

# Accelerating the Adoption of Sustainable Development Practices among Online Distance Learning Higher Education Institutions in Malaysia

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## Abstract

Sustainability development practices currently is a pressing issue in many organizations and are gaining wide attention across the world. This study aims to evaluate the direct relationships between attitude, leadership style, organizational commitment, perceived behavioural control, and subjective norms with intention and the direct relationship between intention and adoption of sustainable development practices among employees of distance learning higher education institutions in Malaysia. Presently, in Malaysia, the adoption of sustainable development practices among online distance learning higher education institutions is still at not a very encouraging level and much improvement needs to be done to

increase the level of adoption. In this study, primary data was employed and a survey questionnaire, which was adapted from previous research studies, was utilized for data gathering. The data analysis involved 392 clean data which was analyzed using structural equation modelling. Firstly, the measurement model was evaluated to determine the convergent validity by examining the construct reliability and validity. The discriminant validity was then assessed and verified using cross-loading and Heterotrait-Monotrait (HTMT) ratios. The structural model was then evaluated and the hypothesis testing indicated that attitude, leadership style, perceived behavioural control, and subjective norms have a significant positive direct relationship with intention. Furthermore, the intention was found to have a positive and significant relationship with adoption. This study provides some insights in providing strategies to enhance the adoption of sustainable development practices

**Keywords:** Attitude, Leadership Style, Organizational Commitment, Perceived Behavioural Control, Subjective norms, Intention, Adoption

### Introduction

The environment of higher education institutions around the world today is becoming increasingly challenging to ensure that the operations of their respective organisations remain relevant in the future. In order to guarantee the sustainability of each institution's operation, sustainability development practice needs to be emphasized to ensure that higher education institutions that are currently operating can continue in the future. According to Brundtland (1987), sustainable development can be defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Many public and private organizations have proactively engaged with economic, social, and environmental sustainability dimensions (Aleixo et al., 2021). The implementation rate of sustainable development practice is still decreasing among organizations at the global level as a result of several internal factors of the organization (Chankseliani & McCowan, 2021). Higher education institutions have a very important role in implementing sustainable development practices in their respective organisations. This is because higher education institutions are agents in the education of future leaders that will contribute to the success of the United Nations Sustainable Development Goals (SDGs) implementation (Acosta Castellanos & Queiruga-Dios, 2022). In Malaysia, higher education institutions have shown a strong commitment to corroborating the Malaysian 2030 agenda for sustainability development. As stated in the Higher Education Blueprint 2015-2025 (Ministry of Education Malaysia, 2015), one of the country's main aspirations is to ensure financial sustainability. In order to achieve this goal, Malaysian higher education institutions state their obligation to accept the principles of sustainable development (Moganadas et al., 2022). Therefore, it has been used by several higher education institutions (Hussin & Kunjuraman, 2017). There is a pressing issue of sustainable development practices in online distance learning universities in Malaysia. Despite the growth of online education, research shows that the integration of good practices in these institutions faces many challenges (Moganadas et al., 2022). Also, research shows that the current level of distance learning adoption in online universities is not encouraging and indicates that further improvement is needed (Saleem et al., 2023). Therefore, assessing these challenges and developing strategies to support sustainable development in this context is crucial. The aim of this study is to investigate the adoption of sustainable development practices in Malaysian open and distance-learning higher education institutions while attempting to develop a complete framework by integrating all the determinants of the adoption of sustainable development practices. It is expected that the

findings may shed some light on the body of knowledge theoretically and practically by providing a better understanding of sustainable development practices determinants.

## **Literature review**

### *Underpinning theory*

According to the planned behaviour theory (Ajzen, 1991), behaviour is influenced by intentions. This is determined by three things: attitude, subjective norms, and perceived behavioural control. External factors can also directly control or inhibit behavior. With regard to intention, this is considered according to the person's desired behavior. To the extent that behavior is observed, it is a valid measure of actual mastery of behavior. Using evidence-based instructional practice (EBIP) as an example, it is sensible behavior. The following points can be defined: Attitudes towards education and learning, especially towards the use of EBIP, are relevant in this context. Subjective norms can be seen as social pressure. This includes awareness of other people's expectations and the extent to which people value those expectations. Perceived behavioural control is the sense of how well a person can perform a certain action in a certain situation. Therefore, self-efficacy in EBIP and external factors such as environment, time, and resources. In addition, these three supports the intention and actions carried out. Ajzen provides some data to withdraw sponsorship. In chapter 6 of his book, only attitude is more predictive of behaviour (Ajzen, 2005).

### *Leadership Style*

Leadership is the practice of directing an organisation in a way that makes it more cohesive and clearer. Leadership includes influencing the objectives of the group or organisation's mission. Influencing people in the organisation to implement strategies and achieve goals. Leadership style affects the protection and identity of the organisation and is considered as a process that consists of influencing the culture of an organisation. Another general definition of leadership is: "the process of influencing others. understand and agree on what needs to be done and how to do it and achieve common goals It is a process that facilitates individual and collective efforts to achieve" (Yukl, 2010). "Leadership inspires others to follow your vision in the parameters you set. since joint efforts of shared vision". Leadership is a process of social influence that maximises the efforts of others to achieve goals" (Kruse, 2013) Leadership is the behaviour that guides people in an organisation to achieve their goals. Leaders do this by influencing employee behaviour in various ways. Leaders set a clear vision for the organisation, motivate employees and guide them through the workflow. and increase morale. In addition to findings about leadership styles in general, recent research has also focused on the leadership styles of corporate leaders in the public and private sectors. Research shows that the leadership style of organisational leaders influences employee attitude and intention. It reflects your relationship with your employees. Innovative leadership models are recognised for increasing employee intention. On the other hand, interchangeable and unrestricted leadership styles produce different results in different situations (Dai et al., 2022) that affect the attitude and work spirit of employees (Mansor et al., 2021). Strategies to attract and retain talent. the basic reason for the growing interest in the study of leadership styles. This helps identify potential leaders to lead the organization in the current competitive environment (Kalkan et al., 2020).

### *Attitude*

Modern studies have concluded that "Attitude is a comprehensive evaluation of a psychological object registered in its attribute dimensions: good-bad, harmful-beneficial.

pleasant-unpleasant, disgusting" (Ajzen, 2001). Brekler (1984) defines attitude as a response to stimuli or existing attitude objects. Eagley and Chaiken (2007) provide a broad description of "manifest psychological tendencies in liking or disliking", three assumptions have been made as the main attributes of attitudes: evaluation, attitude goals, and preferences, respectively. They can show that people tend to value certain things (Eagly & Chaiken, 2007). Numerous studies have discovered the relationship between attitude and purchase intention (Kim & Chung, 2011). According to Ajzen's (1991) theory of planned behavior, people who have a favorable attitude toward a particular behavior are prone to exhibiting such behavior. Hence, the more positive attitude is, the stronger their intention will be. For the success of sustainable development, the employees must be able and willing to adopt and effectively utilize sustainable development practices. The findings by Hoque et al. (2010) stated that they noticed that attitude plays one important role. If people with a positive attitude, they tend to adopt sustainable development practices more than others. A study done by Wang et al. (2021) concluded that in terms of user attitudes, the majority of the user's concern about credibility, and usability, such as helping them to manage their work, and they are convinced that sustainable development practices could effectively be used to enhance their work quality. In addition, a study done by Novovic et. al (2022) mentioned that most of the participant's attitudes toward sustainable development focused on practices that would be helpful for them to manage their work and more systematic ways and in the right direction. Hence participants' attitudes toward using sustainable development practices believe that their work will be improved and give them more satisfaction.

### *Subjective Norms*

Understanding the relationship between subjective norms and intention is crucial in promoting sustainable behavior and encouraging the adoption of sustainable practices (Ajzen, 1991). Subjective norms encompass an individual's perception of social norms and expectations regarding a specific behavior, including the beliefs about what significant others think and the perceived pressure to comply with those norms. These norms significantly influence an individual's intention to adopt sustainable development practices (Greisel et al., 2023). When individuals perceive that their social network supports and expects sustainable behavior, it creates a positive social influence that can enhance their intention to engage in sustainable practices. Dalila et al. (2020) examine the direct influence of subjective norms on the intention to use a specific behavior. The study reveals that stronger perceived social norms regarding the behavior lead to a higher intention to use it. Additionally, personal values are found to partially mediate the relationship between subjective norms and intention. In the study conducted by Wijayati et al. (2021), subjective norms are shown to significantly influence entrepreneurial intention. When individuals perceive social expectations and pressures related to entrepreneurship, it positively impacts their intention to become entrepreneurs. The study also explores the role of entrepreneurial attitude, planned behavioral control, and entrepreneurship education in this relationship. Mahlaole and Malebana (2021) focus on the relationship between subjective norms and entrepreneurial intentions among students, with a specific emphasis on the effects of entrepreneurship education. The study reveals that subjective norms significantly influence students' entrepreneurial intentions. When students perceive social expectations and pressures related to entrepreneurship, it positively affects their intention to become entrepreneurs. These studies collectively emphasize the importance of subjective norms in shaping intention, whether it pertains to the adoption of specific behavior, entrepreneurial endeavors, or

educational contexts. The influence of subjective norms highlights the significance of social factors in influencing individual intentions in various domains.

#### *Perceived Behavioural Control*

Behavioral control appears to arise from an individual's belief that they have sufficient resources, capabilities, and opportunities to perform certain behaviors. According to Ajzen (1991), perceived behavioural control refers to an individual's consideration of the ease or difficulty of engaging in certain behaviors. Similarly, Abrahamse (2019) defines perceived behavioural control as an individual's assessment of factors that can facilitate or inhibit certain behaviours. Based on the Theory of Planned Behavior, perceived behavioural control can directly influence behavioural intentions. That is, people who are perceived to have high behavioural control may have stronger intentions to engage in certain behaviors than those who are perceived to have low behavioural control (Gibson et al., 2021). More importantly, individuals who perform certain behaviors and at the same time try to feel in control of their behavior are more likely to engage in certain behaviors. For example, people with the same level of intention to engage in behavior may have different levels of engagement due to different levels of behavioral control. Similarly, one's intentions may not lead to action due to a lack of perceived behavioural control, it can be concluded that it is possible to give behavioural control and intentions to determine behaviour. Previous studies have used the TPB to improve health behaviors (Moan & Rise, 2005), resource conservation (Chaudhary et al., 2017), and safe environmental practices (Yurieva et al. et al., 2020; Yang et al. al. al., 2020).

#### *Organisational Commitment*

Over the years, "organisational engagement" has begun to gain a lot of attention from leaders of various organisations. It is one of the main building blocks for examining the correspondence between individuals and organisations. It is defined differently as many researchers have worked on it. According to DiRenzo et al. (2022), organisational commitment is a psychological relationship between an individual and an organisation. It is related to ambition, commitment to action in the organisation, and the probability of staying in the organisation (Muhammad et al., 2022). Much research on the development of employee engagement in organisations has described three components: identity, involvement, and loyalty. The identity reflects employee pride in the organisation and acknowledges the organisation's goals and principles. Commitment reflects psychological absorption in normal work activities in the organisation. Loyalty reflects the affection and emotional commitment of employees and expresses their desire to remain in the organisation. Tapjoy and Sanjay (2022) consider proposing commitment as a concept of attitude or behavior in similar work. Our attitude and commitment reflect how we ensure our employees live the organisation's values and are motivated to maintain compliance. On the other hand, behavioural commitment refers to the process in which an employee's past experience motivates him to stay or leave the company (Moreira et al., 2022).

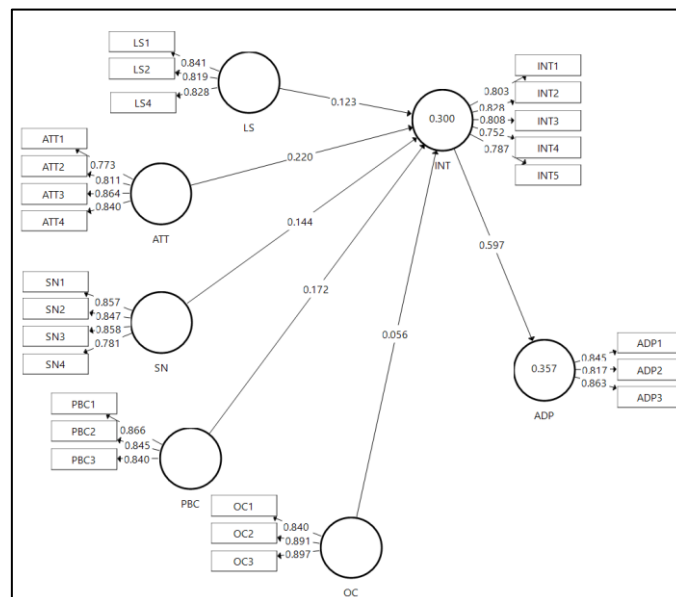
#### *Intention*

Several scholars have tested and empirically confirmed the direct relationship between perceived behavioural control and individual willingness to practice sustainable development and between individual willingness (Liu et al., 2021) and adoption behavior (Liu et al., 2021). In this context, some studies have used green intention as a mediator. For example, Liu et al. (2020d) studied a sample of 2824 participants from China. and shows a perfect mediator of environmental behavior attention between environmental knowledge and ecological

behavior. Likewise, Rahman et al. (2020) analyzed a sample of 314 respondents from Bangladesh and found that, in the context of sustainable development, the Intention to buy green is associated with environmental awareness. effects of the same group and users' perceptions of competence However, few authors have studied the mediating role of interpersonal green intentions or TPB general factors (e.g., attitudes, personal norms, (Mafabi et al., 2017) collected data from managers working in hospitals in Uganda. and showed that behavioural intention mediates the relationship between common factors in TPB and knowledge-sharing behavior. Abrahamse, W. (2019) also identified a perfect mediation of attention between TPB factors and environmental protection behavior Based on the above hypotheses' development, the following hypotheses were proposed for this study:

- H<sub>1</sub>*: There is a relationship between attitude and intention of sustainable development practices adoption among employees of online distance learning higher education institutions
- H<sub>2</sub>*: There is a relationship between leadership style and intention of sustainable development practices adoption among employees of online distance learning higher education institutions
- H<sub>3</sub>*: There is a relationship between organizational commitment and intention of sustainable development practices adoption among employees of online distance learning higher education institutions
- H<sub>4</sub>*: There is a relationship between perceived behavioural control and intention of sustainable development practices adoption among employees of online distance learning higher education institutions.
- H<sub>5</sub>*: There is a relationship between subjective norms and intention of sustainable development practices adoption among employees of online distance learning higher education institutions.
- H<sub>6</sub>*: There is a relationship between intention and adoption of sustainable development practices adoption among employees of online distance learning higher education institutions.

Figure 1:  
 Research Model



Note: LS=Leadership Style ATT=Attitude SN=Subjective Norm

PBC=Perceived Behavioural Control OC=Organizational

Commitment

INT=Intention ADP=Adoption

### **Methodology**

The aim of this study was to focus on online distance learning higher education institutions' employees to be selected as respondents to the study. This study employed primary data which was collected using a survey questionnaire instrument. The survey questionnaire was designed subsequently after an in-depth previous studies assessment to acquire appropriate measurement scales that were frequently used and have solid reliability and validity. The survey questionnaires were circulated through email to the targeted respondents by utilizing snowballing sampling which was a non-probability sampling technique for the purpose of data collection. There was a total of 25 observed variables including independent variables, mediator, and dependent variable measurements. independent variables consist of leadership styles construct with 3 measurement items (Madlock, 2008), attitude with 4 measurement items (Zuhal et al., 2017), subjective norms construct with 4 items (Indrayathi et al., 2021), perceived behavioral control construct with 3 items (Smith, 2015) and organizational commitment construct with 3 items (Angle & Perry, 1981). The mediating variable was the intention with 5 measurements (Fu et al., 2016), and the dependent variable was adoption with 3 measurement items (De Cannière et al., 2009). This study used a five-point Likert scale with a range of strongly disagree to strongly agree to measure each construct measurement item. From the 495 questionnaires that were distributed, 413 were returned. This constitutes a 75.6% response rate and it was adequate to use structural equation modeling (SEM) to perform the data analysis. After the deletion of outliers and data cleaning, 392 questionnaires were found to be clean and ready for data analysis. Table 1 demonstrates the respondents' profiles of the ODL higher education institutions employees. To run the multivariate data analysis and the proposed hypotheses testing, Smartpls4 software was utilized. Additionally, in the procedure of model measurement and structural model evaluation, as proposed by Ringle et al. (2022), Smartpls4 was utilized due to its assessment ability.

Table 1:  
Respondents' Profile

		Frequency	Percent
Gender	Male	179	45.7
	Female	213	54.3
Age	<30 Years Old	33	8.4
	31-40 Years Old	110	28.1
	41-50 Years Old	177	45.2
	51-60 Years Old	50	12.8
	>60 Years Old	22	5.6
JobCategory	Academic	305	77.8
	Non-Academic	87	22.2
YearService	<5 Years	32	8.2
	6-10 Years	95	24.2
	11-15 Years	155	39.5
	16-20 Years	67	17.1
	21-25 Years	38	9.7
	26-30 Years	5	1.3
Recommend	Yes	346	88.3
	No	46	11.7
Total		392	100

### Data Analysis

#### *Common Method Bias*

In the field of management research, a common issue is the presence of common method bias, which occurs when the variance in a study is believed to represent constructs but actually represents the measurement method used. To address this issue, the researcher in this study utilized Harman's single-factor test method to assess the measurement items. The results of the test showed that the principal factor accounted for only 36.7% of the variance, indicating that common method bias was not a significant problem in the study. This finding is consistent with Podsakoff & Organ's (1986) suggestion that common method bias is not a concern when the principal component explains less than 50% of the variance.

### Measurement Model

The PLS-SEM algorithm was employed to gauge and verify the validity and reliability of the constructs' measurement. As recommended by Hair, Hult, Ringle, and Sarstedt (2017), there were two important elements in PLS-SEM which were the outer goodness model reliability and validity for the study. Initially, the specified model was assessed, and after early outer loading reliability and validity assessment, two items from the leadership style, one item from attitude, one item from the subjective norms, two items from perceived behavioral control, two items from organizational commitment, and two items from adoption were deleted due to lower loading which caused in the construct validity of Average variance Extracted (AVE) less than the 0.5 threshold. After the deletion of lower loading items, all constructs have achieved the AVE of a minimum of 0.5 thresholds with a minimum AVE of 0.634 and maximum AVE of 0.768 (Table 2). This showed the convergent validity for all constructs was established. Further, Table 2 also demonstrated the composite reliability for all constructs were ranging from 0.880 to 0.909, which is far higher than the threshold of 0.7 as proposed by Hair et al. (2017). Then, the establishment of discriminant validity was evaluated to confirm its presence



in this study by evaluating the measurement items cross-loading. The assessment results have demonstrated that all item loadings were greater than their respective cross-loadings (Table 3). The establishment of discriminant validity was further assessed with the Hetrotrait-Monotrait (HTMT) ratios and the result has shown that all the seven constructs' ratios were less than 0.9 (Table 4) as suggested by Henseler, Ringle, and Sarstedt (2015). Therefore, it can be resolved that this study has confirmed the reliability and validity of all latent constructs as proposed by Hair, Hult, Ringle, and Sarstedt (2014).

Table 2:  
Construct Reliability & Validity

Constructs	CA	CR	AVE
ADP	0.795(0.751,0.832)	0.880(0.857,0.899)	0.709(0.667,0.747)
ATT	0.842(0.807,0.869)	0.893(0.872,0.910)	0.677(0.631,0.716)
INT	0.856(0.826,0.881)	0.896(0.878,0.913)	0.634(0.590,0.677)
LS	0.775(0.714,0.822)	0.869(0.837,0.894)	0.688(0.632,0.738)
OC	0.85(0.810,0.880)	0.909(0.886,0.926)	0.768(0.723,0.806)
PBC	0.809(0.761,0.845)	0.887(0.863,0.906)	0.723(0.677,0.764)
SN	0.857(0.825,0.882)	0.903(0.886,0.919)	0.700(0.656,0.740)

Table 3:  
Cross Loadings

	ADP	ATT	INT	LS	OC	PBC	SN
ADP1	<b>0.845</b>	0.504	0.547	0.405	0.416	0.444	0.402
ADP2	<b>0.817</b>	0.429	0.460	0.372	0.413	0.326	0.373
ADP3	<b>0.863</b>	0.445	0.495	0.358	0.399	0.363	0.375
ATT1	0.356	<b>0.773</b>	0.315	0.418	0.436	0.374	0.284
ATT2	0.413	<b>0.811</b>	0.365	0.403	0.492	0.494	0.337
ATT3	0.531	<b>0.864</b>	0.472	0.565	0.468	0.506	0.389
ATT4	0.473	<b>0.840</b>	0.401	0.450	0.508	0.497	0.340
INT1	0.534	0.429	<b>0.803</b>	0.348	0.289	0.391	0.318
INT2	0.484	0.405	<b>0.828</b>	0.314	0.330	0.343	0.268
INT3	0.457	0.336	<b>0.808</b>	0.308	0.270	0.277	0.294
INT4	0.451	0.351	<b>0.752</b>	0.277	0.296	0.310	0.278
INT5	0.444	0.379	<b>0.787</b>	0.278	0.372	0.336	0.302
LS1	0.370	0.442	0.327	<b>0.841</b>	0.345	0.222	0.356
LS2	0.365	0.406	0.261	<b>0.819</b>	0.301	0.242	0.289
LS4	0.384	0.541	0.354	<b>0.828</b>	0.426	0.336	0.329
OC1	0.365	0.455	0.306	0.348	<b>0.840</b>	0.409	0.333
OC2	0.410	0.527	0.321	0.364	<b>0.891</b>	0.494	0.394
OC3	0.489	0.532	0.390	0.429	<b>0.897</b>	0.534	0.360
PBC1	0.412	0.553	0.365	0.290	0.541	<b>0.866</b>	0.305
PBC2	0.394	0.454	0.368	0.301	0.444	<b>0.845</b>	0.278
PBC3	0.345	0.454	0.335	0.236	0.416	<b>0.840</b>	0.317
SN1	0.422	0.399	0.298	0.374	0.408	0.347	<b>0.857</b>
SN2	0.392	0.388	0.287	0.301	0.329	0.291	<b>0.847</b>
SN3	0.343	0.287	0.300	0.293	0.278	0.245	<b>0.858</b>
SN4	0.367	0.314	0.337	0.344	0.360	0.291	<b>0.781</b>

Table 4:

## Hetrotrait-Monotrait(HTMT) Ratio

	Ratios	2.50%	97.50%
ATT -> ADP	0.655	0.568	0.739
INT -> ADP	0.718	0.632	0.795
INT -> ATT	0.553	0.450	0.652
LS -> ADP	0.570	0.448	0.683
LS -> ATT	0.680	0.590	0.765
LS -> INT	0.462	0.352	0.571
OC -> ADP	0.585	0.474	0.688
OC -> ATT	0.681	0.587	0.767
OC -> INT	0.454	0.334	0.570
OC -> LS	0.525	0.401	0.641
PBC -> ADP	0.558	0.451	0.653
PBC -> ATT	0.687	0.600	0.766
PBC -> INT	0.500	0.391	0.606
PBC -> LS	0.404	0.294	0.510
PBC -> OC	0.657	0.558	0.747
SN -> ADP	0.551	0.438	0.651
SN -> ATT	0.483	0.364	0.596
SN -> INT	0.426	0.307	0.536
SN -> LS	0.477	0.344	0.602
SN -> OC	0.482	0.369	0.584
SN -> PBC	0.423	0.294	0.543

*Structural Model*

The evaluation of the structural model was executed by assessing the path coefficient ( $\beta$ ) simultaneously with the coefficient of determination ( $R^2$ ) value (Hair et al., 2017). PLS technique was utilized to bootstrap 5000 sub-samples to verify the significant level of the path coefficient. The statistical results of hypotheses testing of path coefficients (Beta), t-statistics, p-value, and confidence interval were shown in Table 5. For *hypothesis 1*, the statistical result demonstrated attitude has a positive and significant influence on intention ( $\beta=0.220$ ,  $t=3.685$ ,  $p=0.000$ ), therefore  $H_1$  was supported. For *hypothesis 2*, the result showed that leadership style has a positive and significant influence on intention ( $\beta=0.123$ ,  $t=2.341$ ,  $p=0.019$ ), thus,  $H_2$  was well supported. For *hypothesis 3*, the statistical result has shown that organizational commitment has positively and but not significantly influenced business performance ( $\beta= 0.056$ ,  $t=0.946$ ,  $p=0.344$ ), hence,  $H_3$  was not supported. For *hypothesis 4*, it was shown that perceived behavioural control has a positive and significant direct effect on intention ( $\beta=0.172$ ,  $t=3.023$ ,  $p=0.003$ ), hence,  $H_4$  is supported. For *hypothesis 5*, it was revealed that subjective norms positively and significantly influenced intention ( $\beta = 0.144$ ,  $t = 2.904$ ,  $p=0.004$ ), hence,  $H_5$  was supported. For *hypothesis 6*, it was revealed that intention positively and significantly influenced adoption ( $\beta=0.597$ ,  $t=17.250$   $p=0.000$ , hence,  $H_6$  was supported. The summary of the hypotheses testing results is presented in Table 5.

The inner value inflation factors (VIFs) were all less than the more liberal threshold of 5 with the highest value being 2.134 (Table 6). Collinearity at this level allows the structural model coefficients size comparison and interpretation. The adoption demonstrated the high level of endogenous constructs' explained variance amount with an  $R^2$  of 0.357 (Figure 1). For the

mediating construct, intention, it showed that the model explains a 30% variance of the construct ( $R^2=0.30$ ). More significantly, the model's out-of-sample predictive power was to make conclusions and give managerial propositions. For this evaluation, the PLSpredict procedure was adopted on adoption (Shmueli et al. 2016, 2019).  $Q^2$  predict higher than 0 showed the PLS-SEM predictions were higher than the naïve mean value prediction standard outcomes (Table 7). Furthermore, the root mean square error (RMSE) value of the PLS-SEM predictions was six of eight cases lower than the RMSE value of the linear model (LM) prediction benchmark. These outcomes have proven the proposed model has a predictive power (Table 7).

Finally, an importance-performance analysis (IPMA) permits the combination of the importance of latent variables that explain adoption (total effect) and their performance (average value on a scale from 0 to 100) as demonstrated in table 8, which was to further back-up the managerial implications (Ringle and Sarstedt 2016; Hair et al. 2018). With reference to the total effects, intention has the strongest total effect (0.665) on adoption, then followed by attitude (0.121), perceived behavioural control (0.107), subjective norms (0.079), leadership style (0.077) and organization commitment (0.030). With regards to the performance value, perceived behavioral control demonstrated the highest performance value (69.316), and intention displayed the lowest performance value (61.036). Therefore, the intention has the highest importance for adoption but also at the same time has the lowest performance value. The top management of the ODL higher education institutions hence should give more attention to and emphasize their activities to improve the performance of intention among their employees so that it would affect positively the performance of the adoption of sustainable practices.

Table 5:  
Hypotheses Testing & Result

	Path	T Statistics	P Values	$f^2$	2.50%	97.50%	Decision
ATT -> INT	0.220	3.685	0.000	0.032	0.094	0.328	<i>Supported</i>
LS -> INT	0.123	2.341	0.019	0.014	0.017	0.223	<i>Supported</i>
					-		
OC -> INT	0.056	0.946	0.344	0.002	0.054	0.176	<i>Not Supported</i>
PBC -> INT	0.172	3.023	0.003	0.025	0.062	0.285	<i>Supported</i>
SN -> INT	0.144	2.904	0.004	0.022	0.049	0.243	<i>Supported</i>
INT -> ADP	0.597	17.250	0.000	0.555	0.521	0.659	<i>Supported</i>

Table 6:  
Inner Collinearity Statistics (VIF)

	ADP	INT
ATT		2.134
INT	1.05	
LS		1.571
OC		1.783
PBC		1.691
SN		1.333

Table 7:  
Predictive Model Assessment

	PLS-RMSE	LM-RMSE	PLS-LM	Q <sup>2</sup> _predict
ADP2	0.638	0.625	0.013	0.190
ADP1	0.660	0.622	0.038	0.239
ADP3	0.692	0.695	-0.003	0.203
INT5	0.622	0.634	-0.012	0.176
INT1	0.620	0.624	-0.004	0.218
INT2	0.628	0.645	-0.017	0.181
INT4	0.684	0.701	-0.017	0.148
INT3	0.680	0.683	-0.003	0.137

Table 8:  
Importance-Performance Map Analysis (IPMA)

	Total Effect	Performance
ATT→ADP**	0.121	67.315
INT→ADP**	0.665	61.036
LS→ADP**	0.077	67.009
OC→ADP	0.030	62.492
PBC→ADP**	0.107	69.316
SN→ADP**	0.079	67.155

Note: \*\*p<0.05

### Discussion & Conclusion

This study focused on the importance of attitude, leadership style, organizational commitment, perceived behavioral control and subjective norms, intention, and adoption from the point of view of employees who work with ODL higher education institutions in Malaysia which were examined empirically based on a theoretical research model. In this study, an evaluation was made on key determinants, namely attitude, leadership style, organizational commitment, perceived behavioral control and subjective norms, and intention and the implication on the adoption of sustainable practices. The main purpose of this study is to examine the direct relationship between attitude, leadership style, organizational commitment, perceived behavioral control, and subjective norms with intention and the direct relationship between intention with adoption. From the result of statistical data analysis, the proposed model explained and estimated attitude, leadership style, organizational commitment, perceived behavioral control and subjective norms, intention, and adoption as perceived by their employees.

Moreover, attitude has been found to have the strongest direct influence on intention ( $\beta=0.220$ ). Therefore, it is very important for ODL higher education institutions to come out with a strategy to ensure that their employees develop a positive attitude toward intention so that it will have an impact and strengthen employee adoption of sustainable practices in their organization. Employees who have a positive attitude towards sustainability are more likely to adopt sustainable practices. For example, an employee who sees the benefits of reducing paper waste may be more likely to print double-sided documents or reuse paper rather than throw it away. To promote a positive attitude towards the intention to adopt sustainable practices, organizations can provide education and training on sustainability practices, and encourage employees to share their ideas and best practices.

Perceived behavioural control has the second strongest influence on intention ( $\beta=0.172$ ). When employees perceive that they have control over their actions and that their actions can have an impact, they are more likely to adopt sustainable practices. Organizations can promote perceived behavioral control by providing training on sustainability practices, creating opportunities for employees to participate in sustainability programs, and by providing feedback on employees' sustainability efforts. Perceived behavioral control should be promoted through feedback and monitoring. This can be achieved by providing feedback on sustainable behaviors and monitoring progress toward sustainability goals.

Subjective norms have the third strongest influence on intention ( $\beta=0.144$ ). Subjective norms also play a crucial role in shaping employees' intention to adopt sustainable development practices. When sustainability practices become the norm, employees are more likely to adopt them as well. For example, when recycling bins are placed throughout an organization and recycling is encouraged, employees are more likely to recycle. Organizations can encourage subjective norms by providing incentives for sustainability practices and recognizing and rewarding employees who adopt sustainable practices.

Leadership style has the fourth strongest influence on intention ( $\beta=0.123$ ). Leadership style is an important factor that can influence employees' intention to adopt sustainable development practices. Leaders who are committed to sustainability and who lead by example can inspire their employees to adopt sustainable practices. Furthermore, a leader who promotes sustainability and encourages employees to participate in sustainable development practices can create a sense of shared purpose and motivate employees to adopt these practices. Leadership style should be focused on sustainability and environmental stewardship. This can be achieved by ensuring that leaders' model sustainable behaviors and promote sustainability initiatives.

#### *Theoretical and Practical Implications*

This study's primary theoretical implications involve three key aspects. Firstly, it operationalized and tested a complicated theoretical model that links various constructs from the business management literature. Secondly, it fills an existing research gap by investigating and providing empirical evidence for each construct in the context of private organizations. Lastly, all constructs were integrated into an established business management model to explore the connection between attitude, leadership style, organizational commitment, perceived behavioral control, and subjective norms with the intention to adopt and the relationship between intention and adoption. The practical implications of the empirical study using the presented model have been identified for ODL higher education institutions from a management perspective. According to the study, employee perspective is significantly influenced by attitude, leadership style, perceived behavioral control, and subjective norms. The study suggests that offering financial remuneration and high-quality services alone is not sufficient for management to enhance these factors. Instead, management should implement strategies to strengthen these aspects, which can positively influence employees' intentions. To improve the adoption of sustainable practices in ODL higher education institutions, it is important for the organization to support and encourage employees to participate and engage in all relevant activities. This approach can help increase employees' sense of intention, leading to positive and strong adoption behavior. Therefore, the organization must establish a strategy that goes beyond simply providing financial incentives and focus on strengthening the employees' attitude, leadership style, perceived behavioral control, and

subjective norms. This can facilitate a positive work environment and culture of sustainability, which is critical for the long-term success of ODL higher education institutions.

### *Suggestions for Future Studies*

To generate more profound implications, future studies can explore the differences between various types of ODL higher education institutions. Additionally, other variables that may influence the adoption of sustainable practices, such as corporate image, peer influence, working environment, and motivation, can also be examined. In conclusion, this study provides preliminary work demonstrating the significance of attitude, leadership style, perceived behavioral control, and subjective norms with intention, as well as the impact of intention on adoption. This study can have practical implications and potential research opportunities for ODL higher education institutions. Future research should focus on identifying the factors that influence adoption and incorporating them into qualitative studies targeting specific ODL higher education institutions. While previous studies have shown the correlation between attitude, leadership style, perceived behavioral control, and subjective norms with intention and adoption, the proposed model can help analyze the specific factors that affect all constructs and the relationships between them. This can provide a more comprehensive understanding of the adoption of sustainable practices in ODL higher education institutions.

### **Conclusion**

This study underscores the key drivers of sustainable practices adoption in ODL higher education institutions. Attitude holds the strongest influence on intention, emphasizing the need for a positive sustainability mindset. Perceived behavioral control, subjective norms, and leadership style also significantly impact intention. Organizations must empower employees, cultivate a sustainable culture, and promote leadership that champions sustainability. This research offers theoretical insights and practical guidance for enhancing sustainability adoption, highlighting its vital role in the long-term success of ODL higher education institutions.

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