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Unveiling Negative Behaviors in the Academic Arena

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Unveiling Negative Behaviors in the Academic Arena

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Abstract: There is increasing evidence that the appearance of negative behaviors is omnipresent not only at the secondary but also at the academic institutions. The aim of the present study is the investigation of inclinations in terms of practicing and being a target of three negative behavioral phenomena; verbal aggressiveness, bullying and Machiavellianism among university students. A sample of 17 classes of totally 783 undergraduate students (405 females and 378 males) from Physical Education and Sports Science, Veterinary and Business Administration academic departments in Greece was scrutinized with social network analysis as far as the afore mentioned three destructive behaviors as structural phenomena were concerned. Standardized questionnaires composed of non-network and network parts were distributed. Vison software was implemented for calculating network variables (network analysis algorithms were used: in/outdegree, Katz status, PageRank, authority). Social Network Analysis and Spearman test (SPSS) have been applied in order to reveal any reliance among departments, behaviors and general characteristics in question. According to the basic results of the present study, there is a noticeable variation among the three academic fields concerning their value system. Physical Education department seems to be characterized by a spirit of competitiveness and great discipline fulfilling athletic achievements. Veterinary department appears to be depicted by scientific and selflessness standards while Business Administration department seems to be devoted to its sole aim regarding the dominance of the market. To combat these negative behaviors, it is necessary to detect their specific determinants in order to formulate effective tactics for nipping such behaviors in the bud at the educational settings.

Keywords: Academic Departments, Network Analysis, Negative Behaviors, Victimiziers, Victims

Introduction

Verbal aggressiveness has been defined as the attack to a human's self-concept with detrimental psychological effects such as emotions of depreciation and shame due to disparaging remarks (Infante and Wigley 1986; Van Heugten, Kelly, and Stanley 2013). It depicts a negative aspect of communication (Infant and Rancer 1996) with numerous types; attacks on individual's personality and abilities, offending and malicious remarks, derisions, obscenities, and so on (Infante 1987). Research on verbal aggressiveness frameworks in education has proved negative outcomes such as insufficient levels of learning, accomplishment (Bekiari et al. 2006; Bekiari 2012; Bekiari, Perkios, and Gerodimos 2015; Syrmipas and Bekiari 2018), self-confidence (Bekiari, Digelidis, and Sakellariou 2006; Bekiari, Kokaridas, and Sakellariou 2005, 2006; Syrmipas and Bekiari 2018; Anderson and Martin 1999; Schrodtt 2003; Wigman, Graham-Kevan, and Archer 2008) and delinquent behavior at a young age (Straus, Sweet, and Vissing 1989).

Smith and Brain (2000) and Ross (2002) have extensively dealt with roots and consequences of bullying as a global phenomenon, evident in various contexts such as education, family, workplace amongst others, offering an overview for the quantitative research conducted here. According to Ringrose and Renold (2010), physical disadvantages, nationality background, age differences and sexuality issues seem to trigger the repetitive misbehavior of one or more people toward a powerless person due to their "inferiority" in terms of power

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(Olweus 1993; Smith and Sharp 1994), which was a basis of hypothesis in our research. As Pörhölä et al. (2016) mention, in educational sectors, there has been extensive research indicating that there are long-term unpleasant consequences concerning psychological, social and physical health not only for victims (Jantzer, Hoover, and Narloch 2006; Newman, Holden, and Delville 2005; Schäfer et al. 2004) but also for bullies (Glew et al. 2005; Nansel et al. 2001) and bystanders (Van Heugten 2011) while an increasing number of studies have revealed bullying occurrences in higher educational settings (Bekiari and Pachi 2017; Bekiari, Pachi, and Hasanagas 2017; McKay, Huberman, and Fratzl 2008; Twale and De Luca 2008; Taylor 2013; Zabrodska et al. 2011). However, their valuable insights are focused on approaches and not on the holistic analysis enabled by complete network analysis.

Machiavellianism refers to a personality trait which was derived from the writings of the sixteenth century political thinker and diplomat, Niccolo Machiavelli, integrating attitudes about moral values and power (Greenlee, Cullinan, and Morand 1995). This implies that Machiavellianism belongs to the “Dark Triad” of personality along with psychopathy and narcissism (Paulhus and Williams 2002) and it reflects individuals who adopt manipulative tactics such as deception, flattery, cynicism and amorality in the name of their own benefit (Christie and Geis 1970; Dahling, Whitaker, and Levy 2009; Liu 2008) since their ultimate goal is to acquire the “upper hand” in their competitive social relations (Barber 1994). This definitory view was the basis for the conceptual elaboration of the research conducted here. Moreover, Kareshki (2011) has offered an awakening view of a behavioral strategy which is dramatically related to goal orientations and omnipresent in a wide range of fields including the educational arena, labelled as Machiavellianism. Nevertheless, this overview could not verify the relevance of Machiavellianism possible determinants in a structural quantitative way, which only the network analysis enables.

Social Network Analysis

Social network analysis is considered to be an approach in scrutinizing the above-mentioned universal phenomena throughout the higher education since they compose structural settings among students. Verbal aggressiveness has been explored in the setting of inmate interactions at a prison school (Bekiari and Hasanagas 2016; Hasanagas, Bekiari, and Vasilos 2017), which has offered basic insights and trial of questionnaires which could be further used at university educational settings. A clear case in point of applying social network analysis is the investigation of verbal aggressiveness as a social structure/hierarchy highlighting its determinants as “high verbal aggressors” or “low verbal aggressors” (Bekiari and Hasanagas 2015; Bekiari et al. 2019a; Vasilou, Bekiari, and Hasanagas 2020; Bekiari and Spyropoulou 2016). Furthermore, the extension of the research focus on bullying and Machiavellianism was remaining an open challenge which was in part fulfilled (Spanou and Bekiari 2020; Theocharis and Bekiari 2017; Spanou, Bekiari, and Theocharis 2020; Bekiari and Pachi 2017; Bekiari, Pachi, and Hasanagas 2017; Bekiari and Spanou 2018), without, however, the combined approach of multiple network indicators which could reveal respectively multifaceted structures of these behaviors (from superficial indegree to more complex indicators like pagerank and katz). Finally, a diachronic view of such negative behaviors’ evolvement has also been presented, being, however, expected to be completed by their determinants (Spanou, Bekiari and Hasanagas, forthcoming).

Academic and Practical Added Value

This research sought to explore these negative behavioral phenomena; verbal aggressiveness, bullying and Machiavellianism; attempting to differentiate their dimensions, identifying behavioral types of students constituting either victims or victimizers among their co-students and thus, supporting prevention measures against such behaviors. The comprehension of the determinants of these detrimental behaviors in academic settings constitutes the academic added value of this study whereas its practical added value lies in the profound interpretation of the determinants which impel students to become vulnerable to use and being a target of such behaviors.

Method

Network research analysis, which utilizes an algebraic approach - algebraic indicators in order to create hierarchies from students/nodes' interpersonal relations instead of conventional statistics, was conducted in this research. Although the students/nodes attend the same semester class, they are diverse in terms of the academic departments they study in throughout Greece. Each semester class is visually illustrated by a polygon (n-gon) of n students symbolizing a network of n nodes as social structures and its diagonals as the relations caused by these negative behaviors among the students/nodes: verbal aggressiveness, bullying and Machiavellianism.

In this research, the students' dimensions of these anti-social behaviors were depicted as cross-assessed variables (behavioral variables) processed with network indicators (algorithms) while not only the correlation of these behavioral (network) variables with non-network variables (personal features) but also the correlation among the network variables themselves provided a real breakthrough in this research.

The calculation and normalization (%) of the network indicators were accomplished by Software Visone 1.1. That is to say, whereas the network indicators' formulae are accessible on the Internet, their social interpretation is portrayed as follows: in/outdegree ("occasional hierarchy"—direct contact among nodes), Katz status ("accumulative hierarchy"—successive contacts among nodes), pagerank ("distributive hierarchy"—successively transmitted value like deriding among students), authority ("qualified competitiveness"—designating students who are enticing most links from as many students as possible in order to create relations such as verbal aggression, bullying or Machiavellianism). Students' personal traits such as socio-economic status, gender amongst others illustrate non-network variables.

Sample and Questionnaires

Network sampling which is non-random in principle (it is based on a well-known class population), was carried out in this research due to the fact that the disclosure of structures and not psychometric (self-perceptual) data is the case in the present research. Thus, this is not considered to be a disadvantage since this research is based on analytical statistics (correlations) and not descriptive ones (generalizations) referring to the total population. For the sample as a whole, diverse student networks participated in this research verifying heterogeneity on student populations and their ensuing vulnerability to be involved in verbal aggressiveness, bullying and Machiavellianism with the purpose of displaying delineated structures of these behaviors.

Selecting a variation of both study time (due to the advanced semesters, students have become familiar with each other) and academic departments (Business Administration, Physical Education and Veterinary) representing distinct mentalities, demonstrates the unbiased profile of the present research, rather than selecting students from a particular academic department.

Participants in this research were students from seventeen semester class networks attending Physical Education & Sports Science departments in Greece: seven classes from the Thessaly University (82, 58, 63, 59, 57, 54 and 42 students), one class from Thrace University (45 students), two classes from Athens University (42 students in each one of them), four classes from Thessaloniki University (23, 24, 24 and 22 students), two semester class networks attending Veterinary departments from Thessaly University (66 and 53 students) and one semester class network attending Business Administration department in Greece: one class from the Technological Educational Institute of Thessaly (27 students). In total, the sample is composed of 783 students/nodes: 405 female and 378 male who were from Greeks and Cyprians regions and were acquainted with each other in each semester class (network).

All participants completed standardized questionnaires during their lectures to determine whether they had experienced any of these negative behaviors. The questions relating to these disruptive behaviors were modified from psychometric (Infante and Wigley 1986; Espelage and Holt 2001; Dahling, Whitaker, and Levy 2009) into network form and the tested questionnaires were comprised of network variables (verbal aggressiveness, bullying and Machiavellianism structures) measured as network indicators (centralities) (Hasanagas and Bekiari 2015, 2017; Bekiari, Pachi, and Hasanagas 2017; Bekiari and Spanou 2018; Spanou, Bekiari, and Theocharis 2020).

As a complete network analysis, the questionnaires had to be named in order for so as the students/nodes of a network to be recognizable. Research ethics and discretion were highlighted to students concerning their personal data so as not to hesitate to provide sincere answers since the researcher was the only one with accessibility to their data. Last but not least, the academic staff and the students/nodes were informed about the objectives of this research, providing them with specified authorization of the research program.

Statistical Analysis

Visone 1.1 software was used to calculate centrality network variables (in/outdegree, Katz status, pagerank and authority) while SPSS was used to process non-network and network data. Since varied centrality values of nodes (not ties) are correlated among them and with non-network variables, permutation techniques developed to address dependence limitations of network data (QAP, ERGM amongst others) and probabilities of ties appearance and correlations between networks characterizing them as “dependent” and “independent” variables as a whole were not implemented for such a correlation in the present research.

Aiming at an in-depth investigation (e.g. if an occasional verbal accuser—high indegree—has the tendency to become an accumulative accuser—high Katz status) and not just predictions (a network could derive from another one), the present research has utilized techniques appropriate to conventional analytic statistics (Spearman test) applied after normality control which was conducted with Shapiro-Wilk and Kolmogorov-Smirnov test focused on statistically coefficient statistics [$p \leq 0.01$ (*) and $p \leq 0.05$ (**)]. Finally, a Bivariate Analysis was selected to multivariate analysis - it is a non-parametric test - as it can make various correlations among network and non-network variables revealing potential relations whereas the results were translated via in-depth interviews (Hasanagas and Bekiari 2015, 2017; Bekiari and Spyropoulou 2016).

Results

Descriptive Examples

In Figures 1, 2, and 3, examples of networks of Machiavellian behavior as hierarchies by three hierarchical algorithms (Katz status, pagerank, authority) are illustrated. It is evident that there are diversities in terms of the structures of Machiavellian networks among the various Higher

Education departments. In particular, the intensity of the relations among students at these academic departments is rendered by the density of the networks. To put it simply, although the networks of “desire to become rich” are similarly portrayed between the Veterinary Department (0.02%) and the Physical Education Department (0.02%), they seem much denser in Business Administration Department (0.11%). This was quite foreseeable as only students of the Business Administration Department are surrounded by a powerful discourse in the course material which places emphasis on wealth as a sign of success “obeying” the demands of the materialistic society we live in while the other two departments are characterized by other ideals which are by definition—as reasonably expected - the sport spirit (for the Physical Education dept) and the care of animals (for the Veterinary dept).

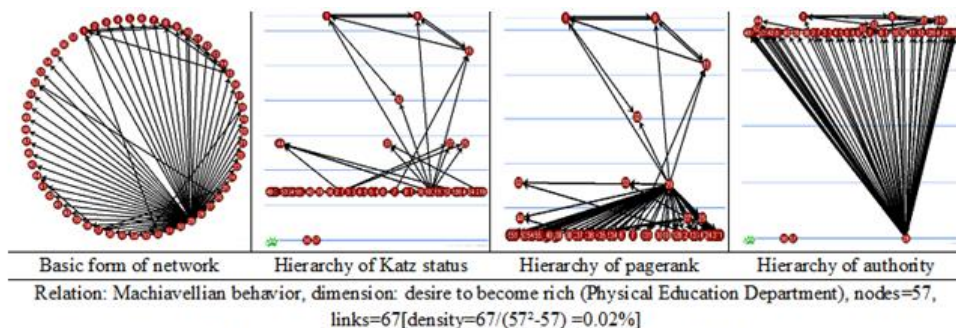


Figure 1: Network of Machiavellianism (desire to become rich) at the Dept. of Physical Education and Sports Science, University of Thessaly, Greece.

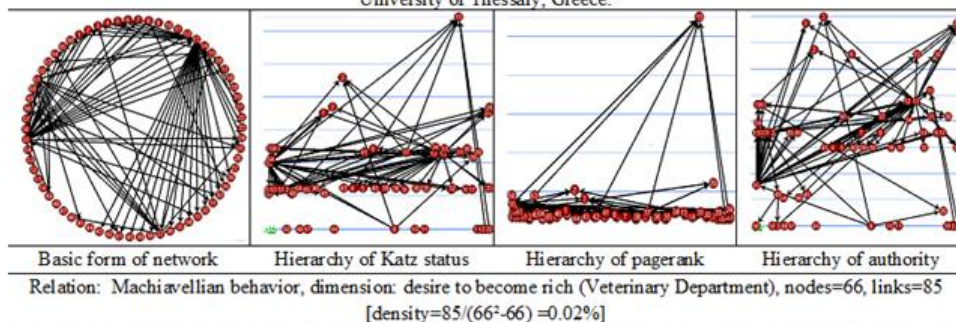


Figure 2: Network of Machiavellianism (desire to become rich) at the Dept. of Veterinary, University of Thessaly, Greece.

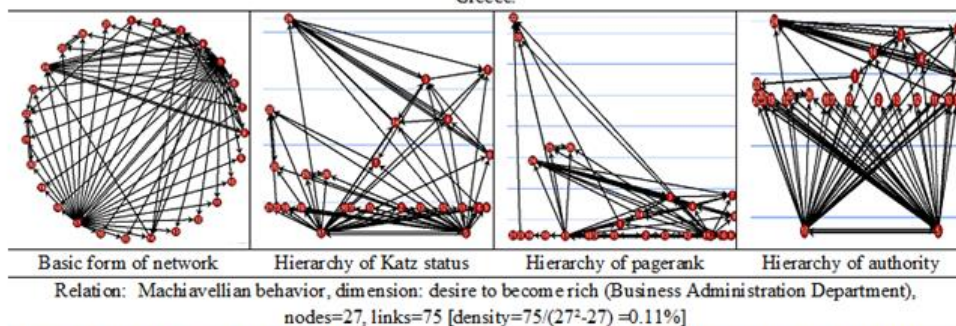


Figure 3: Network of Machiavellianism (desire to become rich) at the Dept. of Business Administration, University of Thessaly, Greece.

Source: Spanou, Bekiari, and Litsa

In Table 1, non-network variables examined in this study seem to be relevant for being a target negative behavior such as verbal aggression, bullying and Machiavellianism. Concerning the students' desires to be distinguished as students, it appears that Physical Education students are vulnerable to become targets of a Machiavellian tactic like ordering others (0.138); Veterinary students are protected against the role of the target of verbal aggressiveness in terms of employing rudeness (-0.439), bullying in terms of threatening (-0.394) and Machiavellian tactics in terms of deceiving (-0.326); and Business Administration students seem to contribute to the role of being targets through Machiavellian techniques, that is to say, deriving information for personal benefit (0.443), deceiving (0.437) and controlling others (0.549). The desire to be distinguished as professionals reinforces the Physical Education students' role as targets regarding verbal aggressiveness strategies such as treating others with irony (0.111) and Machiavellian ones such as ordering others (0.148). The Veterinary students seem to be protected against the role of targets of Machiavellian strategies related to their social status success (-0.313) and Business Administration students' roles as targets motivate Machiavellian tactics in terms of deceiving (0.423).

Regarding bullying experience at university, it seems that being involved in bullying as bullies at university, influences the Physical Education students' role of being targets of anti-social behaviors such as verbal aggressiveness in terms of being rude (0.108); bullying in terms of threatening (0.117), arguing (0.129), causing disagreements (0.122) and Machiavellianism in terms of deceiving (.121), ordering (.106), and desiring social status success (0.112); while the Veterinary students' role as victims of bullying at university appears to trigger the role of the target of bullying in terms of causing disagreements (0.499).

An involvement in bullying incidents at school as bullies appears to encourage Physical Education students of being targets only of verbal aggressiveness in terms of irony (0.105) and rudeness (0.109), while the Business Administration students' role as victims of bullying at school appears to trigger the role of the target of bullying dimensions in terms of causing disagreements (0.476), and Machiavellian ones such as controlling others (0.558).

Table 1: Relation between Non-Network and Network Determinants of Being a Target of Negative Behaviors in Physical Education and Sport Science, Veterinary and Business Administration departments

	Verbal Aggressiveness				Bullying		Machiavellianism		
	Irony	Rudeness	Threat	Argument	Disagree-ments	Deception	Orders	Social Status Success	Info For Benefit
<i>Physical Education and Sport Science students</i>									
<i>distinction as students</i>	.095	.046	.057	.023	.076	.016	.138**	.063	-.087
	.055	.355	.252	.642	.127	.745	.005	.206	.079
<i>distinction as professional</i>	.111*	.043	.053	.073	.035	.018	.148**	.072	-.037
	.025	.390	.283	.142	.482	.718	.003	.145	.458
<i>bullies at university</i>	.093	.108*	.117*	.129*	.122*	.121*	.106*	.112*	.044
	.085	.044	.029	.016	.022	.024	.049	.037	.409
<i>bullies at school</i>	.105*	.109*	.074	.054	.089	.071	.063	.022	.088
	.035	.028	.138	.279	.072	.150	.206	.663	.076

	Irony	Rudeness	Threat	Argument	Disagree- ments	Deception	Orders	Social Status Success	Info For Benefit
<i>Veterinary Students</i>									
distin- ction as students	-.275	-.439**	-.394**	-.280	-.158	-.326**	-.135	-.117	.234
	.074	.003	.009	.069	.312	.033	.389	.456	.131
distin- ction profe- ssional	-.131	-.171	-.290	-.198	-.177	-.201	-.260	-.313*	.088
	.404	.273	.060	.204	.256	.196	.092	.041	.573
bullying victims at university	.142	.078	.081	.074	.499**	.184	.064	.095	.103
	.364	.618	.604	.639	.001	.237	.684	.544	.511
<i>Business Administration Students</i>									
distin- ction as students	.289	.334	.334	.353	.262	.437*	.549**	.245	.443*
	.181	.120	.120	.099	.226	.037	.007	.260	.034
distin- ction as profe- ssional	.242	.306	.306	.111	-.167	.423*	.353	.055	.241
	.265	.156	.156	.616	.445	.044	.098	.805	.267
bullying victims at school	-.051	.394	.394	.318	.476*	.285	.558**	.135	.313
	.818	.063	.063	.139	.022	.188	.006	.538	.145

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

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

(sum = indegree + Katz status + pagerank + authority)

Source: Spanou, Bekiari, and Litsa

In Table 2, practicing verbal aggression, bullying and Machiavellianism seems to present correlation with non-network variables. In other words, Veterinary students' desire for distinction as professionals appears to be against the practice of Machiavellian tactics such as deception (-0.302) while Business Administration students appear to stimulate the practice of bullying tactics such as threatening (0.417). Regarding students' bullying experience as victims at university, it is noticeable that Physical Education students are motivated to practice verbal aggression strategies in terms of being rude (0.189) and Machiavellian strategies in terms of controlling (0.113), Veterinary students seem to stimulate the practice of Machiavellian tactics in terms of controlling (0.417) whilst Business Administration students appear to be related to the practice of Machiavellianism in terms of deception (0.439). Concerning the experience of

bullying behavior during school years prior to entering university, it appears to be responsible for influencing Business Administration students on practicing verbal aggression such as being rude to others (0.487).

Table 2: Relation between Non- Network and Network Determinants of Practicing Negative Behaviors in Physical Education and Sports Science, Veterinary and Business Administration Department (outdegree)

	Verbal Aggressiveness		Bullying	Machiavellianism	
	Rudeness	Threat	Argument	Deception	Control
<i>Physical Education & Sports Science</i>					
distinction professional	.069	.053	.058	.002	.039
	.164	.291	.245	.964	.437
bullying victims at university	.189**	.029	.071	-.010	.113*
	.000	.563	.153	.833	.022
Veterinary students					
distinction professional	-.035	-.137	-.93	-.302*	-.021
	.825	.380	.552	.049	.892
bullying victims at university	.218	-.029	.241	.153	.417**
	.161	.852	.120	.327	.005
Business Administration students					
distinction professional	.279	.417*	.346	-.202	.279
	.198	.048	.106	.355	.198
bullying victims at university	.359	.405	-.140	.439*	.356
	.093	.056	.124	.036	.095
bullying victims at school	.487*	.268	.334	.393	.056
	.019	.217	.119	.063	.779

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

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

Source: Spanou, Bekiari, and Litsa

The findings presented above, are original, as no similar results have been found out by the review of the existing literature, and constitute the added value of the present research.

Discussion and Conclusion

The aim of the present research was the in-depth exploration of three negative behavioral phenomena—verbal aggressiveness, bullying and Machiavellianism—among students of all Physical Education and Sport Science (University of Athens, Thessaly, Thessaloniki and Thrace), Veterinary (University of Thessaly) and Business Administration (University of Thessaly) departments throughout Greece. Social network analysis, as an innovative research approach, was applied to deconstruct these behaviors as structural phenomena and through conventional statistics to detect relations as parameters among their dimensions.

Not only the intensity of the students' networks, but also the configuration of these negative behaviors contributed to the revelation of significant deviations among the three academic departments (Bekiari et al. 2019a, 2019b; Vasilou, Bekiari, and Hasanagas 2020). Therefore, Business Administration students' behavioral routes are manifested by their sole aims to conquer the world of business, Physical Education students' behavioral tactics are

characterized by competitive and disciplined orientations in order to excel in the sports milieu whereas Veterinary students exhibit a more humane profile directed by scientific interests.

Investigating these negative behaviors as personality variables, it is noticeable that due to students' familiarity during their academic years, detrimental behaviors are encouraged (Hasanagas and Bekiari 2015, 2017; Bekiari, Pachi, and Hasanagas 2017; Spanou, Bekiari, and Hasanagas, forthcoming). More specifically, as far as the desire for distinction in the academic or professional milieu is concerned (Tables 1 and 2), or else an ultimate pursuit of recognition leading to a specific value system, contributes to being a target of or practicing negative behaviors. Thus, Physical Education and Business Administration students (Tables 1 and 2) seem to be vulnerable to anti-social behavioral patterns as a part of their aspiring morale which characterizes their departments in order to become distinguished whilst Veterinary students (Tables 1, 2) appear to adopt more "naive" and altruistic behavioral tactics far from desiring to become prominent.

Physical Education students and Business Administration students (Tables 1 and 2) who exhibit a "bullying record" at school appear to cultivate such a behavior at university in the long run (Adams and Lawrence 2011; Andreou 2000; 2001; 2004; Spanou, Bekiari, and Theocharis 2020) proving that although bullying behaviors are commonly encountered in the school settings, they are reinforced by the dramatically competitive cultures at the university settings (Simpson and Cohen 2004). This is understandable as these students get accustomed to dealing with competitive challenges via negative strategies because of their departments' highly ambitious milieu.

Veterinary students (Tables 1 and 2) who seem to be involved in bullying incidents at university seem to be targets of some dimensions of negative behaviors (causing disagreements) and also practice some of these behaviors themselves (controlling others), which could be explained as these students are susceptible to bullying and manipulation, due to their department' dominant discourse. That is to say, because of their scientific-centered and moral-driven dominant culture and norms, they are likely to be targets of bullying strategies such as causing disagreements and practice Machiavellian tactics themselves such as controlling others reflecting a common occurrence in friendly and social interactions respectively in our manipulative society.

Consequently, it is foreseeable that studies applying network analysis comprise the cornerstone for a radical analysis of these negative behaviors in the academic premises via empirical sociological viewpoint. Future research should focus on the expansion of the sample to miscellaneous academic departments globally (multicultural academic departments) in order to shed light on the unexplored strands of these negative behaviors like the recognition of profile groups susceptible to these behaviors and therefore, eliminating them. A combination of qualitative and quantitative research is the key to a meticulous approach to detect and eradicate such behaviors' unfavorable consequences from the academic milieu.

This study's findings are novel in that they "unveil" potential negative behaviors - verbal aggressiveness, bullying and Machiavellianism—among students of Physical Education, Veterinary and Business Administration departments in universities in Greece through an alternative sociological approach (not a psychological approach, as it is based the holistic structural approach of the complete network analysis and not on the classical psychometric questionnaires). In summary, these disruptive behavioral patterns were depicted as social relations and measured as network variables (algebraic analysis) in competitive environments considering their correlations between non-network and network variables of these behaviors' determinants with the intention of designing decisive university policies and regulations to act as intervention and prevention tools.

Recommendations and Limitations

To the utmost in Physical Education and Business Administration departments, the academic staff which is responsible for the students' issues should pay attention to the students of advanced semesters as students' familiarity acquired in the course of time encourages detrimental behaviors. The students of these departments seem to need more such preventive counseling due to their ambitiousness and antagonistic climate. In the Veterinary department, the academic staff should encourage fruitful discussions on scientific and deontological themes so as to positively utilize the scientific-centered and moral-driven culture of this academic field.

A limitation of this research mainly consists in the fact that it is confined on these three departments. Thus, it could serve as an illustration and as triggering basis for further research in a wider range of academic fields (e.g. medicine, philology, physics and so on), from more different regions or countries. Apart from that, such quantitative findings should also be completed in future research with qualitative insights (in-depth interviews) and comparative view, e.g. among less, more and most victimizing or victimized students, so as to reveal deeper causes.

Ethics Statement

Ethics, specifically discretion and personal data protection, have been observed. Permission was provided by the responsible academic staff and the students so as to avoid any disturbance of the teaching or research program.

Conflicts of Interest

The authors report no conflict of interest.

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