DEVELOPMENT OF AN INTEGRATED TAM AND KHAN MODEL ON THE INTENTION TO USE BLENDED LEARNING IN MALAYSIAN ORTHODONTIC RESIDENTS: A PILOT STUDY

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INTRODUCTION

The adoption of blended learning in orthodontic curriculum has gained popularity recently. However, the blended learning approach was inevitable during the COVID-19 pandemic especially when face-to-face teaching and learning sessions were suspended. [1]

Most studies on blended learning looked into the acceptance, effectiveness, and efficiency of the method, but these studies were not grounded on the theoretical framework in their methodology. [3,4] In addition, study pertaining to factors that contributes to the intention to use blended learning is still absent.

During the last decades, many theoretical frameworks have been developed to understand the factors that influence the use of technology applications in blended learning. Technology Acceptance Model (TAM) and KHAN model were considered suitable frameworks in blended learning because it may assist the students to comprehend better.

OBJECTIVES

1. To identify the significance of each factor that contributes to the intention to use blended learning in orthodontic postgraduate programmes.
2. To integrate KHAN and TAM models in order to identify the key factors and relationships that contribute to the intention to use blended learning in orthodontic postgraduate programmes.

MATERIALS & METHODS

This pilot study was carried out from August to September 2022 and included 7 residents from three university that offers postgraduate training in orthodontics. The online questionnaire was distributed using Google Form to all respondents. The questionnaire had a total of 53 items and were based on 5-point Likert scales.

It consists of (5) main domains:1. Demographic data, 2. Perceived Ease of Use, 3. Perceived Usefulness, 4. Attitude and 5. Behavioral Intention. Eight constructs were also included namely; Availability, Accessibility, Content Quality, Effectiveness, Teaching Style, Resource Support, Communication and Responsiveness. The reliability and validity of the questionnaires were tested by analyzing all 53 items

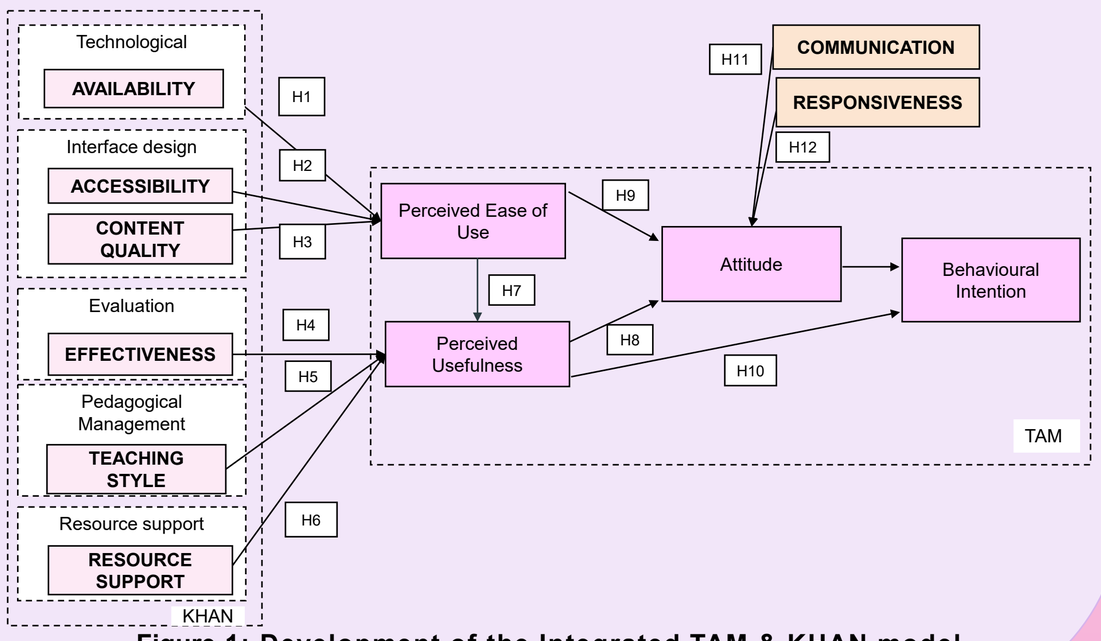

Figure 1: Development of the Integrated TAM & KHAN model

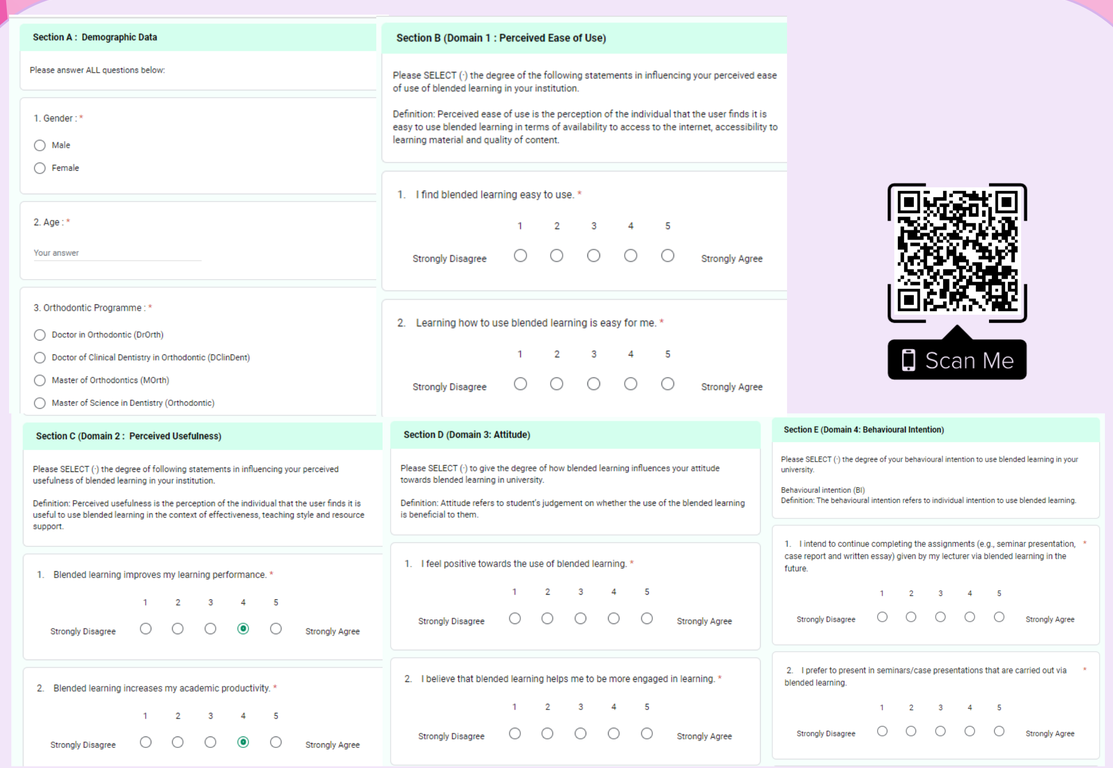

Figure 2:Online Questionnaire

RESULTS

All data from this pilot study were tested for reliability and validity. The internal consistency of the items was measured using Cronbach's alpha analysis on Statistical Package for the Social Sciences (SPSS Version 27). All the Cronbach's alpha analysis ranged between 0.73 to 0.97, except for 1 construct (Attitude). PLS-SEM based on SmartPLS 4.0 was deployed to validate the reflective measurement model. The results revealed that the Average Variance Extracted (AVE) score was greater than 0.50 (0.51-0.73) in all cases except for 4 constructs: Availability, Effectiveness, Resource Support and Attitude.

Table 1: Cronbach's alpha analysis

Acronym	Latent Factors	No. of Items	Cronbach's Alpha
PU	Perceived Usefulness	5	0.730
PEOU	Perceived Ease of Use	6	0.971
ACC	Accessibility	3	0.815
CC	Course Content	3	0.787
AVL	Availability	3	0.851
EFF	Effectiveness	3	0.929
TS	Teaching Style	3	0.825
RS	Resource Support	3	0.815
ATT	Attitude	4	0.519
COM	Communication	3	0.821
RES	Responsiveness	3	0.892
BI	Behavioral Intention	6	0.726

Table 2: Average Variance Extracted (AVE)

Acronym	Latent Factors	Average Variance Extracted (AVE)
PU	Perceived Usefulness	0.730
PEOU	Perceived Ease of Use	0.710
ACC	Accessibility	0.572
CC	Course Content	0.582
AVL	Availability	0.425
EFF	Effectiveness	0.413
TS	Teaching Style	0.533
RS	Resource Support	0.471
ATT	Attitude	0.419
COM	Communication	0.514
RES	Responsiveness	0.589
BI	Behavioral Intention	0.726

DISCUSSIONS

It is imperative to ensure that the developed instrument is reliable and valid, where reliability refers to the consistency of the item measure used within the study.[5] Reliability assessment of the instrument involves checking the internal consistency reliability of the constructs and associated items. [6]

George et al. mentioned that Cronbach's Alpha value of more than 0.7 confirms the reliability of a scale. In our study, all constructs scored more than 0.7 except for the Attitude construct. However, the items will still be remained. This was based on a recommendation that a higher Alpha value is challenging if there were less than 10 items per construct on a scale.[6] Therefore, an Alpha value > 0.5 is considered acceptable.

A common method of measuring convergent validity is the Average Variance Extracted (AVE) criterion. For a measurement model to have adequate convergent validity, the constructs should have an AVE value of 0.5 or above.[5] For this current study, the results revealed that the AVE score is greater than 0.50 in all cases except for 4 constructs. In order to increase the convergent validity of the instrument, additional items must be added to achieve AVE value > 0.5.[7]

CONCLUSION

The reliability of the items and constructs were good. However, additional items need to be added for the construct of Availability, Effectiveness, Resource Support and Attitude to enhance the validity of the questionnaire.

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ACKNOWLEDGEMENT

This research was funded by Kulliyyah of Dentistry Postgraduate-CHAIN Grant (CHAIN 22-001-0001).