

**EVALUATING THE PSYCHOMETRIC PROPERTIES OF
ALLEN AND MEYER'S ORGANIZATIONAL COMMITMENT SCALE:
A CROSS CULTURAL APPLICATION AMONG
MALAYSIAN ACADEMIC LIBRARIANS**

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ABSTRACT

Meyer and Allen hold that organizational commitment is a multidimensional construct comprising three components: affective, continuance and normative. This study focuses on establishing construct validity (convergent and discriminant validity) and internal reliability by applying Allen and Meyer's organizational commitment scale among Malaysian academic librarians. Altogether 17 items comprising the measures for both affective and continuance commitment were incorporated in the questionnaire. The survey was administered on 222 academic librarians from all the nine university libraries in West Malaysia. Findings were based on the responses from 139 usable questionnaires. The findings revealed the two measures to be distinguishable from one another i.e. the measures exhibited convergent as well as discriminant validity. The findings demonstrate that Allen and Meyer's Organizational Commitment measures are applicable to librarians in general and to academic librarians specifically.

Keywords: Allen and Meyer's Organizational Commitment Scale; Academic libraries; Organizational commitment; Affective commitment; Continuance commitment

INTRODUCTION

The topic of organizational commitment has been the subject of much theoretical and empirical effort in the field of organizational behavior, human resource management and industrial/organizational psychology (Allen & Meyer, 1996; Mowday, Steers & Porter, 1997; Porter, Steers, Mowday & Boulian, 1974; Stevens, Beyer, & Trice, 1978). However, very little empirical work has been

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devoted in the field of library and information science, particularly, in the library management area (Hovekamp, 1994; Rubin & Butllar, 1992). There is indeed a dearth of empirical studies on organizational commitment among librarians in general and even more so among academic librarians in Malaysia.

This study represents an attempt to fill in the empirical gap in the library and information science field by testing and validating Allen and Meyer's three component measure of organizational commitment: affective, normative and continuance commitment. Specifically, the study focuses on establishing construct validity (convergent and discriminant validity) and internal reliability by applying Allen and Meyer's (1996) organizational commitment scale among Malaysian academic librarians.

Two research questions have been posited for this study:

- a) Are the sub-scales affective and continuance commitment distinguishable from one another, i.e. do the measures exhibit convergent as well as discriminant validity when applied among Malaysian academic librarians?
- b) Is each of the sub-scales (affective and continuance commitment) internally reliable when applied among Malaysian academic librarians?

LITERATURE REVIEW

A review of the theoretical literature on the organizational commitment construct shows that very little consensus exists among the scholars and researchers on how the construct can be defined conceptually. As the construct develops and evolves over the years, scholars from the various disciplines give their own conceptual definitions as to how the construct should be conceptually defined.

Hall, Scheider and Nygren (1970) define organizational commitment as the "process by which the goals of the organizations and those of the individual become increasingly integrated and congruent". Sheldon (1971) defines organizational commitment as an attitude or an orientation towards the organizations, which links or attracts the identity of the person to the organizations. Salancik (1977) defines organizational commitment as "a state of being in which an individual becomes bound by actions to beliefs that sustains activities and involvement". Porter, Steers, Mowday and Boulian (1974), define organizational commitment as "the strength of an individual's identification with and involvement in a particular organization". They characterize it by three psychological factors: desire to remain in an

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organization, willingness to exert considerable efforts on its behalf and belief in and acceptance of its goals and values hold.

Meyer and Allen (1991) hold that organizational commitment is a multidimensional construct comprising three components: affective, continuance and normative. Affective commitment has been defined as an employee's emotional attachment to identification with and involvement in the organization. Employees with a strong affective commitment will remain in the organization because they want to. Continuance commitment on the other hand has to do with one's awareness of the costs associated with leaving the present organization. Employees whose commitment is in the nature of continuance will remain in the organization because they have to. The third component, normative commitment has to do with feeling of obligations to the organization based on one's personal norms and values. Employees whose commitment to the organization is said to be of the normative type remains in the organization simply because they believe they ought to.

The factor structure of Allen and Meyer's (1996) organizational commitment scale has been examined in several studies. Some of these studies include measures from all the three components (affective, continuance, and normative) whilst others focus only on affective commitment measure and/or continuance commitment measure. Studies have provided empirical support to demonstrate that the components are indeed distinguishable from one another (Dunham, Grube & Castaneda, 1994; Mc Gee & Ford, 1987 and Reilly & Orsak, 1991).

To date, no empirical effort has been made to test and validate Allen and Meyer's (1996) organizational commitment scale in a library setting, let alone in a Malaysia academic library setting. Only two studies have been reported in the library and information science literature that dealt with the topic of organizational commitment (Hovekamp, 1994; Rubin & Buttlar, 1992).

Hovekamp (1994) explored the organizational commitment of professional library employees in unionized and non-unionized research libraries. Hovekamp employed the measure developed by Mowday, Porter and Steers (1979). However, no attempt was made to evaluate the psychometric properties of the scale insofar as construct validity and internal reliability are concerned.

Rubin and Buttlar (1992) conducted a study to examine the organizational commitment of high school library media specialists in Ohio. They employed Mowday, Porter and Steers's (1979) organizational commitment questionnaire.

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However, again no attempt was made to evaluate the psychometric properties of the organizational commitment questionnaire insofar as construct validity and internal reliability are concerned.

METHOD

Population and Sample

The target population for this study was academic librarians (professionally trained library employees) in all the nine university libraries in West Malaysia. Out of the nine university libraries, only one library refused to participate. The remaining eight university libraries gave their consent by providing a list of the names of their professionally trained library employees, which enabled the researchers to construct a sampling frame. This information revealed the total population of academic librarians in all the eight university libraries to be two hundred and seventy nine (279).

Allowing for a plus/ minus five (5) percent error rate, two hundred and twenty two (222) participants were proportionately and randomly selected to participate in the study. Random selection was achieved using a table of computer generated random numbers. A response rate of 63 percent was achieved resulting in one hundred and thirty nine (139) usable questionnaires. The findings are based on responses from these one hundred and thirty nine usable questionnaires.

Instrument

Allen and Meyers's (1996) Organizational Commitment scale was employed for this study in an effort to determine whether the scale's psychometric properties remain stable in a cross-cultural setting when applied in a Malaysian academic library environment. To date no study has been conducted to test and validate the psychometric properties of Allen & Meyer's Organizational Commitment scale in a library setting much less in a Malaysian academic library setting.

For this study only the measures for affective and continuance commitment were incorporated in the final section of the questionnaire; measures for normative commitment were not included for testing and validation purposes. Altogether seventeen (17) items comprising the measures for both affective(items number 1, 2, 3, 4, 5, 6, 7 and 8) and continuance commitment (items number 9, 10, 11, 12, 13, 14, 15, 16 and 17) were incorporated in the questionnaire. All items are measured on

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a 7 point scale ranging from (1) strongly disagree to (7) strongly agree. The seventeen (17) items are reproduced in Appendix A of this paper.

FINDINGS AND ANALYSIS

Convergent and Discriminant Validity: Exploratory Factor Analysis

An exploratory factor analysis using Maximum Likelihood analysis as the method for extracting factors was performed to determine whether the data collected on Allen & Meyers's Organizational Commitment scale would exhibit both convergent and discriminant validity. Table 1 reports the results of running a Maximum Likelihood analysis with unrotated factors. The results showed that two factors were extracted with eigenvalues of more than one (1).

Table 1: Factor Loadings from Maximum Likelihood Analysis

Item	Factor Loading	
	1	2
1	.60	-.36
2	.33	-.38
3	.50	-.36
4	-	-
5	.53	-.57
6	.45	-.38
7	.46	-
8	.41	-.48
9	-	-
10	.55	.32
11	.47	.44
12	-	-
13	.37	.32
14	.34	.47
15	.43	.46
16	.55	.57
17	-	.40

Note: Item descriptions can be found in the Appendix A.

Each factor uniquely explained about sixteen percent of the total variance in the overall organizational commitment scale. The findings are illustrated in Table 2.

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Table 2: Eigenvalues Percentage of Variance and Cumulative Percentages for Factors of the 17 Items Organizational Commitment Questionnaires

Factor	Eigenvalues	% of Variance	Cumulative %
1	2.78	16.39	16.39
2	2.76	16.22	32.61

Table 3: Summary of Items and Factor Loadings for Varimax Orthogonal Two-Factor Solutions for the Organizational Commitment Questionnaires

Item	Factor Loading	
	1	2
5	.79	
1	.70	
8	.63	
3	.61	
6	.58	
7	.53	
2	.50	
16		.80
11		.64
15		.63
10		.61
14		.58
13		.49
17		.39
9		-
12		-
4		-

Note: Item descriptions can be found in Appendix A

An orthogonal rotation using Varimax was performed to make the factors more interpretable and meaningful. The findings of the orthogonal rotation are presented in Table 3 and it can be seen that all items (with the exception of item number 4) purporting to measure *affective commitment* converge or were subsumed under

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factor 1 whilst those items (with the exception of items number 9 and 12) purporting to measure *continuance commitment* converged or were subsumed under factor 2. Hence with the exception of items number 4 for the measure of affective commitment and items number 9 and 12 for the measure of continuance commitment, the two sub-scales can be said to be psychometrically stable and have exhibited both convergent and discriminant validity. This finding supports that of previous studies that have shown affective and continuance commitment to be indeed constructs that are distinguishable from one another (Allen & Meyer, 1990; McGee & Ford, 1987; Reilly & Orsak, 1991). An interesting finding is that items number 4, 9 and 12 did not load or converge on either factor.

Creation of a New Variable: Affective and Continuance Commitment

A new variable labeled *afcmt* (affective commitment) was created by summing up the scores for items number 1, 2, 3, 5, 6, 7 and 8. Since item number 4 did not load on factor 1, it was decided to drop it for the new measure of affective commitment that has been labeled *afcmt*. A new variable labeled *comcmt* (continuance commitment) was created by summing up the scores for items number 10, 11, 13, 14, 15, 16 and 17. Since items number 9 and 12 did not load on factor 2, they were dropped when a decision was made to create a new measure for the variable continuance commitment (*comcmt*).

Convergent and Discriminant Validity: Item to Total Score Correlations

To further corroborate and strengthen the evidence for convergent and discriminant validity, another method of analysis was employed: use of Pearson Product Moment Correlation analysis. Correlations were performed between each item measuring affective commitment (items number 1, 2, 3, 5, 6, 7 and 8) and the newly created variables *afcmt* and *comcmt*. The findings of the correlational analysis are displayed in Table 4. A visual inspection of table 4 indicates that items number 1, 2, 3, 5, 6, 7 and 8 correlate significantly (from moderately to high) with the new variable *afcmt* but not with *comcmt*. This further substantiate and strengthen the claim that affective commitment (*afcmt*) is indeed distinguishable from continuance commitment (*comcmt*) and therefore has exhibited not only convergent validity but discriminant validity as well.

To further corroborate and strengthen the evidence that continuance commitment (*comcmt*) has both convergent and discriminant validity, Pearson Product Moment Correlation analysis was performed between each of the items measuring continuance commitment (items number 10, 11, 13, 14, 15, 16 and 17) and the newly created variable *comcmt* and *afcmt*.

Table 4: Intercorrelations between Items for the Measures of Affective Commitment (afcmt) with the Sub-scale Affective Commitment (afcmt) and the Sub-scale Continuance Commitment (concmnt)

Measures of afcmt	Sub-scale: afcmt	Sub-scale: concmt
Item 1	.74 **	.12
Item 2	.60 **	-.06
Item 3	.68 **	.08
Item 5	.77 **	-.06
Item 6	.64 **	.02
Item 7	.61 **	.15
Item 8	.71 **	-.04

Note. ** correlation is significant at the 0.01 level
 * correlation is significant at the 0.05 level

The findings of the correlational analysis are presented in Table 5. A visual inspection of Table 5 indicates that items number 10, 11, 13, 14, 15, 16 and 17 correlate significantly (from moderately to high) at $p < .05$ level with the newly created variable *comcmt* (continuance commitment) but fail to correlate significantly with the variable *afcmt* (affective commitment). This once again shows that the measure for continuance commitment has exhibited convergent as well as discriminant validity.

Table 5: Inter Correlations between Items for the Measure of Continuance Commitment (concmnt) with the Sub-scale Continuance Commitment and the Sub-scale Affective Commitment (afcmt)

Measures of Continuance Commitment	Sub-scale concmt	Sub-scale afcmt
Item 10	.70 **	.20
Item 11	.70 **	.04
Item 13	.61 **	.01
Item 14	.67 **	.04
Item 15	.68 **	.03
Item 16	.80 **	.04
Item 17	.51 **	-.13

Note: ** correlation is significant at the 0.01 level (2 tailed)
 * correlation is significant at the 0.05 level (2 tailed)

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Internal Reliability: Cronbach's Alpha and Split-Half Reliability Coefficient

In order to be psychometrically sound and stable, a measure must exhibit not only convergent and discriminant but internal reliability as well. Two methods for determining a measure's internal reliability have been employed for this study; Cronbach's alpha reliability coefficient as well as split-half reliability coefficient. The findings of these internal reliability analyses are presented in Table 6. A visual inspection of Table 6 indicate that the newly created measure for affective commitment (*afcmt*) has a Cronbach's alpha value of 0.81 and a split-half reliability coefficient of 0.77 which can be considered to be quite good. The Cronbach's alpha reliability coefficient and split-half reliability coefficient for the newly created measure of continuance commitment is 0.78 and 0.76 respectively. Thus the internal reliability coefficient for Cronbach's alpha and split-half for the continuance commitment measure is above the recommended value of 0.7 (Nunnally, 1978).

Table 6: Reliability Analysis

Scales	Cronbach's Alpha Coefficient	Split Half Coefficient
Affective Commitment (Sub-Scale)	.81	.77
Continuance Commitment (Sub-scale)	.78	.76

Cronbach's Alpha Coefficient for Affective Commitment and Continuance Commitment

It is also important to examine which of the seven items would increase the value of Cronbach's alpha and whether any one of them should be dropped. An examination of Table 7 would indicate that dropping any one of the seven items (items number 1, 2, 3, 5, 6, 7 and 8) would result in the value of Cronbach's alpha lower than the present 0.81. Hence none of the seven items for the measure of affective commitment should be dropped.

A visual inspection of Table 8 would indicate that dropping any one of the seven items (items number 10, 11, 13, 14, 15, 16 and 17) would not significantly raise the value of Cronbach's alpha coefficient higher than the present value of 0.78. Hence all the seven items are necessary for the measure of continuance commitment to be internally reliable.

Table 7: Reliability Analysis of Affective Commitment

Items	Alpha if item is deleted
1	.77
2	.79
3	.78
5	.76
6	.79
7	.79
8	.78

Table 8: Reliability Analysis of Continuance Commitment

Items	Alpha if item is deleted
10	.75
11	.75
13	.77
14	.75
15	.75
16	.72
17	.79

CONCLUSION AND IMPLICATIONS

This study examined the psychometric properties and stability of Allen & Meyer's Organizational Commitment scale; specifically the stability of the measures in a Malaysian academic library setting among professionally trained library employees. The findings revealed the two measures to be distinguishable from one another i.e. the measures exhibited convergent as well as discriminant validity. Item number 4 of Allen and Meyer's affective commitment measure however did not load as it was supposed to. Hence it was dropped when a new variable for affective commitment (*afcmt*) was created. Further, items number 9 and 12 of Allen and Meyer's (1996) continuance commitment measure also failed to load. As such, these two items too were dropped when a new variable labeled *comcmt* (continuance commitment) was

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created. Nevertheless the majority of the items converge with the relevant sub-scales demonstrating that the measures are psychometrically sound and stable.

In addition to demonstrating instrument validity (convergent and discriminant validity), the measures for both affective and continuance commitment also demonstrate internal reliability as evidenced by alpha reliability coefficients and split-half reliability coefficients of more than 0.7 which is above the recommended minimum value of 0.7 (Nunnally, 1978).

The findings provide evidence to the notion that Allen and Meyer's Organizational Commitment measures can be extended to an international setting: a Malaysian academic library setting. However, it remains to be seen whether these measures can be extended to all international applications without further testing and validation. As far the Malaysian setting is concerned, the measures however are applicable to librarians in general and to academic librarians specifically. Malaysian academic library managers who wish to examine their professional library employees' commitment to their libraries could confidently apply these measures in their workplace.

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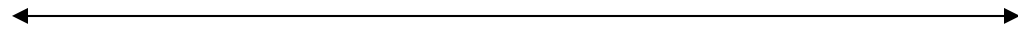
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APPENDIX A

The following 17 statements describe your degree of attachment and loyalty towards the library you are now employed with. Please respond by indicating the degree to which each of the statements applies to you using the following scale:

1 Strongly Disagree	2 Disagree	3 Slightly Disagree	4 Neither Agree of Disagree	5 Slightly Agree	6 Agree	7 Strongly Agree
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There is no right or wrong answer. Write the number that best indicates to what extent each of the statement is true or not true in the parenthesis provided at the end of each statement

1. I would be very happy to spend the rest of my career in this library []
2. I enjoy discussing my library with people outside it []
3. I really feel as if this library's problems are my own []
4. I think I could easily become as attached to another library as I am to this one []
5. I do not feel like "a member of the family" at this library []
6. I do not feel "emotionally attached" to this library []
7. This library has a great deal of personal meaning for me []
8. I do not feel a strong sense of belonging to this library []
9. I am not afraid of what might happen if I quit my job at this library without having another one lined up []
10. It would be very hard for me to leave my job at this library right now even if I wanted to []
11. Too much of life would be disrupted if I decided to leave my job at this library right now []
12. It would not be too costly for me to leave my job at this library in the near future []
13. Right now, staying with my job at this library is a matter of necessity as much as desire []
14. I believe I have too few options to consider should I decide to leave my job at this library []
15. One of the few negative consequences of leaving my job at this library, would be the scarcity of available alternative elsewhere []
16. One of the major reasons I continue to work for this library is that leaving would require considerable personal sacrifice; another place may not match the overall benefits I have here []
17. If I had not already put so much of myself into this organization, I would consider working elsewhere []