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The Role of Learning in Nurturing Knowledge, Attitude, and Practice of Toilet Hygiene Among Youth in Malaysian University

Kamaruzzaman Abdul Manan¹, Zeti Azreen Ahmad², Siti Nor Amalina Ahmad Tajuddin¹,
Roslan Ali¹

Sultan Idris Education University¹, International Islamic University Malaysia²

ABSTRACT

In Malaysia, the cleanliness of public toilets continues to be a challenge. A dirty toilet could become a site that spreads diseases and hurts the image of the country as a whole. Even though campaigns promoting good toilet hygiene practices have been ongoing since 1997, not much has been achieved from these campaigns. A good toilet hygiene practice requires knowledge and the right attitude among users. Therefore, early education is required to shape the public's perception and influence their practice of toilet hygiene. Hence, this study selected the Knowledge Attitude and Practice (KAP) theory to measure the factors influencing university students' toilet hygiene practices. Moreover, the learning factor was added to the theory to see how the teaching and learning process affects the knowledge and attitude of youth. This study used the partial least squares (PLS) method and structural equation modelling (SEM) software to examine the selected factors. The results show that respondents level knowledge (87%), attitude (88%), practice (81%) and learning (79%) on toilet hygiene are high. Moreover, learning, knowledge, and attitude have a significant influence on the practice of toilet hygiene. This study has extended the KAP theory by adding learning as a factor that influences youth's knowledge and positive attitude towards toilet hygiene. The findings are useful for policymakers, higher education institutions, and public relations (PR) practitioners in their effort to improve campaign strategies to generate attitudinal and behavioural change towards hygiene and cleanliness issues. Limitations and suggestions for future research are also included in this paper..

Keywords: Toilet hygiene, KAP theory, university, campaign, youth, image, reputation.

INTRODUCTION

The university is an institution that accommodates a huge number of the student population who mostly live on campus. As an institution that offers teaching and learning services to the global market, the university always strives to provide adequate facilities and a clean and pleasant environment to its population. The campus community refers to those who study, work, or live within a university premise. Given that they share the basic facilities and amenities, good hygiene is a fundamental aspect that requires attention. The toilet is one of the basic facilities commonly shared on campus. Even though universities employ cleaners to sanitise the toilets, every individual has a role to keep the toilets clean. One of the ways of doing so is by practising good toilet hygiene. According to the online Cambridge Dictionary, hygiene means the degree to which people keep themselves or their environment clean, especially to prevent diseases, whereas cleanliness merely refers to the state of being clean (Cambridge Online, 2020). Hence providing a proper hygiene facility does not guarantee hygiene practices.

In this context, good toilet hygiene is not only for comfort but also to avoid the spread of transmissible diseases. A clean toilet will mitigate the risk of spreading diseases and subsequently contribute to the good image of the university as a whole. Universities have made a lot of effort to keep their toilets clean such as hiring toilet operators and cleaners. However, students still find the cleanliness of university toilets unsatisfactory, which could be attributed to the irresponsible act of certain users who do not practice proper toilet hygiene. The then Prime Minister, Tun Mahathir Mohamed once lamented that a dirty public toilet was due to the poor civic consciousness of the public (Bernama, 2 November 2019). Hence, learning and exposure are fundamental to inculcate good toilet hygiene practices. Aligned with this goal, several establishments have been formed to empower the improvement of toilet sanitation through learning, training, and advocacy activities. Among them are the World Toilet Organization (WTO) that was formed in 2001 and the World Toilet College that was established in 2005 (WTO, 2019), both based in Singapore. In Malaysia, the Quality Restroom Association of Malaysia (QRAM) with the mission of inculcating a clean restroom culture among Malaysians was established in 2005 (QRAM, 2019).

A 'global prominence shift' is one of the targets in the Malaysian Education Blueprint for Higher Education 2015 to 2025 to make the country an international educational hub (Rayyan Rafidi, 11 March 2020). In this context, having a good image and reputation is fundamental to attract the international market. Besides quality in teaching and learning, universities must be equipped with good facilities and amenities and a pleasant environment including cleanliness. Literature affirmed that many factors affect hygiene practices, including individuals' knowledge and attitudes towards sanitation besides the demographic factors (Wu et al., 2019).

Malaysia is steadily gaining popularity as a destination for higher education. Many international students come to Malaysia to continue their education every year because they believe in the standard and quality of our education. Education, according to Datuk Seri Mustapa Mohamed is one of the important sectors that contribute to the growth of the national economy (The Star, 2020). However, many students start to express their disappointment and one of it is the state of public toilet hygiene (Ali et al., 2018). Hence if we do not solve this problem soon, Malaysia might suffer a loss of revenue in the education sector as students lose interest in continuing their studies here.

Based on the argument, it is clear that the issue of toilet hygiene is a major problem and needs to be addressed urgently. According to Sridhar et al., (2020) knowledge and attitude are among the key components in measuring the trend of toilet hygiene practice. Moreover, Bakarman et al., (2019) in their study indicated that low level of toilet hygiene knowledge will result to ignorance and truncated in practicing toilet hygiene. Hence this study was conducted using Knowledge, Attitude, Practice Theory. It is important and urgent for the study to understand the current knowledge, attitude and practice in the university. This study aimed to explore whether the current educational system is capable of instilling the value and importance of toilet hygiene among university students. This study was conducted using the Knowledge, Attitude, and Practice (KAP) theory that assumes knowledge influences the attitude and behaviour of the public. This theory suits the study because it explains how much the public knows, how they feel, and how they behave towards toilet hygiene.

METHOD

Data for this study were collected using the survey method through questionnaire distribution. Since this study targeted a large number of respondents, this method was the most practical to reach the target respondents. University students in Malaysia were selected as samples as they are still in the process of learning to develop a good character, and they will be the future leaders of the country. The

questionnaire was designed based on guidelines suggested by Andrade et al. (2020) and previous literature. The questionnaire was pre-tested and modified based on the comments given by an expert. After making the changes, a pilot test was conducted on 40 respondents. The pilot test's Cronbach's alpha values for all variables were above 0.7. Once the instrument was ready, data collection was done for three weeks. A total of 600 questionnaires were personally distributed among university students, and 446 respondents managed to complete them. Stratified random sampling was used as the sampling method. This study used partial least squares (PLS) to analyse the data (Ringle et al. 2015). Data were analysed using a two-stage analytical procedure. The analysis began with the process of measuring the model's validity and reliability, followed by examining the structural model to test the hypothesised relationships.

Goodness-of-fit measures

Table 1 summarises the goodness-of-fit measures used in this study as guidelines to test the validity, reliability, relationships among variables, and overall fit of this study's conceptual model.

Table 1 Goodness-of-fit measures

Types of Fitness Value	Acceptable Value of Fitness
Factor Loading	greater than or equal to .50**
Composite Reliability	greater than or equal to .70**
Average Variance Extracted (AVE)	greater than or equal to .50**
Heterotrait-Monotrait Ratio of Correlations (HTMT)	below than or equal to .90**
<i>p</i> -value	below than or equal to .05**
VIF	less than 4.0**
Q^2	greater than 0**
SRMR	less than .10**

*Source: Garson (2016)

FINDINGS

This section presents the results of the analysis done using descriptives and PLS structural equation modelling (SEM). The presentation of the results begins with the descriptive analysis and is followed by PLS reliability, the validity of the model, and hypothesis testing analysis.

Descriptive analysis

This analysis was conducted to examine the level of respondent knowledge, attitude, practice and learning. Based on the data in table 2 shows that overall the level of respondents' knowledge is 87%. This portrays that the respondents have high knowledge about toilet cleanliness. Respondents also agreed that they know a dirty toilet is a place where germs spread and have possibilities to cause illness. This is also agreed by Wu et al. (2019) that dirty public toilets are considered to be a source of bacteria and viruses, and therefore the practice of personal hygiene measures is important to prevent bacterial and viral infections from spreading within the community.

Table 2 Level of knowledge

(K)	Statement on toilet cleanliness knowledge	Mean	%
1.	I have sufficient knowledge about toilet hygiene	4.00	80
2.	I know that a dirty toilet is a place where germs spread	4.56	91
3.	I know that a dirty toilet have possibilities to cause illness	4.56	91
4.	I know how to clean the toilet bowl after I use it	4.34	87
5.	I know to keep the entire toilet clean	4.29	86
6.	I know that staining the toilet is an immoral attitude	4.43	89
OVERALL		4.36	87

In addition, in table 3, generally, 88% of respondents have a very positive attitude about the importance of keeping the toilet clean. Humans are naturally drawn to cleanliness. As a result, respondents despise using a filthy toilet. They believe that toilet hygiene is an essential skill that everyone should possess and practise.

Table 3 Level of attitude

(A)	Statement on toilet cleanliness attitude	Mean	%
1.	I feel guilty when I omit toilet hygiene	4.30	86
2.	It is my responsibility to clean the toilet bowl after I use it	4.46	89
3.	I feel disgusted to use a dirty toilet	4.66	93
4.	Toilet hygiene is an important skill that everyone must have	4.50	90
5.	I feel it is important for others to adhere to practice toilet hygiene	4.48	90
6.	I feel frustrated when others omit toilet hygiene	4.00	80
OVERALL		4.40	88

Moreover, respondents also in generally hold a strong agreement (81%) that they are practicing toilet hygiene at the university. The respondent strongly affirmed that they clean the toilet bowl after using it and adhere to practice toilet hygiene. However, there still a minority of them refused to promote the importance of toilet hygiene.

Table 4 Level of practice

(P)	Statement on toilet cleanliness Practices	Mean	%
1.	I adhere to practice toilet hygiene	4.26	85
2.	I will avoid using a dirty toilet	4.30	86
3.	If dirty, I will clean the toilet bowl before using it	4.03	81
4.	I clean the toilet bowl after using it	4.42	88
5.	I discuss with my friend the importance of toilet hygiene	3.65	73
6.	I ask others to engage in toilet hygiene	3.73	75
OVERALL		4.07	81

Last but not least, table 4 highlighted that generally, respondents agreed (79%) that learning about the toilet is important. The respondent strongly agreed that learning on clean toilets should be targeted the user. This means the learning of toilet hygiene must be strategic, targeted and localized instead of generic knowledge. This is to ensure that the toilet users are able to develop a sense of belonging in taking care of the public toilet especially in the university.

Table 5 Level of learning

(L)	Statement on toilet cleanliness learning	Mean	%
1.	I notice there are posters in the toilet asking me to keep the toilet clean.	3.72	74
2.	The learning of clean toilets should be targeted the user.	4.25	85
3.	The learning of clean toilets should be targeted the cleaner.	3.58	72
4.	Toilet users should be responsible in educating other users.	4.11	82
5.	Toilet owners should be responsible in educating other users.	3.98	80
OVERALL		3.93	79

PLS structural equation modelling (SEM)

Next, the analysis moved to PLS SEM analysis to test the four developed hypotheses. The study conducted three analyses namely; validity and reliability analysis, bootstrapping analysis and blindfolding analysis to test the model and derived to the hypothesis testing result.

Convergent validity

Table 6 presents the convergent validity of the model. This analysis was conducted to measure construct validity. The analysis was done to test how well the multiple items used measured the same concept (Hair et al., 2019).

Table 6 Convergent validity

Construct	Items	Loading	Composite Reliability	Average Variance Extracted (AVE)
Attitude	A4	0.927	0.925	0.860
	A5	0.928		
Learning	L2	0.811	0.823	0.609
	L4	0.808		
	L5	0.719		
Knowledge	K2	0.790	0.879	0.645
	K3	0.805		
	K4	0.838		
	K5	0.779		
Practice	P2	0.814	0.814	0.687
	P4	0.844		

*Note: Items were deleted due to low loadings

Average variance extracted (AVE) = (summation of the square of the factor loadings)/{(summation of the square of the factor loadings) + (summation of the error variances)}
 Composite reliability (CR) = (square of the summation of the factor loadings)/{(square of the summation of the factor loadings) + (square of the summation of the error variances)}

The results of factor loading for all constructs were between .719 and .928, which exceeded the minimum accepted value of .50. Next, the composite reliability values, which describe the degree to which the construct indicators measure the latent constructs, ranged from .814 to .925. These values exceeded the recommended value of .70.

Finally, the average variance extracted (AVE) values are presented to measure the data error. The results were from .609 to .860, which were greater than the recommended value of .50. Based on the parameter estimates, all the three factors of attitude, learning, and knowledge that predict the practice of toilet hygiene among youth in Malaysian universities are valid measures of their respective constructs.

Heterotrait-Monotrait Ratio of Correlations (HTMT)

The analysis proceeded with the Heterotrait-Monotrait Ratio of Correlations (HTMT) to test the constructs' discriminant validity. Based on Table 7, the values of the HTMT correlations among all constructs ranged between .555 to .894. The criterion for assessing HTMT is the value should be below .90 (Ab Hamid et al., 2017). The results demonstrated that correlations and inter-correlations among constructs were significant. Therefore, this study's results confirmed that the measurements have adequate discriminant validity.

Table 7 Heterotrait-Monotrait Ratio of Correlations (HTMT)

Construct	1	2	3
1 Attitude			
2 Learning	0.637		
3 Knowledge	0.795	0.555	
4 Practice	0.894	0.683	0.819

Hypothesis and Model Testing

After confirming the model’s validity and reliability, this study conducted the path analysis to test the research hypotheses and measure the model fit. This analysis measured the relationships between attitude, learning, knowledge, and practice. Moreover, this analysis was also used to test all the research hypotheses. Table 8 presents a summary of the complete results of the hypothesis testing.

Table 8 Hypotheses testing and model confirmation

Hypotheses	Std. Beta	Std. Error	t-value	p-value	Decision	f ²	R ²	VIF	Q ²	SRMR
H1 Attitude -> Practice	0.430	0.063	6.836	0.000	supported	0.176	0.405	1.768	0.217	
H2 Learning -> Attitude	0.505	0.042	12.102	0.000	supported	0.343	0.255	1.000	0.217	
H3 Learning -> Knowledge	0.432	0.044	9.777	0.000	supported	0.229	0.186	1.000	0.117	0.086
H4 Knowledge -> Practice	0.265	0.068	3.894	0.000	supported	0.067	0.405	1.768	0.271	

The result for H1 “Attitude has a positive relationship with practice” reported the R2 value of 0.405, suggesting that attitude explains 40.5% of the variance in practice. The results ($\beta = 0.430$; $t = 6.836$; $p = 0.000$) indicate that this relationship is significant. Moreover, H2 “Learning has a positive relationship with attitude” obtained the R2 value of 0.255, suggesting that learning explains 25.5% of the variance in attitude. The results ($\beta = 0.505$; $t = 12.102$; $p = 0.000$) indicate that this relationship is significant.

Similarly, the analysis of H3 “Learning has a positive relationship with knowledge” recorded the R2 value of 0.186, suggesting that learning explains 18.6% of the variance knowledge. The results ($\beta = 0.432$; $t = 9.777$; $p = 0.000$) indicate that this relationship is significant. As for H4 “Knowledge has a positive relationship with practice”, the results ($\beta = 0.265$; $t = 3.894$; $p = 0.000$) indicate that this relationship is significant.

For the overall model prediction, as suggested by Ramayah et al. (2018), several criteria should be fulfilled for this model to be considered valid to predict the knowledge, attitude, and practice of toilet hygiene among youth in Malaysian universities. This study began with examining Q².

Generally, the Q² results fulfilled the criterion, with values exceeding the minimum of .00. Learning towards practice recorded the highest value (Q² = 0.271), followed by attitude towards practice (Q² = 0.217) and learning towards knowledge (Q² = 0.117).

Finally, this study used the SRMR analysis to measure the approximate fit of this study’s model. This analysis was used to measure the difference between the observed correlation matrix and the model-implied correlation matrix. This model obtained an SRMR value of 0.086. According to Hair et al. (2017), a model has a good fit when the SRMR value is less than 0.10. Based on the analytical results, this study concluded that H1, H2, H3, and H4 are supported and the research model has a good fit.

DISCUSSION

This study contributes new findings to the theory of knowledge, attitude, and practice. The new variable, namely learning, which was added to the conceptual model was found to be a significant contributor to

youth's knowledge and attitude towards toilet hygiene. Moreover, this study provides a better understanding of toilet hygiene among the youth in a Malaysian university.

Among the hypotheses tested, learning has the strongest relationship and contributes to the attitude of youth. The aim of learning in universities is to inculcate the humanisation process in order to develop a positive attitude among students. The process begins with nurturing good discipline and implanting the values of human beings such as morals and ethics. Cleanliness is one of the basic ethical values that youth need to acquire for them to become graduates who are augmented with knowledge, skills, and the best mental state. This finding is in line with the result of Tiwari et al. (2019) that learning plays an important role in nurturing the attitude of youth.

Moreover, learning was also found to have a strong relationship and contributes to youth's knowledge level. The relationship between these two constructs is not new (Nagarajan & Ganapathy, 2019). Knowledge plays a central role in human life. Humans need knowledge in all aspects of their life from survival to improving the quality of life and searching for the purpose and meaning of life. Without knowledge, humans are like a man walking in the darkness of the night. Learning is like an antidote that humans need for them to obtain and advance their knowledge. This study found learning to be important in helping youth to practise good toilet hygiene.

This study also discovered that youth's positive attitude motivates them to practise good toilet hygiene. This finding is interesting, given that attitude and practice do not always have a positive relationship. This is because in some scenarios like the study conducted by Grappasonni et al. (2018), it was found that the respondents did have a positive attitude, but such attitude did not translate into practices. We believe that the positive finding regarding the attitude–practice link is strongly related to the quality of learning that youth receive at the university, which explains why learning was found to be a strong predictor.

Meanwhile, knowledge was found to be the weakest contributor to practice since the majority of the students already have a strong learning background and attitude. This leads to learning being directly translated into attitude and practice, thus somewhat undermining the influence of knowledge on practice. However, the relationship between these two constructs remains positive. Thus, knowledge is still considered important in motivating youth to practise good toilet hygiene.

The findings show that the youth studying at this Malaysian university are well educated in toilet hygiene. Their knowledge and attitude towards maintaining the cleanliness of toilets were also found to be positive. Besides, they also practise toilet hygiene every time they use the toilets.

CONCLUSION

Based on the findings, this study concludes that it is vital to incorporate toilet hygiene learning into the curriculum. This study has proven that learning plays an important role in enhancing youth's knowledge and developing a positive attitude and practice towards toilet hygiene. Generally, youth are aware of the importance of toilet cleanliness. They also agree on the importance of practicing good toilet hygiene in university public toilets.

However, the current toilet hygiene level in Malaysia generally reflect differently. Majority of public toilets are dirty.. As a result, many young people still need to be educated on the knowledge, attitude and practice of toilet hygiene. This, without a doubt, is the source of our toilet-cleaning issues.

Perhaps, they require more supportive surroundings, as the attitude and practices of people are also influenced by their surroundings. Hence, the inclusion of toilet hygiene in the civic curriculum assessment will send the message that maintaining good hygiene is part of the life learning process and that the university is serious about it. Hence the learning authority should plan and integrate back hygiene learning into the syllabus and make it as an important subject that all students need to pass.

In the context of image and reputation, youth as students are the product that carries the university's name and brand even after they graduate. Many multinational organisations now looking for employees that not only have a good qualification but also practise good personal hygiene. Hence, in maintaining the good image and reputation of the university, the university needs to produce graduates who not only obtain good grades but also excel in practicing moral values. This will enhance the university's image and reputation, thus gaining trust among the public that the university is capable of nurturing excellent human beings.

Besides, the university as a centre for human capital development should go beyond its boundaries. There is a large number of young people in the community outside the university that need exposure to toilet cleanliness learning. Therefore, universities may want to consider increasing their engagement with the youth community through projects that educate them on the importance of having knowledge and a good attitude as well as practising toilet cleanliness. Moreover, city councils and other government and non-government bodies should continuously promote and educate the public on the importance of practicing toilet cleanliness.

Perhaps, organising competitions or giving awards to give recognition to the public for practicing toilet cleanliness will motivate people, especially youth, to adopt good toilet hygiene as a lifestyle. We believe such initiatives will help increase toilet hygiene practices among the people in Malaysia.

LIMITATIONS AND SUGGESTIONS

This study looked at youth in a Malaysian university. More studies can be conducted in other youth attraction places such as shopping malls, cinemas, and sports centres to further understand youth's knowledge, attitude, and practices in the Malaysian or international context. This study has proven that learning should not solely focus on theoretical, but more studies must be conducted to strengthen the university curriculum with practical learning experiences. Moreover, this study only added the learning variable to the Knowledge, Attitude, and Practice theory. Other relevant variables such as time, self-efficacy, or culture may be added to the theory in future studies.

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