this partially explains why knowledge management activities often fail in practice [Khvatova, Block, 2017]. In a company, the DT traits have a direct positive correlation with the individual knowledge sabotage behaviour [Serenko, Choo, 2019].

While narcissism, Machiavellianism, and psychopathy are significant predictors of individual knowledge sabotage behaviour, Machiavellianism and psychopathy trigger co-worker knowledge sabotage. Serenko and Choo [2020], Pan et al. [2018] note that different dimensions of the DT are most closely related to certain knowledge concealment strategies.

Hart, Breeden and Richardson [2019] reveal that dark personalities exhibit a manipulative style of interpersonal communication, and this style is manifested in different ways in conceptually different dark personalities.

Unconsciousness of the Dark Triad traits manifestation and its consequences for the company during the recruitment process as well as the lack of the management methods that can anticipate and resist the toxic behaviour of the employees both propel the inception of "the toxic triangle" which is the foundation of the destructive organizational climate. The toxic triangle consists of bad leaders, the followers who conspire with the bad leader, and the pathologic organizational situation [Bogdanovic, Cingula, 2015]. This fact combined with the statement that 90 % of the most productive people have the skills to neutralize toxic employees [Esaulova, Nagibina, 2017, p. 65] lead to the realization of the necessity to acquire knowledge and master skills in managing toxic employees and teams, as well as the need to understand the psychological characteristics of a person. This realization is likewise applicable to the process of educating university students.

The Dark Triad, identity construction of the student personality, and education. A high level of maturity of a personality characterizes the person as capable of actualizing their potential [Naushirvanova, Nagumanova, 2018]. University educational environment is an important factor in the development of students' organizational and managerial competence, which helps improve the self-organization and self-management skills of students and achieve a high level of resilience both at the environmental and personal level [Razinkina et al., 2018]. Success of and satisfaction with the working process and results, as well as personal efficiency depend on the congruence be-

tween the personality type and the occupation and professional environment type.

The employee's productivity and salary are under the influence of both cognitive and non-cognitive skills, and the latter includes the traits and psychological characteristics of a personality [Rozhkova, 2019]. These comprise both genetically inherited or acquired values and habits and behavioural patterns of a person: a relatively time-stable manner of thinking, feeling and behaving, which reflects a tendency to react to circumstances in a specific way, openness to experience, conscientiousness, neuroticism [Rozhkova, 2019, p. 4].

Razinkina et al. [2020] believe that social unsuccess is connected with academic, professional and personal failure demonstrated in the process of a student's self-realization in educational environment. When there is a nonconcurrence between self-esteem and reality, not the brightest personality traits are easily formed, which can help find workarounds to success and justify actions that are morally questionable [Egorova, Sitnikova, 2014].

Manipulative behaviour depends largely on the level of the personality maturity. Research evidence suggests a negative association between the personal identity and Machiavellianism [Naushirvanova, Nagumanova, 2018]. Students with a higher level of Machiavellianism demonstrate a higher level of rigidity. There is also evidence that the level of Machiavellianism is higher in males than in females [Slotina, Nedoshivina, 2018].

The studies show that there is an interrelation between an academic motivation and the personality traits of the Dark Triad [Kornienko, Derish, 2015]: the strongest connection is between narcissism and the index of the academic motives that fall into the intrinsic motivation (new knowledge, the motivation of achievement and self-development). The motivation of self-development and the extrinsic motives pertain to the psychopathy. Machiavellianism is not a predictor of the academic motives.

Likewise, there is a difference of the Dark Triad manifestation level in the students of various professions. Vedel and Thomsen [2017] find that law, business, and economics students have perhaps the closest thing to a "dark" personality compared with the students of other academic specializations, since individuals who score low on agreeableness are competitive, sceptical, and tough-minded. Students in law and political science were also "darker" than students in psychology [Vedel, Thomsen, 2017]. These personality group differences were already present in students at enrolment, and, therefore, cannot be attributed to socialization processes.

Depending on the choice of professions, the perception of the DT traits differs too. The respondents in the research by Kay and Saucier [2020] demonstrate that "it is acceptable, if not advantageous, for lawyers and musicians to be high in the Dark Triad traits", and "the performative aspects of narcissism are considered an asset for teachers" while "Machiavellianism and psychopathy are considered a liability" [Ibid, p. 1].

The Dark Triad manifestation level depends on the profession studied as well as on the social, cultural, historical and economical characteristics of the country. Bogdanovic and Cingula [2015] compare the display of toxicity among the management student populations from Croatia and Canada and found that Croatian students scored higher in typical Machiavellianism items than Canadian students. The authors of the research claim that the statistically significant higher narcissism of Croatian students can be a result of the long-term stagnation of Croatian enterprises and economy [Ibid, p. 41]. The statistically significant higher psychopathy of the Croatian sample can be due to the combination of genetic and social factors and partially, to the higher Machiavellianism and narcissism [Ibid, p. 41].

The study of the Dark Triad provides an opportunity to take a holistic look at the personality and understand the personality traits negatively assessed by society and employers, as well as to predict the attitude to work and the specific nature of motivation. The employer makes a choice about the employee under the conditions of limited information, therefore, data on psychological characteristics "may indicate the learning ability and productivity of the applicant" [Rozhkova, 2019, p. 11]. Rozhkova also notes that "non-cognitive skills awarded by the employer are equal to those appreciated by the teachers during the educational process" [Ibid, p. 11]. Knowledge, skills and behavioural models can change with age or in the process of studying. The university period for the majority of students ends at the age of early maturity (20–25 years). There is an opinion that the development of the mental capacity peaks at this age too. However, the current rate of technology change is so high that much of the knowledge and hard skills become obsolete and the educational programmes for intellectual development provide limited results consequently [Ibid, p. 8]. At the same time, the formation of positive non-cognitive skills, expressed in the form of habits and behavioural patterns, is decisive for the long-term social and economic well-being of the subject [Ibid, p. 3].

If the university educational programmes provide theory and practice on developing self-control or the capacity to modify cognitive and behavioural tendencies, forming some the students' "ability to delay gratification, resist impulses or urges, and control thoughts and feelings" [Kashdan, Rottenberg, 2010, p. 875], this will become another major factor of forming flexible behavioural routines. "Without these skills, a person's behaviour is at the mercy of the unpredictable push and pull of environmental forces" [Kashdan, Rottenberg, 2010, p. 875].

RESEARCH METHODS

The research studies the personality traits of the Dark Triad among students specializing in Economics and Management at the Peter the Great St. Petersburg Poly-

technic University and makes a comparison of these traits for three bachelor specializations: Business Informatics (BI), Financial Management (FM), and State and Municipal Administration (SMA). Machiavellianism, narcissism and psychopathy were diagnosed with the short version of the Dark Triad questionnaire – Short-Dark Triad (SD3) by Jones and Paulhus [Jones, Paulhus, 2014], translated into Russian.

The validity and reliability of the Russian version of the questionnaire was proved by Egorova, Sitnikova and Parshikova [2015, p. 12]: the Cronbach's alpha for Machiavellianism, narcissism and psychopathy are within the range of 0.70–0.74 and confirm the satisfactory internal consistency between the Russian questionnaire scales. It does not differ significantly from the consistency found by the researchers who used the questionnaire in other languages: so, the consistency level in the work by Jones and Paulhus [2014] was 0.73–0.78.

The SD3 is a 27-item questionnaire measuring Machiavellianism, narcissism, and psychopathy with nine items per trait. The items are personality-relevant statements, which are selfrated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Sample statements for assessing psychopathy are "I avoid dangerous situations", Machiavellianism – "It's not wise to tell your secrets", and narcissism – "People see me as a natural leader" [Jones, Paulhus, 2014].

The data received were processed using the mathematical statistics methods. The research was conducted in May–June, 2020 and covered 110 students aged 19–24. The participation in the survey was voluntary. The data collection via Google form was anonymous.

To determine the ability of the university educational process to influence the formation of personality, we compared the curricula. Our aim was to define the academic disciplines that could help students form an idea about the traits of their personality, possible difficulties in building interpersonal relationship in teamwork, etc. The curricula were taken from the university website, where they were in the public domain.

RESEARCH RESULTS
To reveal the relationship between the specialization and the intensity of the DT traits manifestation, we compared the descriptive statistics for three groups: Business Informatics (N = 36), State and Municipal Administration (N = 46), and Financial Management (N = 28) (Table 1). The average age of the students in the sample is 20.8 years, range from 19 to 24 years. The share of male students in the sample is 39% in BI, 17% in SMA, and 3.5% in FM.

The complete psychological DT profile has the highest value of "average darkness" (AD) for the students in Business Informatics (AD = 2.82), and the lowest for Financial Management (AD = 2.7). The level of psychopathy in general and in individual groups is significantly lower than the level of Machiavellianism and narcissism. The mean values on the scales of Machiavellianism, narcissism and psychopathy for different specializations show that students studying Financial Management have the lowest scores on all the DT scales, the sample of Business Informatics has a higher level of Machiavellianism (M = 3.28) and psychopathy (M = 2.19) than SMA and FM, but the average level of narcissism is the highest among the students in State and Municipal Administration (M = 3.17).

The minimum value of Machiavellianism for the entire sample is 1.56 (recorded in the FM specialization), the maximum value of 5.0 is reached by one student from BI and one from SMA. The SMA group shows the largest standard deviation (SD = 0.61). The minimum value of narcissism in the entire sample is 1.78 and is recorded in the FM group; the maximum of 4.22 is reached by a student in SMA. But the BI group shows the largest standard deviation for narcissism (SD = 0.53). The minimum value of psychopathy in the entire sample is 1.22. It is shown by two persons in BI, two students in FM, and one student in SMA. The maximum level of 4.44 shown by one student from BI. This specialization shows the largest range of values for psychopathy (SD = 0.8).

Further, we compared the specializations by the proportion of students having "potentially harmful" DT traits and "extremely harmful general psychological profile", i.e., exceeding the psychometric norm (Table 2). As the psychometric norm for the Dark Triad, we take the mean value of the corresponding variable from the study by Jones and Paulhus [2014], increased by one standard deviation. This approach was used in the study by Bogdanović, Vetrakova and Stanislav [2018].

Table 1 – Arithmetic means and standard deviations for the Machiavellianism, narcissism, and psychopathy scales
Таблица 1 – Среднее арифметическое и стандартное отклонение для шкал макиавеллизма, нарциссизма и психопатии

Dark Triad scale	Economics and Management, total		Business Informatics		State and Municipal Administration		Financial Management	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Machiavellianism	3.19	0.59	3.28	0.61	3.24	0.61	3.01	0.51
Narcissism	3.08	0.48	3.08	0.53	3.17	0.46	2.93	0.44
Psychopathy	2.19	0.59	2.46	0.80	2.00	0.40	2.15	0.39
Average darkness	2.82	0.55	2.94	0.43	2.80	0.32	2.70	0.31

Table 2 shows the percentage of students having the metrics higher than the psychophysical norm in the samples for different specializations.

The data in Table 2 show that there is no one person whose toxicity exceeds the psychometric norm in the FM group, the State and Municipal Administration to a greater extent than others accumulates the persons with a higher narcissism level (17.4 %), and Business Informatics us characterized by a higher level of Machiavellianism (16.7 %) and psychopathy (13.9 %). BI is the only specialization that includes the representatives exceeding the norm in each of the DT scales. The analysis has not identified a single student with an "extremely harmful general psychological profile". Only 2.7 % of the entire sample have an excess of the psychometric norm in two scales, all of them are BI students.

Our study shows that for different specializations of Economics and Management, the correlation of the DT traits is different (Table 3). Hereinafter, we use the Chaddock scale to describe the correlation. The total sample demonstrates the weak relationship between narcissism and psychopathy (r (110) = 0.07), this is especially evident

for SMA (r (46) = –0.07). Our result differs from other studies (see, for example, [Bogdanović, Vetrakova, Stanislav, 2018; Egorova, Sitnikova, Parshikova, 2014; Jones, Paulhus, 2014]), which show weak (but higher) to moderate interdependence of Narcissism and psychopathy (r is in the range of 0.20–0.42). The correlation between psychopathy and Machiavellianism is moderate (r (110) = 0.37). Other studies show similar results (r is in the range of 0.35–0.40). The highest correlation is observed for BI though it still belongs to the moderate range (r (36) = 0.49). The correlation between Machiavellianism and narcissism is weak for the entire sample (r (110) = 0.21), which is similar to the other studies (r varies in the range of 0.22–0.31). However, for the SMA sample, the Machiavellianism–Narcissism correlation is significantly weaker (r (46) = 0.07).

To assess the predictive validity of our study, we calculated the confidence intervals for the whole psychological DT profile at a confidence level of 95 % for the entire sample and for each specialization. We also made similar calculations based on the survey data of the students in Croatia and Slovakia published by Bogdanović, Vetrakova and Stanislav [2018]. The results are shown in Figure.

Table 2 – Incidence of potentially harmful DT level

Таблица 2 – Доля студентов с потенциально вредными чертами «темной триады»

Dark Triad scale	Descriptive statistics*			Proportion of students with potentially harmful DT level		
	Mean	**S.D.**	**Psychometric norms for dark triad variables**	**BI, %**	**SMA, %**	**FM, %**
Machiavellianism	3.1	0.76	>3.86	16.7	13.0	0.0
Narcissism	2.8	0.88	>3.68	11.1	17.4	0.0
Psychopathy	2.4	1.00	>3.40	13.9	0.00	0.0

*Source: [Jones, Paulhus, 2014].

Table 3 – Comparison of correlation between the Dark Triad metrics (Pearson correlation)

Таблица 3 – Сравнение корреляции показателей «темной триады» (коэффициент корреляции Пирсона)

Research	Mach. : Narc.	Narc. : Psych.	Psych. : Mach.
Business Informatics	0.31	0.20	0.49
State and Municipal Administration	0.07	–0.07	0.30
Financial Management	0.17	0.11	0.35
Entire sample	0.21	0.07	0.37
Bogdanović, Vetrakova and Stanislav [2018, p. 976]	0.23	0.20	0.37
Egorova, Sitnikova and Parshikova [2014]	0.31	0.42	0.35
Jones and Paulhus [2014]	0.22	0.31	0.40
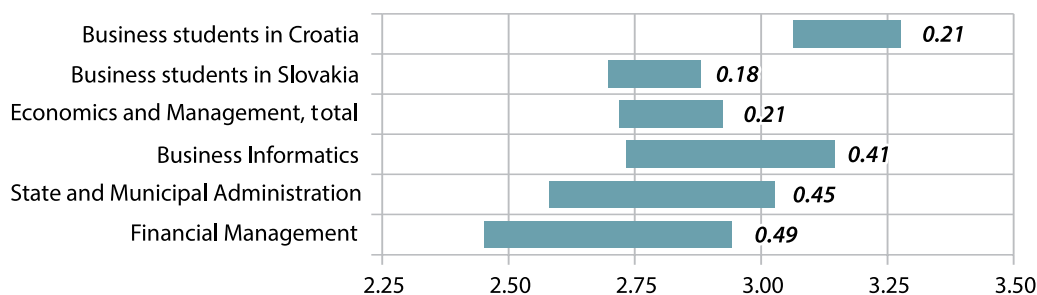
Confidence intervals for the psychological DT profile

Доверительные интервалы для психологического профиля «темной триады»

We can see that the width of the confidence interval for the entire sample of our study is the same with the study of Croatian students (0.21) and comparable to the Slovak one (0.18) though the endpoints differ. However, for the specializations, the prediction accuracy drops, the width of the confidence interval is much larger, which is due to the smaller number of observations.

We also analysed the diversity of the specializations' curricula for 6 semesters and the content of disciplines that can affect students' self-identification and the formation of their soft skills. The disciplines of the first and second semesters are the same for all specializations. The disciplines of the third and fourth semesters are completely the same for BI and FM, and differ from SMA in two items in the third semester and seven items in the fourth semester. In the fifth and sixth semesters, the specializations have only two identical academic disciplines. In the curricula, the number of academic disciplines that can help self-identification of the students is limited. Such disciplines include Sociology and Psychology in the first semester, and some topics of Philosophy in the third semester. A number of issues related to motivation, HR management, leadership, and team building are raised when studying Management. The FM students face the issues of motivation and its effectiveness only in the fifth semester when studying Labour Economics and Production Management. The SMA curriculum has a much wider range of disciplines giving the knowledge important for understanding and correcting behaviour, developing the skills for building relationships, regulating official behaviour, and assessing the deformation of the values of professional ethics. The curriculum of the SMA students includes several practical trainings too.

Within our study, we could not, however, find a relationship between the manifestation of toxicity in the students and the specializations' curricula.

DISCUSSION

The studies show that the difference in the manifestation of toxicity depends on the profession acquired [Kay, Saucier, 2020]. For example, Business and Management students score higher on the Dark Triad scale compared with other students, studying Psychology or Humanities [Vedel, Thomsen, 2017]. The intensity of the Dark Triad manifestation depends on the historical, cultural and economic environment, where the students live and learn. Bogdanović, Vetrakova and Stanislav [2018] illustrated this statement by comparing the DT traits of the students from Croatia, Slovakia, and Canada. It was revealed that the differences of the students of various specializations depended also on the socialization effects within faculties [Kay, Saucier, 2020; Vedel, Thomsen, 2017].

Our results demonstrate that there is a relationship between the DT traits and the specialization within the same Economics and Management field. The toxicity indicators of the students in BI, FM and SMA vary significantly.

The distinctive aspect of this study is that the respondents are from the same university and institute, and in the same year of study; their first-year curricula were identical, and the same teachers delivered lectures and practice to them. The difference in the curricula became substantial in their third year of study.

Researchers note that the gender differences affect the manifestation intensity of Machiavellianism, narcissism and psychopathy [Drovosekov, Nelyubina, Zhemchugova, 2018; Jones, Paulhus, 2014]. Thus, we suggest that the highest level of the Dark Triad traits found in the BI students and the absence of the persons with "extremely harmful whole psychological Dark side profile" [Bogdanović, Vetrakova, Stanislav, 2018, p. 974] in the FM students in our research can be due to the different gender structure of the sample groups: the percentage of male students in the BI was 39 %, SMA – 17 %, FM – 3.5 %.

Educational environment creates conditions for the formation of behavioural models, and "the Dark Triad traits are a liability when it comes to the workplace" [Kay, Saucie, 2020]. Our research took place during the period of the COVID-19 lockdown and resulting compulsory distance learning. The remote learning is associated with the phenomena when the "students do not note any serious forms of deception and <…> evaluate the motives for cheating quite neutral", "demonstrate their propensity and interest in the possibility of cheating" [Bylieva, Lobatyuk, Nam, 2019, p. 7469]. Such behaviour is characteristic of psychopathy.

The highest level of manifestation among the DT traits in our research showed Machiavellianism (see Table 1). It emerges as a defence mechanism in situations associated with stress and instability and allows a person to handle such situations [Egorova, Sitnikova, 2014].

The SMA students demonstrated the highest level of narcissism (M = 3.17). Further still, every sixths respondent has the "potential harmful narcissism". This gives a cause for concern, since the research of the political and social context of the civil servants' education revealed "a significant link between the civil service effectiveness and the education approaches" [Ivanova, Negashev, 2019, p. 541].

Various researchers emphasize the importance of understanding and identifying toxic traits of potential employees when hiring and during probation period [Serenko, Chu, 2019]. Brooks, Fritzon and Krum [2019] note that managers should be aware of the negative consequences within organizations, individuals and society caused by the presence of the DT traits in employees, and possess methods of minimizing and / or eliminating organizational, social and individual threats associated with these traits. However, depending on the specific conditions, the presence of the DT traits can be not only harmful, but also positively affect the organization's activities. For example, individuals with the high DT traits are more likely to help others in order to create the desired images, thus taking

part in beneficial impression management [Hart, Breeden, Richardson, 2019].

The organization should help its employees to objectively reassess their own personality traits and knowledge and the behaviour of their colleagues [Serenko, Choo, 2020].

All of the above supports the conclusion, that it is necessary to introduce the academic disciplines in the university educational process that will help students with self-identification, will familiarize them with the methods for compensating the negative display of the Dark Triad traits, and help them master skills of behaviour management. Nowadays, only the curriculum of the SMA specialization offers disciplines that allow systematical exploration of the communication, leadership, motivation, behavioural ethics and other soft skills highly sought by the modern companies. The SMA curriculum includes trainings for mastering the skills of communication, teamwork and efficient collective behaviour.

CONCLUSION

The overall level of toxicity among management students in Russia is not significantly different from that in other countries. The novelty of the study is the linking of curricula and the content of academic disciplines with the formation of basic models of organizational behaviour.

The research substantiated the necessity of including in the curricula the disciplines that form the skills of communication, leadership, teamwork, motivation, ideas about the ethics of behaviour and other soft skills demanded by modern employers.

Timely diagnostics of the levels of manifestation of the Dark Triad traits and mental rigidity of students in the process of university education will help building a program of psychological support for students, identify and correct inclinations and tendencies to toxic behaviour,

create conditions for the social focus on personal and professional development with regard to the student's specialization of education.

The working behaviour of an employee in a company is influenced not only by his or her professional training and the requirements of the task performed, but also by the characteristics of his or her personality. Therefore, it is expedient to change the approach to training so that university graduates meet the requirements of employers not only in terms of professional qualities, but also in terms of the model of organizational behaviour of a particular industry.

This research has certain limitations. The sample includes only three specializations of the same field of study. The sample is limited to the third-year students. Female students prevail in the sample. Sample sizes by specialization are small and differ in size. The time of the research coincided with the beginning of the COVID-19 quarantine and the transition to the distance learning for all students. In that period, the conditions of learning, communication and living changed significantly.

Toxic employees with high levels of the DT traits create problems for any organization, heads and colleagues. The prolonged period of the pandemic and substantial changes in the work mode of many companies such as adaptation of business processes to global digitalization, transfer of employees to remote work, necessity to introduce new formats of professional communication, etc. require further research of the DT traits manifestation among students of the broader range of training specializations. The investigation should take into account the influence of not only curricula, but new educational formats for the formation of basic models of organizational behaviour among graduates, predetermined by their personal characteristics. ■

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