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Original Research Article

A validation study of the Malay version of career commitment questionnaire

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ABSTRACT

Background: An employee's commitment to his career is an important aspect in ensuring organisational effectiveness. Low level of commitment may increase withdrawal rates, thus, will negatively affect the organisation. The career commitment level of an employee needs to be measured properly. Hence, a validated and reliable instrument is very important to measure the level of career commitment among employees. Career Commitment Questionnaire (CCQ) consists of a combination of Blau's Measure and Career Commitment Measure (CCM).
Methods: The CCQs were distributed to secondary school teachers from 30 schools in Kota Bharu district. The collected questionnaires were split into Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Respondents answered the instrument by self-administered. Data were analysed for EFA, CFA, internal consistency, and convergent validity using STATA software Version 14.
Results: The EFA resulted in the production of 1 factor with 19 items, while CFA results confirmed the construction of 1 factor with 19 items showed by the value of Chi square/df (1.631), TLI (0.967), CFI (0.971), and RMSEA (0.078) which met the requirements of model fitness. The overall Cronbach's alpha value of CCQ was 0.99. The Average Variance Extracted (AVE) of CCQ was 0.78 indicating that the convergent validity was met.
Conclusions: To recapitulate, the CCQ was proved to be a validated and reliable instrument for measuring the level of career commitment among school teachers and in future should be tested to ensure the suitability of CCQ in different career fields.

Keywords: Career commitment, School teachers, Confirmatory factor analysis, Reliability, Internal consistency, Convergent validity

INTRODUCTION

The term career is defined as an individual lifelong sequence of role-related experiences, while commitment is described as a psychological bond between an employee and his organisation.[1,2] Thus, according to the literature, career commitment can be described as the development of an individual career goal and involvement in this goal, that is appropriate with its value.[3] A committed employee will show a great achievement in his career and positively enjoy his career. Moreover, an employee with high career commitment also has a high career satisfaction level.[4] Studies concerning career commitment were conducted for many years and the research is still on going to measure the employee's career commitment for many professions, including teaching.[5]

Teachers with high career commitment are said to have a powerful psychological boundary of their school and students. Organisational effectiveness is also influenced

by the employee's commitment level in his career. A teacher who gives a high commitment in career, such as committed to his teaching and learning process, will increase the student's academic success and therefore, influences the school's effectiveness when the expected school goals are achieved.[6] A positive relationship was found between a teacher's commitment and four school climate dimensions, which are collegial leadership, professional teacher behaviour, achievement press, and institutional vulnerability.[7] This study showed that a teacher's commitment also plays an important role in contributing a positive school climate. Thus, a valid and reliable instrument is needed to assess the employee's career commitment level.

This validation study of the career commitment questionnaire (CCQ) was conducted based on two reasons. Firstly, it consisted of a combination of career commitment measure (CCM) and Blau's measure.[8,9] The original CCM consisted of 12 items with three domains, which are Career Identity, Career Resilience, and Career Planning, while Blau's measure consisted of 7 items which measure an employee's commitment to remain in his career. The combination was done to identify the best items that can be extracted from 2 well-established instruments for measuring the employee's career commitment level relative to the employee's career identity, career resilience, career planning, and intention to remain in his career, regardless of work burden, in one new questionnaire. Thus, the 19 items in this combination, as a new questionnaire, must be validated again to extract items that mostly represented the employee's commitment level in his career. Moreover, the CCQ must be validated again by the Malaysian respondents because of differences in culture, religions, and education system with other countries.

METHODS

Participant

Sample size determination calculation for the validation study was based on sample size estimation, as suggested by previous researchers. A sample size of at least 50-100 participants is generally recommended.[10] Meanwhile, a sample size between 10 and 50 is sufficient for 20 variables.[11] However, the most commonly used method to calculate sample size for the validation study is subject to item ratio.[12] According to previous researcher, the suggested subject to variable ratio ranges from 3:1, 6:1, 10:1, 15:1, or 30:1.[13] Due to cost limitations, the sample size calculation was calculated by following subject to variable ratio of 10:1, which is applicable and greater than 100 respondents. After considering 10% of incomplete data or respondents that refused to participate, the sample size required in this validation study was 210.

30 secondary schools were randomly selected from 48 secondary schools in the Kota Bharu district. Then, the questionnaires were randomly distributed to respondents based on a multistage sampling strategy that was done in school and individually. All self-administered questionnaires were answered by the respondents with guidance from the enumerator. All respondents gave their informed consent before participating in the study. Questionnaires were collected by the researchers within two weeks. The study was approved by the Ethics Committee for Research Involving Human Subjects Universiti Putra Malaysia (JKEUPM) on 4 June, 2014.

Instrument

Translation and back-translation of 19 CCQ items into Bahasa Melayu was done by a translator from the School of Languages, Literacies, and Translation University Science Malaysia (USM). Next, the CCQ was pre-tested to determine the appropriateness of the CCQ among school teachers. Items in the CCQ were answered based on the 5-item Likert Scale measurement. The positive items were scored as 1= strongly disagree, 2 = disagree, 3 = not sure, 4 = agree, and 5 = strongly agree. Meanwhile, for the negative items, all scorings were reversed by recoding them in the STATA software. Scores of 19-43 were classified into low career commitment level, scores of 44-69 were categorised into moderate career commitment level, while scores of 70-95 indicated high career commitment level.

Data analysis

210 questionnaires were split into exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Data analysis was performed using the STATA software Version 14. EFA was conducted to identify if there is a specific latent factor that can be extracted from 19 observed combination items in the CCQ. The Kaiser Meyer Olkin (KMO) value was first assessed to determine whether the data were suitable to be processed with EFA. Principal Factor Analysis (PFA) was applied as an extraction method to produce a simple structure for each item that loads on specific factors with maximum factor loadings.[14] The Eigenvalue was set to be greater than 1.0. The factor loading was set to retain items that had factor loadings greater than 0.50. Varimax rotation was performed to get a better interpretation of each variable that loads on a few factors with maximum factor loadings. The data were analysed repeatedly until the best combination was obtained as the final result for the EFA.

Next, CFA was performed through structural equation modelling (SEM) to examine the data's model fitness. The goodness of fit was evaluated using Chi-square/df, root-mean-square error of approximation (RMSEA), comparative fit index (CFI), and tucker-lewis index (TLI).[15] Reliability of CCQ was done using internal consistency. The average variance extracted (AVE) that represented the average percentage of variation, was calculated to test the convergent validity by dividing squared of factor loadings of every item with the number of items in a model.[16]

RESULTS

The descriptive statistics of socio-demographic shows that the number of female teachers involved in this study is 163 (77.6%), while the number for male teachers is 47 (22.4%). About 92.9% are married. Most teachers had Bachelor's degree (88.1%), followed by Master's degree (9.5%), and diploma (2.4%). Mean age of respondents is 43.33 years old and the average individual income is RM 4810. Most teachers have high blood pressure (13.8%), followed by diabetes (8.1%), and asthma (6.2%).

Table 1: Varimax-rotated factor pattern matrix of CCQ of secondary school teachers in Kota Bharu district (n=105).

Item	Item description	Factor loadings
A31	This career is an important part of who I am	0.836
A32	This career has an great deal of personal meaning to me	0.804
A33	I do not feel emotionally attached to this career	0.751
A34	I strongly identified myself with this career	0.839
A35	The effort associated with this career seems too great	0.747
A36	Given the problems in this career, I wonder if I get enough benefits	0.633
A37	Given the problems in this career, it is still worth the personal burden	0.675
A38	The discomfort associated with this career is minimum	0.676
A39	I have not set any strategies for achieving my goals in this career	0.733
A310	I have not created any plans for my development in this career	0.790
A311	I have identified specific goals for my development in this career	0.803
A312	I always think about my personal development in this career	0.649
A313	I would go into a different career if paid the same	0.678
A314	I want a career in the teaching profession	0.762
A315	If i could do it all over again, I would not choose this career	0.785
A316	I like this career too well to give it up	0.776
A317	This is an ideal career for life's work	0.777
A318	If I had the money needed without working, i would stay in this career	0.678
A319	I am disappointed that I ever entered this career	0.792

Exploratory factor analysis

Value of the Kaiser-Meyer-Olkin (KMO) was 0.929. The Bartlett's test of Sphericity was significant with p-value less than 0.05. This indicates that the data is suitable to proceed with EFA. The Eigenvalue extraction method produced 1 factor that had a value greater than 1.0, which was 10.673, that explained a cumulative percentage of 81.40% of the variance. Varimax rotation produced 19 items with all factor loadings greater than 0.5 (Table 1). Item A34 (I strongly identified myself with this career) was identified to have the highest factor loadings of 0.839, while item A36 (given the problem in this career, I wonder if I get enough benefits) had the lowest factor loadings of 0.63.

Confirmatory factor analysis

CFA was performed using structural equation modeling (SEM) by STATA Software Version 14 to confirm the construction of 19 items with 1 factor of the instrument. The first analysis of CFA is presented in Table 2. All 19 items showed high factor loadings with item A35 (The effort associated with this career seems too great) had the highest factor loading of 0.950, while item A38 (The discomfort associated with this career is minimum) had the lowest factor loading of 0.830. According to the common rules of thumb for interpretation of model fit, the Chi-square/df value must be less than 5.0, the RMSEA must be less than 0.08, while GFI, CFI, and TLI values must be greater than 0.90 to indicate that the model fits the data well.[15] However, the results of goodness of fit indices of first CFA for 19 items showed the model did not achieve the model fitness because the RMSEA value exceeded 0.08.

Since all items in the model had factor loadings greater than 0.50, the Modification Indices (MI) were checked to identify possible redundant items in the model. According to the Modification Indices, 5 pairs of items were identified to have high modification indices value. The first pair was between item A39 (I have not set any strategies for achieving my goals in this career) and A310 (I have not created any plans for my development in this career) with MI value of 41.156. The second pair was between item A316 (I like this career too well to give it up), and A317 (This is an ideal career for life's work) with MI value of 17.179. The third pair was between item A313 (I would go into a different career if paid the same) and A315 (If I could do it all over again, I would not choose this career) with MI value of 12.103. The fourth pair was item A37 (Given the problems in this career, it is

still worth the personal burden) and A38 (The discomfort associated with this career is minimum) with MI value of 11.423 and the last pair was between A31 (This career is an important part of who I am) and A32 (This career has an great deal of personal meaning to me) with MI value of 10.483. Since the deletion of any pairs of redundant items did not improve the model fitness, thus, all 5 pairs of redundant items were set as free parameters and the model was re-specified until the model met the model fitness. The factor loadings of CFA are presented in (Table 2) (Figure 1). The final analysis of CFA results in better goodness of fitness indexes with Chi-square/df (1.631), TLI (0.967), CFI (0.971), and RMSEA (0.078). The average variance extracted (AVE) for career commitment questionnaire was 0.78 indicating that the convergent validity is met.

Table 2: Standardized factor loadings of CFA of CCQ of secondary school teachers in Kota Bharu district (n=105).

Item	Item description	Factor loadings	
		First analysis	Final analysis
A31	This career is an important part of who I am	0.932	0.931
A32	This career has a great deal of personal meaning to me	0.931	0.931
A33	I do not feel emotionally attached to this career	0.907	0.904
A34	I strongly identified myself with this career	0.947	0.950
A35	The effort associated with this career seems too great	0.950	0.952
A36	Given the problems in this career, I wonder if I get enough benefits	0.849	0.852
A37	Given the problems in this career, it is still worth the personal burden	0.845	0.842
A38	The discomfort associated with this career is minimum	0.830	0.827
A39	I have not set any strategies for achieving my goals in this career	0.919	0.914
A310	I have not created any plan for my development in this career	0.914	0.908
A311	I have identified specific goals for my development in this career	0.904	0.905
A312	I always think about my personal development in this career	0.933	0.935
A313	I would go into a different career if paid the same	0.879	0.876
A314	I want a career in the teaching profession	0.947	0.949
A315	If i could do it all over again, I would not choose this career	0.901	0.897
A316	I like this career too well to give it up	0.942	0.939
A317	This is an ideal career for life's work	0.941	0.938
A318	If I had the money needed without working, I would stay in this career	0.851	0.851
A319	I am disappointed that I ever entered this career	0.890	0.887

Table 3: Internal consistency of CCQ of secondary school teachers in Kota Bharu district (n=105).

Item	Item description	Item test correlation	Overall Cronbach alpha
A31	This career is an important part of who I am	0.93	
A32	This career has a great deal of personal meaning to me	0.93	
A33	I do not feel emotionally attached to this career	0.92	
A34	I strongly identified myself with this career	0.94	
A35	The effort associated with this career seems too great	0.95	
A36	Given the problems in this career, I wonder if I get enough benefits	0.86	
A37	Given the problems in this career, it is still worth the personal burden	0.86	
A38	The discomfort associated with this career is minimum	0.84	
A39	I have not set any strategies for achieving my goals in this career	0.93	
A310	I have not created any plans for my development in this career	0.93	0.99
A311	I have identified specific goals for my development in this career	0.91	
A312	I always think about my personal development in this career	0.94	
A313	I would go into a different career if paid the same	0.89	
A314	I want a career in the teaching profession	0.94	
A315	If I could do it all over again, I would not choose this career	0.91	
A316	I like this career too well to give it up	0.94	
A317	This is an ideal career for life's work	0.94	
A318	If I had the money needed without working, I would stay in this career	0.86	
A319	I am disappointed that I ever entered this career	0.90	

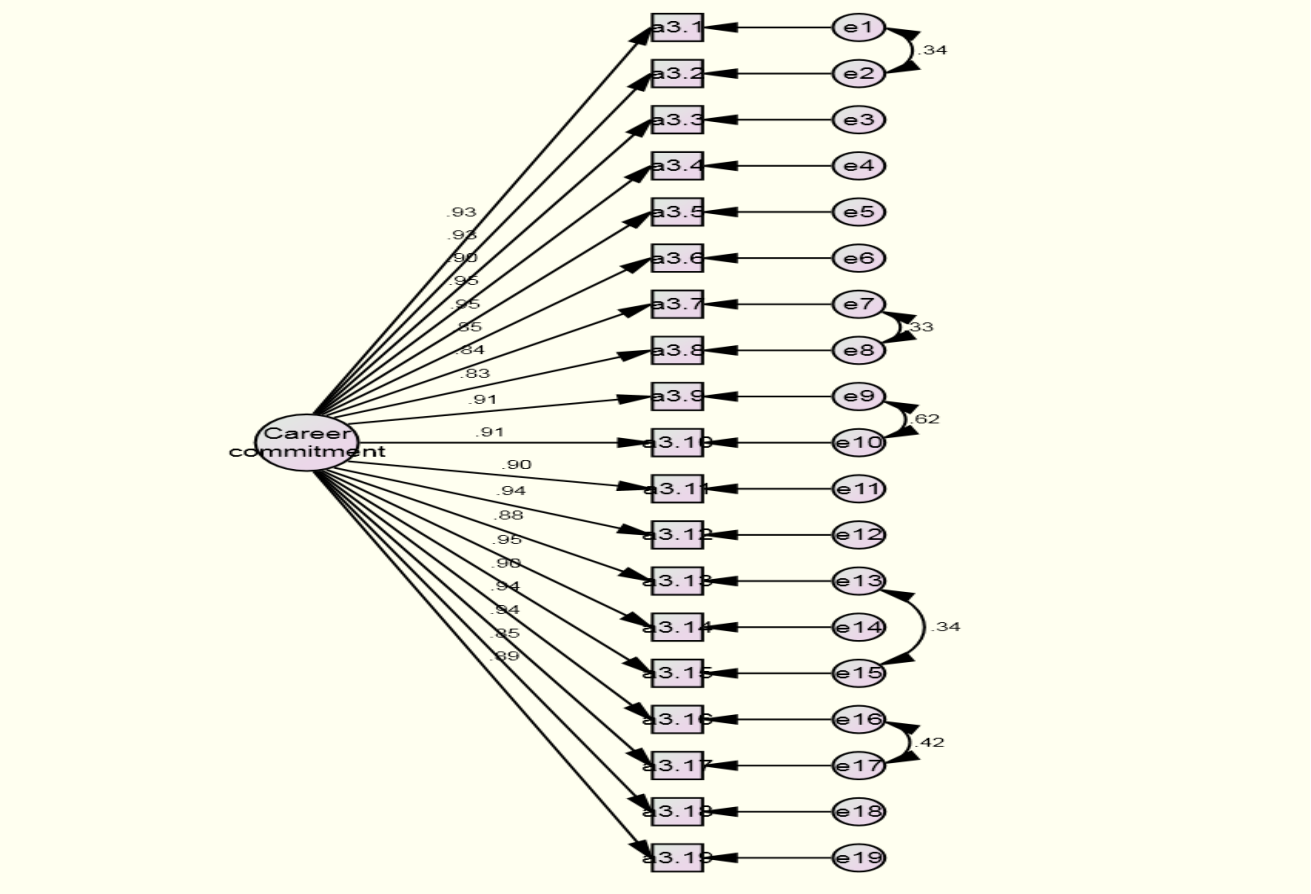

Figure 1: CFA of CC questionnaires among secondary school teachers in Kota Bharu district (n=105).

Reliability analysis

Reliability analysis of CCQ was determined by internal consistency of the instrument (Table 3). Overall Cronbach's alpha for career commitment questionnaires was α = 0.99. The Cronbach's alpha value was greater than 0.70, indicating that the instrument has very good internal consistency.[17] Item A38 had the highest Cronbach's alpha with value of 0.9670, while item A317 had the lowest Cronbach's alpha with value of 0.9636. Thus, all items are said to have good internal consistency.

DISCUSSION

The career commitment questionnaire (CCQ) was developed from the combination of Blau's Measure and Career Commitment Measure. Exploratory factor analysis (EFA) produced 1 factor with 19 items, with all items had factor loadings greater than 0.50. In CFA, no item was deleted in the model, thus, all 19 items were retained in the model. In comparison with the previous validation study, the factor analysis of 12 items as reported by Carson and Bedeian for the original career commitment measure (CCM) produced 3 factors known as career identity, career resilience, and career planning, which is also a multidimensional construct. Career identity consists of A31 (This career is an important part of who I am), A32 (This career has a great deal of personal meaning to me), A33 (I do not feel emotionally attached to this career), and A34 (I strongly identified myself with this career). Meanwhile, career resilience consists of A35 (The efforts associated with this career seems too great), A36 (Given the problems in this career, I wonder if I get enough benefit), A37 (Given the problems in this career, it is still worth the personal burden), and A38 (The discomfort associated with this career is minimised), and career planning consists of A39 (I have not set any strategies for achieving my goals in this career), A310 (I have not created any plan for my development in this career), A311 (I have identified specific goals for my development in this career), and A312 (I always think about my personal development in this career).

On the other hand, Blau's Measure is a unidimensional construct that consisted of 7 items. Both instruments are measuring psychometric properties, and Blau's measure is emphasising more on the employee's intention to remain in his career as described by items such as 'I like this career too well to give it up' and 'If I had the money needed without working, I would stay in this career'. However, in this study, the factor analysis of all combinations of 19 items from CCM and Blau's Measure produced only 1 factor, which means that the multidimensional construct of CCM has become a unidimensional construct when all 7 items of Blau's measure were loaded with 12 items of CCM in 1 factor.

These results contrast with the expected results where the combination of two instruments would be expected to produce 4 factors. This is probably because most of the respondents chose similar choices for 19 items. Almost 80% of the respondents chose 'agree' and 'strongly agree' to indicate each of the 19 items. Thus, this might contribute to all items to load into 1 factor only with factor loadings greater than 0.80. The role of factor loadings is to determine the strength of relationship and to confirm the identification of factors.[18] Thus, this result shows that all 19 items are represented by the latent variable of career commitment.[19] However, in the first analysis of CFA, even though all items displayed factor loadings greater than 0.50, the data did not fit the model well. This was due to the high correlation between items known as redundant items, represented by the high Modification Indices in the model.

All 5 pairs of redundant items were identified to have overlapping meanings. A similar meaning was shared by the first pair of redundant item between item A39 (I have not set any strategies for achieving my goals in this career) and A310 (I have not created any plan for my development in this career), in which the employees did not plan any strategies for a better career in future. The second pair, which was between item A316 (I like this career too well to give it up) and A317 (This is an ideal career for life's work), seemed to have the same meaning with the intention that the career was the perfect career for a life's work. Next, the third pair between item A313 (I would go into a different career if paid the same) and A315 (If I could do it all over again, I would not choose this career) also had parallel items with the meaning to leave the career if a chance emerges.

Meanwhile, the fourth pair between items A37 (Given the problems in this career, it is still worth the personal burden) and A38 (The discomfort associated with this career is minimum) measured the employee's feeling of self-worth while staying in the career despite the burden and problems encountered. The last pair of items A31 (This career is an important part of who I am) and A32 (This career has a great deal of personal meaning to me) had parallel meaning when the employees identified themselves with their career by saying that their career had a great meaning and is important to them. Due to these redundant items, the model failed to meet the model fitness. However, no redundant items were reported by the previous study in examining the psychometric properties of CCM by Carson and Bedeian. Since deletion of the items did not improve the model fitness, thus, a decision was made to retain all of the items in the model by setting all pairs to be free parameter estimates. Determination of the CCQ's reliability resulted in a very good internal consistency of 19 items with item-test correlation ranges from 0.84 to 0.94, with overall Cronbach's alpha of 0.99. Thus, the new Career Commitment Questionnaire retained all of the 19 items in 1 factor measurement of employee's commitment level towards his career.

CONCLUSION

In conclusion, the career commitment questionnaire was proven as a reliable and validated instrument in measuring the career commitment levels of an employee. The exploratory factor analysis of the career commitment questionnaire showed that the combination of 19 items of career commitment measure and Blau's Measure had resulted in 1 factor that represented unidimensional construct rather than 3 factors of career commitment measure and 1 factor of Blau's Measure. Furthermore, the confirmatory factor analysis had confirmed that the career commitment questionnaire consists of 1 factor with 5 pairs of free parameter estimates that fit very well based on the goodness of fit indices. Moreover, the average variance extracted greater than 0.50 indicates that the convergent validity of the career commitment questionnaire is met. Thus, this significant contribution of validated career commitment questionnaire to the existing body of knowledge can be applied as a valid instrument for measuring employee's career commitment levels, not just for the teaching profession but for other career fields as well.

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