

CONFIRMATORY FACTOR ANALYSIS (CFA) OF THE MALAY VERSION OF COUNSELING SELF-EFFICACY AND SELF DEVELOPMENT OF PUBLIC UNIVERSITY'S COUNSELOR TRAINEES'

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Abstract---Confirmatory factor analysis (CFA) for counseling self-efficacy and self development of the public university's counselor trainees were done using IBM_AMOS Version 21.0. A total of 208 respondents, who are trained counselors from Bachelor Degree in Counseling, was involved in the research which currently undergoing internship training. The overall validation procedure is known as the Confirmation Factor Analysis (CFA). The CFA approach to the application of structural equation model by using the AMOS software. Based on CFA for counseling self efficacy and self development fitness indexes for each latent construct were fulfilled.

Keywords--- Counseling Self-efficacy, self-development, trainee counselor, confirmatory factor analysis.

I. Introduction

CFA is the analysis of latent constructs in the model containing this latent constructs corresponding to the correlation matrix for the measurement model and structural model limited to simple correlation between latent variables. In this study, researchers will produce CFA for constructs counseling self efficacy and self development. In this sense, the CFA considered a common modeling approach that is designed to test the hypothesis about the structure factor for some interpretation of prophecy (Loehlin, 2004). More importantly, on CFA the theory is the first in which allowed the researchers to test the theory to see how to build a systematic constructs represent latent variables (Hair et al. 2009).

According to Zainudin Awang (2011, 2012, 2014, & 2015) and Hoque & Awang (2016) Bakar et al. (2016) latent constructs measurement model must pass three types of validity such as construct validity, convergent validity and discriminant validity. Construct validity was assessed through measurements of fitness indexes of the model. Convergent validity is assessed through the Average Variance Extracted (AVE) and the discriminant validity summary index. According to Kline (2005) convergent validity is a set of items (indicators) to measure the construct. It can be measured through tests (AVE), according to Fornell and Larcker (1981) AVE high >0.5 showed a high convergent validity.

Hair et al., (2009) states that the convergent validity should be tested by assessing the individual item factor loading where high loading factor ≥ 0.5 per convergent construct validity showed high and this leads to a certain construct latent variables have been dropped from the event got the result < 0.5 . Next, to reliability are sufficient to assess Composite Reliability (CR) replaces the traditional values of Cronbach Alpha for analysis using Structural Equation Modeling (SEM) (Kashif et al, 2015, 2016 ;. Noor et al., 2015). Latent constructs considered valid when the index reached correspondence

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fitness model according to three categories: Absolute Fit, Parsimonious Fit and Incremental Fit (Awang, 2011; 2012; 2014; 2015).

Research objective

The objective of this study is to implement Confirmatory Factor Analysis (CFA) constructs counseling self-efficacy and constructs self-development counselor trainee.

II. Literature Studies

Counseling Self Efficacy

According to Albert Bandura, self-efficacy is "the belief in one's capabilities to develop and implement the necessary measures to manage the situation to be faced." In other words, self-efficacy is a person's belief in his capabilities to succeed in a particular situation. Bandura described these beliefs as determinants of how people think, behave, and feel (Bandura, 1994). Bandura (1986) defines self-efficacy as well as the terms "human judgment of their capabilities to organize and implement the necessary measures to achieve something that is prescribed". According to Bandura, self-efficacy is "not concerned with the number of skills you have, but by what you believe you can do with what you have under various conditions." Faith often, at least in part, determine how people think, feel, and act in certain situations (Bandura, 1997; 1994).

Larson and Daniels (1998) suggest referring to the counselors' belief about their capabilities to perform the behaviors related to counseling or to negotiate, especially in clinical situations. Counseling self-efficacy has been adapted from the theory of self-efficacy Bandura found in Social Cognitive Theory (SCT) Bandura. Self-efficacy is defined as "the extent to which individuals feel confident in carrying out a task" (Bandura, 1986). Bandura (1994) states that the self-effectiveness or self-efficacy is influenced by the individual himself, his behavior, and environment. Self-efficacy determines how hard a person will aspire to pursue their goals and how much effort will be used, it will also form the expected results (Bandura, 2004). He is directly and indirectly affect the behavior, beliefs objectives, the expected results of the behavior, and how these factors affect the environment seen (Bandura, 2004).

A definition counseling self-efficacy by (Larson and Daniels, 1998) states that "the belief held by individuals about their capabilities to effectively treat their clients". It is the belief of the individual's capabilities to be effective to the customers in the near future and are key determinants of effective counseling. Literature that explores the counseling self-efficacy has yielded results as consistent with an increase in self-efficacy, as well as a counselor working to implement counseling skills (Larson et al, 1999; Larson et al, 1992; Lent et al, 2003; Nutt Williams; Wan Marzuki Wan Jaafar et al., 2011; Aden, et al., 2019). Thus, the concern will decrease among counselors that are trained as a counselor, when they increased self-efficacy (Johnson et al, 1989; Larson et al, 1992; Larson et al, 1999 ;. Lent et al, 2003).

III. Methodology

The study was conducted in five public universities. Among the universities involved in the study is the International Islamic University Malaysia (IIUM), University Utara Malaysia (UUM), University Science Islam Malaysia (USIM), University Malaysia Terengganu (UMT) and University Malaysia Sarawak (UNIMAS). Election of 208 respondents were involved and this was according to the number of samples recommended by Hair of 200 people. This number exceeded the required sample size in regression analysis based on the formula of power Cohen (1992). Stratified random sampling techniques were used in determining the sample. The instruments used are counselling self estimate inventory (COSE) and

Supervisee Levels Questionnaire-Revised (SLQ-R). Data analysis in this study has been carried out using the Statistical Package for Social Sciences (SPSS) and AMOS (IBM SPSS_AMOS Version 21.0).

Result

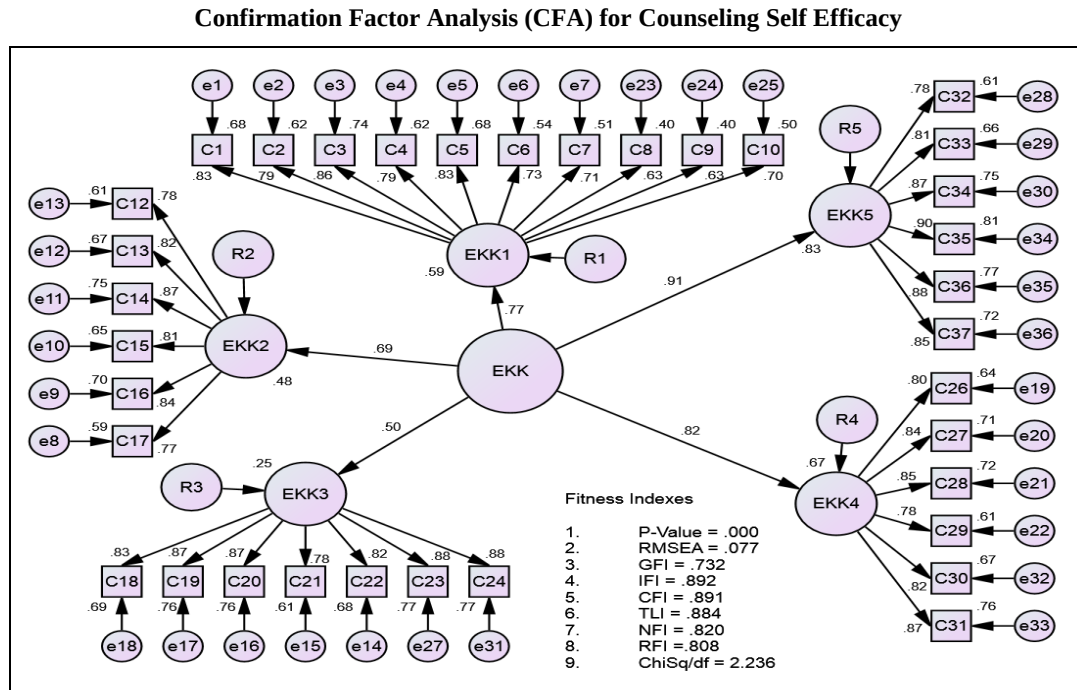


Figure 1: *The Initial Measurement Model for Counseling Self Efficacy*

Fitness Indexes in Figure 1 does not meet the prescribed level as proposed by Zainudin Awang, (2011; 2012; 2014; 2015) and shown in Figure 4 above. In order to fix this problem, Zainudin Awang, (2014; 2015 ;. Awang et al, 2015; and Kashif et al., 2015, 2016) suggests that researchers need to check items that have a Modification Indices (MI) that is high, it indicates items are redundant, so these items should be dropped. This process should be continued until the measurement model reaches the limit values corresponding to the three model categories: Absolute Fit Index (RMSEA), Incremental Fit (CFI) and Parsimonious Fit (Chisq / df). The e7 (C7) should be dropped because it has a high value of 50.241 MI.

First Review: Delete e7 (C7) due to highest MI

Table 1: covariance: (Group number 1 - Default model)

		M.I	Par
		.	Change
R	< R	16.	
1	--> 3	484	.095
e	< e	18.	
32	--> 33	550	.052

		M.I	Par
		.	Change
e < e	37.		
27 --> 31	300		.110
e < e	49.		
24 --> 25	489		.161
e < e	22.		
20 --> 21	747		.058
e < e	48.		
17 --> 18	847		.122
e < e	19.		
12 --> 13	060		.064
e < e	30.		
8 --> 9	754		.064
e < e	19.		
7 --> 23	169		.110
e < e	20.		
6 --> 24	366		.103
e < e	50.		
6 --> 7	241		.156
e < e	19.		
5 --> 24	936		-.089
e < e	26.		
5 --> 6	438		-.093
e < e	32.		
4 --> 5	206		.094

The new model after C7 released:

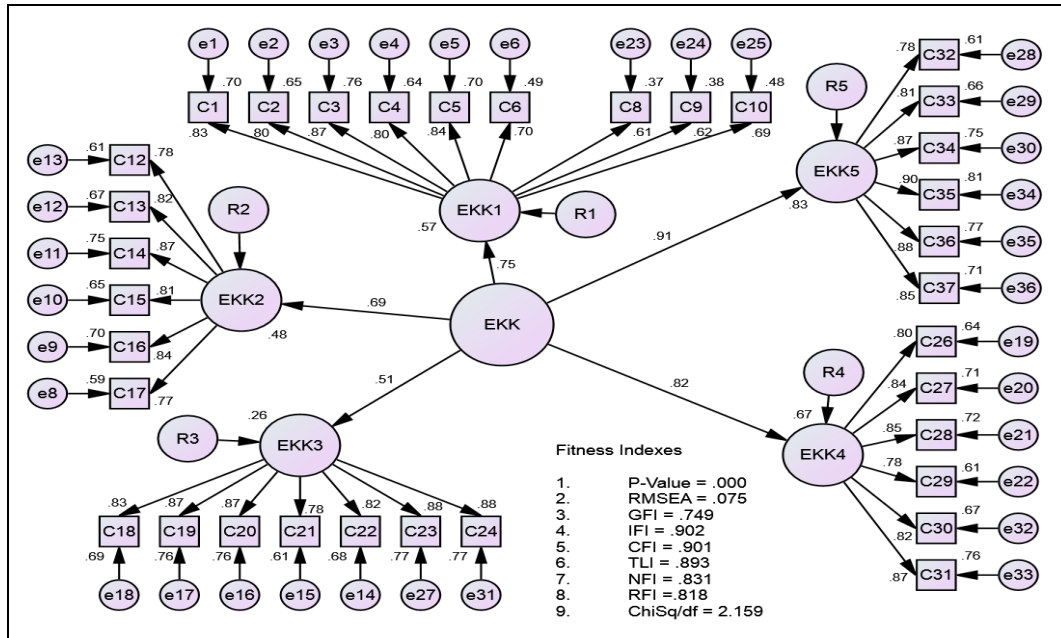


Figure 2: Final Measurement Model for Counseling Self Efficacy

Fitness Indexes in Figure 5 has fulfilled the prescribed level as proposed by Zainudin Awang (2011; 2012; 2014; 2015) and is shown in Figure 5 above shows the category Absolute Fit which is the RMSEA is 0.075 (less than the limit of 0.08), category Incremental Fit the CFI is 0.901 (greater than had 0.90) and category Parsimonious Fit the ratio Chisq / df is 2.159 (less than the prescribed limit of 3.0). Therefore, the final measurement model of Counseling Self Efficacy has reached the construct validity requirements (Zainudin Awang, 2011; 2012; 2014; 2015; Kashif et al., 2015, 2016 ;. and Mohamad Sani et al., 2015).

Assessment for Convergent Validity and Composite Reliability.

For the assessment of Convergent validity, it is necessary to refer to the calculation of Average Variance Extracted (AVE). Convergent construct validity can be achieved if the AVE exceeds the prescribed limit of 0.5 (Awang, 2014; 2015). Next, to assess Composite Reliability (CR) referring to the CR should exceed the prescribed limit of 0.6, indicating the reliability can be achieved (Zainudin Awang, 2014; 2015). The AVE and CR values to construct the main construct and sub construct is measured by reference to loading factors as shown in Table 2 below.

Table 2: AVE and CR for Counseling Self Efficacy

Construct	Sub-Construct	Loading Factor	CR (>0.6)	AVE (>0.5)
Counseling Self Efficacy (EKK)	EKK1	0.75	0.860	0.560
	EKK2	0.69		
	EKK3	0.51		
	EKK4	0.82		
	EKK5	0.91		
EKK1	C1	0.83	0.922	0.573

	C2	0.80		
	C3	0.87		
	C4	0.80		
	C5	0.84		
	C6	0.70		
	C8	0.61		
	C9	0.62		
	C10	0.69		
EKK2	C12	0.78	0.923	0.665
	C13	0.82		
	C14	0.87		
	C15	0.81		
	C16	0.84		
	C17	0.77		
EKK3	C18	0.83	0.947	0.719
	C19	0.87		
	C20	0.87		
	C21	0.78		
	C22	0.82		
	C23	0.88		
	C24	0.88		
EKK4	C26	0.80	0.929	0.684
	C27	0.84		
	C28	0.85		
	C29	0.78		
	C30	0.82		
	C31	0.87		
EKK5	C32	0.78	0.939	0.721
	C33	0.81		
	C34	0.87		
	C35	0.90		
	C36	0.88		
	C37	0.85		

With reference to the Average Variance Extracted (AVE) and Composite Reliability (CR) values in Table 1, the study found all AVE and CR exceed the limits laid down respectively 0.5 and 0.6 (Awang, 2011; 2012; 2014; 2015). Therefore, it can be concluded that the Average Variance Extracted (AVE) and Composite Reliability (CR) for the latent constructs (Counseling Self Efficacy) has been achieved.

Confirmation Factor Analysis (CFA) for Self Development

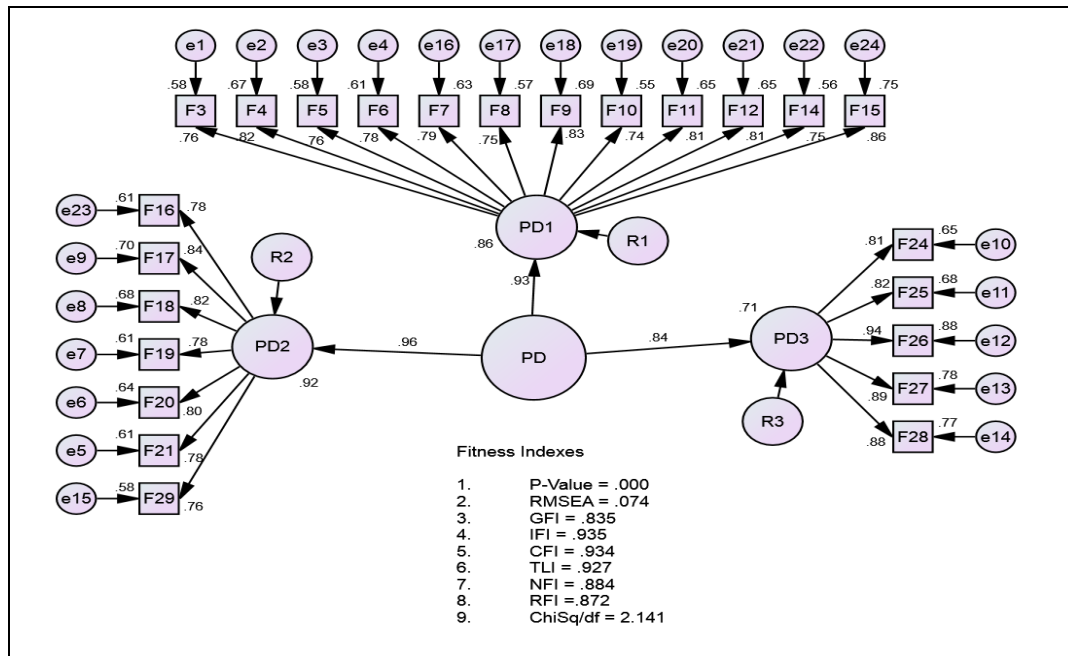


Figure 3: Final Model of Self Development

Fitness Indexes in Figure 3 has met the prescribed level as proposed by Zainudin Awang (2011; 2012; 2014; 2015) and shown in the figure above. Categories *Absolute Fit* which is the RMSEA is 0.074 (less than the limit of 0.08), category *Incremental Fit* which is the CFI is 0.934 (greater than had 0.90), and category *parsimonious Fit* which is the ratio Chisq / df is 2.141 (less than the prescribed limit of 3.0). Therefore, the final measurement model of the self development has fulfilled the validity requirements (Zainudin Awang, 2011; 2012; 2014; 2015; Kashif et al., 2015, 2016 ;. and Mohamad Sani et al., 2015).

Assessment for Convergent Validity and Composite Reliability

For the assessment of Convergent validity, it is necessary to refer to the calculation of Average Variance Extracted (AVE). Convergent construct validity can be achieved if the AVE exceeds the prescribed limit of 0.5 (Awang, 2014; 2015). Next, to assess Composite Reliability (CR) referring to the CR should exceed the prescribed limit of 0.6, indicating the reliability can be achieved (Awang, 2014; 2015).

The AVE and CR values to construct the main construct and sub construct is measured by referring to factors loading as shown in Table 3 below.

Table 3: AVE and CR for Self Development

Construct	Sub-Construct	Factor Loading	CR (>0.6)	AVE (>0.5)
Self Development (PD)	PD1	0.93	0.936	0.831
	PD2	0.96		
	PD3	0.84		

PD1	F3	0.76	0.952	0.623
	F4	0.82		
	F5	0.76		
	F6	0.78		
	F7	0.79		
	F8	0.75		
	F9	0.83		
	F10	0.74		
	F11	0.81		
	F12	0.81		
	F14	0.75		
	F15	0.86		
PD2	F16	0.78	0.923	0.632
	F17	0.84		
	F18	0.82		
	F19	0.78		
	F20	0.80		
	F21	0.78		
	F29	0.76		
PD3	F24	0.81	0.939	0.756
	F25	0.82		
	F26	0.94		
	F27	0.89		
	F28	0.88		

With reference to the Average Variance Extracted (AVE) and Composite Reliability (CR) values in Table 3 , the study found all AVE and CR exceed the limits laid down respectively 0.5 and 0.6 (Awang, 2011; 2012; 2014; 2015). Therefore, it can be concluded that the Average Variance Extracted (AVE) and Composite Reliability (CR) for the latent constructs self development has been achieved.

Conclusion and Implication

Based on these findings it can be stated as follows.

1. Constructs could be highlighted and can be used by researchers, person who study counseling and psychology.
2. The resulting construct counseling self efficacy and self development counselor trainee malay version contribute to add to the literature either in the country as well as broad.
3. The information generated in this study can serve as a guide and reference to design and implement intervention programs or counseling students' development activities.

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