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ACCEPTANCE OF ICT USAGE AMONG INDIGENOUS STUDENTS: EMPIRICAL FINDINGS BASED ON UTAUT

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Abstract

Information Communication Technology (ICT) should be able to simplify and help students by providing continuous education during the pandemic. However, due to the limited ICT infrastructure and different cultural background of the Indigenous people, the usage of ICT was unable to be utilised in full capacity. Peninsular Malaysia is home to the indigenous Orang Asli community, the majority of whom continue to live a traditional lifestyle. The Orang Asli's living conditions have been improved through a number of initiatives by the Malaysian government. JAKOA, for instance, has started a number of social development initiatives aimed at improving the well-being of the Orang Asli community. Thus, this study aims to identify the factors affecting the behavior and usage intention towards technology among Indigenous students in Intellectual Center Aboriginal Students or Pusat Intelek Pelajar Orang Asli (PIPOA). We discovered that all hypotheses are supported positively and significantly by using primary data and all information obtained through the distribution of questionnaires using Google form to the targeted respondents. This indicates that the UTAUT constructs contribute to the intention to use technology among the sample of this study. This study shed light to the new education era, providing assurance to equal education quality and lifelong learning opportunities for young generation of the Indigenous community.

Keywords: UTAUT, ICT, Indigenous students, Malaysia

1. Introduction

Indigenous people or in Malay term "Orang Asli" are the original people who lived in Peninsular Malaysia. They are classified into the Negrito, Senoi, and Proto-Malay tribes. In Malaysia, there are reported to be 953 Indigenous communities with a combined population of 206,777 Indigenous people (Department of Orang Asli Development, 2021). Indigenous people in Malaysia were given the same rights as other ethnic groups in terms of growth, social advancement, and educational opportunities (Singar & Zainuddin, 2017). However, the issue of dropouts among Indigenous students is an ongoing concern within the context of Malaysia education (Norwaliza, 2022). Ministry of Education (MOE) is committed to help the young generation of Indigenous people by implementing "Transformasi Pendidikan Orang Asli dan Pribumi" through "Pelan Pembangunan Pendidikan Malaysia (PPPM) 2013-2025" (Bernama, 2022). All of this is carried out to ensure that Indigenous children can fit into the existing educational programme as Malaysia moves toward the Fourth Industrial Revolution (IR 4.0).

During the COVID-19 pandemic, schools and higher institutions were forced to shut down their operation due to the enforcement of Movement Control Order (MCO). There are no standards, practices, guides, or examples to manage these institutions during the pandemic as all the event occurred abruptly (Lopez et al., 2022). The initiative to ensure the continuity of educational service was through online learning. However, Indigenous communities need special attention as situations may vary compared to urban settings (Ching & Loke, 2016). They are not well equipped to adapt with the transition from traditional learning to online learning. Hence, Malaysian educational sector is facing tremendous challenges in delivering educational services during an unprecedented event to the Indigenous students (Shamsir et al., 2021).

Online learning means that the students will use ICT to study (Lin et al., 2017). However, global distribution of ICTs in the most Indigenous villages is not as advanced as in the urban area (Bala & Tan, 2021). Their community's geographic location restricts their access to ICT and worsens the digital gap, which slows the expansion of ICT in education within the Indigenous community (Luaran et al., 2016). As they live and work in specific locations and speak only their own culture's language, Indigenous students who use ICT sparingly have difficulty understanding and using instructional software that is often produced in English and is text-heavy (Kenrick & Lewis, 2004; Stephens et al., 2006). Therefore, the aim of this study is to examine the factors that contribute to the behavior intention and usage intention of technology among Indigenous students in Intellectual Center Aboriginal Students or Pusat Intelek Pelajar Orang Asli (PIPOA).

The structure of this study is followed by a literature review & hypotheses development, research methods, findings and lastly conclusion and recommendation.

2. Literature Review

2.1. The Indigenous group in Malaysia

Indigenous Malaysians made up about 0.63% of the country's population of 32.37 million people as of 2020, according to estimation. Based on Figure 1, the Indigenous people have 18 subgroups within three

(3) major categories which are Negrito (2.94%), Senoi (55.09%) and Melayu Proto (41.97%) (Department of Orang Asli Development, 2020).

NEGERI	SENOI						MELAYU PROTO						NEGRITO						JUMLAH
	Che Wong	Jahut	Mahmeri	Semai	Semoq Beri	Temiar	Jakun	Orang Kanaq	Orang Kuala	Orang Seletar	Semelai	Temuan	Bateq	Jahai	Kensiu	Kintak	Lanoh	Mendriq	
Johor	1	11	3	23	5	3	8,203	102	4,728	1,778	10	741	-	-	-	-	-	-	15,608
Kedah	-	2	-	11	-	16	-	-	-	-	5	5	-	-	245	22	3	1	310
Kelantan	-	1	3	132	10	14,628	22	-	-	-	-	25	677	687	8	-	-	453	16,646
Melaka	1	-	1	15	2	-	25	-	10	-	3	1,690	-	-	-	-	-	-	1,747
Negeri Sembilan	1	21	16	41	2	10	111	-	1	-	2,340	9,473	1	-	-	-	-	-	12,017
Pahang	523	6,149	42	23,759	4,926	255	30,679	3	14	1	4,899	6,048	1,124	-	1	-	-	2	78,425
Perak	1	166	19	35,453	30	21,451	197	-	50	1	144	235	6	2,205	22	162	394	29	60,565
Selangor	6	31	3,854	1,003	8	395	244	-	15	2	28	14,867	1	1	-	-	-	1	20,456
Terengganu	-	2	1	1	875	1	81	-	-	-	1	3	38	-	-	-	-	-	1,003
JUMLAH	533	6,383	3,939	60,438	5,858	36,759	39,562	105	4,818	1,782	7,430	33,087	1,847	2,893	276	184	397	486	206,777
	113,910						86,784						6,083						

Figure 1. Ethnic distribution of Indigenous people by ethnicity/sub-ethnicity by state

According to Figure 2, based on the census of 2020 done by Department of Orang Asli Development, the distribution of the Indigenous people settlements in Pahang according to the 3 major categories are Negrito (1,127), Senoi (35,654) and Melayu Proto (41,644) which resulted in a total of 78,425 people, from the total of 206,777 Indigenous people in Malaysia altogether, and it is the highest population compared to other states (Department of Orang Asli Development, 2020).

NEGERI	SENOI	MELAYU PROTO	NEGRITO	JUMLAH
Johor	46	15,562	-	15,608
Kedah	29	10	271	310
Kelantan	14,774	47	1,825	16,646
Melaka	19	1,728	-	1,747
Negeri Sembilan	91	11,925	1	12,017
Pahang	35,654	41,644	1,127	78,425
Perak	57,120	627	2,818	60,565
Selangor	5,297	15,156	3	20,456
Terengganu	880	85	38	1,003
JUMLAH	113,910	86,784	6,083	206,777
PERATUS	55.09%	41.97%	2.94%	100%

Figure 2. Ethnicity distribution table of Indigenous peoples by state

Although the Indigenous people were among the first cultures to settle in Malaysia, not everyone is aware of their existence. When compared to other races in Malaysia, Indigenous people still have the lowest socioeconomic standing in a number of areas, including health, education, and technology.

2.2. Technology use among the Indigenous group in Malaysia

According to Bala and Tan (2021), the perceptions of the Indigenous people and their general receptivity to change and new information were favourable. Additionally, they think that ICT will increase their income (by 50%) and help they live healthier lives (by 53%). Additionally, 61.9% of respondents

anticipate that ICT will alter their community. According to Ahlan and Arshad (2011) and Zal (2011), local researchers concur that Indigenous people do not oppose ICT growth because they see ICT as a platform for their advancement and success in the contemporary world. However, it is commonly known that Indigenous people in Malaysia adopt ICT at a much slower rate than other communities as reported in Department of Orang Asli Development Strategic Plan 2011-2015 (Department of Orang Asli Development, 2011). The limitations in education and the economy are among the key causes of this problem (Zal, 2011).

2.3. The Unified theory of technology acceptance and use (UTAUT) model

UTAUT is a paradigm for measuring user acceptability of information technology that was developed to promote a united viewpoint (Venkatesh et al., 2003). They also mentioned that UTAUT seeks to explain user intents to use an information system and subsequent usage behaviour. This analysis used the UTAUT model because of its thoroughness and robust explanatory power. Additionally, UTAUT has gained widespread acceptance as the most up-to-date fundamental notion for expressing user acceptance of an invention, particularly in technology. UTAUT is comprised of four major themes: performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC). According to empirical research, out of these four constructs, the facilitating conditions are directly linked to behaviour adoption. The importance of these elements as direct predictors of user's level of acceptance and use behaviour cannot be overstated (Ayaz & Yanartaş, 2020).

2.4. Hypotheses development

2.4.1. Performance expectancy (PE) and behavioral intention (BI)

Venkatesh et al. (2003) mentioned that PE relates to how individuals believe that new technology will assist and benefit them in performing their job better. It also refers to the level of confidence of a person using the technology would do better. Venkatesh et al. (2003) also revealed that the construct of PE is the strongest determinant of a user's behavioral intention to adopt a technology. In other previous studies that used UTAUT model, PE has been found to significantly affect intention to use technology. Almaiah et al. (2019) discovered that PE has been found to positively affect university students' BI to use mobile learning systems. In addition, Persada et al. (2019) found that Generation Z perceived digital learning in their study, thus it positively relates with the performance expectancy and behavioral intention in using technology. While Ahmet Ayaz and Yanartaş (2020) discovered that PE is the most significant determinant of BI in their study. Hence, based on the evidence of previous research, the following formation of hypothesis can be made:

H1: There is a significant relationship between PE and BI in Indigenous students' use of technology

2.4.2. Effort expectancy (EE) and behavioral intention (BI)

Effort expectation is defined as the ease at which a system is used and the amount of work a consumer anticipates a certain task will demand (Venkatesh et al., 2003). The efforts required to use the

system, regardless of how simple or complex it is, is hence referred to as EE. Technology that is user-friendly might be more quickly accepted and embraced by users. Most consumers prefer technology that provides them with comfort, flexibility, and utility (Catherine et al., 2017). It is a critical component of the UTAUT model and is widely used to assess users' intentions to use new technology. There is some evidence to support the idea that EE and BI are significantly and positively correlated (Ayaz & Yanartaş, 2020; Almaiah et al., 2019). However, this is contrary from study of Chen and Hwang (2019) where they found that EE does not contribute to the factor of intention to use technology. From the discussion mentioned above, the second hypothesis is suggested as follow:

H2: There is a significant relationship between EE and BI in technology usage among Indigenous students

2.4.3. Social influence (SI) and behavioral intention (BI)

Venkatesh et al. (2003, 2012) defined SI as "the extent to which consumers believe other people believe they should use technology". It refers to the extent to which someone important to the individual (such as relatives, peers, friends, and teachers) believes he or she should use the new system. According to Catherine et al. (2017), word-of-mouth influences the adoption of communication technologies through reference groups, which include friends and IT experts. SI might come from social forces, subjective norms, or images. Image refers to the enhancement of a single person's reputation or social class through an apparent new system (Venkatesh et al., 2003). Persada et al. (2019) found that Generation Z are influenced by their peers, relatives and teachers in using technology in their study, thus this shows that SI has a significant effect towards the BI. Ayaz and Yanartaş (2020) has supported the significant findings of Persada et al. (2019). In contrast, Almaiah et al. (2019) and Chen and Hwang (2019) found no strong evidence of SI and BI in using technology in their study. Based on this, the following hypothesis has been put forward:

H3: There is a significant relationship between SI and BI in Indigenous students' use of technology.

2.4.4. Behavioral intention (BI) and use intention (UI)

According to Abdulwahab (2010), behavioural intention is the level to which a person intends to carry out specific acts. The behavioural intention of a person will reveal their purpose to accomplish something (Zolait, 2016). A feeling that is motivated by the desire to accomplish something might be described as behavioural intention (Oh & Yoon, 2014). It makes sense that a person's behaviour while performing work is the power of concealed items that can only be seen from that person's behaviour (Krismadinata et al., 2019). Use intention is thought to be significantly influenced by behavioural intention as a variable. Behavioural intention functions as a mediator in the UTAUT paradigm. It is reliant on the outcomes of several factors. All factors affecting BI are influenced by a user's beliefs or attitudes. The majority of studies have found a significant and positive relationship of BI on UI. These outcomes were found by Ma et al. (2010), Im et al. (2011), and Yu (2012) when they observed users' attitude about mobile banking and e-banking, respectively. Therefore, the fourth hypothesis is as follows:

H4: There is a significant relationship between BI and user intention in technology usage among Indigenous students.

2.4.5. Faciliting condition (FC) and use intention (UI)

The FC is the degree to which a person believes that the technological is in place to facilitate system use. It is a user's perception of available resources and assistance when performing a task (Venkatesh et al., 2003; 2012). Instead of focusing on behavioural intention, the UTAUT model has built conducive factors to influence real technology usage (Ayaz & Yanartaş, 2020; Schaper & Pervan, 2007; Venkatesh et al., 2003). Joa and Magsamen-Conrad (2022) found none of the UTAUT constructs including facilitating condition has significant relationship. However, Md. Sari et al. (2022) found that the factor measuring facilitating conditions had the greatest mean, which confirmed that their respondents had the necessary infrastructure to employ technology for educational purposes. In addition to the discussion, the findings of Vaithilingam et al. (2022) are consistent with previous research, which discovered that FC affects the level of technology adoption. Therefore, the following hypothesis is developed:

H5: There is a significant relationship between FC and UI in technology usage among Indigenous students.

3. Method

The information for this study was all gathered from the distributed questionnaires to the intended respondents using a Google Form. The questionnaire is divided into three sections. Section A and B of this study contain the dependent and independent variables, while Section C contains the demographic information on the respondents. We used existing scales validated in the original theory of UTAUT. The variables were assessed using a 5-point Likert scale. They need to determine their level of agreement or disagreement to the statements in the survey by using five different scale rates ranging as Strongly Agree (5), Agree (4), Moderate (3), Disagree (2) and Strongly Disagree (1).

Our team has instructed and distributed the online questionnaire to all participants at the end of a technology-based program that has conducted PIPOA, Rompin. This face-to-face program has been conducted on 25 and 26 June 2022. PIPOA is a center that place excellent Aboriginal students from all around peninsular Malaysia and provide the opportunity for students to obtain a complete and better education for their future. PIPOA originally was established to accommodate Indigenous students excelling in the Primary School Achievement Test (UPSR) and Third Form Assessment (PT3). Therefore, the age range of PIPOA students are from 13 until 17 years old. As on 1 June 2022, there are 96 students in PIPOA, however only 90 participants aged 13 until 15 years old had involved in this program.

Hence, purposive sampling technique has been used in this study. Out of 96 populations of PIPOA students, 90 of them had participated. However, there are only 65 final samples that have been included in this study after excluding the invalid and incomplete response from participants. In certifying the validity and reliability of the scale selection, facilitator has monitored the participants throughout the survey process. Table 1 shows the distribution of demographic profile of 65 respondents:

Table 1. Demographic of respondents

Gender		Age		Ethnicity		State	
Male	31%	13 years old	45%	Melayu Proto: Jakun	57%	Johor	11%
Female	69%	14 years old	23%	Melayu Proto: Semelai	15%	Kelantan	2%
		15 years old	32%	Melayu Proto: Temuan	11%	Kuala Lumpur	2%
				Negrito: Jahai	3%	Negeri Sembilan	8%
				Negrito: Kintaq	2%	Pahang	74%
				Negrito: Lanoh	2%	Perak	3%
				Negrito: Mendriq	2%	Selangor	2%
				Senoi: Jah Hut	3%		
				Senoi: Semai	3%		
				Senoi: Temiar	3%		

In order to determine whether certain variables are associated, this study employs PLS SEM. It has two assessments: measurement model and structural model assessments (Hair et al., 2017). In order to evaluate a measurement model, two criteria must be met: convergent validity and discriminant validity. The SEM-PLS model typically has two components namely measurement model and structural model. Convergent validity, discriminant validity, and reliability are applied to quantify the measuring model's ability to identify the target population.

Alternatively, the structural model is constructed to display and describe the connection between latent variables in the research model. Next, we will look at how R2 and Q2 statistics can assess the quality of the SEM-PLS model's structural components. If the t-value is larger than 1.96 and the P-value is less than 0.05, or 5%, for each pathway, then the hypothesis is accepted.

4. Findings

4.1. Model reliability and validity

Internal consistency reliability was determined using composite reliability (see Table 2). The composite reliability ratings ranged from 0.812 to 0.924, showing that internal consistency reliability was outstanding, as predicted by the assessment system (Hair & Alamer, 2022). Outer loadings are used to report the indication dependability of specific model elements. All of the absolute standardised outer loadings were more than 0.600; Chin (2010) argued that the aforesaid criterion is acceptable when other items measure the same concept. The model's absolute standardised loadings ranged from 0.523 to 0.771, with all extracted average variances greater than 0.500 (Fornell & Larcker, 1981). These figures assure the employment of valid indicators in the present study.

The heterotrait-monotrait (HTMT) technique is used to evaluate discriminant validity (refer to Table 3). HTMT values greater than HTMT0.85 of 0.85 (Kline, 2015) or HTMT0.90 of 0.90 (Gold et al., 2001) usually imply that discriminant validity is not a concern. The current study discovered that all of the results were over the cut-offs of HTMT0.90 (Gold et al., 2001) and HTMT0.85 (Kline, 2015).

Table 2. Loading, reliability and validity

Variables	Items	Loading	CR	AVE
Performance Expectancy	PE1	0.806	0.924	0.754
	PE2	0.858		
	PE3	0.863		
	PE4	0.941		
Effort Expectancy	EE1	0.720	0.812	0.523
	EE2	0.686		
	EE3	0.847		
	EE4	0.622		
Social Influence	SI1	0.696	0.839	0.569
	SI2	0.636		
	SI3	0.828		
	SI4	0.837		
Facilitating Condition	FC1	0.863	0.855	0.598
	FC2	0.748		
	FC3	0.773		
	FC4	0.7		
Behavioural Intention	BI1	0.879	0.91	0.771
	BI2	0.883		
	BI3	0.871		
Use Intention	UI1	**Deleted**	0.898	0.745
	UI2	0.892		
	UI3	0.890		
	UI4	0.805		

Table 3. Discriminant validity - HTMT criterion

	#1	#2	#3	#4	#5	#6
#1 Behavioural intention						
#2 Effort expectancy	0.778					
#3 Facilitating conditions	0.789	0.837				
#4 Performance expectancy	0.603	0.682	0.454			
#5 Social Influence	0.695	0.661	1.034	0.354		
#6 Use intention	0.907	0.698	0.844	0.562	0.654	

4.2. The predictive power of the model

The model's predictive power was then assessed using R2 (Hair et al., 2019). The endogenous variables use intention and behaviour intention had R2 values of 0.655 and 0.548 respectively, indicating that the model explained 65.5% and 54.8% of the variation in use intention and behaviour intention respectively. R2 values of 0.250, 0.500, and 0.700 are considered to have weak, moderate, and strong explanation power, respectively. As a result, the explanatory power is low to moderate. Given that the endogenous latent variable in this study was reflective, the predictive relevance of the endogenous construct was next examined using Stone-Q2 Geisser's test (Geisser, 1983; Stone, 1974). The Q2 score was greater than zero using cross-validated redundancy (Behavior intention = 0.386, usage intention = 0.457). This indicated that the model used was predictive (Hair et al., 2014; Henseler et al., 2015) (Refer Figure 3).

4.3. Hypotheses testing

The t-statistics were computed using a bootstrapping method with 1000 resamples, and the hypotheses were tested using this method (Hair et al., 2019). According to the findings presented in Table 4 and illustrated as Figure 3, which can be seen below, all of the hypotheses are supported favourably and significantly. In order to rule out the possibility of there being problems with multicollinearity, we looked at the variance inflation factor (VIF). In every single model of regression analysis, the VIFs were lower than 2.3, and these values were lower than the critical value of 5 that was proposed by Hair et al. (2019). Thereby, multicollinearity was not serious (O'brien, 2007). According to the findings in Table 3, every single construction satisfies the requirement.

Table 4. Hypotheses testing results

Hypotheses	Path Coefficient, β	SD	T-Value	p-value	Decision	VIF
Behavioural intention -> Use intention	0.55	0.12	4.574	0.000**	Accepted	1.765
Effort expectancy -> Behavioural intention	0.349	0.146	2.387	0.017**	Accepted	1.839
Facilitating conditions -> Use intention	0.333	0.12	2.773	0.006**	Accepted	1.765
Performance expectancy -> Behavioural intention	0.233	0.139	1.682	0.093*	Accepted	1.542
Social Influence -> Behavioural intention	0.335	0.123	2.721	0.007**	Accepted	1.318

Notes: * p-value < 0.10; ** p-value < 0.05; *** p-value < 0.01, Bootstrap confidence interval for error probability of 0.05 ($\alpha = 5\%$)
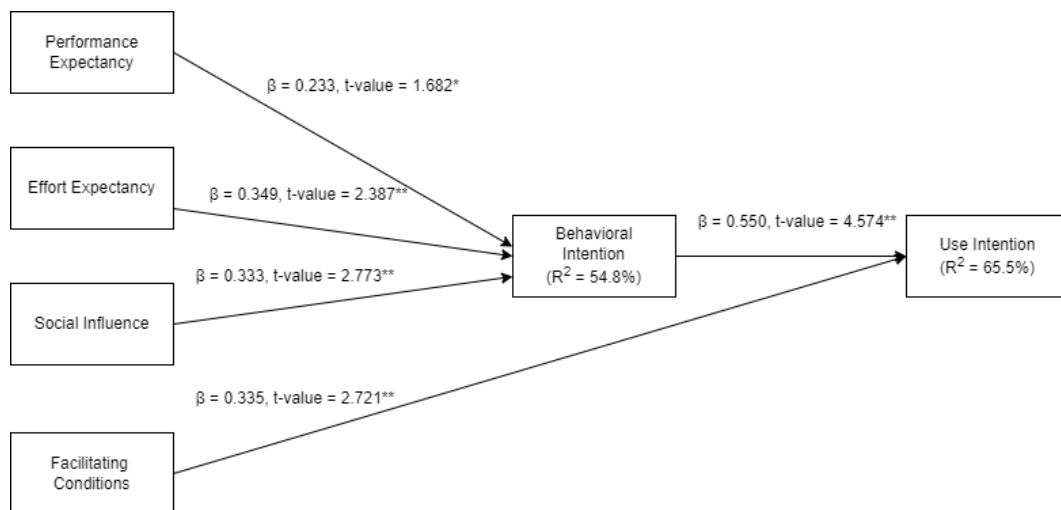

Figure 3. PLS results for research model testing

5. Discussion and Conclusion

This study aims to look into the factors that influence Indigenous students' behaviour and technology use intentions in PIPOA. This study reveals that all hypotheses are strongly and significantly supported. It

indicates that all of the UTAUT constructs employed by this study contribute to the intention to use technology by them especially for educational purposes. As for PE and BI, the p-value is 0.093, therefore hypothesis 1 (H1) is accepted. This finding is consistent with Almaiah et al. (2019), Persada et al. (2019) and Ayaz and Yanartaş (2020). This demonstrate that Indigenous students believe that technology can assist them in performing better in their study for example in completing their homework easily and efficiently. Hence, they have a positive intention toward the usage of technology.

Hypothesis 2 (H2) examines the relationship between EE and BI. From the result, it shows that the p-value is 0.017, hence H2 is accepted. The finding of this study is consistent with Ayaz and Yanartaş (2020) and Almaiah et al. (2019). From the result, we can conclude that the respondents found user-friendly technology have influenced their intention in using technology. They found that technology used for education purpose is flexible, useful and easy to use, therefore it is effortless to understand the technology and it directly influenced their intention.

In similar vein, social influence (H3) also shows a significant relationship toward the behavioral intention of using technology. This might be caused by the place they stay at, since of all the Indigenous students are staying at one center (PIPOA) with similar objective, thus all parties (e.g: teachers, friends and management) in the center may become the factor in influencing them to use technology. According to Catherine et al. (2017), the reference groups play a major role in the adoption of communication technologies. Consistently, Persada et al. (2019) found that Generation Z are easily influenced by their peers, relatives and teachers in using technology in their study. Nonetheless, the finding of the study is inconsistent with Almaiah et al. (2019) and Chen and Hwang (2019) where they found no strong evidence of social influence and behavioral intention in using technology among students.

As all the three constructs in UTAUT found have significant relationship with the behavioral intention (H4), next, we proceeded to test the relationship between behavioral intention and use intention. The result shows the p-value is 0.000 indicating that the relationship is significant, thus H4 is accepted. Having good behavioral intention will directly influence good use intention in using technology. In the UTAUT model, behavioural intention is a mediator, so a number of variables affect it. All factors influencing behavioural intention reflect a user's belief or personal attitude. According to Oh and Yoon (2014), behavioral intention can be interpreted as a feeling driven by the desire to do something. This study's finding is supporting the previous study of Ma et al. (2010), Im et al. (2011) and Yu (2012) where they found a significant relationship when examining their respondents' attitudes towards e-banking and mobile banking.

The last hypothesis tested is between facilitating condition and use intention of technology among Indigenous students (H5). We test direct relationship between facilitating and use intention as per suggested by Venkatesh et al. (2003) as this construct is believed to establish impact toward usage of technology rather than behavioral attention as compared to the other three construct. From the result, we can see that the p-value is 0.006, thus H5 is accepted. For this study, we can conclude that the respondents perceive that if there are the resources and facilities provided at the time of usage, it might influence the intention to use the technology. This is consistent with Md Sari et al. (2022) and Vaithilingam et al. (2022) which they found that facilitating conditions have significant effect on technology adoption.

In conclusion, Indigenous students in PIPOA have a positive perception towards the usage of technology and they believe technology will make them better and more efficient in their education. As this study is focusing on the Indigenous students, we believe that this will help contribute to the new perspective of education among Indigenous students. It will also support the fourth SDG, which promotes inclusive quality education lifelong learning opportunities for all people, including Indigenous peoples.

Like all researches, this study has several limitations even though it has achieved its objective. First, the respondents of this study are among group of selected/intelligent Indigenous students that have been gathered in PIPOA. We believed that their way of thinking might be slightly different from the other groups of students. Next, the survey is conducted after the technology-based program, therefore this might also influence their perception towards the behavior intention as well as the use intention of technology adoption. Therefore, the aforementioned limitations could have uncovered the path for further study. The aforementioned constraint will not, however, render the study's conclusions meaningless.

Acknowledgments

References

Abdulwahab, L. (2010). A conceptual model of unified theory of acceptance and use of technology (UTAUT) modification with management effectiveness and program effectiveness in context of telecentre. *African Scientist*, *11*(4), 267–275.

Ahlan, A. R., & Arshad, Y. (2011, November). The ICT social inclusion among orang asli community in Gombak area. In *2011 International Conference on Research and Innovation in Information Systems*, 1-6. IEEE. https://doi.org/10.1109/ICRIIS.2011.6125687

Almaiah, M. A., Alamri, M. M., & Waleed, A. R. (2019). Applying the UTAUT Model to Explain the Students' Acceptance of Mobile Learning System in Higher Education. *IEEE Access*, *7*, 174673–174686. https://doi.org/10.1109/ACCESS.2019.2957206

Ayaz, A., & Yanartaş, M. (2020). An analysis on the unified theory of acceptance and use of technology theory (UTAUT): Acceptance of electronic document management system (EDMS). *Computers in Human Behavior Reports, 2*, 100032. https://doi.org/10.1016/j.chbr.2020.100032

Bala, P., & Tan, C. E. (2021). Digital inclusion of the orang asli of peninsular Malaysia: remote virtual mechanism for usability of telecentres amongst indigenous peoples. *The Electronic Journal of Information Systems in Developing Countries*, *87*(4), 1-14. https://doi.org/10.1002/isd2.12171

Bernama. (2022, Jan 8). *PPPM Pastikan Transformasi Pendidikan Orang Asli* [PPPM Ensures the Transformation of Orang Asli Education]. HM Online. https://api.hmetro.com.my/mutakhir/2022/01/797731/pppm-pastikan-transformasi-pendidikan-orang-asli

Catherine, N., Geofrey, K. M., & Aballo, G. (2017). Effort expectancy, performance expectancy, social influence and facilitating conditions as predictors of behavioural intentions to use ATMs with fingerprint authentication in Ugandan banks. *Global Journal of Computer Science and Technology, 17*(E5), 9-25.

Chen, P. Y., & Hwang, G. J. (2019). An empirical examination of the effect of self-regulation and the Unified Theory of Acceptance and Use of Technology (UTAUT) factors on the online learning behavioural intention of college students. *Asia Pacific Journal of Education, 39*(1), 79-95. https://doi.org/10.1080/02188791.2019.1575184

Chin, W. W. (2010). *How to write up and report PLS analyses. In Handbook of partial least squares* (pp. 655-690). Springer. https://doi.org/10.1007/978-3-540-32827-8

Ching, M. Y. K., & Loke, S. H. (2016). A Preliminary Study of Educational Leadership in the Rural Context in Malaysia. *Asian Journal of University Education*, *12*(2), 1–19.

Department of Orang Asli Development (2011). Pelan Strategik Jabatan Kemajuan Orang Asli [Strategic Plan of the Department of Aboriginal Development] (2011-2015), 1st ed. Kuala Lumpur, Malaysia: Department of Orang Asli Development, Malaysia, 2011.

Department of Orang Asli Development (2020). Jadual Taburan Etnik Orang Asli Mengikut Negeri [Ethnicity Distribution Table of Native People by State] 2020. Retrieved from https://damak.jakoa.gov.my/jakoa/www/index.php

Department of Orang Asli Development (2021). Ethic Group of Orang Asli in Malaysia. Retrieved from https://www.jakoa.gov.my/orang-asli/suku-kaum/

Department of Orang Asli Development (2022, August 3). Department of Orang Asli Development. http://www.jakoa.gov.my/

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing Research, 18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Geisser, S. (1983). On the prediction of observables: a selective update. In J. M. Bernardo, M. H. DeGroot, A. F. M. Smith, & D. V. Lindley (Eds.), *Bayesian Statistics, Vol. 2. North-Holland, Amsterdam* (pp. 203–229).

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of management information systems*, *18*(1), 185-214. https://doi.org/10.1080/07421222.2001.11045669

Hair Jr, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis, 1*(2), 107. https://doi.org/10.1504/ijmda.2017.10008574

Hair Jr, J. F., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review, 26*(2), 106-121. https://doi.org/10.1108/ebr-10-2013-0128

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2-24. https://doi.org/10.1108/ebr-11-2018-0203

Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics, 1*(3), 100027. https://doi.org/10.1016/j.rmal.2022.100027

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of marketing science, 43*(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Im, I., Hong, S., & Kang, M. S. (2011). An international comparison of technology adoption testing the UTAUT model. *Information & Management*, *48*(1), 1-8. https://doi.org/10.1016/j.im.2010.09.001

Joa, C. Y., & Magsamen-Conrad, K. (2022). Social influence and UTAUT in predicting digital immigrants' technology use. *Behaviour & Information Technology, 41*(8), 1620-1638. https://doi.org/10.1080/0144929x.2021.1892192

Kenrick, J., & Lewis, J. (2004). Indigenous peoples' rights and the politics of the term 'indigenous'. *Anthropology Today*, *20*(2), 4-9. https://doi.org/10.1111/j.0268-540X.2004.00256.x

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford publications.

Krismadinata, K., Jalinus, N., Pitra Rosmena, H., & Yahfizham, Y. (2019). Understanding Behavioral Intention in Implementation of the ICTs Based on UTAUT Model. *Lontar Komputer: Jurnal Ilmiah Teknologi Informasi*, *10*(2), 96-107. https://doi.org/10.24843/LKJITI.2019.v10.i02.p04

Lin, M. H., Chen, H. G., & Liu, K. S. (2017). A study of the effects of digital learning on learning motivation and learning outcome. *Eurasia Journal of Mathematics, Science and Technology Education*, *13*(7). https://doi.org/10.12973/eurasia.2017.00744a

Lopez, J., Salim, S. S., Zaremohzzabieh, Z., & Ahrari, S. (2022). The Role, Experience, and Challenges to Headmasters of Indigenous Primary Schools amid Covid-19 in Malaysia. *Asian Journal of University Education*, *18*(1), 231. https://doi.org/10.24191/ajue.v18i1.17191

Luaran, J., @ E., Ahmad Nadzri, F., Mohd Rom, K., B., & Jain. J. (2016). The importance of Information and Communication Technology in English learning: Indigenous students' perspectives. *Malaysian Journal of Distance Education*, *18*(1), 87–101. http://doi.org/10.21315/mjde2016.18.1.6

Ma, Z., Ma, L., & Zhao, J. (2010). Evidence on E-banking quality in the China commercial bank sector. *Global Journal Business Research*, *5*(2), 73–83.

Norwaliza, A. W. (2022, March 19). *Strategi Atasi Keciciran Pelajaran Murid Orang Asli* [Strategies to Overcome Dropout of Indigenous Pupils]. BH Online. https://api.bharian.com.my/rencana/minda-pembaca/2022/03/935848/strategi-atasi-keciciran-pelajaran-murid-orang-asli

O'brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & quantity*, *41*(5), 673-690. https://doi.org/10.1007/s11135-006-9018-6

Oh, J. C., & Yoon, S. J. (2014). Predicting the use of online information services based on a modified UTAUT model. *Behaviour & Information Technology*, *33*(7), 37–41. http://doi.org/10.1080/0144929X.2013.872187

Persada, S. F., Miraja, B. A., & Nadlifatin, R. (2019). Understanding the Generation Z Behavior on D-Learning: A Unified Theory of Acceptance and Use of Technology (UTAUT) Approach. *International Journal of Emerging Technologies in Learning (iJET)*, *14*(05), 20–33. https://doi.org/10.3991/ijet.v14i05.9993

Sari, N. M., Yin, K. Y., Zakariya, Z., & Ismail, R. (2022). User Acceptance of Google Classroom-Assisted Learning: The Case of Malaysian Form Six Economics Students. *International Journal of Learning, Teaching and Educational Research, 21*(2), 363-379. https://doi.org/10.26803/ijlter.21.2.20

Schaper, L. K., & Pervan, G. P. (2007). An investigation of factors affecting technology acceptance and use decisions by Australian allied health therapists. In *2007 40th Annual Hawaii International Conference on System Sciences* (HICSS'07) (141-141). *IEEE*. https://doi.org/10.1109/HICSS.2007.69

Shamsir, M. S., Krauss, S. E., Ismail, I. A., Ab Jalil, H., Johar, M. A., & Rahman, I. A. (2021). Development of a Haddon Matrix Framework for Higher Education Pandemic Preparedness: Scoping Review and Experiences of Malaysian Universities during the COVID-19 Pandemic. *Higher Education Policy*, *35*, 1–40. https://doi.org/10.1057%2Fs41307-020-00221-x

Singar, S. N., & Zainuddin, A. (2017). Exploring the school dropout factors among indigenous students in *Melaka Journal of Administrative Science Special Edition: Socio-Economic Issue*, *14*(3).

Stephens, C., Porter, J., Nettleton, C., & Willis, R. (2006). Disappearing, displaced, and undervalued: a call to action for Indigenous health worldwide. *The lancet*, *367*, 2019-2028. https://doi.org/10.1016/s0140-6736(06)68892-2

Stone, M. (1974). Cross-validatory choice and assessment of statistical predictions. *Journal of the Royal Statistical Society: Series B (Methodological)*, *36*(2), 111-133. https://doi.org/10.1111/j.2517-6161.1974.tb00994.x

Vaithilingam, S., Nair, M., Macharia, M., & Venkatesh, V. (2022). Mobile communication and use behavior of the urban poor in a developing country: A field study in Malaysia. *International Journal of Information Management*, *63*(102440). https://doi.org/10.1016/j.ijinfomgt.2021.102440

Venkatesh, V., Morris, M., Davis, G. B., & Davis, F. D. (2003). User acceptance of technology: toward a unified view. *MIS Quarterly*, *27*(3), 425-478. https://doi.org/10.2307/30036540

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, *36*(1), 157-178. https://doi.org/10.2307/41410412

Yu, C. S. (2012). Factors affecting individuals to adopt mobile banking: Empirical evidence from the UTAUT model. *Journal of electronic commerce research*, *13*(2), 104.

Zal, W. A. A. (2011). Penerimagunaan teknologi maklumat dan komunikasi oleh belia orang asli Selangor: indikator integrasi melalui tafsiran nilai [Adoption of information and communication technology by Selangor indigenous youth: indicators of integration through the interpretation of values]. *Jurnal Teknologi Maklumat & Multimedia*, *11*, 49-54.

Zolait, A. (2016). Determinants of behavioral intentions towards using e-government services in the kingdom of Bahrain determinants of behavioral intentions towards using government services in the Kingdom of Bahrain. *International Journal of Computing and Digital Systems*, *5*(4), 345-355. http://doi.org/10.12785/ijcds/050406