

Predictors of Cyber-plagiarism: The Case of Jose Rizal University

Ryan EBARDO^{a,b}

^a*Doctorate Student, De La Salle University – Manila, Manila, Philippines*

^b*Faculty Member, Jose Rizal University, Mandaluyong, Philippines*

ryan.ebarido@jru.edu

Abstract: Higher education is the last bastion in the fight against cyber-plagiarism. Students are trained to be ethical professionals within the university context by molding their young minds through a combination of pedagogical strategies and academic programs to preserve their morals, values and character. While technology is a catalyst for enhanced learning, it has also been used to illicit forms of academic dishonesty such as cyber-plagiarism. This paper applies the Theory of Planned Behavior and complemented by a dimension borrowed from the Big 5 Personality Theory to investigate the drivers of cyber-plagiarism in a university in the Philippines. A total of 309 responses are gathered to test the applicability of the proposed research model. A Partial Least Squares Structural Equation Model is applied to validate the research model in this study. Although ICT attitude and peer pressure influence behavioral intention to commit cyber-plagiarism at a certain level, this cannot be supported in this investigation. On the other hand, ICT literacy and neuroticism predict behavioral intention to commit cyber-plagiarism, which subsequently predicts the performance of such act. Technological and pedagogical recommendations are discussed.

Keywords: cyber-plagiarism, theory of planned behavior, big five personality traits, academic honesty

1. Introduction

Technology has brought novel innovations in the academy that allowed the faculty and the students to access, create and disseminate knowledge with ease. While technology provided regal benefits to learning, it comes with adverse effects to academic integrity in the form of cyber-plagiarism (Castree III, 2012; Ramirez-Correa, 2017). Plagiarism, in its digital form, has been a constant problem afflicting higher educational institutions around the world. In today's digital environment, this problem has transcended to catastrophic levels due to the ease of acquiring knowledge and availability of tools that seamlessly support this form of academic dishonesty (Kauffman & Young, 2015; Quah, Stewart, & Lee, 2012).

The advent of the connected economy influenced how students behave in their academic behaviors. Today's generation of learners are exposed to tools that take advantage of technology to enhance the learning experience such as the Internet and E-Learning platforms. However, these technological advances are also subject to abuse with regards to academic honesty (Ramzan, Munir, Siddique, & Asif, 2012). Students have systematically copied works of authors to comply with their academic requirements (Jones & Sheridan, 2015). In addition, scheming entities in the Internet have monetized the practice of cyber-plagiarism through the sale of plagiarized academic papers online (Castree III, 2012). Prior literature has also revealed that the environment has a significant influence in the act of cyber-plagiarism. Students are more susceptible to committing cyber-plagiarism when they observe that people around them are doing the same. In the context of higher education, peer influence from classmates is an environmental determinant that influences personal behavior towards cyber-plagiarism (Chang, 2014).

This study explores the influence of technology and personality in the act of committing cyber-plagiarism at Jose Rizal University (JRU). Since technology and the environment have been confirmed to have a significant impact on the personal ethical behavior of students towards academic honesty, a modified framework using the Theory of Planned Behavior or TPB by Ajzen

(1991) is applied with an additional construct from Big 5 Personality Trait Theory of (Goldberg, 1990). An empirical test using Partial Least Squares – Structural Equation Model is applied to validate the framework. There is limited literature that adopted TPB in the domain of cyber-plagiarism in higher education. This paper is also one of the early studies to explore cyber-plagiarism in Philippine Higher Education. A review of related literature is discussed in the next section, followed by the research design and methodology. Results of the study are dissected, limitations are acknowledged and recommendations are offered in the concluding section.

2. Related Literature

Plagiarism in any form has been universally abhorred by the society. Since the establishment of the academy, students have found ways to commit plagiarism and escape detection from academic administrators. Technology merely transformed these strategies and magnified its adverse effects to the academe giving birth to cyber-plagiarism (Kauffman & Young, 2015). A review of published literature revealed limited exploration on the influence of technology to cyber-plagiarism in higher education. A recent study by Ramírez-Correa (2017) explored how personality traits among higher education students lead to cyber-plagiarism. The research revealed that a high degree of neuroticism relative to Internet use for academic purposes lead to the act of cyber-plagiarism. The technological affordance of copying and pasting materials and the abundance of information resources in the Internet have a causal relation with cyber-plagiarism (Šprajc, Urh, Jerebic, Trivan, & Jereb, 2017). In an exploratory, empirical study conducted by Ramzan et al. (2012), a major driver in the act of cyber-plagiarism is the lack of clarity in policies governing academic dishonesty. The study recommended pedagogical and technological interventions to alleviate cyber-plagiarism in higher education.

The established Theory of Planned Behavior (Ajzen, 1991) is a widely tested theoretical model that has been applied in different disciplines. TPB argues that individual behavior is influenced by behavioral intention. Likewise, behavioral intention is driven by the factors attitude towards the act, subjective norms and perceived behavioral control (Camara, Eng-Ziskin, Wimberley, Dabbour, & Lee, 2017). In education, TPB has been used to empirically identify behavioral determinants of cyber-plagiarism. Prior literatures revealed that attitude, subjective norms and perceived behavioral control, are strong predictors of the intention to plagiarize and subsequently predicts the act of cyber-plagiarism (Chang, 2014).

Although, scientific evidences have proved that TPB can predict intention to act or behave in a scenario, literature have suggested that it does not account for a change in a person's behavior, an individual's past and future experiences (Sniehotta, Pesseau, & Araújo-Soares, 2014). The Big 5 Personality Traits Theory was originally proposed by (Goldberg, 1990) which posits that individuals can be classified as having one of the five major personalities namely agreeableness, conscientiousness, extraversion, neuroticism and openness to experience. Of these five personalities, neurotic tendencies have been found in psychological research to demonstrate intention to commit unethical and illegal acts including cyber-plagiarism (Ramírez-Correa, 2017).

3. Research Design and Methodology

In psychological research, attitude, subjective norms and perceived behavioral control are found to be strong predictors of behavioral intention (Ajzen, 1991). In an academic environment, learning necessitates the use of Information and Communications Technology or ICT. The study of Chang (2014) has argued that ICT attitude influences the intention to commit cyber-plagiarism. Subjective norm is the perception to perform an act or exhibit a behavior based on social pressure from people close to an individual. Sentiments from family members, colleagues and friends have a significant influence on behavioral intention (Ajzen, 1991). In the academic environment, peers are represented by classmates and have been found to influence student's behavior (Chang, 2014). Perceived behavioral control is the ease or difficulty to perform an act (Ajzen, 1991). Information Technology has been a vital component in the academic curricula resulting to students acquiring skills necessary to accomplish tasks. While technology encourages students' academic productivity, it has also been

found to be influential in committing cyber-plagiarism (Chang, 2014; Ramzan et al., 2012). The three factors of ICT attitude (attitude), peers' unethical behaviors (subjective norms) and ICT literacy (perceived behavioral control) are theorized to lead to behavioral intention to commit cyber-plagiarism which then leads to the actual engagement of cyber-plagiarism. This study postulates that ICT attitude positively influence intention to commit cyber-plagiarism (H1), peers' unethical behaviors positively influence intention to commit cyber-plagiarism (H2), ICT literacy positively influence intention to commit cyber-plagiarism (H3) and behavioral intention to commit cyber-plagiarism leads to cyber-plagiarism (H4). To account for psychological behavioral changes in a student, a personality trait factor was added. Traits are persisting characteristics of individuals that are inherent regardless of changes in circumstances (Hoyt, Rhodes, Hausenblas, & Giacobbi, 2009). Of the five personality traits, neuroticism has been found by a prior study to demonstrate inclinations towards cyber-plagiarism. This trait is operationalized within TPB and this study further postulates neuroticism positively influences intention to commit cyber-plagiarism (H5). To test the hypotheses, this study adopts the Theory of Planned Behavior of (Ajzen, 1991) and extends the framework through the integration of the neuroticism construct from (Goldberg, 1990). The research model is shown in Figure 1 – Operational Research Model:

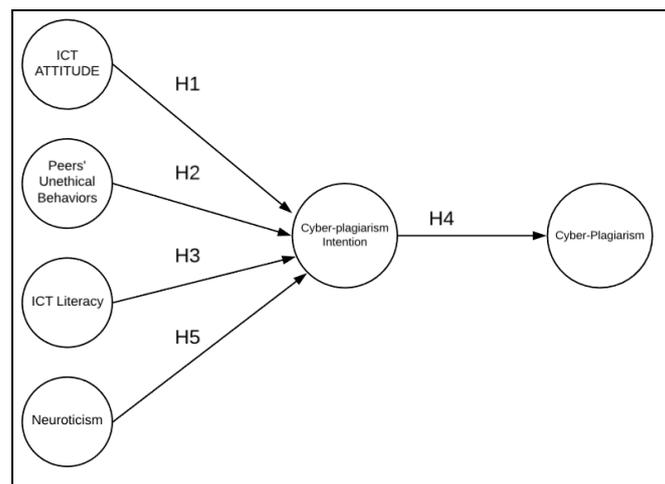


Figure 1 - Operational Research Model

3.1. Research Instrument

To test the applicability of the proposed framework, 46 measures are adopted from the research of Chang (2014) which used TPB in the context of cyber-plagiarism. These measures represent the constructs of ICT attitude (ICTA), peers' unethical behaviors (PEER), ICT literacy (ICTL), Cyber-plagiarism intention (PLAGI) and the act of Cyber-plagiarism (PLAG). To incorporate an individual's personality, specifically neurotic tendencies, 3 questions are added from Ramírez-Correa (2017). To form the construct of ICT attitude (ICTA), three dimensions are positioned as lower order constructs. These are Web-based learning attitude (WBLA), Internet attitude (INTA) and attitudes on ICT for education purposes (ICTE). For ICT literacy (ICTL), three dimensions are positioned as lower order constructs. These are Information literacy (INFL), Computer literacy (COML) and Internet literacy (INTL). The initial version of the questionnaire is composed of a total of 49 questions. This was administered to two students from the different colleges who were asked to identify the terms or phrases that are confusing or requires further explanation. Some terms required localization and acronyms were defined. To test the validity of the instrument, a Partial Least Squares Algorithm using SmartPLS is applied to identify indicators that are below the acceptable values of 0.70 for Cronbach's Alpha and Composite Reliability and 0.5 for Average Variance Extracted. Indicators that did not meet the critical values are deleted and the final version of the questionnaire is composed of 41 questions. The validated instrument is deployed using Google Forms. Table 1 – Instrument Validation shows that the Cronbach's Alpha, Composite

Reliability and Average Variance Extracted values are above the critical values demonstrating validity and reliability (Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, 2014).

Table 1

Instrument Validation

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
COML	0.847	0.875	0.842	0.648
ICTE	0.899	0.934	0.896	0.691
INFL	0.890	0.899	0.886	0.614
INTA	0.754	0.818	0.738	0.510
INTL	0.881	0.907	0.874	0.591
NEURO	0.827	0.868	0.832	0.632
PEER	0.777	0.804	0.779	0.546
PLAG	0.879	0.893	0.878	0.647
PLAGI	0.906	0.913	0.906	0.661
WBLA	0.892	0.942	0.874	0.563

3.2. Research Sampling

Classes were approached and invited to participate in the survey. The survey was also posted in Facebook communities of JRU students. The questionnaire is deployed online for three weeks during the second semester of academic year 2017-2018. All respondents are active students of Jose Rizal University in the college division. A total of 316 responses are recorded. Responses that have a single value for all questions are invalidated resulting to 309 records for this study. An analysis of the responses revealed that 37 or 12%, 180 or 58% and 92 or 30% came from College of Liberal Arts, Criminology and Education (ACE), College of Computer Studies and Education (CSE) and College Business Administration and Accountancy (BAA) respectively. Of the respondents, 192 or 62% are males and 117 or 38% are females. In terms of year levels, 20 or 6% are on the first year level while 12 or 4% are on their second year. Majority of the respondents are on the higher year levels with 159 or 51% are on their third year and 80 or 26% are on their final year in college. Irregular students totaled 38 or 12% of the total population.

4. Discussion of Results

To validate the research model, a bootstrapping technique using Partial Least Square Structural Equation Model is administered to the results using SmartPLS. This statistical tool has a graphical user interface that is efficient in exploratory, path modeling investigations and has been used widely in IS researches (Wong, 2013). The results of the path model are summarized in Table 2 – Path Analysis Results:

Table 2

Path Analysis Result

Hypothesis	Path	SD	T Statistics	Significance Level	Decision
H1	ICTA->PLAGI	0.036	0.858	NA	Rejected
H2	PEER->PLAGI	0.035	0.498	NA	Rejected
H3	ICTL->PLAGI	0.035	2.329	0.05	Accepted
H4	PLAGI->PLAG	0.028	26.731	0.01	Accepted
H5	NEURO->PLAGI	0.022	36.425	0.01	Accepted

As shown in the results, ICT attitude (H1) and Peer pressure (H2) as predictors of Behavioral intention to cyber-plagiarize are rejected as it is below the minimum threshold of 1.65 (1-tailed) to be at a significant level (Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, 2014).

Although both constructs positively influence behavioral intention to cyber-plagiarize, both hypotheses cannot be scientifically claimed in the context of this research. Prior studies have argued that technology has been valuable in the fight against academic dishonesty including cyber-plagiarism. These include the use of detection software to identify digital plagiarism and other sophisticated tool (Holi Ali, 2013; Jones & Sheridan, 2015). Within Jose Rizal University, technology has been crucial in implementing its academic rules and regulations. Students are trained to use technology tools for research purposes and use automated citation application by the library and the faculty. While peer pressure has been claimed to influence cyber-plagiarism intention (Camara et al., 2017; Chang, 2014), this cannot be claimed in this study. A possible explanation is the integration of ethics within the curricula of the university. Studies have been successful to prove that ethics as a course in higher education have been found to be influential in molding students' behavior (Gardelli, Alerby, & Persson, 2014; Rutherford, Parks, Cavazos, & White, 2012). ICT Literacy (H3) and neuroticism (H5) are predictors of behavioral intention to cyber-plagiarize. Academic pressure is an impetus in the commitment of cyber-plagiarism. As such, students lean on their acquired technology skills to comply with their academic requirements (Camara et al., 2017; Chang, 2014) leading to behavior intention to commit such acts. Within Jose Rizal University, IT is a required course across all programs. Laboratories are equipped with Internet connectivity and software applications to aid the students with the necessary technology skills. Research have found that these skills are used to commit cyber-plagiarism (Ramzan et al., 2012; Šprajc et al., 2017). Personality trait is also found to be a predictor of behavioral intention to commit cyber-plagiarism. A trait defines how a person behaves at a given situation (Goldberg, 1990). A research by Ramírez-Correa (2017) suggested that students demonstrating neurotic tendencies are most likely to commit cyber-plagiarism in their academic lives. Lastly, behavioral intention to commit cyber-plagiarism leads to the act of cyber-plagiarism. A person's intentional behavior to perform a task leads to its actual commitment. This claim is consistent with previous studies (Camara et al., 2017; Moeder Stowe, 2013; Song, Kim, & Cho, 2017).

5. Conclusion, Limitations and Future Directions

This study is with limitations. The distribution of the sample population did not employ a randomized technique that may constrain the generalizability of the findings. In addition, other dimensions may be used as predictors for cyber-plagiarism. Since two predictors are dropped from TPB, a qualitative research to explain the results of this study may be conducted. Since ICT literacy is a predictor of cyber-plagiarism, this study recommends that Jose Rizal University should institutionalize the use of technology tools that detect cyber-plagiarism (Holi Ali, 2013) and encourage automation software applications for proper citation tasks. This can be accomplished through courses, seminars and online learning courses within the university environment. Lastly, the student's personality is a predictor of cyber-plagiarism. The university should tap the student development office in policing cyber-plagiarism through continuing programs that inculcate academic honesty and improve students' character. Lastly, the role of the faculty is crucial to curb cyber-plagiarism (Gunnarsson, Kulesza, & Pettersson, 2014; Moeder Stowe, 2013). Stricter enforcement of academic policies should be implemented and it starts with the faculty. They are the frontlines of the university to champion its ethical standards.

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