

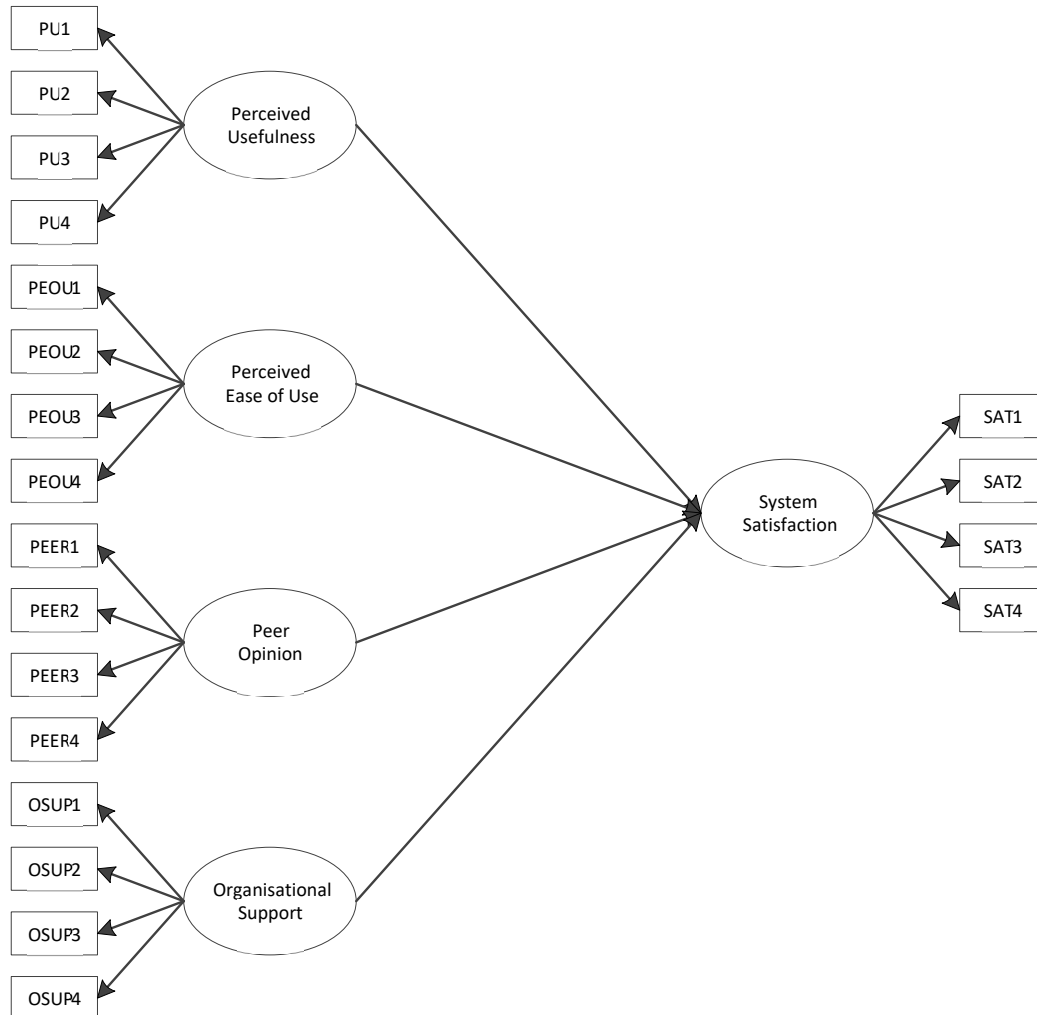
**ISYS3401 IT Evaluation Assignment 2**  
**Measurement Model Development & Assessment of Effects**  
**(Semester 1, 2020)**

**Background**

A hospital has recently implemented an electronic medication management (eMeds) system for doctors, pharmacists and nurses to prescribe, validate and administer medication to patients. The hospital would like to study the satisfaction of the users on the new system. Past studies suggest that user satisfaction is generally influenced by factors such as perceived usefulness, perceived ease of use, peer opinion, and organizational support, etc. The hospital conducted a survey on a sample of the users during the 4 weeks of the implementation period in order to investigate the following research question:

Are perceived usefulness, perceived ease of use, peer opinion, and organizational support important to system satisfaction for doctors and nurses respectively?

The research questions can be depicted as the following research model:



**Assignment Tasks:**

1. (33%) Perform detailed Exploratory Factor Analysis (EFA) with unlabeled data using dataset 1 (dataset1.xlsx). Your goal is to develop the best measure model and constructs based on the statistical results. You may need to perform a sequence of EFAs to achieve your goal. Report your final model and provide justification for each construct and related items.
2. (33%) Perform assessment of Scale Reliability and Construct Validity using dataset 2 (dataset2.xlsx). Data collected was based in the questionnaire survey shown in Appendix.
  - a. Compute the internal consistency of the measurement items of EACH construct using appropriate methods:
  - b. Conduct appropriate exploratory factor analysis (EFA).
  - c. Report your answers systematically. Based on your analyses so far, comment on the reliability, convergent and discriminant validity of the measurement items. Are there any items that should be excluded? Justify your conclusions with relevant results from your analysis, and/or perform additional analyses if necessary.
3. (33%) Perform assessment of effects (regression analysis or equivalent) using dataset 3 (dataset3.xlsx) to test associations between each construct and system satisfaction. In this task, you may consider the user type variable in your analysis (Doctor = 0, Nurse =1).

**Note:**

- When performing EFA, apply the principal components method to extract factors with eigenvalue greater than one, and rotate the extracted factors using the varimax method.
- For task 2, make sure you check and perform data cleaning and preprocessing as needed. For example, the construct "Peer Opinion", one of the items (PEER3) is negatively worded. Create a new item called "PEER3r" and recode the data by reversing the responses (i.e., 7→1, 6→2, 5→3, 4→4, 3→5, 2→6, 1→7; or simply  $PEER3r = 8 - PEER3$ ). Use PEER3r instead of PEER3 for ALL your analyses.

**Requirements Details:**

1. This assignment is done individually.
2. Submit the following files to Canvas before 12noon, Monday, 25<sup>th</sup> May 2020 (Week 13).
3. Submission Pack:
  - For Task 1:
    - a. Excel file for Task 1 and additional analyses in Excel (if any)
    - b. SPSS output file (.spv) and additional analyses in SPSS (if any)
    - c. Word or PDF file of final model with YOUR comments and justifications
  - For task 2:
    - a. Excel file for Task 2 and additional analyses in Excel (if any)
    - b. SPSS output file (.spv) and additional analyses in SPSS (if any)
    - c. Word or PDF file of final model with YOUR comments and justification
  - For task 3:
    - a. Excel file for Task 3 and additional analyses in Excel (if any)
    - b. SPSS output file (.spv) and additional analyses in SPSS or excel output (if any)
    - c. Word or PDF file of final model, and statistical results of each association in the model
    - d. Report informative findings and relevant interpretation of YOUR results.
4. Prepare a printed report that includes the following and submit it in week 13
  - a. Assignment cover sheet
  - b. Written answers for all 3 tasks
  - c. Appendix 1: Excel worksheets and additional analyses in Excel (if any) for all tasks
  - d. Appendix 2: SPSS outputs and additional analyses in SPSS (if any) for all tasks

**Measurement Model in dataset 2.xlsx (for Task 2)**

<b>Construct</b>	<b>Item</b>	<b>Description</b>
Satisfaction	SAT1	I am satisfied with the eMEDs system.
	SAT2	Using the eMEDs system is a good idea.
	SAT3	I like using the eMEDs system.
	SAT4	My experience on using the new eMEDs system has been positive.
Perceived	PU1	Using the eMEDs system enables me to accomplish tasks more quickly.
Usefulness	PU2	Using the eMEDs sytem improves my job performance.
	PU3	Using the eMEDs system increases my productivity.
	PU4	I find the eMEDs system useful in my job.
Perceived	PEOU1	Learning to operate the eMEDs system is easy for me.
Ease of Use	PEOU2	My interaction with the eMEDs system is clear and understandable.
	PEOU3	I find it easy to get the eMEDs system to do what I want it to do.
	PEOU4	I find the eMEDs system easy to use.
Peer	PEER1	My peers are supportive of using the eMEDs system.
Opinion	PEER2	My colleagues think using the eMEDs system is a good idea.
	PEER3	My supervisor thinks using the eMEDs system is a bad idea. (reverse)
	PEER4	Most people whom I deal in my job encourage using the eMEDs system.
Organisational Support	OSUP1	The hospital provides me with the necessary training and guidance on using the eMEDs system.
	OSUP2	The hospital provides the necessary help and assistance to enable me to use the eMEDs system.
	OSUP3	I am given the necessary resources and support to use the eMEDs system.
	OSUP4	In general, the hospital has supported the use of the eMEDs system.
For dataset3.xlsx		
	Type	0 = Doctor 1 = Nurse