

What drives students' behaviour towards plagiarism in Montenegro: The moderating role of text matching software

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The issue of academic integrity has been flourished inside academic society for several decades (Melgoza & Smith, 2008). The academic integrity could be defined as '*the values, behaviour and conduct of academics in all aspects of their practice (teaching, research and service)*' (Macfarlane et al., 2014, p. 341). This remains one of the major global problems in higher education (e.g. the International Centre for Academic Integrity reported that 70% of students cheat during the test), as academic dishonesty influences negatively the credibility of a university at the national and international level (Park, 2003). What more, the continued advancement in technology amplifies the risk to academic integrity. Moreover, some market actors blamed universities for corporate scandals since they failed to foster stronger ethical values among students to prepare them for the workplace (Verschoor, 2003). Accordingly, several scholars confirmed (Carpenter et al., 2004; McCabe et al., 1996; Nonis & Swift, 2001) that students who cheat in the academic setting are more likely to engage in unethical behaviour while in the workplace.

Given the importance of the issue, researchers have determined reasons for non-academic behavior, frequency of cheating, impact of sanctions (Davis & Ludvigson, 1995), compared strategies that have a better effect on students, e.g. fear-based vs. participation in discussion of cases (Compton & Pfau, 2008), established relations between the moral perspective of students and the circumstances that lead to cheating (Eisenberg, 2004). Some researches differentiate between the planned and the so-called spontaneous cheating (Genereux & McLeod, 1995).

Plagiarism is considered as one of the most common forms of academic dishonesty (Lathrop & Foss, 2000; Park, 2003; Wilcox, 2005; Hodges et al., 2017). Accordingly, working on the sample of around 5000 students, McCabe et al. (2001) found that more than 65% students plagiarize on their written essays. What more, scholars argue that plagiarism is on the constant rise due to the possibilities provided by Internet (Howard & Davies, 2009; Towneley & Parsell, 2004; Bradley, 2015; Rogerson & McCarthy, 2017). This is in line with Wang (2008)'s findings who reported that approximately 30% of students used ideas, 15% of students used text and 5% of students used projects from the Web without indicating appropriate references. As explained by Wilcox (2005) the Internet provides easy access to information, it also gives the impression that one may appropriate others' ideas without

attribution since it can be accessed easily. Furthermore, the author stressed that easy access to information is at the heart of many incidents related to plagiarism. Additionally, Ellery (2008) found support for positive correlation between the frequency of Internet use and students' plagiarism. Therefore, special attention has been dedicated to establishing profiles of those who plagiarize (Hodges et al., 2017). Yeung et al. (2018) found that poor information literacy and language abilities factors are behind plagiarism. Jones (2011) identified reasons why students plagiarize such as being too busy and the need to earn good grades.

Batane (2010) revealed that 75% of the participating students (in the survey) reported that they plagiarize mainly because of laziness. Investigating two-year students' self-reported perceptions of acts of plagiarism, Ferguson (2010) found that demographic traits such as age and gender were related to the students who chose to engage in self-reported acts of plagiarism. Using a series of group interviews, Devlin & Kathleen (2007) argue that contributing reasons for plagiarism are: institutional admission criteria, student understanding of plagiarism, poor academic skills, a range of teaching and learning factors, personality factors and external pressures. McCabe (2005) concluded that the reasons driving students to plagiarize are related to the increase of competitiveness, pressures to achieve academically, the knowledge that their peers also plagiarize without being caught and possibility to obtain someone else's work easily. Underwood & Szabo (2004) recognized fear of failure as the main factor that increases students' probability to plagiarize. The authors further explained that the fear could be associated to many different repercussions such as parents' disappointment, scholarship loss and student not wanting to fail the course. Weinstein & Dobkin (2002) corroborated that students' attitude towards plagiarism increases as the likelihood of being caught is low and as the punishment is defined as minimal. Moreover, Davis et al. (1993), working on the sample of 6000 students, found that 36% of students indicated that they would plagiarize in order to pass a certification test.

One of the most utilized mechanisms for fighting against plagiarism is Turnitin software (Bradley, 2015). Turnitin is developed by PhD students from the University of California, Berkeley in 1998. Today more than 30 million students are using the software in 15,000 institutions and 140 countries. As part of its disadvantages, the software is considered an important device for plagiarism prevention (Groark et al., 2001; Batane, 2010). In the same vein, several scholars suggest that when students are aware that their writing assessments will be checked for possible plagiarism, they are less likely to plagiarize (Martin, 2005; Braumoeller & Gaines, 2011). In other words, student awareness of the existence of plagiarism detection software serves as an essential deterrent of plagiarism (Burke, 2004). However, on the other hand, as underlined by Willen (2004) even when students are aware about practice regarding plagiarism prevention, they still may plagiarize when under pressure in order to perform well. Grebing (2015) stressed that there is a gap in the literature regarding the effect of online tools on changing student behaviors and perceptions associated to academic dishonesty. Accordingly, it is crucial to understand if the students' behaviour towards plagiarism is dependent regarding their knowledge and awareness about

plagiarism detection software.

Although plagiarism is recognized as a global problem, Carnero et al. (2017) argue that in developing countries, the problem is poorly discussed what hinder the definition of preventive strategies. What more, den Ouden & van Wijk (2011) underlined that the notions such as authorship, copyright and intellectual property have come into existence only recently in Western culture while in Eastern cultures these notions are still less common. Actually, as explained by Brennan (2015) student examination, in Eastern countries, is not relied on writing essays what makes their understanding limited concerning plagiarism and authorship.

Academic integrity movement has started in Montenegro in last few years. For instance, the recognition of academic integrity importance in Montenegro is supported by the fact that the Government of Montenegro through the Ministry of Education has adopted the Law on Academic Integrity beginning of 2019. Additional support could be found by the fact that all universities (4 universities – 1 public and 3 privates) in Montenegro obtained software for the plagiarism detection (iThenticate) via Ministry of Education as a part of a project supporting the development of higher education and research potential entitled '*Enhancement of HE Research Potential Contributing to Further Growth of the WB Region*'. Accordingly, University of Montenegro adopted the decision to use iThenticate software in April 2018. The University organized several seminars, workshops, roundtable dealing the issue in last 18 months. Moreover, the University has certified in the field related to academic integrity by the Institute for Research and Action on Fraud and Plagiarism in Academia, University of Geneva.

However, the deeper research-based analysis on academic integrity in Montenegro is not realized yet. As indicated by Cortes-Vera et al. (2018) there is lack of studies on the specific causes behind plagiarism. In order to build an environment that will integrate academic behaviour as integral part of teaching, learning and research that is suitable for Montenegrin context, it is necessary to provide research- based evidence that would ground further recommendation on the issue of academic integrity. Therefore, using data on students from University of Montenegro, which is the largest university in the country (enrolling around 80% of student population), the main objective of this paper is to determine the prevailing students' behaviour towards plagiarism. In addition, even that plagiarism detection software can not eliminate the problem of plagiarism completely (Carroll, 2009), it is important to analyze moderator effects of the detection software when examining the predictors of students' behaviour towards plagiarism. Notably, the importance of moderator analysis is accented by Cohen et al. (2003) who argue that moderating approach is '*at the very heart of theory testing in the social sciences*' (p. 255).

Accordingly, the present study is twofold: (1) to identify students' behaviour and socio-demographic characteristics that drive them towards plagiarism (2) to analyze the moderating role of Turnitin software. In general, findings obtained through Structural Equation Modeling

(SEM), will help us to better define strategy related to the quality of research and higher education in Montenegro by spreading the culture of academic integrity, promoting ethical behaviour and preventing plagiarism and other types of non-ethical practices in academic work.

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