The Investigation of Hong Kong University Engineering Students' Perception of Help-seeking with Attitudes towards learning Simulation Software

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ABSTRACT
Simulation software has been integrated into education delivery process in order to provide an effective learning environment for students such as FlexSim and Arena. This study investigated Hong Kong engineering students' help-seeking perception and attitudes towards learning simulation software at their university education institution. Students can be influenced by different factors during their study of using simulation software and depends on different situations for determining their help-seeking perception. The objective of this survey is to examine the factors and situations that influenced students on using simulation software about its usage and acceptance, including the teaching and learning processes and the usage as a supplement to the conventional instruction. A survey will be conducted and collected samples from university students in one of Hong Kong's universities. A comparison will be made based on students' help-seeking perception and attitudes towards using simulation software (e.g. FlexSim or Arena) after collecting and analyzing those samples in order to provide a suggestion for improving the learning environment.
Keywords: Behavioral Intention, Goal orientation, Help-seeking, Perceived Usefulness, Self-regulation, Simulation software

INTRODUCTION
Based on the rapid development of technologies, interactive learning environments (ILEs) have influenced on the daily practice of education (Dillon & Gabbard, 1998; Koedinger, Anderson, Hadley, & Mark, 1997). Simulation software is seen to be a tool for enhancing the effectiveness of educational environment which is a program for user modeling an operation through the software without any actual performance. By using this simulation software, there are different functions and complicated structures for students to simulate some specific operation such as the operation of supply chain and manufacturing processes. Help-seeking performance would be made by using the simulation software because of the complex usages and techniques included in the software. Difficulties are made by the communication between the software program and human since the software has been identified as "thinking" differently from human (Rodgers & Moraga, 2011). A result shows that the relationship between help- seeking and academic need are connected (Karabenick & Knapp, 1988) which means academic result shows the degree of help-seeking from students. The academic result can be affected by the behaviors and attitudes of help-seeking to students. Ames (1983) has mentioned that students' help-seeking is not only depended on the pattern of attributions made about the task, also depend on the achievement goals. Learning attitudes can be reflected by students' help-seeking behavior (Arbreton, 1998). It shows a relationship between the help-seeking behavior and learning attitudes by students' achievement goals.

Simulation software has been implemented into the learning environment for students understanding more for applying their learning knowledge. Students can apply their knowledge learnt from lectures by simulating the software in order to get a great understanding of some specific concepts. Behavioral intention can be influenced by internal and external factors in different situations (Davis, 1989). It is worth to investigate the reasons and factors on the help-seeking performance from students with the use of simulation software. Besides, there is lack of research of finding the relative perception of help-seeking from students on using simulation software. Therefore, an understanding of cognitive, motivational and technological characteristics of student's academic help-seeking behavior is needed in order to recognize the factors that influence help-seeking in simulation software learning can help professors develop effective tools and techniques for enhancing students get interested in simulation software learning.

LITERATURE REVIEW

Definition of Academic Help-seeking

Help-seeking behaviors of learners reflect their metacognitive and specific knowledge skills (Newman, 1994; Puustinen, 1998; Wood & Wood, 1999). It can also be assumed that the help-seeking behaviors from the learners reflect their attitudes about learning and their achievement goals (Arbreton, 1998; Newman, 1998; Ryan & Pintrich, 1997). The academic result can be one of the achievement goals for students and assumed that it can reflect the learning attitudes based on their help-seeking behaviors. Besides, seeking help contributes to a general pattern of student's flexibility to overcome their difficulties for learning and achievement (Newman, 2000). It can be an important role in student's learning experience based on the challenges that online learning environment may develop (Dunn, Rakes, & Rakes, 2014). Learning changes individual' knowledge state and skill repertoire so that learners may seek help from others or other resources in order to solve problems they met since they are influenced directly and indirectly by their social and cultural circumstances and the why, what, when, where, and how of learning are not always decided by individual alone (Nelson, 1985). Learners need to obtain the necessary help for their learning through their classmates, instructors or other resources in order to meet their target problems.

A model of Help-seeking Process

A model of a Vygotskian framework is provided to understand help-seeking (e.g., Nelson-LeGall, 1981; Newman, 1994; Puustinen, 1998; Karabenick & Dembo, 2011). It can be a task analysis of the help-seeking process and comprises the following steps:

1. Meet a problem in learning and being aware of need for help.
2. Decide to seek help or not be considering the method of help-seeking.
3. Identify potential helpers if decided to seek help from someone.
4. Use strategies to elicit help to gain the greatest effort.
5. Contain getting help and evaluate the help gained.

The model was indicated by Nelson-LeGall (1981) and elaborated by Newman (1994).

Simulation Software

Simulation software is widely used as an instructional technology for providing training and basic operation to the university students (Sheingold & Hadley, 1990; Thomas & Hooper 1991). It provides powerful learning tools for students to understand the processes of an actual system. A real-life scenario is provided in the simulation and students can come across a number of real or idealized situations to observe and learn. Computer simulation enhances the active involvement of students in the learning process in order to facilitate their practice and mastery of concepts and principles (Rivers & Vockel, 1987).

According to Shannon (1975), simulation is the process of designing a model of a real operation and guiding experiments with the model for the purpose of understanding the operation or evaluating various strategies for the operation which means simulation is the process of simulating something or the result of simulating a specific operation. It also is defined in the handbook of simulation (1993), "simulation is the imitation of the operation of a real-world process or system over time to time." The major usage of simulation is to specify and study the behavior of a system or a process and be consider "what-if" questions related to the actual system performance.
The development of computer technology is related to the use of simulation modeling. The simulation modal is a computer program which realizes a huge number of computational operations. This means that the development of computers and simulation programs help to progress the field of simulation modeling methodology and its relative applications.

Nance (1996) has mentioned that there are five periods of developing the simulation. The first period of search (1955-69) is to facilitate the needs in simulation modeling. Problem-solving technique is being recognized into simulation languages to empower the functions of simulation. Secondly, the advent (1961-65) characters the appearance of indications of the major simulation programming languages that current in use. Thirdly, a consolidation in conceptual clarification are designed in the formative period (1966-70) in order to improve the clarity of simulation presentation to users. Fourthly, major expansions and extensions are developed during the expansion period (1971-78). Lastly, Simulation languages have been rarely extended and implemented to computers in the period of consolidation and regeneration (1979-86).

Characteristic of Simulation

Banks (1991) has classified five features of simulation software are input, processing, output, support, and cost. Input contains the ability to change the simulation language to another language if the simulators require the same model. It also involves syntax that made users understand the modeling terminology easily. Processing feature allows users entering the code to incorporate special characteristics in the model. Standardized and customized reports are created by output feature. The standardized reports include performance procedures such as average time in queue and average utilization of resources while the customized reports include the display of specialized performance procedures and the tailoring of output for managers. The quality of documentation, animation capability, on- line help and tutorial, customer reports are belonging to support a feature. The final feature of the cost is difficult to determine because of the cost change. It is based on the outlay of the simulation and the hardware requirements. The time spending in learning the software and the time requiring in building the model are also involved in the cost feature.

FlexSim Simulation Software
FlexSim is developed by FlexSim Software Products Inc (Simulation software, n.d.) and is a program for creating discrete events simulations. The FlexSim consists of two programs which are basic simulation software FlexSim and FlexSim Healthcare Simulation (FlexSim HC). The OpenGL environment is the main functions of the program for rendering 3D images in real time. It simulates the work of a machine, conveyors, working men, robots, and forklifts. Students can use the simulation in trial version for free.

Arena Simulation Software
Arena is developed by the Rockwell Automation (Arena Simulation, n.d.) which enables the design of production lines. It helps demonstrating, predicting and measuring the system performances with the combination of process simulation and optimization. The program of Arena can simulate in two-dimensional (2D) and three-dimensional (3D). The 2D mode is used for the whole production process by applying the logical model since the duration and the speed of production are adapted in the simulation. After desiring the necessary functionalities, the related objects are created in 2D system and then updated to 3D environment. The benefits of using 3D animation are monitoring the arrangement of machinery, production line workers and demonstrates the whole process in the system. A final report is generated for each carried simulation.

METHOD
Students' help-seeking perception in university education can be influenced by several variables. Aleven et al. (2003) have identified learner-related factors that influence help-seeking behavior such as prior knowledge, self-regulation, age and gender, and goal orientation. Additionally, attitudes towards help-seeking are influenced by the social roles and cultural values which emphasize self-reliance and individual achievement (Nelson-LeGall, 1985). There are various models of technology acceptance used to understand the help-seeking perception of students. The Technology Acceptance Model is one of the most popular models and widely applied in the educational research. It helps to understand the reasons for individual favorable or not favorable to the technology. Thus, the model can be used to check students' help-seeking intentions in Simulation Software learning.

A. External Variables
Prior Knowledge Difference in Simulation Software Learning
Prior knowledge influences students' learning performance (Dochy & Alexander, 1995). An indirect effect included in the prior knowledge on learning through student behavior and study skill (Dochy & Segers, 2001). Other studies denoted that effective help-seeking is related to academic achievement and prior knowledge. Based on the research of Wood and Wood (1999), students with higher prior knowledge showed more effective help-seeking behavior while students with the lower prior knowledge required help more frequently. Their result showed that students with less prior knowledge made more errors and require more help. Similarly, students who have more knowledge about simulation software require less help from others. Less prior knowledge students may have less perceived ease of use of simulation software (e.g. FlexSim and Arena). Thus, the prior knowledge can be checked to understand the help-seeking perception of students based on their prior knowledge of simulation software learning (SSL).

H1: Students with prior knowledge require a positive effect on the Perceived Ease of Use (PEU) of the simulation software (e.g. FlexSim and Arena).
H2: Students with prior knowledge require a positive effect on the Perceived Usefulness (PU) of the simulation software (e.g. FlexSim and Arena).

Self-regulation in Simulation Software Learning
According to Levenyhal, Nerenz and Steele (1984), Self- regulation is defined as the ability to moderate the own thinking and feelings that affect one's behavior. Help-seeking can be defined as a strategy of self-regulated learning and self- regulated students tend to more control on their learning processes and academic outcomes (Newman, 1998). A study of Puustinen (1998) shows that the self- regulatory skills are related to the adaptive help seeking, so they tend to seek help more frequently than other students (Karabenick & Knapp, 1991). In the meantime, students with weaker self-regulatory skills tend to be lower prior knowledge because of the difficult task met with

their low prior knowledge. Accordingly, students with low prior knowledge of simulation software (e.g. FlexSim and Arena) learning are containing weaker self-regulatory.
H3: Prior Knowledge is different in self-regulatory skills.
H4: Students with self-regulatory skills have positive effect on the Perceived Ease of Use (PEU) in the Simulation Software Learning (e.g. FlexSim and Arena).
H5: Students with self-regulatory skills have positive effect on the Perceived Usefulness (PU) in Simulation Software Learning (e.g. FlexSim and Arena).

Goal Orientation in Simulation Software Learning
A course can be attracted by students leads to more oriented toward adopting mastery goals for giving the effort to learn more (Harackiewicz & Barron & Pintrich & Elliot & Thrash, 2002). Different goal orientations from students lead to different help-seeking behaviors. According to the study of Ryan and Pintrich (1997), they mentioned that the achievement goals can be divided into two motivational variables on help-seeking including direct and indirect effects. They indicated that Students with learning goals were more likely to require help from others while students with performance goals were more likely to perceive help- seeking as a threat to self-worth.

Thus, help-seeking performance approach of students on simulation software learning is exists in this study.
H6: Goal orientation of students have a positive effect on the Perceived Ease of Use (PEU) in Simulation Software Learning (e.g. FlexSim and Arena).
H7: Goal orientation of students have a positive effect on the Perceived Usefulness (PU) in Simulation Software Learning (e.g. FlexSim and Arena).

B. TAM Variables
Perceived ease of use and Perceived usefulness in Simulation Software Learning
According to Venkatesh and Davis (1996), the perceived usefulness can be affected by the perceived ease of use.
H8: A positive relationship involved in Perceived Ease of Use (PEU) and Perceived Usefulness (PU) in SSL.

Perceived Ease of Use and Attitude in Simulation Software Learning
The perceived ease of use is expected the degree of students using technologies and tools in Simulation Software Learning (SSL). It can be assumed that the easier of using techniques in SSL to a student may tend to perform a positive attitude in SSL.
H9: A positive relationship involved in Perceived Ease of Use (PEU) and Attitude (ATT) in SSL.

Perceived Usefulness and Attitude in Simulation Software Learning
In the study, the perceived usefulness (PU) of the Simulation Software Learning (SSL) is assumed students gain benefits more from the learning would perform well in the SSL courses.
H10: A positive relationship involved in Perceived Usefulness (PU) and Attitude (ATT) in SSL.

Attitude and Behavioral Intention in Simulation Software Learning
In the study, the attitude towards Simulation Software can refer the behavioral intention of the Simulation Software Learning (SSL). If students contain a good attitude towards Simulation Software, they tend to use more and support the SSL.
H11: a positive relationship involved in Attitude toward Using (ATT) and Behavioral Intentions (BI) in SSL.

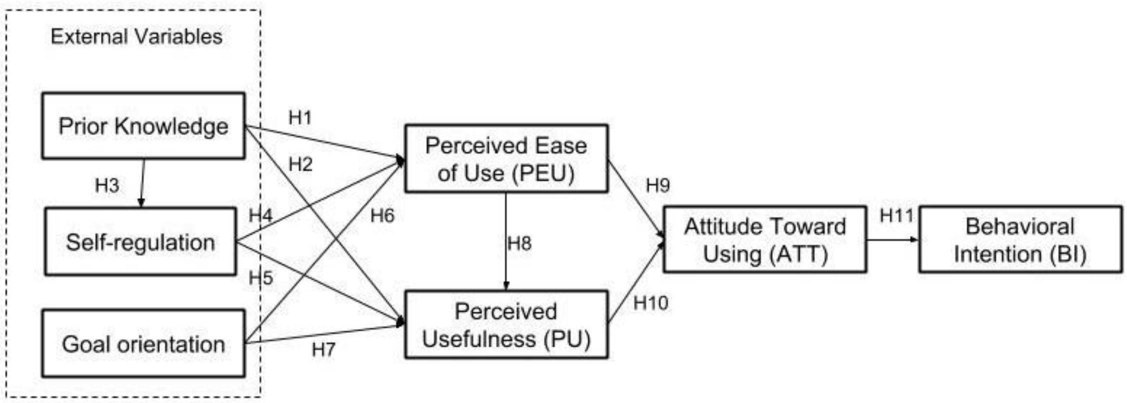

Figure 1. The Research Model of the study

FINDINGS

A questionnaire survey has been conducted into the project which aims to collect data for analysis students' help-seeking perception and attitudes towards using the simulation software (e.g. FlexSim or Arena) in their study. The survey focusses on the engineering students in one of Hong Kong's universities. The survey is going to divide into three major parts. They are personal information, student preferences for the methods of seeking-help from others and students' attitudes towards using simulation software for learning. Questions are designed based on students' experiences and their self-expectation. It has been designed twenty-eight questions in the survey for evaluating students' help-seeking perception and attitudes towards learning simulation software.

A. Population and Sample

Relevant data and questionnaires were collected from the target respondents. 150 questionnaires were distributed and 127 of them were returned and validated. Table 1 shows the demographic information of the target respondents.

Table 1. Demographic Characteristics of the Respondents

Individual Variables	Frequency
Gender of Respondents	
Male	54.3%
Female	45.7%
Study Year of Respondents	
Year 2	13.4%
Year 3	51.2%
Year 4	35.4%
Age of Respondents	
Below 20 years old	3.1%
20-23 years old	80.3%
24-26 years old	16.5%
Prior Knowledge of Respondents	
Have prior knowledge	11.8%
No prior knowledge	88.2%
Students' help-seeking Preferences from instructor in situation a	
Emailing instructor privately	30.7%
Calling instructor	1.6%
Asking instructor on discussion board	2.4%
Meeting instructor face-to-face	33.9%
No need to ask instructor	6.3%
Not comfortable asking instructor	25.2%
Students' help-seeking Preferences from instructor in situation b	
Emailing instructor privately	34.6%
Calling instructor	7.1%
Asking instructor on discussion board	0.8%
Asking instructor in live chat	1.6%
Meeting instructor face-to-face	29.9%
No need to ask instructor	6.3%
Not comfortable asking instructor	19.7%
Students' help-seeking Preferences from peer in situation a	
Emailing peers privately	2.4%
Calling peers	8.7%
Asking peers on discussion board	1.6%
Asking peers in live chat	43.3%
Meeting peers face-to-face	22.8%
No need to ask peers	9.4%
Not comfortable asking peers	11.8%
Students' help-seeking Preferences from peer in situation b	
Emailing peers privately	11.0%
Calling peers	4.7%
Asking peers in live chat	44.1%
Meeting peers face-to-face	23.6%

No need to ask peers	7.1%
Not comfortable asking peers	9.4%

B. Data Collection Method & Analysis
The questionnaire was divided into three parts. The first part included the basic personal information about the respondents. The second part was inquiring five questions related to students' prior knowledge of simulation software, and students' help-seeking preferences from instructors and peers during the learning process of simulation software, and asked the students' preferred methods of contracting the instructors or peers in two situations. The two situations are mentioned in the last four questions a) when they are confused about the concept of a subject matter in a simulation software learning, and b) when they are confused about the guidelines for completing an assignment, meet a due data, a grade or other similar procedures in a simulation software learning. The third part contained eighteen questions inquiring students' attitudes towards simulation software learning.

The questionnaires were distributed after the lectures. Found the target respondents based on the AIMS of this university for checking the lectures timeslots of engineering students. Then, invited them for completing the questionnaires after the lectures. Before distributing the questionnaires, they were asked whether they have experiences of learning the simulation software. If not, the questionnaires would not be distributed to them. Feedback was given from the respondents to understand more about the purpose of this survey. The validated questionnaires ensured the respondents are experienced in simulation software learning. The data was evaluated and presented in the regarding tables.

C. Data Analysis & Findings
The descriptive statistics was shown in Table 2 to give a summary of the information about the items used in the survey. There were eighteen items listed in Table 2 by using five-point Likert-scale (1 = strongly disagree to 5 = strongly agree), including students' help- seeking perception factors and attitudes toward learning Simulation Software. Each factor contained three statements in the questionnaire for asking students' experiences.

Table 2. Questionnaire Items

Items	Mean	STD. Deviation
I found the Simulation Software (e.g. FlexSim or Arena) easy to use.	2.74	0.657
It is easy to use the Simulation Software (e.g. FlexSim or Arena) in improving my academic performance.	2.59	0.694
It is easy to use Simulation Software (e.g. FlexSim or Arena) as a tool for learning.	2.61	0.644
Using the Simulation Software (e.g. FlexSim or Arena) easy to enhance my learning effectiveness.	3.03	1.061
Using the Simulation Software (e.g. FlexSim or Arena) as an easy tool for learning in classroom to increase my learning and academic performance.	2.98	0.908
The learning of Simulation Software (e.g. FlexSim or Arena) is useful in supporting my learning.	3.02	0.959
I can perform better while learning the Simulation Software (e.g. FlexSim or Arena).	2.74	0.681
I am satisfied with the learning content of the Simulation Software (e.g. FlexSim or Arena).	2.52	0.688
I feel enjoyable every time when I learn the Simulation Software (e.g. FlexSim or Arena).	2.74	0.769
Given the opportunity, I would use the Simulation Software (e.g. FlexSim or Arena) as a learning tool in the future.	2.73	0.672
I would recommend other to use the Simulation Software (e.g. FlexSim or Arena) as a learning tool.	2.35	0.717
I would like to use the Simulation Software (e.g. FlexSim or Arena) as a learning tool.	2.58	0.761
When I meet a problem in Simulation Software learning (e.g. FlexSim or Arena), I will require help from my teacher.	2.90	0.733
When I meet a problem in Simulation Software learning (e.g. FlexSim or Arena), I will require help from my classmate.	2.57	0.751
When I meet a problem in Simulation Software learning (e.g. FlexSim or Arena), I will find solution from proper websites (e.g. Google search).	2.83	0.714

I believe that I can get excellent grades on Simulation Software learning (e.g. FlexSim or Arena).	2.97	0.796
I believe that I can capture the basic concepts taught in Simulation Software learning course (e.g. FlexSim or Arena).	2.65	0.706
I believe that I can understand the most difficult part of Simulation Software materials (e.g. FlexSim or Arena).	2.24	0.707

Factor analysis is used for testing the variability of this study. It aims for observing the variable were correlated to each other. The similarity and relation of the target group for ensuring the data collected is associated with the scale, and reduce the number of variable to facilitate the supplementary analysis. The data was tested by the factor loading and corrected item-total correction. To access the significance of factor loadings, factor loadings of 0.3 to 0.4 are minimally accepted (Hair et al., 2010) which means the data was variable while the value of factor loading and the corrected item-total correction is more than 0.3. The factor loading in the variable items ranged from 0.414 to 0.795 which means that data was variable to the study.

Furthermore, The Cronbach's alpha is adopted in this study to provide a measure of the internal consistency of a scale. The value of the Cronbach's alpha is presented as a number between 0 and 1. There are serval reports indicated different acceptable values of alpha, ranging from 0.7 to 0.95 (Bland & Altman, 1997; DeVellis, 2017). However, a maximum alpha value of 0.9 has been recommended (Streiner, 2003). Thus, the alpha value low than 0.7 could be the low value of due to a low number of question, poor interrelatedness between items (Tavakol & Dennick, 2011). The low value of alpha should be discarded. The Cronbach alpha value of Table 2 was 0.849 which was accepted in the range of 0.7 to 0.95.

The study is to observe Hong Kong engineering university students' help-seeking performance and attitudes towards Simulation software learning. By analyzing the collected data from the questionnaires, different results were found based on the research model and tested by the Statistical Package for Social Sciences software (SPSS). The analysis methods included Independent Sample T-test and Pearson Correlation. All hypotheses were tested based on students' experience of FlexSim and Arena.

Table 3. Test of Hypothesis H1

Sig F	F	Sig t	t
0.197	1.680	2.135	0.035

Based on the result of Independent T-test in Table 3 ($p=0.035<0.05$), a significant difference appeared between students with prior knowledge and without prior knowledge of Simulation Software learning. The mean value for students with related prior knowledge was 2.8889 while students without related prior knowledge was 2.6131, which means students with related prior knowledge perceived using the software easier.

Table 4. Test of Hypothesis H2

Sig F	F	Sig t	t
0.355	0.862	2.625	0.010

The mean value of students with prior knowledge was 3.4444 and greater than the students without prior knowledge of simulation software (2.9524). Based on the Table 4 ($p=0.010<0.05$), there was a significant prior knowledge difference about students perceived usefulness in simulation software learning.

Table 5. Test of Hypothesis H3

Sig F	F	Sig t	t
0.223	1.498	2.491	0.014

The mean value of self-regulated students with prior knowledge was 3.0889 which greater than self-regulated students without prior knowledge (2.7232). Based on the Table 5 ($p=0.014<0.05$), there was a significant difference between self-regulated students with or without prior knowledge of simulation software learning.

Table 6. Test of Hypothesis H4

Pearson Correlation (r)	Sig. (2-tailed)	N
0.555	0.000	127

** Correlation is significant at the 0.01 level (2-tailed)

Based on Table 6, the value of r was 0.555 (p=0.000<0.05) which was greater than 0.5 and would be classified as a strong positive correlation between self-regulatory and perceived ease of use of simulation software learning.

Table 7. Test of Hypothesis H5

Pearson Correlation (r)	Sig. (2-tailed)	N
0.707	0.000	127

** Correlation is significant at the 0.01 level (2-tailed)

Based on Table 7, the r value was 0.707 (p=0.000<0.05) which means that a strong relationship occurred between students' self-regulatory and perceived usefulness of learning simulation software.

Table 8. Test of Hypothesis H6

Pearson Correlation (r)	Sig. (2-tailed)	N
0.526	0.000	127

** Correlation is significant at the 0.01 level (2-tailed)

Based on Table 8, the r value was 0.526 (p=0.000<0.05) which showed a positive relationship between the goal orientation and the perceived ease of use from the learning of simulation software to students.

Table 9. Test of Hypothesis H7

Pearson Correlation (r)	Sig. (2-tailed)	N
0.639	0.000	127

** Correlation is significant at the 0.01 level (2-tailed)

Based on Table 9, the r value was 0.639 (p=0.000<0.05) which showed the strong relationship between the goal orientation of students and students' perceived usefulness of learning simulation software.

Table 10. Test of Hypothesis H8

Pearson Correlation (r)	Sig. (2-tailed)	N
0.632	0.000	127

** Correlation is significant at the 0.01 level (2-tailed)

Based on Table 10, a positive relationship was occurred between perceived ease of use and perceived usefulness of simulation software toward students' learning as the r value was 0.632 (p=0.000<0.05).

Table 11. Test of Hypothesis H9

Pearson Correlation (r)	Sig. (2-tailed)	N
0.402	0.000	127

** Correlation is significant at the 0.01 level (2-tailed)

Based on Table 11, a positive relationship was formed between the perceived ease of use and the attitudes of students learning simulation software as the r value was 0.402 (p=0.000<0.05).

Table 12. Test of Hypothesis H10

Pearson Correlation (r)	Sig. (2-tailed)	N
0.396	0.000	127

** Correlation is significant at the 0.01 level (2-tailed)

In Table 12, the r value was 0.396 (p=0.000<0.05) which showed a positive relationship between the perceived usefulness and attitudes toward students learning simulation software.

Table 13. Test of Hypothesis H11

Pearson Correlation (r)	Sig. (2-tailed)	N
0.580	0.000	127

** Correlation is significant at the 0.01 level (2-tailed)

In Table 13, the r value was 0.580 whereas the p value was 0.000 (p<0.05), showed a positive relationship between the students' attitudes toward simulation software learning and behavioral intention of using simulation software.

CONCLUSION AND EVALUATION

Engineering university students' perception of help-seeking and attitudes toward simulation software (e.g. FlexSim or Arena) in Hong Kong has examined in this study. Students preferences of help-seeking in simulation software learning have been researched through the survey with the use of modified Technology Acceptance Model (TAM). The analyzed data has been mentioned in different tables. The independent sample t-test and Pearson correlation have been used in the study for analyzing the data collected from the survey. They have been used for checking and testing the relationship and effect across different variables.

Most of the variables have been tested and supported. Based on the result of the data analysis, there were significant impacts and connections on student's perception and their attitude toward simulation software learning among their prior knowledge, self-regulation, and goal orientation which also influenced their help-seeking behavior in learning simulation.

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