Systematic Research Approach of Model Development and Validation in Higher Education

Invited speech

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The contemporary definition of research which is the logical integration of ideas (Islam, 2017)
Research Approaches

To integrate ideas logically, researchers should follow two types of approaches such as:

- Theoretical Approach
- Methodological Approach
The theoretical approach is to develop the theory or model, which will integrate the ideas of research.
The methodological approach is to validate the theory or model using appropriate analytical tools, which can provide the findings of research.
Theoretical Approach
Technology Adoption and Gratification (TAG) Model (Islam, 2016)

Note: PEU= “perceived ease of use”, PU= “perceived usefulness”, CSE= “computer self-efficacy”, INT= “Intention to Use”, USE= “ICT Usage”, GRAT= “Gratification”
TAM is one of the most extensively used models to explain and assume the use of technology
The TSM, proposed by Islam (2014) is developed and validated by incorporating two additional intrinsic motivation attributes, namely, computer self-efficacy and satisfaction into the original TAM.
Islam (2011) developed and validated the Online Database Adoption and Satisfaction (ODAS) Model by consisting of the constructs computer self-efficacy and satisfaction into the TAM.
Technology Adoption and Gratification (TAG) Model (Islam, 2016)

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Methodological Approach

- Rasch Model/Exploratory Factor Analysis (EFA)
- Confirmatory Factor Analysis (CFA)
- Full-fledged Structural model
- Invariance Analyses
One-Factor Measurement Model of Perceived Usefulness (PU)

Chi-Square 14.387
df 5
p 0.013
RMSEA 0.069
CFI 0.991
TLI 0.981
One-Factor Measurement Model of Computer self-efficacy (CSE)

Chi-Square: 42.528
df: 20
p: .002
RMSEA: .053
CFI: .991
TLI: .987
One-Factor Measurement Model of Perceived Ease of Use (PEU)

Chi-Square 4.754
df 2
p 0.093
RMSEA 0.059
CFI 0.996
TLI 0.989
One-Factor Measurement Model of Gratification (GRAT)

Chi-Square: 5.724
df: 5
p: 0.334
RMSEA: 0.019
CFI: 1.000
TLI: 0.999
One-Factor Measurement Model of Intention to Use (INT)

Chi-Square 11.463
df 5
p .043
RMSEA .057
CFI .993
TLI .985

Diagram:

- INT
  - INT1 (.73)
  - INT2 (.85)
  - INT3 (.75)
  - INT4 (.73)
  - INT5 (.77)
  - INT10 (.65)

- e1 (.57)
- e2 (.53)
- e3 (.59)
- e4 (.42)
- e8
Chi-Square 99.462
df 32
p .000
RMSEA .073
CFI .952
TLI .933

Three-factor Measurement Model of ICT Use
Chi-Square 99.462
df 32
p .000
RMSEA .073
CFI .952
TLI .933

Second-order Factor of ICT Use
The Hypothesized Technology Adoption and Gratification (TAG) Model
The Revised Technology Adoption and Gratification (TAG) Model
Conclusion

This presentation includes the Technology Adoption and Gratification (TAG) model to indicate and also to explain how the TAG model was developed and validated using systematic research approaches, which might be essential for future researchers, academicians and practitioners in performing quantitative researches in all the arenas of higher education.


Thank You