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The Role of TPB in Predicting Sustainable Behavior in Higher Education Institution

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ABSTRACT

The spirit of Sustainable Development Goals encourages people and institutions including higher education institutions (HEI) to take an active role to attain the goals such as performing sustainable behavior. This research, therefore, is conducted to predict the factors underlying HEI's members to perform sustainable behavior by applying Theory of Planned Behavior. This study distributes an electronic questionnaire to 273 accounting undergraduate students in Universitas Islam Indonesia. All completed questionnaires were analyzed by assistance from a statistic tool namely smartPLS version 3. This research discovers subjective norm does not significantly influence intention as well as sustainable behavior, however, the others influence significantly. The indirect test indicates that there are no mediation effects from intention variable in order to mediate the relation between three independent variables to sustainable behavior. This research argues that the insignificant influence of subjective norm to intention and sustainable behavior results insignificant influence of intention to sustainable behavior and generates no mediation effects.

KEYWORDS: Higher Education Institution; Sustainable Behavior; Theory of Planned Behavior

INTRODUCTION

The earth is currently in a serious threat as evidenced by the many environmental damages that occurred on earth. Environmental damages mostly came from human activities (individuals, organizations, and also corporations) that generated negative impact for environment as well as society (Denedo, Thomson, & Yonekura 2017; Liempd & Busch 2013; Tregidga 2013; Thomson, Dey, & Russell 2017). In order to reduce the damages, there was an increasing concern from countries across the world to work together preserving earth for a better life and future (Waal & Thijssens 2020; Bebbington & Unerman 2018; Ike et al. 2019). The UN General Assembly, in 2015, adopted the Sustainable Development Goals (SDGs) based on an approved document, namely Transforming our world: The 2030 Agenda for Sustainable Development. It contains 17 objectives, 169 targets, and 230 indicators that must be achieved in 2030. The SDGs emphasizes the linkages between economic, social and environmental dimensions of sustainable development.

Achieving SDGs targets requires synergy and an active role from various organization elements such as government, companies, communities, and higher education institutions (HEI) as well. HEI are currently receiving considerable attention to start taking an active role in maintaining environmental sustainability and reducing its contribution to natural damage (Paletta & Bonoli 2019; Genta et al. 2019; Sima, Grigorescu, & Bălteanu 2019). HEI's contributions to environmental damages come from academic and non-academic operational activities that use a lot of natural resource products and generate a lot of waste. It is therefore the stakeholders use their power to press HEI to focus on sustainability aspect and provide sustainability disclosure to them like what companies did (Sepasi, Braendle, & Rahdari 2019; Sassen & Azizi 2018; Adams 2013). Social and environmental responsibility reporting for universities in Indonesia may not be produced today because there are no regulations regulating sustainability In HEI. In addition, initiatives from universities to perform sustainability activities are still considered low (Sepasi, Braendle, & Rahdari 2019).

HEI's contribution to sustainability can be started by making internal regulations or policies that are in line with the spirit to preserve environment from damages (Krizek et al., 2012). This has to be done to force all HEI members to show a behavior that promoting sustainability, which is called sustainable behavior. This research defines sustainable behavior as a behavior that is in line with the principles for protecting social and environmental sustainability such as reducing waste, energy usage, emissions, and others. A lot of researchers have conducted the study to find out factors that drive sustainable behavior. It is necessary to give an insight to HEI's management for formulating strategies and policies towards a sustainable campus. Lertpratchya, Besley, Zwickle, Takahashi, & Whitley (2017) argue that sustainable behavior will be performed if individuals have been and are involved on campus for a long period. Although the statement does not explicitly state whether individuals have been educated about sustainability, it takes a long time for HEI members to aware and conducts sustainable behavior when they receive knowledge about sustainability. It contradicts Too & Bajracharya (2015) that find individual awareness has a little impact on person's sustainable behavior although sustainability knowledge has been obtained.

Researchers had adopted the classic behavior theory, namely Theory of Planned Behavior (TPB) (Ajzen, 1991) which comprised of three independent variables, they are attitude toward behavior, subjective norm, perceived behavioral control, to predict sustainable

behavior in many aspects and fields. Cho (2019) adopted TPB on recycling behavior on campus found that attitude toward behavior and perceived behavioral control influence the emergence of intention. Allen & Marquart-Pyatt (2018) examined energy conversion on campus found that social norms are not a predictor for sustainable behavior. Chen, Gregoire, Arendt, & Shelley (2011) found the contradictory results that social norms significantly influences campus sustainable behavior. Bertazzo, Jacques, & Neto (2020) also found similar findings on the aspect of reducing emissions through the choice of transportation modes.

The above studies generally adopted TPB to examine intention to perform sustainable behavior intention. On the other hand, the actual sustainable behavior has not been explored yet so that the result of the study is still questionable whether the intention is continued to be actual behavior or not. In addition, intention is still considered as a single variable that influences actual behavior. Intention, viewed from individual psychology, has the potential to strengthen the relationship between independent variables and behavior so that indirect testing is considered necessary. The above researches are generally carried out in developed countries in which the policies and infrastructures to achieve sustainability in campus are readily available. Indonesian accounting literature on sustainability put a few foci on sustainability in HEI. It is because HEI may not require to disclose anything about sustainability as there is no regulation from government and bodies. On the other hand, HEI are one of the contributors to environmental damage. This study, therefore, will explore the factors that influence sustainable behavior in Indonesian HEI. This study also examines indirect test of three independent variables of TPB on behavior through intention. This study does not pay attention to specific sustainable behavior such as plastic usage, but use a broad scope of sustainable behavior that relevant to HEI in Indonesia.

This study uses TPB as the basic theory to find out the potential factors for sustainable behavior. The first variable mentioned in TPB is attitude toward behavior, which is defined as the feeling of like or dislike of certain behavior. These are directly influenced by beliefs related to possible outcomes or consequences will be received (Yoon, 2011). Ajzen (1991) explains that belief development is related to certain attributes such as objects, characteristics, or events. These attributes are then assessed to determine this certain behavior has positive or negative consequences when the behavior is performed. Ajzen (1991) further explained that positive feelings came from positive consequences of performing behavior. On the other hand, people will not perform any behavior if negative consequences arise. In this theory, attitude toward behavior positively influences intention which means positive judgment toward behavior drives intention to perform behavior.

In terms of sustainable behavior in HEI, Ramayah et al. (2012) found a positive and significant relationship between attitude toward behavior and recycling behavior. Yadav & Pathak (2016) also found attitude toward behavior was a significant predictor on intention to buy organic food. Research findings from Chen et al. (2011) indicated that sustainable behavior was an easy behavior to do in which individuals will quickly transform their feeling into actual behavior. According to these previous researches, performing sustainable behavior is considered positive behavior which have positive impact to environment. Therefore, this study develops the following hypotheses:

H1a: Attitude toward behavior positively influence intention

H1b: Attitude toward behavior positively influence actual sustainable behavior

Ajzen (1991) explained that individuals will have intention to conduct a behavior when they receive social pressure form the environment such as family, friends, and society. TPB visualizes these effects into variables namely subjective norms. Ajzen (1991) further explained that an individual may have important person or group so that he/she imitate behavior performed by their references. Individuals will perform behavior if the important person or group also perform certain behavior and vice versa. Subjective norms explained that individuals are in the process of learning and observing others to obtain judgments before displaying behavior. Subjective norm has a similar meaning to social learning theory (Bandura 1978; Harrison & McIntosh 1992; Krohn et al. 1985) which states that individuals perform certain behaviors through the modeling process. Through the process of observing others, individuals will have a judgment and perspective to perform or not perform certain behavior. In terms of the difference between subjective norm and social learning theory, subjective norm implies that individuals conduct or not conduct behavior after receiving social pressure, influence, or observing others. Social learning theory explains that individuals are not merely reacting immediately after receiving influence, but they will choose, organize, and change the stimuli before transforming it into behavior (Harrison & McIntosh 1992).

In terms of sustainable behavior, various studies have examined the relationship between subjective norms and sustainable behavior. Han, Hsu, & Sheu (2010) found a positive effect of subjective norm on the intention to choose an environmentally friendly hotel. This finding found that social pressure from the references drives individual to choose environmentally friendly hotels. In terms of recycling behavior in HEI, Cho (2019) found that there was no significant influence from subjective norms because the influence was only descriptive and not applicable. Kumar (2019) found a positive and significant effect on the intention of recycle electronic waste. From the description above, it indicates that there are different results regarding subjective norms examination. This study develops a hypothesis based on Ajzen (1991) which explains there is a positive influence between subjective norms and intention. This study also examines direct relationship between subjective norm and actual sustainable behavior.

H2a: Subjective norm positively influence intention

H2b: Subjective norms positively influence actual sustainable behavior

The third determinant of TPB is perceived behavioral control. Perceived behavioral control refers to the perceived ease or difficulty in displaying behavior and is assumed to reflect past experiences. Ajzen (1991) argued that perceived behavioral control is developed by control belief that measured the consequences when such behavior is performed. In addition, individuals can also grab the information from others' experiences that influence the judgment to increase or decrease the possibility to conduct behavior. Heeren et al. (2016) argued that if the obstacles exist, there was a low possibility of person performing a behavior.

Wang, Ren, Dong, Zhang, & Wang (2020) found that perceived behavioral control has a positive and significant effect on intention to recycle. This shows that the existing obstacles are not sufficient to change individual's intention to recycle. Yadav & Pathak (2016) found that perceived behavioral control was the most significant predictor for predicting intention to buy organic food. In terms of direct test of perceived behavioral control to actual behavior, Kautish, Paul, & Sharma (2019) found there was an insignificant relationship of these two variables, Heeren et al. (2016) found that perceived behavioral control was not a significant predictor of sustainable behavior in HEI. These findings indicate that there were

obstacles that impede actual behavior performed by HEI's members. However, this study follows the basic concept of TPB that explains there is a positive relationship between perceived behavioral control and actual behavior. Therefore, this research develops hypothesis as follows.

H3a: Perceived behavioral control positively influence to intention

H3b: Perceived behavioral control positively influence actual sustainable behavior

The next question is addressed to examine the influence of intention toward sustainable behavior. TPB explained that intention is influenced by three independent variables namely attitude toward behavior, subjective norms, and perceived behavioral control. Furthermore, intention is known as a significant variable influencing behavior. In terms of sustainable behavior, Cho (2019) found that intention to recycle positively and significantly influences actual recycling behavior. This shows that individuals with high intentions have a high probability to transform intention toward actual behavior. On the other hand, there is a few research examining the mediation role of intention in TPB research model framework. TPB assumes that the intention is stimulated by the three predictor variables that are associated with actual behavior. However, there is a possibility of individual change their intention to be actual behavior because of the existence of obstacles. For example, students will not reduce the use of disposable bottles due to the lack of refill points provided by campus even though the students already have the intention to reduce them. This research develops hypothesis as follows:

H4: Intention will have a positive relationship to real sustainable behavior

H5: Intention to mediate the relationship between attitude toward behavior, subjective norm, and perceived behavioral control on real sustainable behavior

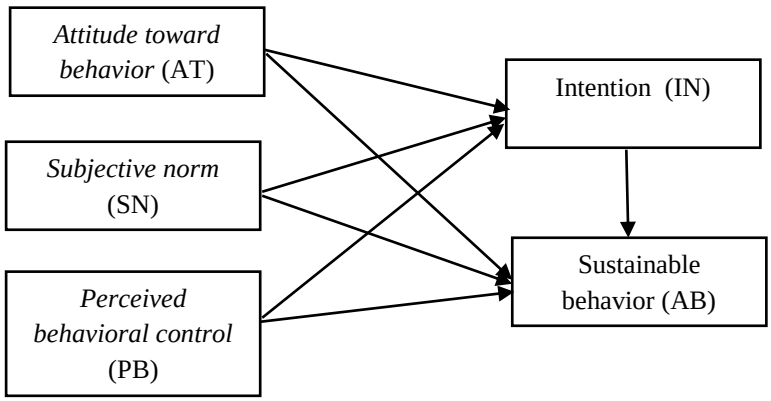

Figure 1. Research Model

METHOD

This study uses an explanatory approach to test the relationship between variables so that quantitative analysis techniques are applied (Saunders, Lewis, & Thornhill 2016). The study population was active students of the undergraduate accounting study program at the Faculty of Business and Economics, Universitas Islam Indonesia, which is located in Yogyakarta. This study selects students as respondents because they are known having higher contribution to environmental damage than other HEI members. In addition, students have a higher desire to change their habits to more sustainable such as moving from paper based to digital documents (Cho, 2019). The Faculty of Business and Economics of Universitas Islam Indonesia was chosen as a research object because they

focus on social and environmental sustainability as embodied in its vision. The accounting curriculum at Universitas Islam Indonesia has a course that specifically discusses sustainability theories and issues.

Sample selection is done using non-probability sampling which allows samples to be randomly selected without giving the same probability to population members. Purposive sampling technique is applied in this study. Purposive sampling is applied to select respondents in accordance to research needs by applying certain criteria to the population members (Saunders, Lewis, & Thornhill 2016). The criteria are students who have received socialization and/or sustainability course in accounting curriculum. This study uses primary data which is taken directly from respondents using a questionnaire. The research questionnaire was made into an electronic questionnaire and distributed to students through various social media in the internet. As a result, the questionnaire has been filled in by 273 accounting students from the Faculty of Business and Economics, Islamic University of Indonesia. All data from students are involved in the analysis process.

This research develops the instruments that come from various sustainable behavior relevant to HEI. The examples of these sustainable behaviors are then adjusted to measure independent variables in TPB (see Table 2). Respondents were asked to give opinions according to their knowledge using a scale of 1 to 6 which means strongly disagree to strongly agree. The collected data were analyzed using smartPLS 3 which is based on partial least square structural equation modeling (PLS-SEM) rather than covariance-based structural equation modeling (CB-SEM). This is based on the rule of thumb from Hair, Ringle, & Sarstedt (2011) that explain how to determine and use PLS-SEM and CB-SEM approach. Hair et al. (2011) suggest that if the research objective is to predict or identify driver constructs and complex research models, it is better to use PLS-SEM. SEM employs the measurement model (outer model) and the structural model (inner model) to test variables and research model. The structural model is a unidirectional predictive relationship between each latent variable and its observed indicators. Thus, variable indicators can only be associated with their latent variables (Hair, Ringle, & Sarstedt 2011). This test is known as discriminant validity.

Henseler, Ringle, & Sarstedt (2015) suggest discriminant validity testing to use the heterotrait-monotrait ratio (HTMT) criterion which is the average heterotrait-heteromethod correlation (indicator correlation across constructs) relative to the average monotrait-heteromethod correlation (indicator correlation in the same construct). If the HTMT value is below 0.90 then the discriminant validity has been met. There is also convergence validity testing which means the extent to which the construct converges in order to explain the variants of its items (Hair, Risher, Sarstedt, & Ringle, 2018). This test criterion can be viewed using average variance extracted (AVE) value which have a minimum value of 0.50 (Hair et al., 2018). Finally, assessing the reliability of a construct can be done using composite reliability (CR) with a minimum value of 0.70 (Hair et al., 2018).

After examining measurement model, the structural model test is applied that shows the relationship between variables. PLS-SEM does not allow a causal relationship in the structural model. Thus, testing the direction between variables can only be done in one direction (Hair et al., 2011). This test is carried out using a bootstrapping technique which will produce a coefficient value to understand the direction of independent to dependent variable. The p-value shows a significant or insignificant influence. If the p-value is smaller than the significance value, the relationship is significant and vice versa. This study also

looks at indirect test results that came from the bootstrapping output to understand the mediation effect.

RESULTS AND DISCUSSION

The validity test was conducted in order to meet discriminant validity as indicated by the HTMT value and the convergence validity represented by the AVE value. Reliability is represented by the composite reliability value. As shown in Table 1, the HTMT value of each variable correlation does not exceed 0.9 which mean there is no strong relationship between the indicators of one variable to others. From these results, all the variables have met discriminant validity. The AVE value of each variable is more than 0.5, which means the variables in this study are valid and meet convergence validity. In terms of reliability, Table 2 shows the CR value of each variable more than 0.7, which means that all the research variable passed the reliability test.

This research found that attitude toward behavior had a positive and significant effect on intention ($\beta = 0.370$; $p = 0.000$) as well as sustainable behavior ($\beta = 0.282$; $p = 0.001$). This finding is consistent with the findings of previous studies such as Ramayah, Lee, & Lim (2012) and Yadav & Pathak (2016). This shows that students have an interest for sustainable behavior which encourages them to have intentions and present them to sustainable behavior. Based on this finding, it shows that students favor sustainable behavior although it quite difficult to perform it. The important value is that students have an assessment of sustainable behavior which has a positive outcome to maintain environmental sustainability. This is reasonable because there are many movements or information that promote environmental sustainability in human activities individually or in groups. Yadav & Pathak (2016) argue that a positive feeling of sustainable behavior comes from individual perspective as he/she cares about sustainability issues. Currently, information about environmental damage can be easily accessed from various media that increase people's awareness and knowledge to protect our earth (van Giesen & Leenheer 2019).

In terms of the ease and difficulty in sustainable behavior, students believe that sustainable behavior is behavior that is easy to do. This comes from students' experience who have performed and ready for habitual changes in order to maintain sustainability. As stated by Ajzen (1991), the perception of ease and difficulty is a reflection of his/her own past experiences and others that generates individual control to perform behavior. Reducing the use of paper, for example, is not an obstacle because students are familiar with technology and online learning so that they do not a lot of paper for academic processes. The existence of electronic books strengthens students to switch from paper-based books to electronic books (Ketron & Naletelich 2016).

Table 1. Heterotrait-monotrait ratio (HTMT)

	AB	AT	IN	PB	SN
AB	-	-	-	-	-
AT	0.761	-	-	-	-
IN	0.536	0.646	-	-	-
PB	0.748	0.854	0.679	-	-
SN	0.516	0.693	0,.11	0.632	-

This study also found that subjective norm has no positive effect on intention (β = -0.051; p = 0.34) and has no significant effect on sustainable behavior (β = 0.126; p = 0.075). This is interesting because these findings contradict the argument that has been disclosed in TPB. TPB considers that the influence of the environment will stimulate individuals to generate intentions and behavior. Various studies in sustainability field have also found the same thing where social influences will drive sustainable behavior (Heeren et al. 2016; Swaim et al. 2016; Giampietri, Finco, & Giudice 2016). However, the findings of this study are in line with Yadav & Pathak (2016) who found no influence from the environment on sustainable behavior. Yadav & Pathak (2016) argued that the absence of this influence is because sustainable behavior has not become a social norm, especially in developing countries. Subjective norms in TPB are identical to the individual process of selecting references, either individuals or groups, to carry out certain behaviors. Furthermore, it is also explained that individuals tend to imitate the behavior of the references that have been selected.

Variable	Indicator	Mean	AVE	CR
Attitude toward behavior	Turn off electronic devices	4.56	0.542	0.823
	Use public transportation or bike	2.93		
	Reduce paper usage	4.05		
	Reduce waste production	4.86		
	Use environmentally friendly product	4.39		
Subjective norm	People in campus perform :		0.598	0.878
	Turn off electronic devices	3.77		
	Use public transportation or bike	2.83		
	Reduce paper usage	3.79		
	Reduce waste production	4.17		
	Use environmentally friendly product	4.28		
Perceived behavioral control	Turn off electronic devices	5.25	0.715	0.834
	Use public transportation or bike	3.41		
	Reduce paper usage	4.50		
	Reduce waste production	4.41		
	Use environmentally friendly product	4.30		
Intention	I have intention to perform sustainable behavior	5.18	0.702	0.904
	I change daily lifestyle to for better environment	5.07		
	I have intention to reduce energy, water, and plastic usage	5.00		
	I have intention to contribute to sustainable development	5.02		
Sustainable behavior	I have turned off electronic devices when the classroom is empty	4,.5	0.738	0.848
	I don't drive my car or motorbike to go to campus	3.09		
	I don't use paper for academic purposes	3.45		
	I Have used environmentally friendly product	4.44		

Table 2. Mean, AVE, dan CR

In the context of HEI, this finding indicates students do not have any references to conduct sustainable behavior. It is therefore the students do not understand what sustainable behavior should be done and how to perform it. Another potential reason is that sustainable behavior is still a behavior that has not been widely accepted yet because of its nature that change person habit.

The perceived behavioral control test showed that there was a significant positive effect on intention (β = 0.309; p = 0.000) and real behavior (β = 0.205; p = 0.008). Previous findings have shown inconsistent results. Wang et al. (2019) found a positive and significant effect on sustainable behavior. However, other studies found that perceived behavioral control is not a predictor of sustainable behavior because of the existence of obstacles (Kautish, Paul, & Sharma 2019; Heeren et al. 2016). These findings indicate that students do not have difficulty displaying sustainable behavior. If difficulties and barriers to displaying behavior arise, students can adapt themselves to minimize these difficulties and hindrances. For example, students can easily carry a tumbler when the use of single-use plastic drinking bottles is reduced. This finding provides a positive indication for HEI to create initiation and real action in achieving a sustainable campus.

As presented in Table 3, intention is built by TPB variables except for subjective norm. However, this study found that intention was not a significant predictor of sustainable behavior (β = 0.149; p = 0.016). Intention is considered as a personal desire to perform behavior but the individual has not made any decision to convert it into a behavior. Students have the freedom to let it be the intention or change it to be sustainable behavior. This study assumes that students do not have a significant incentive to engage in sustainable behavior. Therefore, students currently do not want to transform their intention to actual behavior although they favor to perform and understand its implication. Students need more aspect outside TPB variables to convince them that sustainable behavior has to be performed and gain positive impact to nature. The important value is that students already have an adequate understanding of sustainability. However, the significant obstacle is how to perform sustainable behavior properly without giving the cost. For example, students understand that using private vehicles contributes to creating pollution and increasing greenhouse gases. Students also realize that they must reduce their use to prevent global warming. However, students do not know how to reduce the use of private vehicles to go to campus or from campus. It furthermore gains students' expense to swift from private vehicles to public transportation. Students are looking for the ideal form or reference to display sustainable behavior.

Table 3. Direct Test

Hypothesis	Coefficient (β)	*T Statistics*	*P Values*	Decision*
AT -> AB	0.282	3.446	0.001	Supported
AT -> IN	0.370	5.545	0.000	Supported
IN -> AB	0.149	2.424	0.016	Not supported
PB -> AB	0.205	2.684	0.008	Supported
PB -> IN	0.309	5.353	0.000	Supported
SN -> AB	0.126	1.783	0.075	Not supported
SN -> IN	-0.051	0.784	0.434	Not supported

*significance level 0.01

To test the mediating effect of the intention variable, the test follows the procedure shown by Zhao, Lynch Jr, & Chen (2010) and Nitzl, Roldan, & Cepeda (2016). The mediator analysis procedure has two stages. The first stage is to determine the significance of the indirect test. At this stage, testing is carried out by calculating indirect test of the independent variable to the dependent variable through the mediating variable. The second stage is to determine the type of mediation effect by looking at the direct test results (attitude toward behavior, subjective norms, and perceived behavioral control variables on sustainable behavior) and indirect (through the intention variable as a mediating variable), then the mediation effect is determined as presented in Figure 2.

The results of the indirect test show that there is no significant relationship between the attitude toward behavior, subjective norm, and perceived behavioral control variables on sustainable behavior. To explain the effect of mediation variable, reviewing the significance of the relationship from direct testing of the attitude variable toward behavior, subjective norms, and perceived behavioral control on sustainable behavior are needed. Direct test shows that attitude toward behavior and perceived behavioral control have a significant effect on sustainable behavior, while subjective norm is not significant. Following the procedure in Figure 2, the intention variable did not have a mediating effect on the relationship between attitude toward behavior, subjective norm, and perceived behavioral control on sustainable behavior.

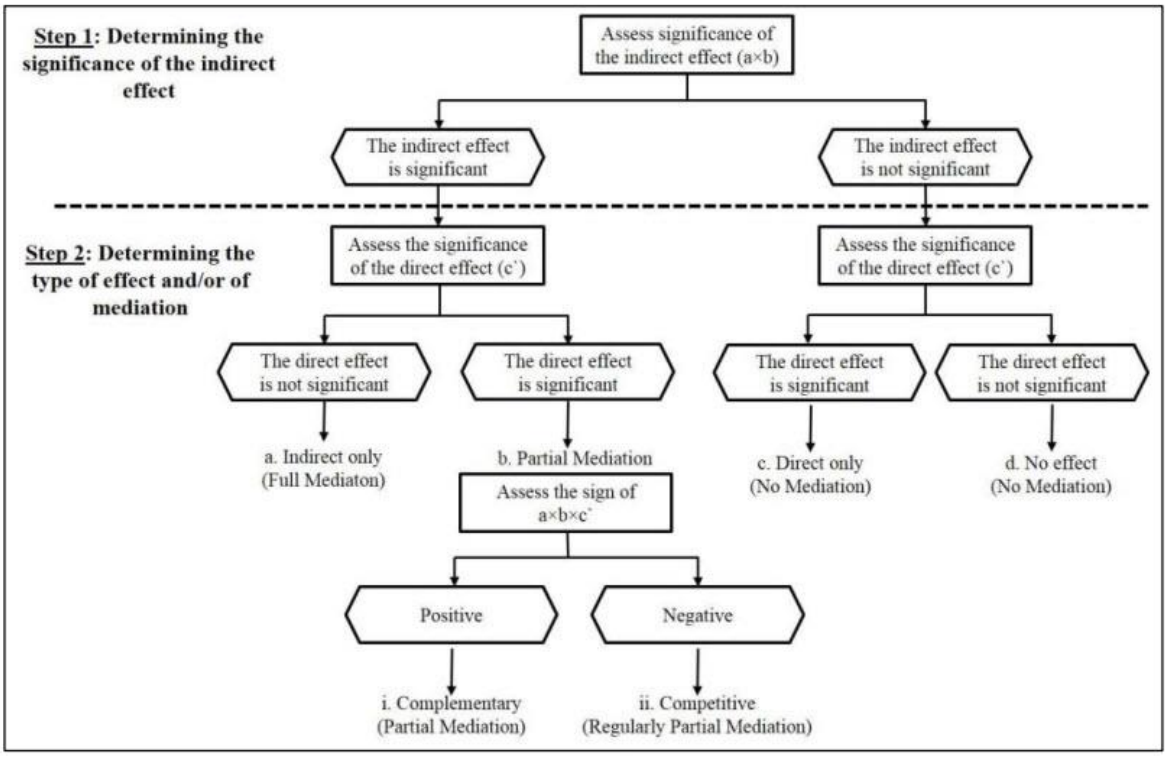

Figure 2. Mediator Analysis Procedure in PLS (Nitzl, Roldan, dan Cepeda 2016)

Hypothesis	Coefficient (β)	*T Statistics*	*P Values*	Decision*
AT -> AB	0.055	2.179	0.030	Not significant
PB -> AB	0.046	2.191	0.029	Not significant
SN -> AB	-0.008	0.719	0.473	Not significant

Table 4. Indirect Test Results

Table 4 shows that mediating variable changes the effect of attitude toward behavior to sustainable behavior from significant to insignificant one (β = 0.055; p = 0.030). In addition, perceived behavioral control towards real behavior produced insignificant results (β = 0.046; p = 0.029). This result contradicts to direct test of the attitude toward behavior and perceived behavioral control variables on sustainable behavior, which shows a significant relationship. In terms of the effect of subjective norm, there is a consistent result between direct and indirect test that shows an insignificant effect (β = -0.008; p = 0.473). Following the procedure depicted in Figure 2, it can be concluded that there is no mediating effect resulting from the intention variable. On the other hand, attitude toward behavior and perceived behavioral control have significant influence when direct test is employed.

The findings are interesting because intention is an important determinant of actual behavior. The reason that can underlie these findings is there is an insignificant effect of the subjective norm variable on intention and sustainable behavior. As explained by TPB, intention is built from three factors, namely attitude toward behavior, subjective norm and perceived behavioral control, so that it does not affect the quality of intention toward behavior. This test proves that intention does not significantly affect sustainable behavior even indirect test has been applied. Although this study has not tested the effect of subjective norms on attitude toward behavior and perceived behavioral control variables, the insignificant impact of subjective norms disrupts individual decisions to display sustainable behavior even though attitude toward behavior and perceived behavioral control directly influence intention and also sustainable behavior. This shows that students still consider the role of the environment and its references as fundamental factors for decision making. Students favor sustainable behavior and believe that it is easy to do. However, the absence of a reference person makes students reluctant to display sustainable behavior. For example, students want to display sustainable behavior, but their environment and reference person do not display this behavior. Although students already have intention, the absence of social pressure and people who become role models will abort the intention as evidenced by the insignificant relationship between subjective norms and sustainable behavior both direct and indirect tests.

CONCLUSION

This study found TPB positively and significantly affects the intention and behavior of sustainability except on the subjective norm variable. This indicates that the environment and people around students are not encouraging to display sustainable behavior. The reason is that the lack of social pressure and references keeps students from having intentions and also caring about the environment. Direct testing of intent also has an insignificant effect on sustainable behavior. In this case, students are considered unable to convert intentions into real behavior which is a result of lack of references and social pressure. In the indirect test, intention did not mediate the independent variable with sustainable behavior as a result of no effect on subjective norms. This study illustrates that sustainable behavior requires individual awareness and consequences, not entirely from social influence. Higher education institutions need to increase activities that raise awareness and a sense of responsibility for sustainability. The limitation of this study is it only uses the variables available in TPB so that it has not captured other potential variables. This research does not cover all HEI's member so that the findings are limited to students phenomena. Future research is expected to use the derivation variable of TPB. Future studies are recommended to examine the relationship between independent variables of TPB.

REFERENCES

Adams, C. A. (2013) 'Sustainability reporting and performance management in universities Challenges and benefits', *Sustainability Accounting, Management and Policy Journal*, 4(3), pp. 384–392. doi: 10.1108/SAMPJ-12-2012-0044.

Ajzen, I. (1991) 'Theory of Planned Behavior', *Organizational Behavior and Human Decision Processes*, 50, pp. 179–211.

Allen, S. and Marquart-Pyatt, S. T. (2018) 'Workplace energy conservation at Michigan State University', *International Journal of Sustainability in Higher Education*, 19(1), pp. 114–129. doi: 10.1108/IJSHE-07-2016-0124.

Bandura, A. (1978) 'Social Learning Theory'. doi: 10.1111/j.1460-2466.1978.tb01621.x.

Bebbington, J. and Unerman, J. (2018) 'Achieving the United Nations Sustainable Development Goals: An enabling role for accounting research', *Accounting, Auditing and Accountability Journal*, 31(1), pp. 2–24. doi: 10.1108/AAAJ-05-2017-2929.

Bertazzo, Â. B. S., Jacques, M. A. P. and Neto, I. L. (2020) 'Beliefs underlying modal choice in school trips : A case study in Brazil', *Transportation Research Part F*, 69, pp. 187–205. doi: 10.1016/j.trf.2020.01.008.

Chen, C. J. R. *et al.* (2011) 'College and university dining services administrators' intention to adopt sustainable practices: Results from US institutions', *International Journal of Sustainability in Higher Education*, 12(2), pp. 145–162. doi: 10.1108/14676371111118200.

Cho, M. (2019) 'Campus sustainability An integrated model of college students' recycling behavior on campus', *International Journal of Sustainability in Higher Education*, 20(6), pp. 1042–1060. doi: 10.1108/IJSHE-06-2018-0107.

Denedo, M., Thomson, I. and Yonekura, A. (2017) 'International advocacy NGOs, counter accounting, accountability and engagement', *Accounting, Auditing and Accountability Journal*, 30(6), pp. 1309–1343. doi: 10.1108/AAAJ-03-2016-2468.

Genta, C. *et al.* (2019) 'Envisioning green solutions for reducing the ecological footprint of a university campus', *International Journal of Sustainability in Higher Education*, 20(3), pp. 423–440. doi: 10.1108/IJSHE-01-2019-0039.

Giampietri, E., Finco, A. and Giudice, T. Del (2016) 'Exploring consumers ' behaviour towards short food supply chains', *British Food Journal*, 118(3), pp. 618–631. doi: 10.1108/BFJ-04-2015-0168.

Giesen, R. and Leenheer, J. (2019) 'Towards more interactive and sustainable food retailing An empirical case study of the supermarket', *Interactive and Sustainable Food Retailing*, 47(1), pp. 55–75. doi: 10.1108/IJRDM-11-2017-0280.

Hair, J. F. *et al.* (2018) 'When to use and how to report the results of PLS-SEM', *European Business Review*, 31(1), pp. 2–24. doi: 10.1108/EBR-11-2018-0203.

Hair, J. F., Ringle, C. M. and Sarstedt, M. (2011) 'PLS-SEM : Indeed a Silver Bullet', *Journal of marketing Theory and Practice*, 19(2), pp. 139–151. doi: 10.2753/MTP1069-6679190202.

Han, H., Hsu, L. J. and Sheu, C. (2010) 'Application of the Theory of Planned Behavior to green hotel choice : Testing the effect of environmental friendly activities', *Tourism Management*. Elsevier Ltd, 31, pp. 325–334. doi: 10.1016/j.tourman.2009.03.013.

Harrison, J. R. and Mclntosh, P. (1992) 'Using Social Learning Theory To Manage

Organizational Performance', *Journal of managerial Issues*, 4(1), pp. 84–105.

Heeren, A. J. *et al.* (2016) 'Is sustainability knowledge half the battle?: An examination of sustainability', *International Journal of Sustainability in Higher Education*, 17(5), pp. 613–632. doi: 10.1108/14676371311312905.

Henseler, J., Ringle, C. M. and Sarstedt, M. (2015) 'A new criterion for assessing discriminant validity in variance-based structural equation modeling', *Journal of the Academy of Marketing Science*, 43, pp. 115–135. doi: 10.1007/s11747-014-0403-8.

Ike, M. *et al.* (2019) 'The process of selecting and prioritising corporate sustainability issues: Insights for achieving the Sustainable Development Goals', *Journal of Cleaner Production*. Elsevier Ltd, 236, p. 117661. doi: 10.1016/j.jclepro.2019.117661.

Kautish, P., Paul, J. and Sharma, R. (2019) 'The moderating in fl uence of environmental consciousness and recycling intentions on green purchase behavior', *Journal of Cleaner Production*. Elsevier Ltd, 228, pp. 1425–1436. doi: 10.1016/j.jclepro.2019.04.389.

Ketron, S. and Naletelich, K. (2016) 'How e-readers have changed personal connections with books', *Qualitative Marketing Research: An International Journal*, 19(4), pp. 433–452. doi: 10.1108/QMR-10-2015-0078.

Krizek, K. J. *et al.* (2012) 'Higher education ' s sustainability imperative : how to practically respond?', *International Journal of Sustainability in Higher Education*, 13(1), pp. 19–33. doi: 10.1108/14676371211190281.

Krohn, M. D. *et al.* (1985) 'Social Learning Theory and Adolescent Cigarette Smoking : A Longitudinal Study', *Social Problems*, 32(5), pp. 455–473.

Kumar, A. (2019) 'Resources , Conservation & Recycling Exploring young adults ' e-waste recycling behaviour using an extended theory of planned behaviour model : A cross-cultural study', *Resources, Conservation & Recycling*. Elsevier, 141, pp. 378–389. doi: 10.1016/j.resconrec.2018.10.013.

Lertpratchya, A. P. *et al.* (2017) 'Assessing the role of college as a sustainability communication channel', *International Journal of Sustainability in Higher Education*, 18(7), pp. 1060–1075. doi: 10.1108/IJSHE-09-2016-0172.

Liempd, D. V., and Busch, J. (2013) 'Biodiversity reporting in Denmark', *Accounting, Auditing and Accountability Journal*, 26(5), pp. 833–872. doi: 10.1108/AAAJ.

Nitzl, C., Roldan, J. L. and Cepeda, G. (2016) 'Industrial Management & Data Systems Article information : Mediation Analysis in Partial Least Squares Path Modeling : Helping Researchers Discuss More Sophisticated Models', *Industrial Management & Data Systems*, 116(9), pp. 1849–1864.

Paletta, A. and Bonoli, A. (2019) 'Governing the university in the perspective of the United Nations 2030 Agenda The case of the University of Bologna', *International Journal of Sustainability in Higher Education*, 20(3), pp. 500–514. doi: 10.1108/IJSHE-02-2019-0083.

Ramayah, T., Lee, J. W. C. and Lim, S. (2012) 'Sustaining the environment through recycling : An empirical study', *Journal of Environmental Management*. Elsevier Ltd, 102, pp. 141–147. doi: 10.1016/j.jenvman.2012.02.025.

Sassen, R. and Azizi, L. (2018) 'Assessing sustainability reports of US universities', *International Journal of Sustainability in Higher Education*, 19(7), pp. 1158–1184. doi: 10.1108/IJSHE-06-2016-0114.

Saunders, M., Lewis, P. and Thornhill, A. (2016) *Research method for Business Student*. Edinburgh: Pearson.

Sepasi, S., Braendle, U. and Rahdari, A. H. (2019) 'Comprehensive sustainability reporting in higher education institutions', *Social Responsibility Journal*, 15(2), pp. 155–170. doi: 10.1108/SRJ-01-2018-0009.

Sima, M., Grigorescu, I. and Bălteanu, D. (2019) 'An overview of campus greening initiatives at universities in Romania', *International Journal of Sustainability in Higher Education*, 20(3), pp. 410–422. doi: 10.1108/IJSHE-01-2019-0036.

Swaim, J. A. *et al.* (2016) 'Motivational influences on supply manager environmental sustainability behavior', *Supply Chain Management: An International Journal*, 21(3), pp. 305–320. doi: 10.1108/SCM-07-2015-0283.

Thomson, I., Dey, C. and Russell, S. (2017) 'Activism, arenas and accounts in conflicts over tobacco control', *Accounting, Auditing and Accountability Journal*, 28(5), pp. 809–845.

Too, L. and Bajracharya, B. (2015) 'Sustainable campus: engaging the community in sustainability', *International Journal of Sustainability in Higher Education*, 16(1), pp. 57–71. doi: 10.1108/IJSHE-07-2013-0080.

Tregidga, H. (2013) 'Biodiversity offsetting: Problematisation of an emerging governance regime', *Accounting, Auditing and Accountability Journal*, 26(5), pp. 806–832. doi: 10.1108/AAAJ-02-2013-1234.

Waal, J. W. H. v. d., and Thijssens, T. (2020) 'Corporate involvement in Sustainable Development Goals: Exploring the territory', *Journal of Cleaner Production*. Elsevier Ltd, 252, p. 119625. doi: 10.1016/j.jclepro.2019.119625.

Wang, B. *et al.* (2019) 'Resources , Conservation & Recycling Determinants shaping willingness towards on-line recycling behaviour : An empirical study of household e-waste recycling in China', *Resources, Conservation & Recycling*. Elsevier, 143, pp. 218–225. doi: 10.1016/j.resconrec.2019.01.005.

Yadav, R. and Pathak, G. S. (2016) 'Intention to purchase organic food among young consumers : Evidences from a developing nation', *Appetite*. Elsevier, 96, pp. 122–128. doi: 10.1016/j.appet.2015.09.017.

Yoon, C. (2011) 'Theory of Planned Behavior and Ethics Theory in Digital Piracy : An Integrated Model', *Journal of Business Ethics*, 100, pp. 405–417. doi: 10.1007/s10551-010-0687-7.

Zhao, X., Lynch Jr, J. G. and Chen, Q. (2010) 'Reconsidering Baron and Kenny : Myths and Thruts about Mediation Analysis', *Journal of Consumer Research*, 37(2), pp. 197–206. doi: 10.1086/651257.