

Does Personality Impact Academic Fraud?

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ABSTRACT

This study tests the effects of Machiavellianism, gender, and personality type on academic fraud with academic environmental pressure as the moderating variable. Our sample is 91 respondents selected with the purposive judgment and convenience sampling methods. The findings demonstrate that male students, students with an A-type personality, and highly Machiavellian students are more likely to commit academic fraud under greater academic pressure. However, academic environmental pressure does not moderate the effect of the independent variables on academic fraud. The positive regression coefficient of the interaction term indicates that Machiavellian students are more likely to commit academic fraud under greater academic environmental pressures. The results are similar for female students and students with an A-type personality. This study highlights the importance of being honest in the academic and professional activities because the academic and professional domains treat fraud seriously.

Keywords: Personality type; academic pressure; academic fraud.

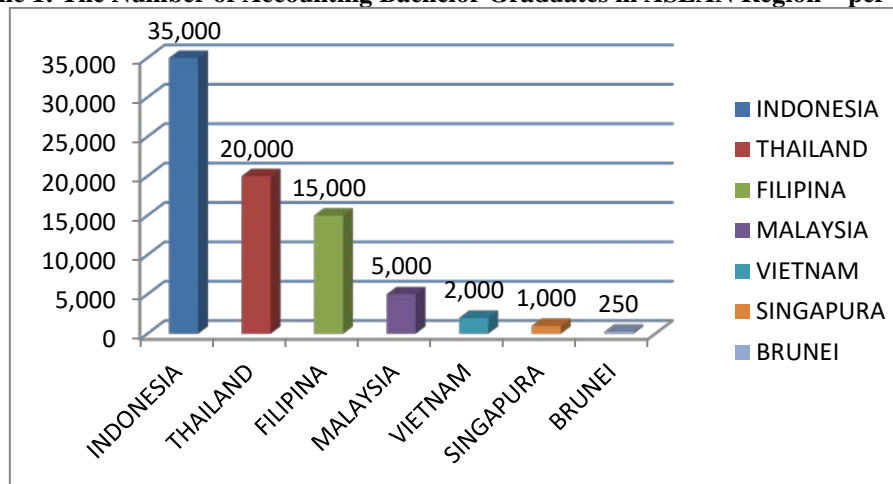
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1. INTRODUCTION

Individuals generally have different attitudes, traits, behaviors, and personalities. Their backgrounds, environments, education, technology, and other factors motivate them to make decisions when confronted with challenges. While the accounting profession used to only deal with administrative and financial reporting matters, this profession should now have broader perspectives and more competencies to cope with increasingly dynamic business development. According to Christiawan (2002), accountants' competence represents the abilities related to their education and experience. Besides, accountants need to undergo technical training; acquire professional skills; receive supervision for their performance; and learn, understand, and apply accounting standards and principles stipulated by professional organizations.

Besides the professional realm, the academic realm also requires competence, especially for students who prepare for their professional careers. Their academic experiences help them shape their characters and ethics, obtain knowledge transfer, and other aspects of their lives. The increased demands for business practices and governmental administration require educational institutions to prepare their graduates to acquire competence that meets the demands. Cited from Putka (1992), in a 1991 Wall Street Journal article, Steven Davis, a psychology professor, suggests that fraud incidents in the US have increased from about 20% in the 1940s to 75% in the 1990s. Smyth and Davis (2004) report that 74% of surveyed students commit fraud, and 45% of them act individually.

Graphic 1: The Number of Accounting Bachelor Graduates in ASEAN Region – per Country



Sources : World Bank (2014)

As illustrated by Graphic 1, the 2014 World Bank data reveals that Indonesia ranked first in accounting bachelor graduates in the ASEAN region. Besides, the Institute of Indonesian Chartered Accountants (*IAI – Ikatan Akuntan Indonesia*) data indicates about 60,000 available vacancies for accounting graduates in various governmental and private institutions. Students are prepared to anticipate future professional challenges according to their academic majors. For example, the American Accounting Association (1986), in Suttipun (2014), suggests that accounting students need to develop the following competencies to anticipate professional challenges, including creative thinking, lifelong learning, learning to learn, and communication skills. Besides, they also must have standard accounting competence to cope with accounting professional challenges, such as attitude, knowledge, and skills (IAESB, 2014).

Accounting students arguably cannot achieve the entire required competence. Professional requirements are closely related to the readiness and processes to acquire the competence. Rahmawati et al. (2017) establish that many students cannot achieve certain standards or criteria that may cause stress. Consequently, students may exhibit dysfunctional behaviors or actions. Besides, selfish or self-centered students are more likely to commit dysfunctional behaviors because they, intentionally or unintentionally, are depressed and seek to meet the requirements by any means regardless of the ethical considerations. Dysfunctional behaviors are unethical. Both men and women have considerations affected by pressure and internal awareness factors and based on clear thoughts on their behaviors (Abdullah, 2003). Unethical behaviors are often associated with Machiavellian attitude (Rindayanti & Budiarto, 2017) as a personality dimension that reflects the degree to which lack of morals is manifested in individuals' efforts to achieve their personal interests.

Unethical behaviors contradict the professional rules and ethics stipulated in the accounting profession's integrity and objectivity principles. Accounting practitioners should be firm and honest in maintaining professional and business relations. They must not allow subjectivity, conflict of interests, and other parties' influences to affect their professional judgments (IAPI, 2008). Unethical academic behaviors include academic fraud. Regarding this issue, the fraud triangle, as a fraud theory, suggests that fraud is affected by three factors: pressure, opportunity, and rationalization (Wolfe and Hermanson, 2004). Students basically belong to future generations that will contribute to the national development by applying their acquired academic knowledge. However, media news reports academic fraud, including plagiarism, hiring others to complete the assignments, and citation dishonesty.

Lestari (https://news.okezone.com, 2014) mentions that Anggito Abimanyu, a senior lecturer and senior officer of the Ministry of Religion, resigned from his tenured position at Universitas Gajah Mada because of the plagiarism allegation against his article "Gagasan Asuransi Bencana" (Idea of Disaster Insurance) in the *Kompas* daily newspaper on February 10, 2014. His article exhibited striking similarity with Munawar Kasan and Hotbonar Sinaga's "Menggagas Asuransi Bencana" (Initiating Disaster Insurance). Another example is news reported by Kennedy & Plus (http://www.radioaustralia.net.au, 2015) indicating that several universities in Sydney were rocked by the widespread use of essay-making services by their students who pay a firm named *MyMaster* to help them complete various online assignments and tests.

Further, Lin (2013) documents several academic fraud cases. For example, Shanghai Jiaotong University found typical academic frauds in 2006 where individuals recognized others' achievements as theirs. On September 7, 2011, a professor from the Thousand Plan of Harbin Medical University was found guilty of academic fraud in his article, causing the Montreal Heart Institute Research to sack him. Next, in February 2012, a professor from Guiyang College of Traditional Chinese Medicine forged information during the review process to have favorable reviews, leading to revocation.

Zahara (2017) concludes that pressure does not significantly affect fraud, but opportunity and rationalization do. Meanwhile, Lyn (2013) observes that academic fraud in China is associated with three factors: lack of severe sanctions in the evaluation systems, excessive pursuit of personal interests, and lack of academic ethics. MacGregor (2012) finds that rationalization plays a crucial role in students' academic unreasonableness. Rationalization affects students' evaluation to justify several ambiguities that pose dilemmas of whether the actions are permissible. Students have the rationalization to justify their actions if they believe that only their peers enjoy unfair advantages. Besides, Artani and Wetra (2017) reveal that pressure felt by students, rationalization, and opportunity affect fraudulent behaviors. Similarly, Fadlilah and Aisyah (2017) demonstrate that gender affects academic fraud. In this respect, our study extends Fihandoko (2014) by adding academic environmental pressure as the moderating variable. We develop this variable by contextualizing or narrowing the environmental pressure variable. Further, this study also adds gender as the independent variable. Thus, our research differs from prior studies by adding academic environmental pressure as the moderating variable and gender as an independent variable. We use academic environmental pressure as the moderating variable to investigate how academic environmental pressure motivates students to commit academic fraud.

Based on the above arguments, our research problems are: (1) Does Machiavellian attitude positively affects students' academic fraud? (2) Do both male and female students perceive academic fraud similarly? Which gender is more likely to commit academic fraud?

(3) Does individuals' personality also affect students' academic fraud? (4) Do academic environmental pressure increase the likelihood that students commit academic fraud?

This study seeks to test 1) the effects of Machiavellian attitude, personality type, and gender on academic fraud, and 2) the effect of academic environmental pressure on the relationships between each independent variable and students' academic fraud.

This study informs higher education institutions about how Machiavellian attitude, gender, and personality type affect academic fraud as moderated by the academic environmental pressure variable. Further, our research also empirically informs future related studies. Lastly, this research also highlights the moderating role of academic environmental pressure on the relationships between Machiavellian attitude, gender, and personality type on academic fraud. The remainder of this study is organized as follows. Section 2 is a literature review and hypotheses development. Section 3 is the research method. Section 4 is a discussion. Section 5 offers our conclusions and suggestions for future research.

2. LITERATURE REVIEW

Ethical egoism theory

Egoism or selfishness defines the principles of how individuals think rationally based on their self-interests. Henry Sidgwick proposed the ethical egoism theory in 1874 through his book titled "The Methods of Ethics." According to Rachel (2004) in Sukrisno (2010), the psychological egoism theory explains that all humans' actions are based on their interests/selfishness. The ethical egoism theory emphasizes that individuals' sole objective is to protect their interests. However, this theory is silent on whether individuals have to avoid helping others. This argument is closely related to Machiavellian attitude. According to Jones and Paulhus (2009) and Ayan et al. (2013), Machiavellianism is a propensity to direct others' behavior through manipulation and control for personal gains, while this tendency is based on the most advantageous options.

Machiavellian Attitude

Simić et al. (2015) argue that Machiavellian individuals are less moral and are determined to achieve their personal objectives. As a personality dimension, Machiavellianism reflects a lack of morals as manifested by individuals' efforts to achieve their personal interests. Machiavellian attitude is also considered selfishness, where individuals are willing to commit unethical actions for their personal interests. Even Simić, Matović, dan Stojković label these actions as immoral. Fihandoko (2014) suggests that Machiavellian attitude negatively affects the accounting profession because Machiavellian individuals tend to be manipulative.

According to Thomas et al. (2011), Machiavellian attitude is less committed and ideological, less attentive to others, and lack interpersonal relations. Similarly, Machiavellian individuals tend to have negative attitudes, including a lack of honesty and integrity in achieving their personal interests. Meanwhile, Ayan et al. (2013) identify the following characteristics of Machiavellian attitude: pragmatism, amorality, cynicism, and beliefs in manipulating others to achieve personal interests. In the current academic domain, especially at the university level, various parties likely exhibit Machiavellian attitudes. For example, Machiavellian students may commit negative actions to earn the highest grades, achieve the highest ranking in sports, or win the scientific olympiad. These students are adamant about achieving these performance levels for their personal interests (e.g., compliments,

recognition, and appreciation) through any means necessary, disregarding ethics, rules, or the interests of others, including compliments, recognition, and appreciation.

Refers to Daft (2008: 469-470), a number of studies have shown that individuals high in Machiavellianism are characterized by pragmatism, cynicism, amorality, and a belief in the utility of manipulating others to achieve personal goals. Such individuals show good activity in jobs, especially those that require negotiation skills or jobs that present them with important awards.

Gender

Gender is one of the humans' basic differences. Sexual differences affect men's and women's perceptions and attitudes in their daily lives. Suliani (2010) indicates that gender represents cultural and mental interpretations of sexual differences and relationships between men and women. Gender differences lead to different sensitivities toward ethics and conformity between these two genders. Prior studies also examine differences in ethical actions between men and women, including those related to ethical dilemmas (when individuals are confronted with situations that demand ethical behavior).

Specifically, Khazanchi (1995) concludes that in terms of 'degree of unethicalness,' men and women exhibit relatively low unethical behaviors. However, in several instruments (e.g., integrity, disclosure, and conflict of interest), women can identify unethical behaviors better than men while women do not have significantly higher scores in other instruments (social responsibility, accountability, privacy protection, and personal conduct) than men. Further, Steffensmeier and Allan (1996) in Torgler and Valev (2010) analyze the role of gender in corruption and tax evasion. They underscore that gender differences mainly lie in cognitive, emotional, biological, and psychological behaviors. Their empirical evidence also indicates that men and women have different approaches to problem-solving. Theoretically, it is predicted that women are less likely to commit crimes than men in certain situations. However, they also mention that women with greater opportunities are more likely to commit theft and forgery. Meanwhile, the gender variable is likely more stable than other variables such as race, age, and social stratification.

Personality type

Personality type represent humans' social element that reflects their certain behaviors (Robbins & Judge, 2017). Baharudin et al. (2015) reveal that restless, competitive, impatient, ambitious, perfectionist, and assertive individuals exhibit an A-type personality. Meanwhile, individuals with a B-type personality tend to be more relaxed, less restless, less ambitious, less assertive, and more patient. Personality type likely affects fraudulent behaviors, and individuals with an A-type personality tend to prioritize performance (grades, championship, or rewards). They focus more on issues that fall behind their expectations and are willing to correct others' or peers' mistakes openly. In particular, students with an A-type personality always search for ways for each of their problems. Conversely, students with a B-type personality tend to be more relax and less competition-oriented. They are more patient in dealing with their fellow students when having problems, more likely to comply with existing rules, and less willing to commit fraud.

Sutanto and Djohan (2006) demonstrate that individuals with an A-type personality will position themselves in conditions with greater pressures. They tend to prioritize quantity over quality. Conversely, individuals with a B-type personality are more relaxed, less restless, and more eager to find fun and joy in their works.

Academic Fraud

Albrecht and Zimbelman (2009:34) define opportunity as a condition that enables individuals to commit fraud because fraudsters consider the condition safe, and their fraudulent behaviors will not be detected. Besides, Hendricks et al. (2011) also reveal that academic fraud is motivated by students' lack of perception, motivation, and ability to acknowledge their fraud. Academic fraud includes lying to lecturers, plagiarism, giving non-verbal signals during the tests, giving answers through SMS or message applications, and exchanging answers. Lin (2013) argues that three factors motivate academic fraud: less deterrent punishments, excessive pursuit of personal interests, and lack of ethics in academic activities.

Fraudulent actions are often associated with the fraud triangle theory that consists of pressure, rationalization, and opportunity. Pressure refers to situations that increase individuals' likelihood of committing fraud. Individuals under pressure tend to feel uneasy and seek ways to resolve their problems, such as by committing fraud. These options are also backed up by their rationalizations, triggered by their perception of other fraudsters. Individuals will be arguably affected by their environments when making decisions. Specifically, they will evaluate their surroundings' customs and cultures. Individuals who are more frequently exposed to fraudulent behaviors are more likely to consider fraud similar to other habits and be motivated to commit fraud (Santoso & Yanti, 2015). Besides pressure and rationalization, opportunity also facilitates fraudulent behaviors. Wolfe and Hermanson (2004) suggest that opportunity should be supplemented with the ability to commit fraud. These four fraud factors refine the fraud triangle theory.

Academic Environmental Pressures

Cheng et al. (1993) document that academic environmental pressure affects students' stress levels. Academic pressure includes family, educational demands, financial burden, competition, and study-related pressures. Tunjungsari (2011) also mentions several stressors, including heavy workloads, tight deadlines, lack of supervision or directions, insufficient responsibility-related authority, and value conflicts and differences between superiors and employees. In this respect, stressors in the occupational environment are arguably similar to those in the academic/ educational environments, especially for students who prepare themselves to enter their future professions. For example, students may have heavy academic loads due to assignments given by their lecturers. They are sometimes required to complete the assignments in short times or immediately without adequate supervision or directions.

Additionally, Marie (2016) also reveals that, according to survey results, current students are more prone to depression. Pressure and assignments affect their mental and physical health. According to the National College Health Assessment's 2014 study, about 33% of the surveyed students have suffered depression for about one year. Another research also concludes that about 20% of students undergo counseling and treatments due to academic pressures. Even 9% of the students have planned to commit suicide because of the inability to bear the academic pressures, especially the increasing demand to achieve academic success. Besides, financial burden and parental pressure motivate students to force themselves to graduate timely and achieve better grades.

Hypothesis Development

The effect of machiavellian attitude on academic fraud behaviors

Machiavellian attitude affects academic fraud behavior because students with greater Mach IV are more likely to commit academic fraud. Ayan et al. (2013) indicate that Machiavellian

individuals exhibit the following characteristics: pragmatism, immorality, cynicism, and belief in manipulating others to achieve personal interests. Highly Machiavellian individuals tend to perceive that manipulative and unethical behaviors are normal and justified to achieve their objectives. Fihandoko (2014) also demonstrates that Machiavellian attitude positively affects academic fraud.

H1: Machiavellian attitude positively affects academic fraud behaviors.

The effect of gender on academic fraud behaviors

Gender affects men's and women's perceptions and attitudes in their daily lives. Attitudes refer to individuals' responses or reactions toward certain events. This study analyzes the role of the gender variable in explaining whether individuals will have different attitudes due to their perceptions of academic fraud behaviors and academic environmental pressures. Steffensmeier and Allan (1996) in Torgler and Valev (2010) observe that women are arguably more capable of abstaining from crime than men. Khazanchi (1995) also documents that women have greater evaluation levels on unethical behaviors than men. Further, Widyawati and Sukhemi (2017) reveal that men tend to seek success, even by violating rules, while women tend to be more compliant and determined to complete their tasks.

H2: Gender affects academic fraud behaviors.

The effect of personality type on academic fraud behaviors

Sutanto and Djohan (2006) demonstrate that individuals with an A-type personality tend to position themselves in high-pressure environments. Conversely, those with a B-type personality are more relaxed and calm in completing their works. Hence, individuals can make decisions ethically or unethically according to dilemmas faced by them. Academically, students with an A-type personality are more likely to commit academic fraud because they decide to be in environments with high academic pressures.

H3: Personality type affects academic fraud behaviors.

The moderating role of academic environmental pressure on the effects of Machiavellian attitude, gender, and personality type on academic fraud behaviors.

Cheng et al. (1993) define academic environmental pressure as the factors that affect students' stress levels. Students who experience greater stresses from their academic environments are more likely to commit fraud. Misra and Castillo (2004) conclude that academic environmental pressure significantly affects academic fraud. Their findings are supported by Fihandoko (2014) who documents that environmental pressure positively affects academic fraud. We predict that the academic environmental pressure variable moderates (strengthens/ weakens) the effects of the independent variables on the dependent variable.

H4a: Academic environmental pressure moderates the effect of Machiavellian attitude on academic fraud behavior.

H4b: Academic environmental pressure moderates the effect of gender on academic fraud behavior.

H4c: Academic environmental pressure moderates the effect of personality type on academic fraud behavior.

3. RESEARCH METHOD

Population and sampling technique

We perform this study at Satya Wacana Christian University's Faculty of Economics and Business, using its accounting students as research subjects. The undergraduate accounting program of this faculty has been accredited A (excellent in the new accreditation grades) – the highest accreditation grade in the Indonesian higher education accreditation system. Excellent learning quality must promote honesty and integrity to generate morally prepared graduates to enter the workforce. Our study sample consists of 979 students from the 2017-2018 academic year. This study selects the sample using convenience sampling (based on ease of collecting data) as a purposive-judgment sampling method. Our research subjects also have to exhibit a specific criterion, namely having committed academic fraud at least once during their academic years. This study determines the sample number using the following Slovin's formula (Tunjungsari, 2011):

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{979}{1 + 979(0.1)^2}$$

$$n = 90.73 \approx 91$$

where :

n : sample number
 N : population number
 e : tolerable sampling error (10%)

Hence, the formula indicates that the sample number must be at least 91 respondents.

Data type and source

This study uses primary quantitative data by distributing the questionnaires to the students. The questionnaires aim to collect the data on the effects of the independent variables on academic fraud behavior with academic environmental pressure as the moderating variable. We distribute the questionnaires directly to the classes and explain how to fill in the questionnaires to the students. The questionnaires consist of five parts: questions on respondents' personal data (including gender), questions to measure Machiavellian attitude, questions on perceived personality type, questions to measure perceived academic fraud, and academic environmental pressures. We use a 5-point Likert scale for each instrument as the measurement basis, ranging from 1 (completely disagree) to 5 (completely agree) (Sugiyono, 2006).

We measure each instrument depending on the variable types. For the Machiavellian variable, higher points implied that the respondents exhibited greater Machiavellian attitudes. The gender variable indicated whether men and women exhibit a greater tendency to commit academic fraud. Next, greater academic environmental pressure implies that respondents perceive that their learning environments put higher academic pressure on them. The academic fraud behavior variable measures students' perception of academic fraud. Respondents who score higher for this variable are more likely to rationalize their academic fraud behavior.

Table 1 Research Variables

	Variable	Measurement results
Independent Variable	Machiavellian attitude	1–33 point (Low Mach) 34–66 point (Normal / Balance) 67–100 point (High Mach)
	Gender	Dummy variable, 0 = male, 1 = female
	Personality type	If number A > B = Type A If number B > A = Type B
Dependent Variable	Academic Fraud	0-10 = Very Low 11-20 = Low 21-30 = Medium 31-40 = High 41-50 = Very High
Moderating Variable	Academic environmental pressure	0-10 = Very Low 11-20 = Low 21-30 = Medium 31-40 = High 41-50 = Very High

Table 2 Empirical Indicators

Variable	Definition	Empirical Indicators
Machiavellian attitude	Ayan, Unsar, & Kahraman (2013), Daft (2008), Machiavellian is manipulating others to achieve personal interests	1. Pragmatism 2. Amorality 3. Cynicism 4. Manipulative
Personality type	Robbins & Judge, (2017); Baharudin, Kurdi, & Lionardo, (2015), Personality type represent humans' social element that reflects their certain behaviors	1. Patient 2. Ambitious 3. Assertive 4. perfectionist 5. Relaxed
Gender	Ferijani and Mareta (2003), Suliani (2010) gender represents cultural and mental interpretations of sexual differences and relationships between men and women, Gender differences lead to different sensitivities toward ethics and conformity between these two genders.	1. Sensitivities toward ethics 2. Level of compliance with regulations
Academic Fraud	Hendricks, Young-Jones, & Foutch (2011) academic fraud is motivated by students' lack of perception, motivation, and ability to acknowledge their fraud	1. Lying to lecturers 2. Plagiarism 3. Giving non-verbal signals during the tests, 4. Giving answers through SMS or message applications 5. Exchanging answers
Academic environmental pressure	Academic environmental pressures are factors that affect students' stress levels, includes family, educational demands, financial burden, competition, and study-	1. Family 2. Educational demands 3. Financial burden 4. Competition 5. Study-related pressures

related pressures. (Cheng, Leong, dan Geist, 1993)

Data Analysis Technique

We use the multiple regression technique to analyze the data with the following model :

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e$$

where:

Y : academic fraud behavior
 b : regression coefficients
 X₁ : Machiavellian attitude
 X₂ : gender
 X₃ : personality type
 e : error

Due to the presence of a moderating variable, we run the test of the absolute difference value. This test regresses the absolute differences between the standardized independent and moderating variables. The following are the regression formula for the test of absolute difference value:

$$Y = a + (b_1ZX_1 + b_2Zz + b_3|ZX_1 - Zz|) + e \dots \dots \dots (1)$$

$$Y = a + (b_4X_2 + b_5Zz + b_6|X_2 - Zz|) + e \dots \dots \dots (2)$$

$$Y = a + (b_7X_3 + b_8Zz + b_9|X_3 - Zz|) + e \dots \dots \dots (3)$$

where:

Y : academic fraud behavior
 b₁ – b₉ : the regression coefficients of X variables
 ZX₁ : Machiavellian attitude (standardized)
 X₂ : gender
 X₃ : personality type
 Zz : academic environmental pressure(standardized)
 |(Z)X₁ – Zz| : the interaction between the absolute differences of the standardized independent variable and standardized moderating variable
 e : error

4. RESULTS AND DISCUSSIONS

Respondents' Characteristics

Our research sample is the active students of the Faculty of Economics and Business, Satya Wacana Christian University in the 2017-2018 academic year who have committed academic fraud at least once in their academic years. To anticipate the possibility of incomplete data, we initially distribute 101 questionnaires (more than the required minimum sample size of 91). Table 3 below presents respondents' gender.

Table 3 informs that female respondents outnumber male ones (48 students or 52.7% of total respondents). However, these figures do not necessarily imply that female students are more academically depressed or more likely to commit academic fraud than male students. Our analysis also reveals that respondents with a B-type personality (55 students or

60.4% of total respondents) exceed those with an A-type personality (36 students or 39.6% of total respondents).

Table 3 Respondents' general characteristics based on sex

NO	Sex	Respondent Number	Percentage
1	Male	43	47.3%
2	Female	48	52.7%
	Total	91	100%

Source: primary data (processed), 2018

Data Processing Technique

Descriptive Statistics

Table 4 displays the descriptive statistics of our research variables.

Table 4 Descriptive Statistics

Variable	No	Total Score	Average Score
Machiavellian attitude	X1-X20	232,05	2,55
Academic environmental pressures	TL1-TL10	295,90	3,25
Academic fraud behavior	TK1-TK10	287,10	3,15

Source: primary data (processed), 2018

Table 4 indicates that the mean value of the Machiavellian attitude variable is 2.55. Because this variable's possible answer range is 1-5, the score can be classified into three categories (1-2.33= low Mach, 2.34-3.67= normal Mach, and 3.68-5=high Mach). The mean score of 2.55 suggests that, on average, our respondents fall within the normal Mach level. Normal Mach implies that the respondents exhibit moderate tendencies to act manipulative, cynically, or unethically.

Table 4 also informs that the average scores of the academic environmental pressure and academic fraud behavior variables are 3.25 and 3.15, respectively. Both variables have a possible answer range of 1-5. Dividing the range into five categories will result in the following groups: very low (1-1.80), low (1.81-2.60), moderate (2.61-3.40), high (3.41-4.20), and very high (4.21-5). Hence, our respondents exhibit moderate scores for both variables (academic environmental pressure and academic fraud behavior) because the mean scores of both variables fall within the 2.61 – 3.40 range. In other words, the respondents are uncertain about whether they are under pressure due to academic requirements and whether they commit fraud in their academic processes.

Validity and Reliability Tests

The validity test values $>$ r-table indicate the validity of our research instruments. The research instruments are considered reliable for the reliability test when Cronbach's alpha value is >0.6 . Based on these criteria, the statements for the Machiavellian attitude and academic fraud behavior are considered valid and reliable because the r-statistic $>$ r-table for all indicators and the Cronbach's alpha > 0.6 .

Table 5 Validity and Reliability Test

Variable	Statement	R	R table	Validity	Cronbach alpha if item is deleted*	Cronbach alpha if item is deleted**
Academic environmental pressure	TL1	0,4692	0.2039	VALID	0,491	0,523
	TL2	0,2206	0.2039	VALID	0,551	0,604
	TL3	0,6164	0.2039	VALID	0,443	0,498
	TL4	0,5514	0.2039	VALID	0,467	0,507
	TL5	0,2510	0.2039	VALID	0,546	0,593
	TL6	0,3773	0.2039	VALID	0,533	0,601
	TL7	0,4855	0.2039	VALID	0,491	0,564
	TL8	0,4899	0.2039	VALID	0,492	0,542
	TL9	0,6046	0.2039	VALID	0,447	0,49
	TL10	0,2937	0.2039	VALID	0,58	DELETED

* table results on the first test

** table results on the second test

Table 5 demonstrates that all statements in the academic environmental pressure variable are valid for each indicator. However, we have to run the reliability tests three times to generate Cronbach's alpha of 0.604 due to unreliable indicators.

Classical Assumption Tests

The classical assumption tests consist of normality, multicollinearity, and heteroscedasticity tests. Our normality test indicates that the data is normally distributed because the Kolmogorov-Smirnov (K-S) test results in the significance value 0.589 (> 0.05).

Table 6 Multicollinearity test among the independent variables

Variable	Tolerance	VIF
Personality type	0,987	1,013
Gender	0,963	1,039
Machiavellianism	0,956	1,046
Academic environmental pressure	0,999	1,001

Dependent variable: academic fraud

Source: primary data (processed), 2018

Table 6 above informs that the VIF values of all variables are below 10, indicating no serious multicollinearity between the independent variables.

Table 7 indicates that the test of absolute difference value mitigates the multicollinearity problem between the independent and moderating variables ($VIF < 10$). The heteroskedasticity test with the ln (natural logarithmic) transformation method suggests that the gender, personality type, and Machiavellian attitude do not exhibit the heteroskedasticity problem due to the significant value > 0.05 .

Table 7 Multicollinearity Test with the Test of Absolute Difference Value

Variable	Tolerance	VIF
Standardized Machiavellian attitude (ZX ₁)	0.993	1.007
Standardized academic environmental pressure(Zz)	0.999	1.001
ZX ₁ – Zz	0.993	1.007

Dependent variable: Academic fraud behavior
Source: primary data (processed), 2018

Hypothesis testing

T-test

Table 8 below presents the results of the t-test.

Table 8 Results of t-test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	15.400	4.642		3.318	.001		
Personality type	-1.265	.928	-.124	-1.363	.177	.993	1.007
Gender	3.298	.922	.331	3.576	.001	.964	1.037
Machiavellian attitude	.217	.063	.319	3.442	.001	.960	1.042
Academic Environmental Pressures	.131	.103	.116	1.282	.203	1.000	1.000

a. Dependent Variable: Academic fraud behavior

Source: primary data (processed), 2018

Table 8 above indicates that not all coefficients have positive values. Specifically, the first hypothesis that predicts that Machiavellian attitude positively affects academic fraud behavior is empirically supported (sig. value = 0.001). Next, the second variable (the effect of gender on academic fraud behavior) is also empirically supported (sig. value = 0.001). However, personality type does not significantly affect academic fraud behavior (sig. value = 0.177).

The regression test for the moderating variable shows that the academic environmental variable does not moderate the relationships between the independent and dependent variables. However, its coefficient value is positive, implying that greater academic environmental pressure causes students with Machiavellian attitude to exhibit a greater tendency to commit academic fraud.

The academic environmental pressure also does not moderate the relationship between gender and academic fraud behavior. The coefficient value of the interaction is negative, suggesting that greater academic environmental pressure causes female students to

exhibit a greater tendency to commit fraud. In other words, female students are more likely to commit fraud due to increased academic environment pressures.

Besides, academic environmental pressure also cannot moderate the relationship between personality type and academic fraud behavior. However, the coefficient value of the interaction is negative, indicating that greater academic environmental pressure causes students with an A-type personality to exhibit a greater tendency to commit fraud. In other words, students with an A-type personality are more likely to commit fraud due to increased academic environmental pressures.

Discussions

The test on the first hypothesis (H1) shows that Machiavellian attitude affects academic fraud behavior. Hence, students with greater Machiavellian attitude are more likely to commit academic fraud behavior. Our finding supports Fihandoko (2014) who find that Machiavellian attitude positively affects academic fraud behavior. Machiavellian attitude includes cynical, pragmatic, and manipulative behaviors for personal interests. Our result is also in line with Henry Sidgwick's ethical egoism theory that claims that individuals' sole objective is pursuing their self-interests. Next, the moderation hypothesis (H4a) is not empirically supported. Thus, academic environmental pressure does not moderate the effect of Machiavellian attitude on academic fraud behavior. However, the coefficient score for the interaction term is positive, suggesting that students with more Machiavellian attitudes are more likely to commit academic fraud under greater academic environmental pressures.

The test for the second hypothesis (H2) demonstrates that gender significantly affects academic fraud behavior. The coefficient score of 3.298 suggests a positive direction. Hence, male students are more likely to commit academic fraud behavior. This finding is consistent with Widyawati and Sukhemi (2017) who find that men search for success, including (if necessary) by violating the rules. Conversely, women are more compliant and determined. Next, the test for the moderation hypothesis (H4b) reveals that academic environmental pressure does not moderate the effect of gender on academic fraud behavior. The coefficient value of the interaction term is negative, indicating that female students are more likely to commit fraud under greater academic environmental pressure. Our result is contrary to Khazanchi (1995) and Widyawati and Sukhemi (2017) who find that women are more compliant in completing their tasks and more ethical than men.

The third hypothesis (H3) test shows that personality type does not affect academic fraud behavior. However, the coefficient value is negative, implying that students with an A-type personality are more likely to commit academic fraud. This finding is consistent with Sutanto and Djohan (2006) who document that individuals with an A-type personality tend to position themselves in high-pressure environments. Conversely, individuals with a B-type personality are more relaxed and calm in performing their tasks. The test of the moderation variable (H4c) implies that academic environmental pressure does not moderate the effect of personality type on academic fraud behavior. The interaction term's negative coefficient indicates that students with an A-type personality are more likely to commit fraud under greater academic environmental pressure.

5. CONCLUSION, IMPLICATION, AND LIMITATIONS

Our empirical analysis leads to the following conclusions. First, Machiavellian attitude positively affects academic fraud. Second, gender positively affects academic fraud. Third,

personality type does not affect academic fraud. Fourth, academic environmental pressure cannot moderate the effects of Machiavellianism, gender, and personality type on academic fraud.

This study is subject to the following caveats. First, our sample is only students from the Faculty of Economics and Business, Satya Wacana Christian University. Hence, the generalizability of our findings is limited. Second, we have to delete three unreliable academic environmental pressure variable indicators to generate Cronbach's alpha greater than 0.6. Third, we have to run an additional test (the test of absolute difference value) to qualify for the classical assumption test (the multicollinearity test) and the moderated regression test. Fourth, the academic environmental pressure variable does not moderate the relationships between the independent and dependent variables.

Based on our findings, this study proposes the following suggestions. First, universities should strengthen their monitoring activities and offer regular counseling about the importance of honesty in academic and professional activities. Such actions will arguably motivate students to appreciate honesty in their academic and professional life. Second, future studies need to add other variables and extend the research object to represent the existing situations better.

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