

國立嘉義大學99學年度

觀光休閒管理研究所博士班招生考試試題

科目：社會科學研究方法(含基礎統計)

一、請閱讀以下文章，並回答問題 ※請以中文作答

1. Provide a clear statement of the specific research question(s) that the study will answer. (10%)
2. State the null and research hypotheses you would test in this study. (5%)
3. Provide a description of the study's design (e.g., experimental, quasi-experimental, observational, etc.). (5%)
4. Indicate whether you would use a within-subject and/or between-subject design (if applicable). (5%)
5. How you will define, operationalize and measure the dependent and independent variables. (5%)
6. An explanation of how the subjects will be selected and how they will be assigned to experimental treatments. (5%)
7. A discussion of steps you will take to ensure that some other variables do not confound the results of your study. (5%)
8. Discuss what kinds of statistics tool will be used in this study. (5%)
9. Discuss the validity issues in your study. (5%)

High employee turnover is a major problem confronting food service operators today. Conventional wisdom claims that employee turnover entails high costs for the employer. It is costly to recruit and hire new employees and the supervisors have to spend valuable time training new employees. Higher turnover leads to lower morale in the employees. In addition there is deterioration in service during the time the new employees are learning their jobs.

However, there are some that argue that the "time to train" is not a significant cost factor and customers do not focus as much on service as claimed. In addition, lower paid new employees are constantly replacing higher wage employees. The cost savings from the turnover are crucial for maintaining the profitability of the low margin food service industry.

This disagreement among the food service operators has caught the attention of some financially oriented academics. These researchers seek to answer this puzzle by examining the relationship between long-run profitability and turnover. They claim that increased profitability adequately compensates for lower morale and customer satisfaction caused by higher turnover. The first phase of this research project involves establishing the relationship between long-run profitability and turnover. Your charge is to help your colleagues in designing the first phase of the study.

二、請閱讀以下文章，並回答問題 ※請以中文作答

1. Please assess the sampling method of this study (10%)
2. Why did the authors employ the covariance structure analysis to examine their collected data in this study (10%)
3. Why did the authors employ the two-step approach to modeling their models in this study (10%)
4. Please assess measurement model fits, convergent validity, and discriminant validity of this study (10%)
5. Based on the hypothesized model (Fig. 1) and findings obtained by the structural model (Table 3), please draw the final model of this study (10%)

Methods

Data Collection

Data were collected from users of the Appalachian Trail (AT) over the summer and fall of 1999. Sampling occurred along the entire length of the trail. A stratified, systematic sampling technique was employed to obtain a representative sample of all AT hikers (Babbie, 1995). To accomplish this, the length of the trail was segmented into 22 sections based on use estimates provided by the various associations charged with maintaining the trail (i.e., maintenance and management). Every third trail user over the age of 18 was intercepted by volunteers and paid staff and requested to provide their name and address to be sent a survey instrument. A total of 2,529 AT visitors agreed to participate in the study and were mailed a questionnaire two weeks after their visit. One week after the initial mailing, visitors were mailed a reminder/thank you postcard. Visitors who did not return a completed questionnaire within three weeks of the initial mailing were mailed a final copy of the questionnaire. This sampling procedure yielded 1,569 completed questionnaires (62% response rate). Through (“Thru”) hikers were also purposively over-sampled at the end of the trail, but were excluded from these analyses on the basis that they represent a distinct minority of AT users.

Results

Testing the Proposed Model

The data were analyzed using covariance structure analysis provided with LISREL (version 8.12; Jöreskog & Sörbom, 1997). The use of covariance structure analysis has certain advantages over separate applications of factor analysis and regression. It allows the researcher to; (a) simultaneously test a system of theoretical relationships involving multiple dependent variables, (b) restrict the relationships among variables to those that have been hypothesized a priori, and (c) more thoroughly investigate how well the model fits the data (e.g., through the use of residuals and goodness-of-fit indices) (Lavarie & Arnett, 2000). Analysis of these data followed Muliak, James, Alstine, Bennett, Lind, and Stilwell's (1989) two-step approach to modeling beginning with the examination of the measurement model followed by an examination of the structural model. Examination of the measurement model provided an assessment of the construct validity (i.e., convergent and discriminant validity) of involvement, commitment, and loyalty and the reliability (i.e., internal consistency) of items measuring these constructs. The structural model assessed the predictive validity of the latent constructs.

Measurement Model

An assessment of the measurement model was made using confirmatory factor analysis. After the initial analysis a specification search (Leamer, 1978) of parameter estimates and the modification indices (Sörbom, 1986) indicated that model fit could be significantly improved by permitting the errors to correlate between items A4 and A5 ($\chi^2=143.90$, $df=1$). Fit statistics indicated satisfactory model fit ($\chi^2 = 2780.15$; $df = 504$, $p < .05$). Although the chi-square statistic was significant (see Table 2) it is understood that the chi-square statistic is sensitive to sample sizes greater than 100 (Byrne, 1998). Therefore, other indicators of model fit provided by LISREL were used to assess the adequacy of the hypothesized model. The results reported in Table 2 indicate satisfactory model fit (RMSEA= .057; GFI = .90; CFI = .92; NFI = .91). Indicators of construct validity (e.g., convergent and discriminant validity) and reliability (i.e., internal consistency) were also used to assess the adequacy of the measurement model.

Assessing Convergent Validity: Convergent validity refers to the ability of a scale's items to load on its underlying construct (Bagozzi, 1994). Specifically, convergent validity is evidenced if each indicator's loading on its posited underlying construct is greater than twice its standard error (Anderson & Gerbing, 1988). All loadings had significant *t*-values ranging from 14.16 to 55.86, providing evidence of convergent validity.

Assessing Discriminant Validity: Bagozzi (1994) has suggested that discriminant validity exists when scales intended to measure different constructs have weak correlations with each other. Hatcher (1994) has also suggested that confirmatory factor analysis can provide evidence of discriminant validity by testing whether the fit of the measurement model decreases significantly when pairs of measures are fixed to covary perfectly. We used the chi-square difference test (Byrne, 1998) to assess if the model allowing free covariance among pairs of latent constructs was superior to the model with the covariance between constructs fixed to 1.0 (Hatcher, 1994). This method relies on the assumption that when two factors are fixed to covary perfectly, they are then measuring the same construct. The results demonstrated discriminant validity among all latent constructs because the fit of the model significantly deteriorated when covariances were set at 1.0.

Assessing Reliability: The reliability (i.e., internal consistency) of all scales measuring involvement, commitment, resistance to change, and loyalty was assessed using Cronbach's alpha coefficients. Nunnally (1978) suggests that Cronbach alpha coefficients which are equal to or greater than .70 are acceptable values. Cortina (1983), however, has noted that in scales with a reduced number of items (e.g., six or less), .60 and above may also be acceptable. The alpha values for all constructs ranged between .60 through .93. On the basis of this, we concluded that all scales were reliable.

Structural Model

Twenty-seven structural equations were constructed to examine the processes leading to the formation of behavioral loyalty. We hypothesized that each dimension of involvement would positively predict each dimension of commitment, which would in turn positively predict each dimension of resistance to change. Finally, resistance to change was hypothesized to positively predict behavioral loyalty. A full structural model with all parameter estimates was computed. We then undertook a specification search (Leamer, 1978) of the resultant output. We first examined the parameter estimates to identify non-significant structural coefficients. Five of the hypothesized paths (i.e., Self Expression→Informational Complexity, Self Expression→Volitional Choice, Volitional Choice→Setting Resistance, Position Involvement→Activity Resistance, and Financial Investment→Activity Resistance) were removed from the model on the basis of non-significant *t*-values (Schumacker & Lomax, 1996). We then examined the modification indices to identify model misspecification. These indices indicated that it was not necessary to specify additional parameters. The result and the structural coefficients are reported in Table

3 and shown in Figure 2 and offer only partial support for our hypothesized model. Although this analysis produced a significant chi-square statistic ($\chi^2 = 3067.86$; $df = 523$, $p < .05$), other goodness-of-fit criteria shown in Table 2 indicate a satisfactory fit between this model and the data (RMSEA = .063; GFI = .89; CFI = .92; NFI = .90).

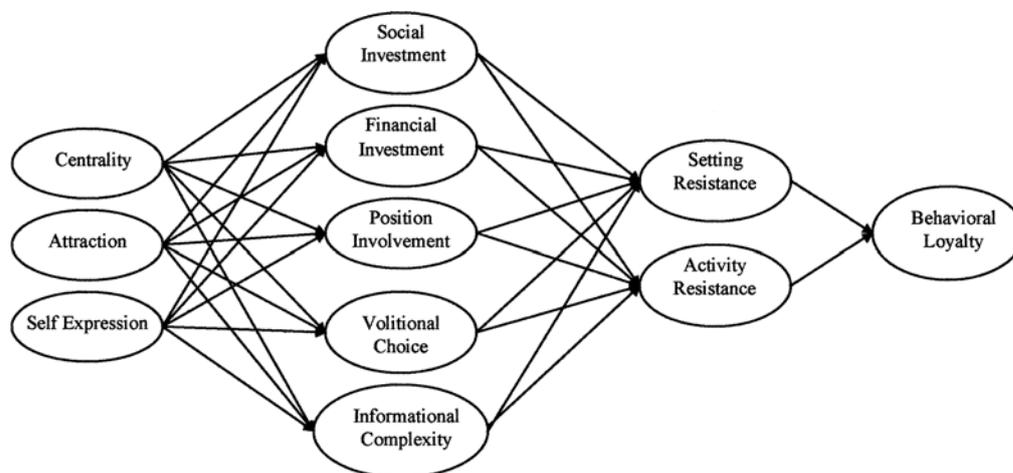


FIGURE 1 Hypothesized Model: Involvement, Commitment, and Loyalty.

TABLE 3 Structural Model Analysis

Direct effects	β	t -value
Predictors of Commitment		
Self Expression→Position Involvement	.19	3.20
Self Expression→Social Investment	.20	4.16
Self Expression→Financial Investment	-.11	-2.01
Attraction→Information Complexity	.56	15.28
Attraction→Volitional Choice	.36	8.22
Attraction→Position Involvement	.22	4.17
Attraction→Social Investment	.50	11.42
Attraction→Financial Investment	.31	6.19
Centrality→Informational Complexity	.19	5.76
Centrality→Financial Investment	.08	2.05
Centrality→Social Investment	.12	2.80
Centrality→Position Involvement	.40	11.40
Centrality→Volition Choice	.37	9.05
Predictors of Resistance to Change		
Informational Complexity→Activity Resistance	-.22	-3.61
Informational Complexity→Setting Resistance	-.10	-2.66
Volitional Choice→Activity Resistance	.13	3.21
Position Involvement→Setting Resistance	.96	25.34
Social Investment→Activity Resistance	.86	13.98
Social Investment→Setting Resistance	-.19	-5.05

Financial Investment→Setting Resistance	-.07	-2.39
Predictors of Behavioral Loyalty		
Activity Resistance→Behavioral Loyalty	.18	5.74
Setting Resistance→Behavioral Loyalty	.25	7.78
