Title:

Construct Validation of Factors Influencing the Educational Performance of ODL Learners: Methodological Contribution Using Psychometric Properties and Confirmatory Factor Analysis

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Venue: Main Campus

INTRODUCTION AND OBJECTIVE

Survey instrument must be able to measure latent construct which cannot be directly observed

survey research offers advantages such as breadth of data collected, larger samples and generalisability of results.

Potential disadvantage of survey research is respondents may misunderstand the survey questions.

That is why it is vital to establish valid and reliable instrument

Main objective of this paper is to validate the measurement of performance of ODL learners

LITERATURE REVIEW

Research instrument is developed based on review of previous literature

(Kara, 2009; Ni, 2013; Odeshi, 2014; Rhema & Miliszewska, 2014)

EDUCATIONAL PERFORMANCE OF ODL LEARNERS: THE MEASUREMENT

A1	Accessibility	I have greater access to the learning process
A2		I have greater experience in my studies
A3		I am more active in my learning
M1	Motivation	I can save more time
M2		I find it easy to use
M3		I can easily understand course material taught
M4		I find the courses taught interesting
M5		I have an improved motivation level
F1	Flexibility	I got more involved with the module
F2		I feel in control in my learning
F3		I am learning more efficiently
F4		I am able to learn more conveniently
F5		I feel that the technology has enhanced my learning
C1	Competency	I can easily manage the amount of study material taught for an exam
C2		I do not find it difficult to prepare for examinations
C3		I can easily cope with examination tension
C4		While taking an important exam, I perspire a great deal

RELATE TO THE FOUR BROTHERS

RESEARCH METHODOLOGY

- Research instrument was developed from the literature.
- Convenience sampling used. Students of OUM were the respondents (Limitation)
- Data was collected during the exam period. Face to face method was used. A total of 102 samples were obtained
- A total of 100 observations are sufficient to perform a confirmatory factor analysis (CFA) according to Bartlett et al. (2001).
- The amount of data also fulfils the requirement of Cochran (1977).

DEMOGRAPHIC PROFILE

Females (69%)	Fall between the age of 25-34 (49%)	Enrolled in Bachelors programme (67%)
Having a CGPA of 2.50-3.49 (63%)	Spend 4 hours per week on myVLE (56%)	Spend 5-9 hours per week on studying for exams (50%)

RELATE TO THE FROG THAT COULD HAVE BEEN A PRINCESS

PSYCHOMETRIC PROPERTIES

The extent to which a measure is repeatable or stable.

We are measuring what we are supposed to be measuring

Steps involved:

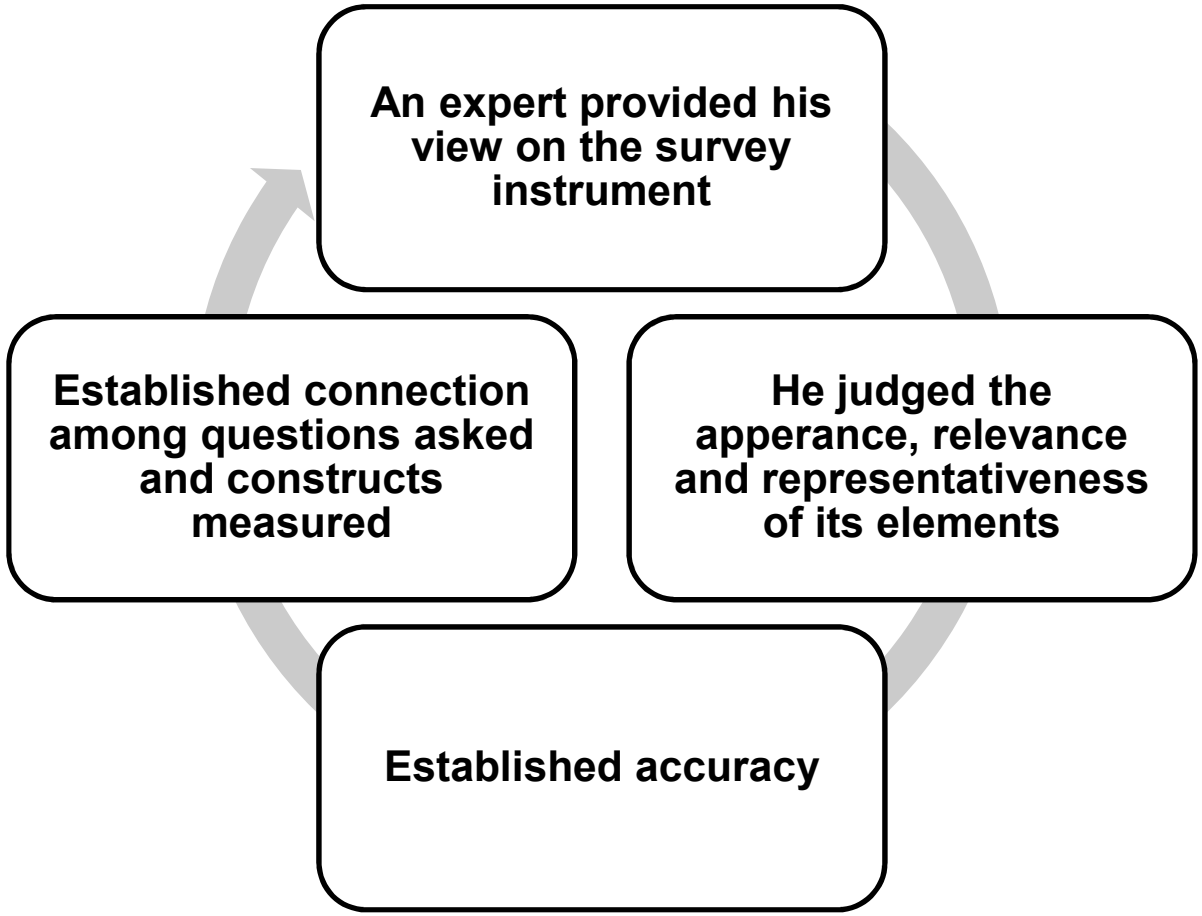
Step 1:content validity

Step 2: normality test

Step 3: reliability test

Step 4: confirmatory factor analysis

STEP 1: CONTENT VALIDITY



STEP 2: ASSESSMENT OF NORMALITY

Variable	SKEWNESS Acceptable skewness for items should be between +2 to -2 (Weinberg & Abramowitz, 2002)	KURTOSIS Acceptable Kurtosis for items should be between 0 to 3.8 (Lei & Lomax, 2005)
A3	-0.400	-0.179
A2	-0.282	-0.115
A1	-0.758	0.781
C4	-0.548	1.08
C3	-0.296	0.29
C2	-0.472	0.137
C1	-0.428	-0.25
M5	-1.103	1.406
M4	-0.271	-0.15
M3	0.209	-0.269
M2	-0.053	-0.499
M1	-0.293	-0.08
F5	-0.376	-0.012
F4	0.228	-0.58
F3	0.033	-0.235
F2	-0.16	-0.197
F1	-0.959	1.166

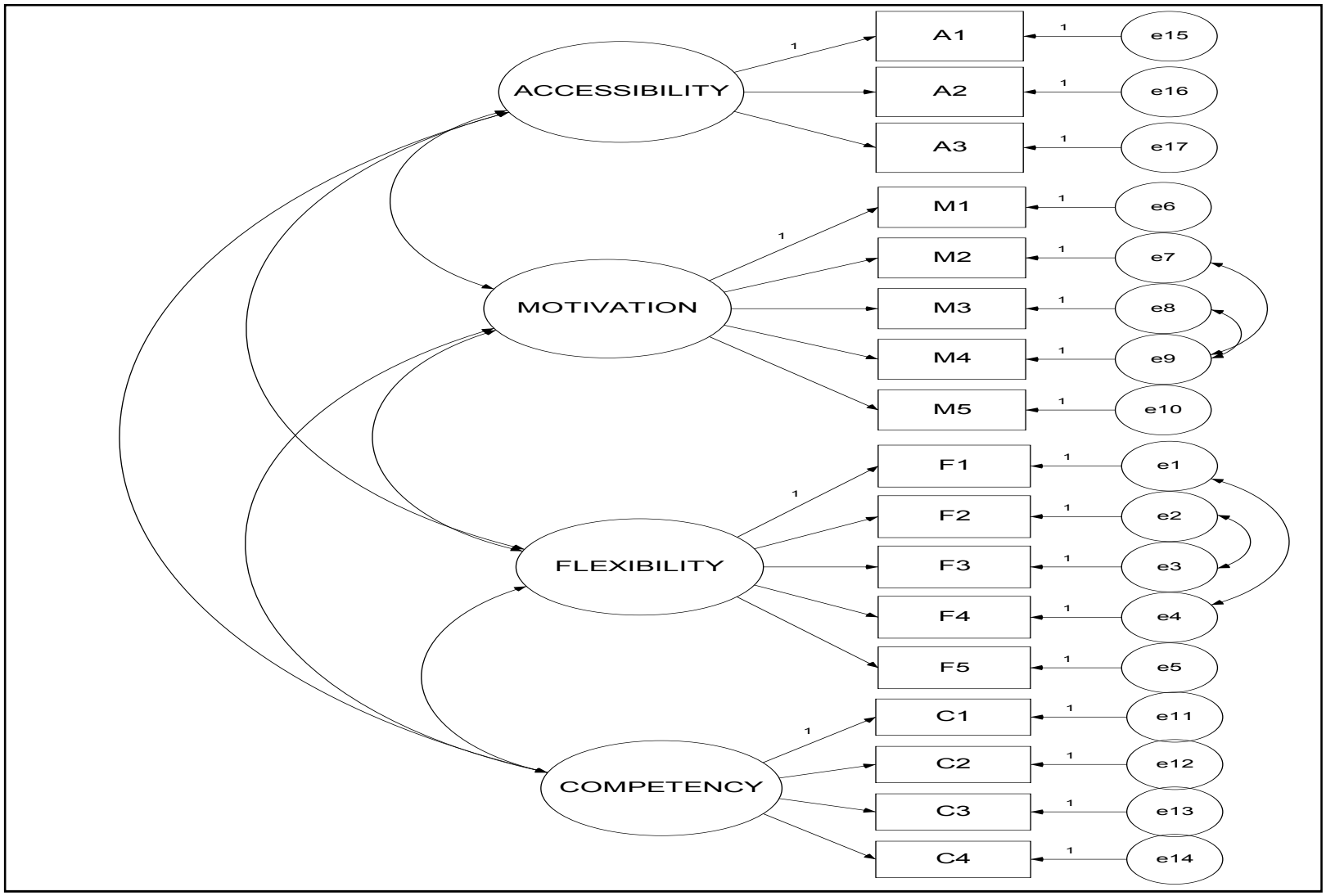
STEP 3: RELIABILITY OF THE CONSTRUCTS

CONSTRUCTS	CRONBACH ALPHA OBSERVED
DESIRED RANGE	> 0.60 (Zikmund et al., 2010) > 0.70 (Nunnally, 1978)
ACCESSIBILITY	0.69
MOTIVATION	0.78
FLEXIBILITY	0.86
COMPETENCY	0.71

STEP 4: CONFIRMATORY FACTOR ANALYSIS

- CFA: to test whether the data fit the measurement model.
- It is a part of structural equation modeling which can help integrate functions in one single umbrella (Bagozzi & Yi, 2011: Nachtigall et al., 2003)
- SEM based research can overcome the problem of non-normal data (Oke, 2012; Gao et al., 2008).
- SEM does not ignore the measurement error

STEP 4: CONFIRMATORY FACTOR ANALYSIS



STEP 4: CFA FITNESS

INDEX	OBSERVED	FITNESS	EVALUATION
RMSEA	**0.06**	**GOOD FIT**	**good fit < 0.10 (Chinda & Mohamad, 2008; Hair et al., 2010) mediocre fit = 0.08 (MacCullum et al., 1999)**
AGFI	**0.80**	**ACCEPTABLE FIT**	**Acceptable fit > 0.80 (Byrne, 2010; Hu & Bentler, 1999)**
CFI	**0.94**	**GOOD FIT**	**good fit > 0.90 (Chinda & Mohamad, 2008; Byrne, 2010 Hu & Bentler, 1999)**
TLI	**0.93**	**GOOD FIT**	**Good fit = 0.92 (Bagozzi & Yi, 2012) Acceptable fit > 0.80 (Hooper et al., 2008)**
NFI	**0.83**	**ACCEPTABLE FIT**	**Good Fit > 0.90 (Byrne, 2010) Acceptable fit 0.60 to 0.90 (Singh, 2009)**
Chisq/df	**1.39**	**GOOD FIT**	**Good Range < 5.00 (Tabachnick & Fidell, 2007)**
PGFI	**0.61**	**GOOD FIT**	**Acceptable fit >0.50 (Hair et al., 2010; Mulaik et al., 1989)**

RELATE TO HUSBAND AND WIFE JOKE

RECOMMENDATIONS & SIGNIFICANCE

Use the instrument to and link it to various management theories such as:

- Vroom's Expectancy Theory
- Theory X and Y
- Ajzen's Theory of Planned Behaviour

New instrument is offered to researchers who need not worry about validation.

They can use it right away and perhaps include moderating and mediating variables to enrich future work

METHODOLOGICAL CONTRIBUTION IS OFFERED AND RESEARCH GAP IS NARROWED

SEM and regression models can be offered by other researchers in this area of study.

Importance of difference types of methodologies

CONCLUSION

FOOD, FAMILY AND PHILOSOPHY???

AND THE STORY OF OUM

" To widen access to quality education and provide lifelong learning opportunities by leveraging on technology, adopting flexible mode of learning, and providing a conducive and engaging learning environment at competitive and affordable cost