



“Does Internet Literacy Facilitate Academic Dishonesty among Malaysian Undergraduate Students?” The Malaysian evidence

¹Ramlan Mustapha, PhD, ²Zulkifli Mat Som, ³Noraniza Md Jani & ⁴Mazdaruddin Isa

^{1,4}Institute of Teacher Education, Tengku Ampuan Afzan Campus Malaysia

²Institute of Teacher Education, Cyberjaya Malaysia

³Technical University of Malaysia, Malacca

Article Info

Received:

18 February 2019

Accepted:

25 February 2019

Publish

15 April 2019

E-mail address:

*corresponding Author :

*mujahidpahang@gmail.com

zulkifli.matsom@gmail.com

nizajani1973@gmail.com

Abstract

Academic dishonesty is becoming a threat to the academic world across the globe. Therefore, this study will examine the empirical and critical phenomena of academic dishonesty in the context of Malaysian undergraduated students. This research proposes a framework based on a modified Theory of Planned Behaviour by including internet literacy as an additional predictor. The quantitative method based on a survey applied in this paper. The primary data was collected from 300 Malaysian undergraduate students of selected public universities in Malaysia. The study extended a previous study and conducted the same discussion using convenience sampling. The internet literacy represented additional independent variables alongside attitude, subjective norm and perceived behaviour control, while behaviour intention represented the dependent variable. In this investigation, the relationship had been analysed using Smart-PLS 2.0 Beta. Three measured variables (attitude, internet literacy and perceived behaviour control) were found to have a positive relationship with the intentions to cheat among Malaysian undergraduated students. This investigation contributes to the literature of current Muslim academic dishonesty behavior and the factors that affect such behavior. Finally, implications for stakeholders, educators and higher education policy makers are discussed, and suggestions for further research are proposed.

Keyword: Academic Dishonesty, internet literacy, Malaysian Undergraduated students, Theory of Planned Behaviour, cheating

Introduction

Academic dishonesty has become a challenge and a threat to the integrity of the academic world. It is becoming a serious issue and has recently increased significantly (Teixeira & Rocha, 2010; Kalhori, 2014). In higher education, academic dishonesty is constantly increasing; thus increasing concerns over the issue and drawing more toward it (Hsiao & Yang, 2011). Mc Cabe (2005) reported that nearly 70% of high school students has perform academic dishonesty at least once in their studies. Lin & Wen (2007) in their investigation of 2,068 students in Taiwan reported that 61.7% occurs among students in Asia, particularly in Taiwan. Meanwhile, Tamara & Eric, (2006) reported that 80% to 90% of the students admitted to plagiarism, cheating and academic dishonesty during their studies. However, Demoera & Jindrova (2013) reported that the Center



for Academic Integrity (CAI) in their study found that over 75% of high school students committed academic dishonesty at least once in their studies. Survey conducted by the Josephian Institutes of Ethics in California, found 72% of high school students admitting to academic dishonesty such as plagiarism, cheating in examinations and so on (Koul, 2012).

The issue not only threatens academic integrity, but also reflects the ethics and morals of current students. As Hsiao & Yang (2011) reported that unethical behaviour is significantly correlated to the tendency or desire of committing academic dishonesty among students of colleges and universities. Moten (2014) reported in a study that academic dishonesty levels among Muslim students is significantly high. Accordingly, this study will investigate the influence of internet literacy on the intention to commit academic dishonesty among Muslim students in Malaysia higher education. Therefore, this research will study the aspects of internet literacy and its impacts on the issue of academic dishonesty. The theory of planned behaviour to be fundamental in the formation of hypotheses and modelling.

Academic dishonesty in the context of higher education in Malaysia

As a developed nation, Malaysia needs to spearhead academic progress that is competitive with other countries. Issues involving academic dishonesty should be taken seriously for the country's progress in line with the rapid development of academic integrity. Awareness of the issue grew after it was raised in parliament in October 26, 2009. Harris (2011) reported that the issue of plagiarism has spread widely in the academic world after academicians at a local university were found to have committed plagiarism in their writing. Quah, Stewart & Lee (2012) reported there was a professor who has plagiarized his doctorate degree. His writing contained information from the website of Harvard University and Albion College in the United States. In investigation found that there were 64 printed pages matching the information found in the institutions websites. Additionally, there are also cases involving academicians performed plagiarism in their written article in some educational institutions (Moten, 2014).

No doubt that academic dishonesty activities occurs extensively in the context of higher education system of Malaysia. Nurshiha & Nurliyana (2013) found that 82% of students had committed academic dishonesty such as plagiarisme and cheating in academic writing. Ramlan, Zaharah and Saedah (2016) found that nearly 62% of Muslim students admitted to academic dishonesty in 2015 and 56% admitted to academic dishonesty in 2014. Meanwhile, Latisha & Surina (2012) reported in their survey that peer pressure and collective culture correlate impacts on academic cheating among student in Malaysia.

Academic cheating and internet literacy

The explosion of information technology has significant impacts on the academic world. Access to information has become easier and unlimited. However, technology is often misused by students in looking for a shortcut to complete academic assignments with plagiarism from online and other digital resources. The negative impact of information technology came when students used the internet to plagiarize in academic writing (Byrne & Thrusell, 2013). Amenities in the dissemination of information technology facilitated students to “copy & paste” or “information’s editing” thus spreading widely the problem of academic cheating in academic environment (Howard, Serviss & Rodrigue, 2010). Recently, the emergence of the Internet as a source of information providing, and ease of access to the information paves the occurrence of academic



dishonesty especially in higher education where the issue has become a major topic of concern (Sicak & Arslan, 2016).

ICT and internet knowledge is an advantage to the students in their learning process, but the understanding and expertise gives them access to do academic plagiarism (Underwood, 2007; Thrusell, Byrne & Hassan, 2013). Wilkinson (2009) notes that most of the students and academic staffs know and are aware of the potential of information technology leading to academic cheating. In addition, the lack of knowledge on the aspects of plagiarism is also cause of academic cheating among students (Thrusell et al, 2013). However, students which not have extensive knowledge of a subject are likely to commit plagiarism (Barret & Malcolm, 2006; Thrusell et al.2013). Recent research illustrates that the issue of academic dishonesty is at a worrying level. The findings show that more than half of university students are involved in plagiarism (Thrusell et al.2013; Demeora et al, 2013).

Thus, this study considered internet literacy to predict cheating behaviours of student in higher education. The study was undertaken in some public universities which provides students with internet access and includes features such as the distribution of learning materials, achieved academic resources. Therefore, this study was able to give an overview of phenomenon of academic dishonesty in the context of Malaysian undergraduated students.

Literature Review

Recently, academic cheating has increased significantly (Lewellyn & Rodriguez, 2015; Jurdi, Hage & Chow, 2011). Lewellyn & Rodriguez (2015) reported that, according to the 1960 statistic's, the rates of academic dishonesty in the United States was 39%, this increased drastically in 1993 to a rate of 64%. Olafson, Schraw, Nadelson, Nadelson & Kehrwald (2013) reported that the recent academic dishonesty statistic shows high rates of 54.1% to 70.4%. Simkin & McLeod (2010) found even higher rates of academic dishonesty at the level of 60% to 86%. Other studies showed that internet technologies affect the growing problem of academic dishonesty. Jones (2011) assessed 48 students and revealed two reasons that led to this problem, the first was grade of the students (92%), and the second was that the students did not have enough time to complete the assignment (75%).

Activities involving academic dishonesty among Muslim students increased (Vlaardingerbroek, Shehab dan Alameh, 2011). Vlaardingerbroek et al. (2011) reported that 59% of students make academic dishonesty in examinations at the national level. However, Hadijah, Norashikin, Nusrah & Fauziah (2013) in their research of 610 students in Malaysian private universities showed dishonest behaviour occurs because lecturers do not warn students about ethical misconduct. The results also indicated task factors that are not relevant to the subject being taught and peer influence to be among the causes of the academic dishonesty. Nurshiha & Nurliyana (2013) recorded that more than 82% of the students involved in academic dishonesty are from a public universities in Malaysia. Ramlan, Zaharah & Saedah (2016) in their comparative study showed that there is an increased in percentage of academic dishonesty, 55% of Muslim students were involved in academic dishonesty in 2014 and 63% of the students were involved in the following year.

Therefore, this matter should be taken seriously by all parties, and ensure that this phenomenon does not impair integrity and damage the culture of ethics in education. The increase in academic dishonesty must be resolved systematically and should be accompanied by



improvements in the education system, such that it does not impair the educational institutions. Recommendations and proposed alternatives should be taken into account in all aspects, including the development of ethics, self-awareness and spiritual development in raising awareness of integrity among students and academicians.

Theory of Planned Behaviour (Ajzen, 1991)

Planned behavior theory was founded (Ajzen, 1991). It is a model of psychological behavioral anchored on the intension behind human behavior. Theory of planned behavior (TPB) is capable of predicting a good or bad intention to perform in action any human behavior (Hsiao & Yang, 2011; Harding, Mayheaw, Finelli & Carpenter, 2007). This theory is an extension of the theory of reasoned action founded by Ajzen 1971, which is widely used in predicting and explaining human behaviors in various fields of study. According to this theory, human behaviour will include an intention, meanwhile an intension become a proxy for the occurrence of the behaviour.

TPB has three main variables, these are attitude, subjective norm and perceived behaviour control. The first variable an attitude, is a reflective action against the intentions of one's feelings, whether good or bad behaviour (Hsiao et al, 2011; Ajzen, 1991). The second variable refers to the influence of subjective norms around or social acquaintances (family, siblings, friends, etc.) that affect the action of an individual (Ajzen, 1991; Harding et al, 2007; Hsiao et al, 2011 dan Alleyne & Philip, 2011). While the third variable of the theory is perceived behaviour control. Perceived behavior control is a reaction or the reflective of an individual's past experience, barriers, opportunities, time, abilities and skills to be able to control a behaviour (Stone, Jawahar & Kisamore, 2010; Ajzen, 1991; Harding et al, 2007; Hsiao et al, 2011 dan Alleyne & Philip, 2011).

TPB is a purposeful and dominant theory in studies involving academic dishonesty. Study that carried out meta-analysis shows that all variable of TPB support a specific theory in describing the phenomenon of academic dishonesty (Whitley, 1998; Harding, Mayhew & Carpenter, 2007). According to Whitley (1998) students who have a good attitude are more likely to do things that deviate compared to students of the opposite attitude. In addition, students who have an environmental impact (subjective norm), such as family, friends and others will tend to perform deviant behavior. However students who are resilient and of high self-nature are able to withstand the requirements of deviate behaviour such as academic dishonesty. Ajzen (1991) support this theory and states the theory is accurate in predicting the behaviour of academic dishonesty and academic cheating.

Therefore, this study will use intention as a dependent variable, use attitude, subjective norm and perceived behaviour control as independent variables and use internet literacy as an additional predictor. Relatively, the study will examine the effect of the additional variables (internet literacy) on the intention of committing academic dishonesty within the scope of Muslim students in Malaysia.

Research framework and hypothesis

Based on the literature review, the researchers used the theory of planned behaviour (Ajzen 1991) as the theoretical basis of the study. The researchers used an additional aspects of internet literacy in the relationship between the variables to examine its effect on the intention to commit academic dishonesty among undergraduate students.. There are a few studies that examine the

relationship between the aspects of ICT literacy but there is no studies that was anchored on Malaysian undergraduate students. The researchers are trying to address this gap.

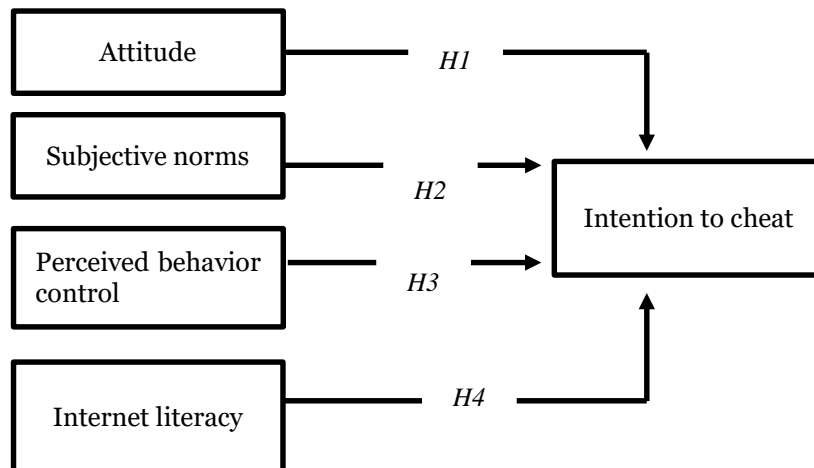


Figure 1: Proposed Research Model

Based on the theory this study showed a positive relationship between students and their intent to commit academic dishonesty. The study assumes that there is a positive relationship between the elements of attitude, subjective norm, perceived behavior control and internet literacy toward intention to cheat. Thus, this research postulates the following hypothesis:

- Ha1: Attitudes significantly affects the cheating intention of Malaysian undergraduate students.
- Ha2: Subjective norms significantly affects with the cheating intention of Malaysian undergraduate students.
- Ha3: Perceived behavior control significantly affects with the cheating intention of Malaysian undergraduate students.
- Ha4: Internet literacy significantly affects with the cheating intention of Malaysian undergraduate students.

Methodology

Basically, this study uses a quantitative method. This study is based on a combination between descriptive, inferential and correlation approaches (Frankeal, Wallen & Hyun, 2011). According to Majid (2004) research design is a technique with specific methods of obtaining the information needed to solve the problem. The study design is based on a quantitative survey approach. The advantages of this method are that information can be collected from subjects of the study, data can be collected quickly and the result can be generalized with proper and effective tools (Chua Yan Piaw, 2006). The survey method is also useful to measure opinions, attitudes and behavior (Kothari, 2012). Moreover, it's also intended to give attention to the description,

explanation and exploration of the subject that are being studied (Babbie, 1998). Therefore, the use of this method is the most appropriate approach to assess the attitudes and behaviour of Muslim students in Malaysia.

Sampling

The sample consisted of 300 Muslim students from selected public universities in Malaysia. The sample was selected using convenience sampling since the sampling frame was not acquired. Although this sampling cannot be generalized, but it is the best method to use if the researcher does not have a sampling frame (Sekaran & Bougie, 2010; Malhotra, 1999). The target populations were Malaysian undergraduate students in various faculties in selected public universities in Malaysia.

Table1: Respondents

Faculty	Number of respondent
Education	90
literature	65
Eonomic	85
Engineering	60

Instrument

This study used a questionnaire survey. The questionnaire was designed based on previous studies and literature review. Instruments to measure the construct of theory of planned behaviors such as attitude, subjective norms, perceived behavior control and intention were adapted from a previous scale used by Stones, Jawahar and Kisamore (2010). Meanwhile, the internet literacy construct adapted from Lau & Yuen (2013). Since, the instrument constructed contained 21 items for measuring five main constructs of the study which 5 items for attitude, 5 items for subjective norms, 6 items for perceived behavior control, 5 items for internet literacy and 5 item for intention. Since, this instrument is adapted from a variety of literatures, the validity and reliability analysis should be done. The process of validity will be carried out through a measurement model in PLS SEM (Confirmatory Factor Analysis). The reliability analysis carried out and the results for Cronbachs Alpha prescribed in table 1. The findings indicate that the instrument has good internal consistency.

Table 1. Reliability coefficient for sub construct

Main construct	Internal consistency (Alpha)
Attitude	0.834
Subjective norm	0.943
Perceived Behavior Control	0.908
Internet Literacy	0.835
Intention	0.645



Data analysis

This study used statistical methods using Partial Least Square (PLS SEM) version 2.0 beta. When the research is the expanding of an existing structural model, then a suitable method is VB SEM (variance based SEM) (Hair, Ringle & Sartsdet, 2011; Hair, Hult, Ringle & Sarstedt, 2014).

Data screening procedure

The missing data and outliers analysis procedure was accessed before model measurement and structural model analysis were carried out. Results show that there were 4 missing data found. We use Estimation maximization method (EM) for analyzing missing value. This method was chosen because it is more accurate and consistent than the listwist deletion (Ramayah, Lee & Lim, 2012; Graham, Hofer, Donaldson, McKinnon & Schaffer, 1997). Meanwhile, 4 cases were identified as extreme outliers and removed by using case wise diagnostic technique. This procedure was carried out to ensure that were not further effects on the data analysis.

Results and Discussion

Respondent background

The respondents were comprised 300 undergraduate Undergraduate students in various field of study from selected public universities in Malaysia. A full analysis of the respondent profile is shown in the following table:

Table2: Gender

<i>Demographic</i>		<i>No of respondent</i>	<i>percentage</i>
Gender	Male	125	47%
	Female	175	53%

n= 300

Table 2 shows the distribution of respondents' gender data. 47% of respondents were male while 53% of respondents were female.

Table: 3 Field of the study

<i>field of the study</i>		<i>Number</i>	
<i>percentage</i>			
faculty	Education	90	27%
	Literature	65	19%
	Economic	85	26%
	Engineering	60	18%

n= 300

Table 3 indicates the respondents field of study. A total of 90 (27%) respondents were students of the faculty of Education. In addition, 65 (19%) respondents were from the faculty of Literature, 85 (28.6%) of the Faculty of Economics and 67 respondents (18%) students of Engineering faculty.

The Measurement model (validity)

Convergent validity

Table 4 Measurement model (Factor loading, Average of Variance Extracted (AVE), composite reliability & Cronbachs Alpha)

Construct	item	Loading	AVE	Composite reliability	Cronbach alpha
Attitude	ATT1	0.8635			
	ATT2	0.8978	0.7492	0.8995	0.8335
	ATT3	0.8342			
S.Norms	NORM1	0.9356			
	NORM2	0.7493			
	NORM3	0.8964	0.7838	0.9558	0.9438
	NORM4	0.8929			
	NORM5	0.8887			
	NORM6	0.9356			
P.B. Control	PBC1	0.8674			
	PBC2	0.8411			
	PBC3	0.8518	0.7316	0.9315	0.9083
	PBC4	0.8978			
	PBC5	0.8162			
ICT literacy	ICL1	0.7454			
	ICL2	0.7468			
	ICL3	0.737	0.6052	0.8842	0.8381
	ICL4	0.8179			
	ICL5	0.8367			
Intention	INT1	0.6088			
	INT2	0.6794			
	INT3	0.7167	0.5796	0.7855	0.6434
	INT5	0.7566			

In order to determine the validity of the construct , measurement model (CFA) in Smart PLS, parameters such as individual item loading, AVE, and composite reliability need to be accessed using PLS olgarithm (see table 4). In this study, the researcher tested the convergent validity of the instrument by measuring the AVE as suggested by Fornell and Larcker (1981). The threshold value of AVE should be larger than 0.5 (Fornel & Larcker, 1981). Instead of AVE, convergent validity also be assessed through composite reliability. If it exceed above 0.7 achieved validity standard (Nunnally & Bernstein, 1994; Hair et al.2013. Beside the AVE and composite reliability, factor loading values above 0.7 also shows that the instrument has reached the standards convergent validity (Fornell & Larcker, 1981). In this study, the researchers tested the factor

loading, composite reliability and average variant extracted. According to Table 4, all individual item loading exceeds the value of 0.7, then it has a good value (Hair et al., 2013; Fornell et al, 1981) except two items of the attitude construct and one item in the intention construct that have values below the threshold of 0.7, then it dropped. All multi-item constructs met the guideline of average variance extracted of greater than 0.5. Additionally, all items in the composite reliability exceed the value of 0.7, (Bagozzi & Yi, 1998; Hair et al 2013).

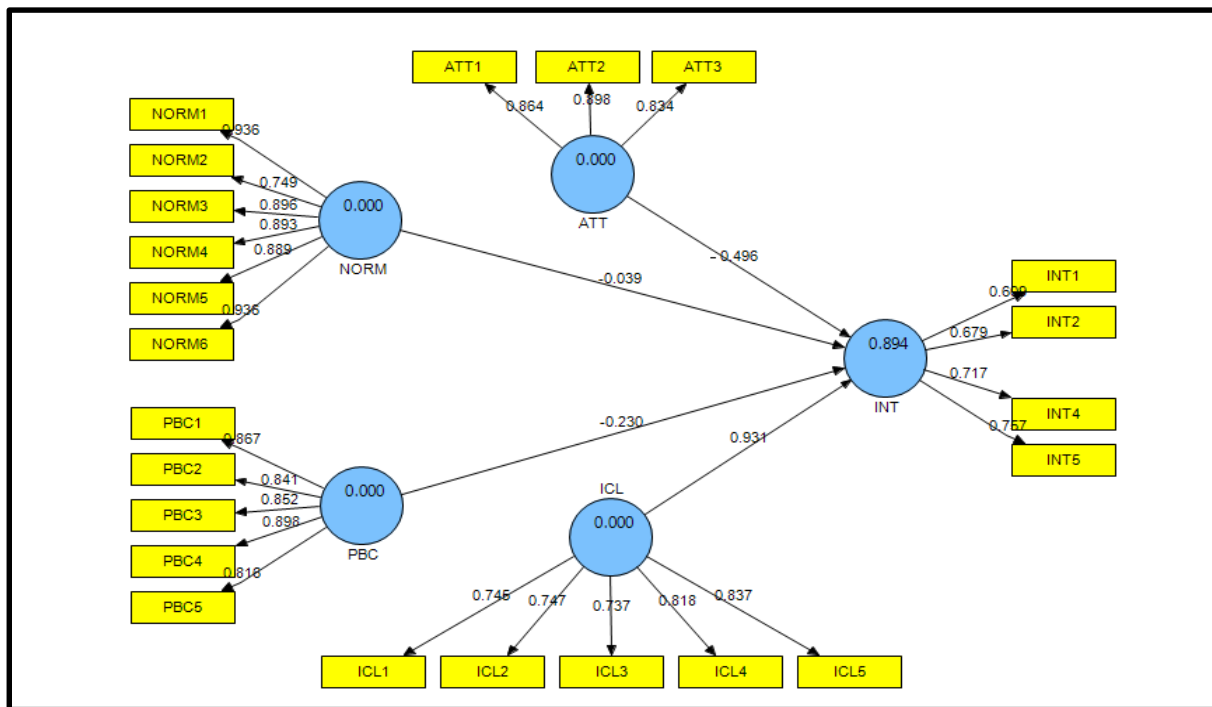


Fig 2: Captured screen of the measurement model

Discriminant validity

In this study, we also examine the test of discriminant validity. For the test of discriminant validity, each item should load more highly on its own construct than on other constructs (see table 5).

Table 5: Correlation matrix among latent variables

	ATT	ICL	INT	NORM	PBC
ATT	0.8656				
ICL	0.1136	0.7779			
INT	0.5560	0.7001	0.7613		
NORM	0.1704	0.6339	0.4324	0.8853	
PBC	0.1715	0.7084	0.4806	0.8465	0.8553

Note: Diagonal bold values represent the average variance extracted (AVE) and other values represent the squared correlation of latent construct variables

As shown in Table 5, the square root of AVE, highlighted (in bold) for each construct has a value greater than the correlation with other constructs. This confirms the existence of discriminant validity of the constructs. In addition, discriminant validity was also seen using cross loading table (see table 6).

Table 6: *Cross Loading*

	ATT	ICL	INT	NORM	PBC
ATT1	0.8636	0.0126	0.4494	0.0679	0.0764
ATT2	0.8978	0.1538	0.5546	0.1780	0.1980
ATT3	0.8342	0.1177	0.4239	0.1934	0.1614
ICL1	0.1201	0.7454	0.5179	0.6376	0.7732
ICL2	0.1112	0.7469	0.5121	0.7286	0.7751
ICL3	0.0223	0.7371	0.5416	0.3408	0.3888
ICL4	0.0536	0.8180	0.7167	0.3744	0.4139
ICL5	0.1342	0.8368	0.5567	0.4717	0.5107
INT1	0.7732	0.1607	0.6088	0.0929	0.1431
INT2	0.7732	0.2437	0.6794	0.1836	0.1887
INT4	0.0536	0.3180	0.7167	0.3744	0.4139
INT5	0.1342	0.4368	0.7567	0.4717	0.5107
NORM1	0.1482	0.5372	0.3442	0.9357	0.8411
NORM2	0.1617	0.4444	0.3240	0.7493	0.6410
NORM3	0.1510	0.6280	0.4385	0.8965	0.7636
NORM4	0.1482	0.6193	0.4358	0.8930	0.7530
NORM5	0.1492	0.5606	0.3779	0.8888	0.8675
NORM6	0.1482	0.5372	0.3442	0.9357	0.8411
PBC1	0.1492	0.5606	0.3779	0.8388	0.8675
PBC2	0.1482	0.5372	0.3442	0.7357	0.8411
PBC3	0.1810	0.5796	0.4180	0.6416	0.8518
PBC4	0.1633	0.6323	0.4391	0.7440	0.8979
PBC5	0.0955	0.6927	0.4551	0.6351	0.8163

Discriminant validity refers to the degree of difference (discriminant) between a construct with other constructs (Urbach et al., 2010). Discriminant validity test are carried out to determine whether a construct measure what should measure. The study employs a comparative table of cross-loading items to test discriminant validity. This method can be implemented by correlating an item with other items from itself and other construct (Chin, 2010). The loading of an item needs to be high for the construct it represents, and low for the other constructs. This study shows the achieved discriminant validity of the items (see table 5 and 6). Overall, the measurement model or confirmatory factor analysis was confirmed by convergent and discriminant validity.

Structural model analysis

To test the measurement model, bootstrapping approach was used in smart PLS to determine any significant level constructs (path modelling). Figure 2, 3 and Table 7 shows the results of bootstrapping with 500 samples.

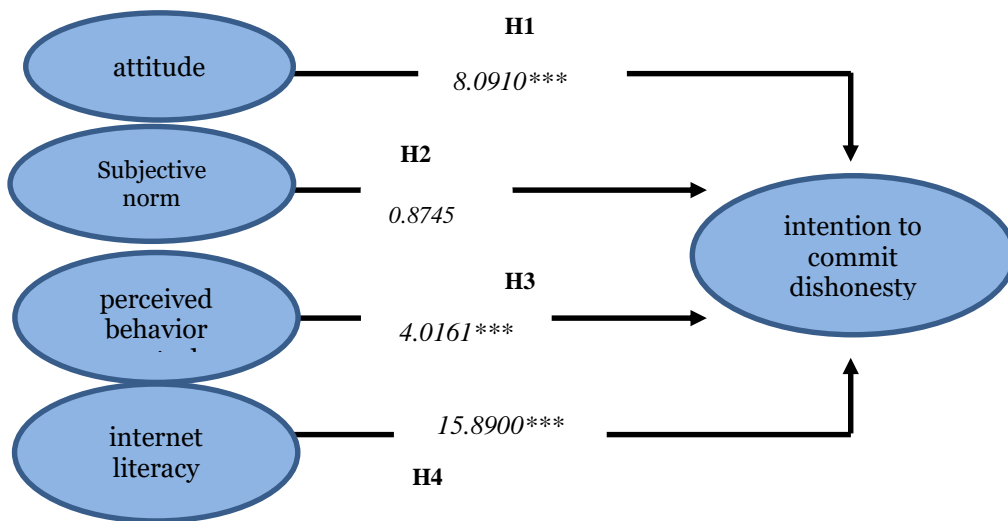


Figure 2: Bootstrapping result

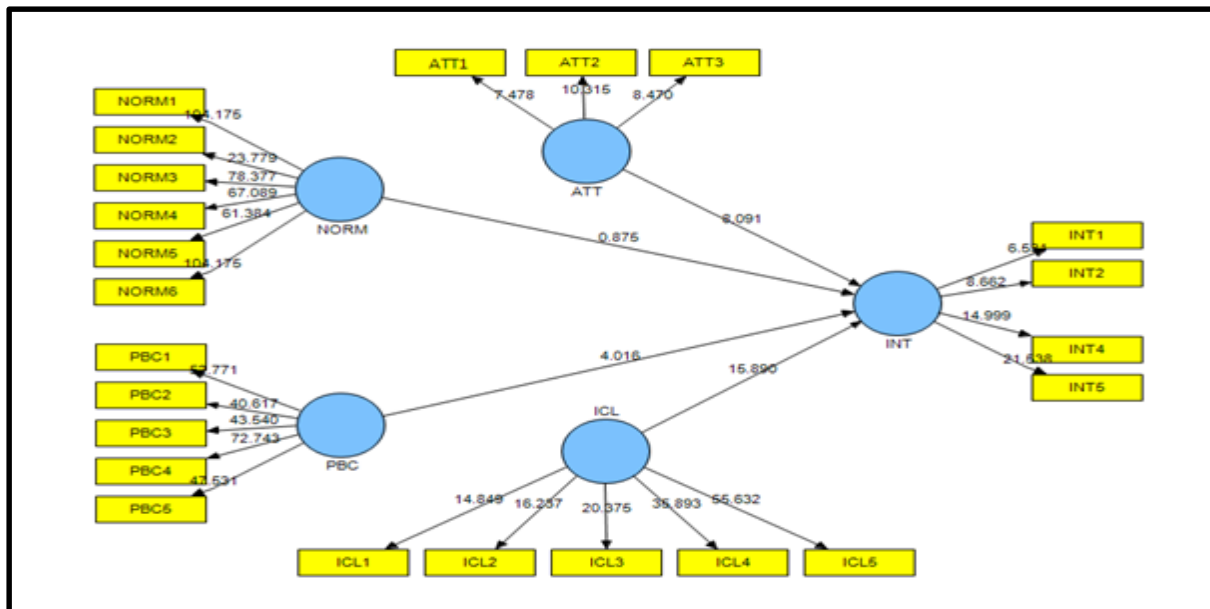


Fig 3: Result of the structural model

Table 7: Hypothesis testing

	(beta value)	Standard Error	T Statistics	remark
ATT -> INT	-0.4962	0.0613	8.0910	Support
ICL -> INT	0.9309	0.0586	15.8900	Support
NORM -> INT	-0.0386	0.0442	0.8745	not
PBC -> INT	-0.2296	0.0572	4.0161	Support

* $p < 0.5$ ** $p < 0.01$ *** $P < 0.0001$

1 tail test

Results from Figure 2 and Table 7 for the first hypothesis predicts that there is a significant negative between attitude and intention to commit academic dishonesty. Attitude shows a significant association with the intention to commit academic dishonesty ($\beta = -0.4962$, $p < 0.001$). However, subjective norm shows no significant association with the intention to cheat ($\beta = -0.0386$, $p < 0.001$), which does not support the forecast for the expected hypothesis 2. Hypothesis 3 (perceived behaviour control) shows a significant negative association with the intention to commit dishonesty ($\beta = -0.2296$, $p < 0.001$). Meanwhile internet literacy shows a significant positive association with the intention to cheat ($\beta = 0.9309$, $p < 0.001$). Out of the four factors, the internet literacy is the best predictor for determining the intention to commit academic dishonesty among Muslim students in Malaysia. The results also show that the three supported hypotheses have research hypothesis (t-value) between 4.0161 to 15.8900. Fig. 1, fig. 2 and table 6 shows a demo of PLS analysis and the standardized coefficients for each hypothesized path in the model and the R^2 for each dependent variable. The model explains 89.4 percent of the variance which is indicative of a very strong explanatory power.

Predictive relevance (Q^2) dan Predictive power (R^2)

In this study, we set the number of re-sampling (bootstrapping) to be 500. The studies' model shows the predictive power of the medium, i.e. $R^2 = 62$ to the variable intention to conduct academic dishonesty. The value of R^2 suggests that 89 % of the variance in the dependent variable with independent variables can be explained. In addition, we also refer to the accuracy of the predictors of Q^2 . We use blindfolding methods to evaluate the accuracy of forecasting. Blindfolding analysis shows $Q^2 = 0.532$ and it meets the criteria for $Q^2 > 0.5$ (Hair et al, 2010; Henseler et al, 2009).



Discussion

The phenomenon of academic dishonesty occurs due to several factors as noted by most of the studies that have been conducted. Most studies conducted are based on a robust framework and theory. This study is focused on the theory of planned behaviour as well as internet literacy as an additional variable into the theory. The findings of the study are consistent with earlier studies that found TPB to be a consistent theory and accurate in predicting academic dishonesty behaviour (Imran & Nordin, 2013; Stone et al, 2010; Harding et al. 2007; Hsiao & Yang, 2015; Stone et al. 2007; Hsiao, 2014). The uniqueness of this study, is that it contributed to a new dimension in identifying the intention to host an academic dishonesty among Muslim students. It is also consistent with the previous finding such as Stone et al (2010) and Harding Et al.(2007) who found TPB model is able to predict intentions or actual behavior.

This study basically tested four hypotheses built on literature. As discussed in (Table 6) three findings support the hypothesis of the study. Three hypotheses such as attitude, internet literacy and perceived behavior control is seen to have a significantly negative relationship with the intention to commit academic dishonesty among undergraduate students in Malaysia. This research model explains 89% of variance on the intention to commit academic dishonesty whereas previous findings such as Armitage & Corners (2002) found 39% of variance, Beck & Ajzen (1991) found 67%, of variance, Henning, Malpas, Ram & Doherty (2011) found 34% of variance and Hsiao (2015) found 53% of variance. This means that this study describes a better variance than previous studies.

The uniqueness of this study is that the structural equation modelling (SEM) theory of planned behavior (TPB) able to predict and explain the intention to commit academic dishonesty among undergraduate students. The confirmatory factor analysis (CFA) shows the data is good and stable. As expected attitude, internet literacy and perceived behavior control showed significant association with the intention to commit academic dishonesty among Muslim students.

This study support previous studies such as Nonis & Swift (2001) who found attitudes to have a strong influence on the intention to commit certain behaviour. According to Hsiao & Yang (2011) most of student will do academic dishonesty if they are unable to distinguish good or bad behaviors. This simple research shows the similar results as Hsiao (2015) and Mc Cabe & Trevino (1993), it found that attitude plays an important role on the intention to commit academic dishonesty. The tendency to do an act is subject to the consideration and justification of the offender, resources and their self needs. If students have strong ethical values, the misbehavior can be overcome. In this study, attitude plays a significant role as individual attitudes increase it will lead to decrease the intent to commit academic dishonesty.

In the Malaysian higher education context, attitude and ethical values are given emphasis and suppression. A Code of misconduct and severe punishment for the perpetrators could be an aspect that can prevent academic dishonesty from occurring. In drawing to raise awareness of moral and ethical attitudes, emphasis should be given to ethics and moral values. This is consistent with Hsiao et al. (2015) who said that moral and ethical values should be emphasized in the work or learning environment. Several tactics and strategies such as code of ethics need to be implemented in order to ensure academic dishonesty can be contained. According to Mc Cabe (1992) lack of proactive action against this deviant behaviour causes these symptoms to become increasingly prevalent in the academic environment.



In addition, this study contributes to the expansion of the existing theory. One of the biggest contributions of this study is to prove that internet literacy play a role in student circles. Although, previous studies focus on multiple races, but this study focused specifically on undergraduate students to address the gaps that exist in the context of Malaysian students.

The results also showed that the aspect of internet literacy played a role in the context of undergraduate students. Consistent with Thrushell & Byrne (2013) there was a significant negative correlation between the cheating behavior and certain internet activities. Thrushell, Byrne & Hassan (2013) confirms the possibility of students who regularly use the internet, social media and gadgets lead a tendency to cheat, plagiarize and so on. Scanlon & Neumann, (2002) reported that almost a quarter of students (24.5%) of student intend to plagiarize online materials. Hence, this study met the expectations of previous researchers finding that such activities related to the internet contribute to academic dishonesty among students. This study also found that internet literacy has a significant positive impact on the cheating behavior. This may be because the existing internet skills among students create an easy way for them to complete academic assignments without bothering to study and making deep research. In addition, the students involved in these activities, might be obsessed to complete academic assignments and get good marks, while ignoring academic integrity. Although internet and digital materials are essential, the aspect of integrity and honesty should not be pushed aside. Internet and digital materials should be used as easy reference materials such that it easier for students to think and highlight their ideas based on extensive reading.

Undeniably, this study has some limitations. The study involved only undergraduate students in Malaysia. Future research may expand the scope of the study among students from other countries. In addition, this study introduces a new variable into the theory of planned behavior (TPB). Future researchers should use other variables to identify aspects of intelligence or ICT risk behaviours that may affect the behaviour of academic dishonesty among students. In the future, researchers who want to study such as a sensitive issues relating to religious matters, the “consent forms” or “institutional review board approval” should be taken into consideration

After examining the findings and the literature, some aspects can be formulated and proposed as a guide:

1. The development of ethical awareness among students. This was noteworthy because students are the future leaders who will be the backbone of the country. Ethical values and good manners should be fostered in order to demonstrate the value of academic integrity. Authorities, particularly institutional administrators should periodically make various aspects of the development of ethics and awareness among pupils, so that the value and integrity of the profession are at stake can keep them more relevant.
2. The development of religious values among students. Religious aspects are seen significant because it affects the consideration of individual behaviour. Koul (2012) in his study of 2123 high school students in Thailand use a number of variables such as gender, professional career aspirations combined with materialism, religious and goal achievement on a desire to commit fraud (willingness to cheat). The research showed that factors materialism and career aspirations have a positive relationship with the desire to make academic dishonesty. Both of these factors have a significant value to the intention to commit fraud. Meanwhile, the religious factor and mastery goals have significant value with the intent to commit fraud. This shows that the higher religious



- values will lead the student to avoid fraud among other students. So the development of religious values is seen significant and necessary.
3. Special enforcement of the ethical use of the internet should be established. Students should be exposed to the ethical use of the Internet and the impact of internet abuse in education. The use of Turnitin software and other applications must be intensified so that problems such as plagiarism can be prevented efficiently.

Conclusion

The issue of academic dishonesty has become a trend in the academic world nowadays (Stone et al, 2010). This become a phenomenon in academia with the rapid pace of technology such as the internet, social networks and so on, making it easier for the phenomenon to occurs. For individuals who are directly involved with the academic world, this phenomenon should be viewed more closely, because should be identified and improvements should be put in place along with strategies to cope with the enforcement aspect for solving this problem, so that the academic world continues to be relevant in the future. The use of application (software) such as Turnitin is inadequate in curbing the problem, most important is self-awareness, attitudes and ethical values in the individual level.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Alleyne, P., & Phillips, K. (2011). Exploring Academic Dishonesty among University Students in Barbados: An Extension to the Theory of Planned Behaviour. *Journal of Academic Ethics*, 9(4), 323–338
- Armitage, C. J., Norman, P., & Conner, M. (2002). Can the Theory of Planned Behavior mediate the effects of age, gender and multidimensional health locus of control? *British Journal of Health Psychology*, 7, 299–316. doi:10.1348/135910702760213698
- Babbie, Earl R. (1998). *The Practice of Social Research*. 8th Edition. Wadsworth Pub. Co. Belmont, CA
- Bagozzi, R. P., & Yi, Y. (1988). On the Evaluation of Structural Equation Models. *Journal of the Academy of Marketing Science*, 16(1), 74–94. doi:10.1177/009207038801600107
- Barrett, R., & Malcolm, J. (2006). Embedding plagiarism education in the assessment process. *International Journal for Educational Integrity*, 2(1), 38–45.
- Bloodgood, J. M., Turnley, W. H., & Mudrack, P. (2008). The influence of ethics instruction, religiosity, and intelligence on cheating behavior. *Journal of Business Ethics*, 82(3), 557–571. doi:10.1007/s10551-007-9576-0
- Byrne, K., & Trushell, J. (2013). Education undergraduates and ICT-enhanced academic dishonesty: A moral panic? *British Journal of Educational Technology*, 44(1), 6–19.
- Bruggeman, E. L., & Hart, K. J. (1996). Cheating, Lying, and Moral Reasoning by Religious and Secular High School Students. *The Journal of Educational Research*. doi:10.1080/00220671.1996.9941337
- Borba, M. (2001). *Building Moral Intelligence: The seven essential virtues that teach kids to do the right thing*. California, Jessey-Bass.



- Chin, W. W. (2010). *How to write up and report PLS analysis*. In Vinzi, V.E., Chin, W. W., Henseler, J. & Wang, H (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications*. (pp. 655-690). Berlin: Springer-Verlag
- Chuah, C. H., Stewart, N., & Lee, J. W. C. (2012). Attitudes of Business Students' Toward Plagiarism. *Journal of Academic Ethics*, 10(3), 185–199. doi:10.1007/s10805-012-9157-4
- Diamantopoulos, A., & Sigauw, J. A. (2000). Introducing LISREL: A guide for the uninitiated. *Journal of the Electrochemical Society*, 129, 171. doi:10.4135/9781849209359
- Domeova, L, Jindrova, A., (2013). Unethical Behaviour of the Student of The Czech University of Life Sciences. *International Educations Studies*; vol 6 (11), 77-85. Doi: 10.5539/ies.v6n11p77.
- Fraenkel, J. R., Wallen, N. E., & Huyn, H. H. (2011). *How to Design and Evaluate Research in Education, New York*, (Vol. 38). doi:10.1037/032719
- Fornell, C., & Larcker, D. F. (1981). *Structural equation models with unobservable variables and measurement error*. *Journal of Marketing Research*, 18(1), 39–50.
- Graham, J. W., Hofer, S. M., Donaldson, S. I., MacKinnon, D. P., & Schafer, J. L. (1997). Analysis with missing data in prevention research. *The Science of Prevention: Methodological Advances from Alcohol and Substance Abuse Research*, (October 1995), 325–366.
- Harding, T. S., Mayhew, M. J., Finelli, C. J., & Carpenter, D. D. (2007). The Theory of Planned Behavior as a Model of Academic Dishonesty in Engineering and Humanities Undergraduates. *Ethics & Behavior*, 17(3), 255–279. doi:10.1080/10508420701519239
- Harris Salleh, M. (2011). Academic Dishonesty: Factor That's Contribute Plagiarism in A Technical College In Malaysia, *Kolokium Pembentangan Penyelidikan POLIMAS Jun 2011*.
- Hassan, T. (2008). Locus of Control, mental ability and achievement motivation as determinants of potential for academic cheating. *Proceeding for International Conference of Education, Research & innovation (ICERI 2008)*, Madrid, Spain.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis. Vectors*. doi:10.1016/j.ijpharm.2011.02.019
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *The Journal of Marketing Theory and Practice*, 19(2), 139–152. doi:10.2753/MTP1069-6679190202
- Hair, J. F. J., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. *Long Range Planning* (Vol. 46). doi:10.1016/j.lrp.2013.01.002
- Henseler, J., & Chin, W.W. (2010). A Comparison of approaches for the analysis of interaction effects between latent variables using partial least squares path modeling. *Structural Equation Modeling*, 17(1), 82–109
- Henning, M., Malpas, P., Ram, S., Doherty, I., Kelly, F., & Hawken, S. J. (2011). Can engagement in academic dishonesty be described as planned behaviour or lack of self-control? *Pharmacy Education*, 11(1), 158–165.
- Howard, R. M., Serviss, T., & Rodrigue, T. K. (2010). Writing from Sources, Writing from Sentences. *Writing & Pedagogy*, 2(2), 177–192. <http://doi.org/10.1558/wap.v2i2.177>
- Hsiao, C.-H., & Yang, C. (2011). The Impact of Professional Unethical Beliefs on Cheating Intention. *Ethics & Behavior*, 21(4), 301–316. doi:10.1080/10508422.2011.585597
- Hsiao, C. H. (2015). Impact of ethical and affective variables on cheating: comparison of undergraduate students with and without jobs. *Higher Education*, 69(1), 55–77. doi:10.1007/s10734-014-9761-x
- Husu, J. & Tirri, K. (2003) A Case Study Approach To Study One Teachers' Moral Reflection. *Teaching and Teacher Education*, 19, 345–357



- Iberahim, H., Hussein, N., Samat, N., Noordin, F., & Daud, N. (2013). Academic Dishonesty: Why Business Students Participate in these Practices? *Procedia - Social and Behavioral Sciences*, 90, 152–156. doi:10.1016/j.sbspro.2013.07.076
- Jumahat, T, Bensaid, B. & Nordin, M.S.(2014). Pembinaan kerangka konsep dan eksplorasi awal model pengukuran kecerdasan spiritual dari perspektif Islam. *The 9th International Malaysian Studies Conference*, 1-13.
- Jones, D. R. L. (2011). Academic Dishonesty: Are more students cheating? *Business Communication Quarterly*. 74, 141-150.
- Kalhuri, Z., (2014). The Relationship between Teacher–Student Rapport and students Willingness to Cheat. *Social and Behavioral Sciences*, 136 (2014). pp 153-158.
- Kothari, C. R. (2012). Research Methodology: An introduction. *Research Methodology: Methods and Techniques*, IX, 418. doi:Goddard, W. & Melville, S.
- Kerlinger, F.N. and Lee, H.B. (2000). *Foundations of Behavioral Research (4th ed.)*. Fort Worth, TX: Harcourt College Publishers
- Koul, R. (2012). Multiple motivational goals, values, and willingness to cheat. *International Journal of Education Research*, 56(2012), 1-9. Doi: org/10.106/j.ijer.2012.10.002.
- Llewellyn, P.G & Rodriguez, C. (2015). Does Academic Dishonesty Relate to Fraud Theory? A Comparative Analysis. *American International Journal of Contemporary Research*, 5(3), 1–6.
- Lin, C.-H. S., & Wen, L.-Y. M. (2006). Academic dishonesty in higher education—a nationwide study in Taiwan. *Higher Education*, 54(1), 85–97. Doi: 10.1007/s10734-006-9047-z
- Lupton, R. A., and Chapman K. J. (2002). Russian And American College Students'Attitudes, Perceptions, And Tendencies Towards Cheating. *Educational Research*. 44(1): 17–27
- Olafson, L., Schraw, G., Nadelson, L., Nadelson, S., & Kehrwald, N. (2013). Exploring the Judgment–Action Gap: College Students and Academic Dishonesty. *Ethics & Behavior*, 23(2), 148–162. doi:10.1080/10508422.2012.714247
- Malhotra, N. K. (1999). *Marketing Research: An Applied Orientation. The Handbook of Marketing Research Uses Misuses and Future Advances* (Vol. 10).
- McCabe, D. L. (1992). The influence of situational ethics on cheating among college students. *Sociological Inquiry*, 62(3), 365–374. doi:10.1111/j.1475-682X.1992.tb00287.x
- McCabe, D. L., Trevino, L. K., & Butterfield, K. D. (2002). Honor codes and other contextual influences on academic integrity: A replication and extension to modified honor code settings. *Research in Higher Education*, 43(3), 357–378. doi:10.1023/A:1014893102151
- Mohd. Majid Konting. (2004). *Kaedah Penyelidikan Pendidikan*. Kuala Lumpur: Dewan Bahasa & Pustaka.
- Moten, A. R. (2014). Academic dishonesty and misconduct: Curbing plagiarism in the Muslim world. *Intellectual Discourse*, 22(2) , 167–189.
- Nunnally, J. C., & Bernstein, I. (1994). *Psychometric Theory*. McGraw - Hill: New York (Vol. 3).
- Okasuade & Oluwatayo, J.(2011). Emotional Intelligence as Determinant of potential for Academic Cheating Among Senior Secondary School Students in Ondo State. *Developing Country Studies*, Vol 1(1), 1-8.
- Olusula, O.I., Ajayi, & Samson, O.(2015). Moral Intelligence: an Antidote to Examination Malpractices in Nigerian Schools. *Universal Journal of educational Research*, 3(1): 32-38.
- Nursiha Saidin, Nurliyana Isa.(2013). Investigating Academic Dishonesty among Language Teacher Trainee: The Why and How of Cheating. *Procedia-Social and Behavioral Sciences*. 90, 522-529



- Nonis, S., & Swift, C. O. (2001). An Examination of the Relationship Between Academic Dishonesty and Workplace Dishonesty: A Multicampus Investigation. *Journal of Education for Business*, 77(2), 69–77. doi:10.1080/08832320109599052
- Ramlan M, Zaharah. H. dan Saedah. S. (2016). ketidakjujuran akademik dalam kalangan mahasiswa muslim: analisis perbandingan tahun 2014-2015. *JURNAL KURIKULUM & PENGAJARAN ASIA PASIFIK*, 4(1), 41–55.
- Ramayah, T., Lee, J. W. C., & Lim, S. (2012). Sustaining the environment through recycling: An empirical study. *Journal of Environmental Management*, 102, 141–147. doi:10.1016/j.jenvman.2012.02.025
- Reisenwitz, T.H.(2012), Can A Business Ethics Course Affect Academic Dishonesty?. *Academy of Educational Leadership Journal*, Vol 16 (2) 115-129.
- Scanlon, P. M., & Neumann, D. R. (2002). Internet Plagiarism Among College Students. *Journal of College Student Development*, 43(3).
- Sekaran, U. & Bougie, R.(2010). *Research Methods in Business: A skill Building Approach*. 5th Edition, John Wiley and Sons, Singapore, PP, 488.
- Simkin, M., & McLeod, A. (2010). Why do college students cheat? *Journal of Business Ethics*. 94(3)
- Sicak, A. & Arslan, A.(2016). The Relation between Prospective Teachers' Goal Orientations and Academic E-dishonesty. *Universal Journal of Educational Research* 4(7): 1660-1666.
- Stone, T.H, Jennifer L.Kisamore, I.M. Jawahar. (2007). Predicting Academic Dishonesty. ASAC, Ottawa, Ontario, pp 40-56.
- Stone, T. H., Jawahar, I. M., & Kisamore, J. L. (2010). Predicting Academic Misconduct Intentions and Behavior Using the Theory of Planned Behavior and Personality. *Basic and Applied Social Psychology*, 32(1), 35–45. doi:10.1080/01973530903539895
- Stone, T. H., Jawahar, I. M., & Kisamore, J. L. (2009). Using the theory of planned behavior and cheating justifications to predict academic misconduct. *Career Development International*, 14(3), 221–241. doi:10.1108/13620430910966415
- Urbach, N., Smolnik, S., & Riempp, G. (2010). An empirical investigation of employee portal success. *The Journal of Strategic Information Systems*, 19(3), 184-206.
- Quah, C. H., Stewart, N., & Lee, J. W. C. (2012). Attitudes of Business Students' Toward Plagiarism. *Journal of Academic Ethics*, 10(3), 185–199. doi:10.1007/s10805-012-9157-4
- Teixeira, A. A. C., & de Fatima Oliveira Rocha, M. (2010). Academic Misconduct in Portugal: Results from a Large Scale Survey to University Economics/Business Students. *Journal of Academic Ethics*, 8(1), 21–41. doi:10.1007/s10805-010-9102-3
- Trushell, J., Byrne, K., & Hassan, N. (2013). ICT facilitated access to information and undergraduates' cheating behaviours. *Computers and Education*, 63, 151–159.
- Underwood, J. D. M. (2007). Rethinking the Digital Divide: Impacts on student-tutor relationships. *European Journal of Education*, 42(2), 213–222. <http://doi.org/10.1111/j.1465-3435.2007.00298.x>
- Vlaardingerbroek, B., Shehab, S.S., & Alameh, S.K. (2011). The Problem of open cheating and invigilator compliance in the Lebanese Brevet and Baccalaureat examinations. *International Journal of Educational Development*, 31, 297-302.
- Whitley, B.E., Jr.(1998). Factors associated with cheating among college students: A Review. *Research in Higher education*, 39, 235-274
- Wilkinson, J. (2009). Staff and Student Perceptions of Plagiarism and Cheating. *International Journal of Teaching and Learning in Higher Education*, 20(2), 98–105. Retrieved from <http://www.isetl.org/ijtlhe/articleView.cfm?id=278>