

Title:

Modelling Dimensionality of Cultural Experience Attitudes for International Tourists

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Author:

Pandora Kay
Victoria University

Contact Details:

Pandora.Kay@vu.edu.au
(03) 9919 5367

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Abstract

This empirical research of tourists' cultural experiences aims to advance theory by developing a measurement model of attitudes towards attending cultural experiences for a sample of international tourists visiting Melbourne, Australia. Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were used to cross-validate the underlying dimensionality structure of cultural experience attitudes in the model. A five-factor model was extracted from the EFA and some further modifications were required to establish discriminant validity. A four-factor model was retained in the CFA, which included three factors based on a liking for different types of cultural experiences and one factor indicating that social interaction was the most liked socio-psychological attitude towards attending cultural experiences. Although the sample were all English-speaking international tourists, cross-cultural validation of the model was also examined for factor configural and metric invariance of the measurement model as there were three different groups of international tourists within the sample: North Americans; New Zealanders; and tourists from United Kingdom and Ireland. This measurement structure was found to be relatively invariant for the factor loadings across the three groups of international tourists.

Introduction

Exploring the dimensionality of tourists' attitudes towards attending cultural experiences was a primary aim of this empirical research. Many destinations, such as Melbourne, Australia, are positioned and marketed as 'cultural capitals', yet very little is known about tourists' attendance at cultural experiences, especially the more temporal performing arts based cultural experiences. While there has been considerable interest in identifying cultural tourists and understanding their motivations for attending cultural experiences, much of this research has been situational to attendance at specific types of cultural experiences and to date, has not aimed to develop a model for measuring tourists' attitudes towards attending different types of cultural experiences and for understanding the underlying structure and dimensionality of these attitudes. Developing such a model was a specific aim of this research, using exploratory factor analysis (EFA) undertaken on a calibration sample, and then confirmatory factor analyses (CFA) on a validation sample to cross-validate the dimensionality of cultural experience attitudes. Cross-cultural research of tourists' cultural experience attitudes and motivations is also lacking to date despite the cross-cultural nature of international tourism, and so a further aim of this study was to test the developed model of cultural experience attitudes and its underlying dimensionality, for cultural invariance.

The research questions addressed in this study are whether the sample for this research, which are English-speaking tourists from three major international tourist markets for Melbourne, Australia, cross-validates in confirmatory factor analyses (CFA), the dimensionality of cultural experience attitudes derived from the exploratory factor analyses (EFA) employed in this study. For the resultant measurement model for cultural experience attitudes, a related research question that will also be tested is whether there is a significant difference in the factor configural and metric invariance for the three different groups of international tourists within the sample: North Americans; New Zealanders; and tourists from United Kingdom and Ireland.

Literature Review

Several approaches to researching attitudes can be found in the tourism literature. One approach includes attitudes within the various applications of Mitchell's (1983) combined Values, Attitudes and Lifestyles scale (VALS), which has been used largely for tourist market segmentation purposes (e.g., Shih, 1986). Other tourism research evaluates leisure travel attitudes by measuring motivations, perceptions, preferences and future travel intentions (e.g., Lee and Tideswell, 2005) which is a variation on the established method of attitude measurement based upon the theory of reasoned action (Fishbein, 1967, 1970; Fishbein and Ajzen, 1975) and the later theory of planned behaviour (Ajzen, 1985). Others incorporate an

importance-evaluation mode of attitude measurement to assess various forms of tourist perceptions and behaviour such as perceptions of destinations, which again has been often applied for tourist market segmentation purposes (e.g., Ryan and Mo, 2001). Other approaches focus on the perspective residents and measuring their attitudes toward tourism and tourism development (Lankford and Howard, 1994). Within cultural tourism research, rather than attitudes *per se*, the emphasis has been on tourists' motivations, benefits, satisfaction, activities or other behaviour (e.g., Foo and Rossetto, 1998; McKercher and du Cros, 2003; McKercher, Ho, du Cros, and So-Ming, 2002; Richards and Queiros, 2005; Tourism Victoria, 2004). The lack of research on attitudes is a gap in the literature to be explored in this research.

In contrast to some of these studies, this study proposes that attitudes can be distinguished from motives, although both are internal predispositions. While the former can be defined as the affective or feelings responses that consumers have toward an object or a general evaluation of an object (Fishbein and Ajzen, 1975), the latter can be summarized as an internal factor that arouses, directs and integrates a person's behaviour (Iso-Ahola, 1980). Attitudes have been further categorized as hedonic or utilitarian (Spangenberg, Voss, and Crowley, 1997; Voss, Spangenberg, and Grohmann, 2003). In this study, it is further proposed to focus more on hedonic attitudes rather than utilitarian ones because of the former's relevance to the consumption of aesthetic products (Hirschman and Holbrook, 1982; Holbrook and Hirschman, 1982), although the latter have been conceptualised as simplifying decision making in relation to measuring tourist motivation (Fodness, 1994). Hedonic components of attitude were found to be situational (Halvena and Holbrook, 1986).

This study proposes developing a multi-item attitudinal scale for measuring tourists' cultural experience attitudes. As numerous approaches, scales, paradigms and indexes have been used for measuring dimensions of tourist and other consumer attitudes, it was decided to base this scale on two main types of items: an expansion of the arts enthusiast scale (Wells and Tigert, 1971), and items measuring tourists' attitudes towards selected motives for and benefits (sought and gained) from attending cultural experiences. The former measure a person's interest in the arts and were incorporated within the combined Activities, Interests and Opinions scale (AIO), yet another approach to measuring attitudes from a classic study of consumer psychographics (Wells and Tigert, 1971). The latter items were incorporated because while the primary focus in this paper was tourists' attitudes towards cultural experiences, it forms part of a larger study to test relationships between attitudes and other constructs of relevance to motivational process for attending cultural experiences, namely, motives and benefits (sought and gained).

After developing a cultural experience attitude scale and exploring its underlying dimensionality and structure, a related aim of this study was to test the final measurement model for cross-cultural differences among some of Australia's major tourist markets. Only a small portion of the vast body of literature on tourist motivation and behaviour considers cross-cultural differences, yet international tourists are important markets for most destinations, and international tourism and international marketing are cross-cultural by nature. The influence of culture on leisure travel, and knowledge and understanding of cultural differences, are themes that have not received enough attention in the travel and tourism literature, despite culture being one of the strongest influences on tourists' motives, choices, intentions and purchases on a global scale (Reisinger, 2005). By incorporating a culture variable into this research of tourists' cultural experience attitudes, this research contributes to exploring another identified gap in tourism literature and research.

Research Methodology

Participants and Measure

The sample for this research was 405 individual tourists from three of Australia's largest inbound markets: North America, New Zealand, and United Kingdom and Ireland. This study is part of a larger study examining tourists' motivational process for attending and experiencing a range of cultural related attractions and events. The other constructs within the larger study, (which are not covered in this paper), are motives for attending cultural experiences while on holiday, benefits sought and gained from cultural experiences. Similarly, the larger study sampled eight tourist population units in total: two other international tourist markets of importance to Australia (Japan, and Chinese-speaking tourists from Asia) and domestic interstate tourists from nearby states (SA, NSW, and Qld). English-speaking international tourists based on language most spoken at home are the largest sample (N=405) and so were selected as the most suitable sample upon which to develop and validate the construct models using a two-stage statistical analysis process and a cross-validation procedure with a randomly split sample.

Respondents were sampled on-site at the Queen Victoria Market (QVM) which was an ideal site for this research of tourists' cultural experiences as it is centrally located in the Melbourne CBD, operates five days a week, includes a heritage building, entertainment by musical performers and other special events, and last but not least, attracts considerable numbers of tourists as shown by the ranking of markets for international and domestic tourists. For example, research of tourists' top 15 activities nationally for Australia and by state for Victoria (Tourism Victoria, 2005), ranks going to markets within the top three activities for international

tourists (51% nationally cf 57% Victoria), and the 11th most popular activity for six percent of all domestic tourists, nationally and for Victoria. Purposeful, convenience and quota sampling were used to identify eligible respondents from the eight tourist population unit quotas of interest to the larger study. Respondents eligible to complete the research instrument which was a personally administered *in-situ* structured questionnaire were firstly identified through selected demographic questions used as screening questions recorded by the data collector on an intercept sheet. Because of the cross-cultural language aspects of the larger study, the questionnaire instrument was developed in English, viewed by experts for opinion, pre-tested with cross-cultural postgraduate students then translated into Chinese (simplified) and Japanese, and back-translated for content equivalence. Bi-lingual data collectors fluent in English and Chinese (Mandarin) or Japanese were recruited through university employment services and then trained in accordance with international guidelines (International Chamber of Commerce/European Society for Opinion and Marketing Research, 1995). Data collection was undertaken over 29 QVM trading days between December 2005 and February 2006. Interviewer codes on the research instruments enabled individual's anonymous responses to be matched.

The cultural experience attitude construct that is the focus of this paper, was measured by 29 question items rated on a six-point Likert type scale of agreement ranging from 1 for "Totally Disagree" to 6 for "Totally Agree". In the absence of a suitable, validated item set, a multi-item attitudinal scale was compiled with two-thirds (items 2.1-2.16, 2.23-2.25) based on an adapted and expanded form of the arts enthusiast scale (Wells and Tigert, 1971); and another eight (items 2.18-2.22, 2.26-2.28) measuring attitudes towards commonly found motives and benefits (sought and gained) selected from numerous previous studies of tourists at cultural and non-cultural experiences (Kay, 2003, 2006). The other two attitude items pertain to the respondent characteristics and their liking for cultural experiences: one focuses on respondent's occupation and the extent to which they like going to cultural experiences because they are related to their work (item 2.17), and the other focuses on respondent's liking for the travel trip characteristic of partaking in cultural experiences on package tours (item 2.29). The original arts enthusiast scale (Wells and Tigert, 1971) comprised three items: I enjoy going through an art gallery; I enjoy going to concerts; and I like ballet. Lumpkin (1985) used a slightly modified three items: I enjoy going to concerts; I like ballet and opera; and I like to browse in museums. In adapting and expanding the arts enthusiast scale for this study of cultural experience attitudes, all of the item statements were standardized to use the same introductory wording of "I like going to" and the range of three or four arts activities was considerably expanded to a list of sixteen different cultural experiences and activities which was based on a typology of cultural experiences of

interest to this study developed from numerous studies of cultural experiences visited by domestic and international tourists as well as local residents (e.g., Australia Council for the Arts, 1999; Cultural Ministers Council Statistics Working Group, 1997; Tourism Victoria, 2003).

Statistical Analyses

A two-stage process in the exploration and validation of the factorial structure of the questionnaire items will be used in this study as recommended by Anderson and Gerbing (1988), including the recommended cross-validation procedure (Hair, Anderson, Tatham, and Black, 1995) of randomly dividing the participants into two samples (1:2 ratio) before analysis by using the random sample selection procedure in SPSS version 12.0. This provided a calibration sample (N = 213) for estimating and fine-tuning the factor model in the exploratory factor analysis and a validation sample (N = 192) for testing the stability of the final model (Hsu, 2001).

In the first stage of analysis, exploratory factor analysis (EFA) to determine the underlying measurement model was undertaken using maximum likelihood extraction with oblique rotation on the 29 measurement items until a satisfactory model of the factorial structure of the questionnaire items was determined. As the primary objective is to identify the latent dimensions of the cultural experience attitude construct represented in the original variables and because the scale being used is unvalidated and so there is little knowledge about the amount of unique error variances, maximum likelihood extraction based on shared variance was deemed an appropriate factor analysis method to use. Because correlation between the construct dimensions is expected, the use of the oblique rotation method, OBLIMIN in SPSS version 12.0, is justified (Hair et al., 1995). The model derived from the EFA will be subsequently evaluated using confirmatory factor analysis (CFA) from the second stage of analysis.

In the second stage of analysis, a series of CFA analyses were undertaken with the participants' responses. Initially, one-factor congeneric models for each of the constructs was undertaken to test for internal validity, and then the factorial validity of the hypothesised model that was derived from the EFA was tested for discriminant validity (Anderson and Gerbing, 1988). In these models, the variances of the latent variables were set to unity in order to identify the models and maximum-likelihood estimation procedures on the covariance structures were conducted in AMOS version 5.0 program. In evaluating the factorial validity of the full measurement structure, both pattern and structure coefficients were considered. Multiple criteria were employed to assess the goodness-of-fit of the models (Hair et al., 1995). Statistical

fit of the models was determined by the chi-square likelihood ratio (χ^2). Absolute fit of the models was also determined by the goodness-of-fit index (GFI), the standardised root mean-square residual (SRMR), and the root mean-square error of approximation (RMSEA). Further descriptive fit of the models was determined by using the incremental fit measures of the adjusted goodness-of-fit index (AGFI), the Tucker-Lewis Index (TLI), and the comparative fit index (CFI). Parsimonious fit was determined by the normed chi-square ratio of χ^2 to degrees of freedom (*df*). The desired threshold for the GFI, AGFI, TLI and CFI is .90 as recommended by Hair et al, (1995) who notes that the .90 threshold has no statistical basis but is based on practical experience and research which have demonstrated its usefulness in distinguishing between acceptable and unacceptable models. For the RMSEA which expresses the lack of fit due to reliability and model specification or misspecification, it has been suggested that values <.05 constitute good fit, values in the .05 to .08 range acceptable fit, values in the .08 to .10 range marginal fit, and values > .10 poor fit (Browne and Cudeck, 1992). The SRMR is the average of differences between the sample correlations and the estimated population correlations. It has a range from 0 to 1 and values of .08 or less are desired (Hu and Bentler, 1999).

Whether there are differences in the measurement model for cultural experience attitudes of the three groups of English-speaking international tourists comprising the sample will be tested by dividing the sample into the three country- or region-of-residence subsamples (North Americans; New Zealanders; and tourists from United Kingdom and Ireland) and then performing factor configural and metric invariance tests for the measurement model.

Preliminary Analysis of the Data

Prior to analysis, the calibration and validation data samples were checked for normality of data distribution, outliers and screened for missing values. For scores that are normally distributed, skewness and kurtosis values will equal zero, although values ranging from -1.50 to +1.50 may be considered to approximate a normal distribution (Muthen and Kaplan, 1985 cited in Byrne and Campbell, 1999). Most of the attitude items approximated normality, except for item 2.13 *I like going to markets* which was negatively skewed. A square root transformation was tried, but did not improve the normality of distribution. Eleven of the 29 items had outliers in the calibration sample and 15 items had outliers in the validation sample, but no observations were extreme on a sufficient number of variables to be considered unrepresentative of the population.

For missing values, as the question scales used in this study did not include the option to answer 'don't know/unsure' or 'not applicable', these types of missing values did not apply. With large

sets of scale items for the cultural experience attitude construct of interest to this study, missing values occurred for the majority of the 29 variables and some missing values analysis was undertaken to identify remedies for missing data to be applied to reduce potential hidden biases of the results and also to reduce the practical impact of missing data on the sample size available for analysis. Items with some missing values numbered 24 in the calibration sample and 20 in the validation sample, although the percentage of missing values is only more than 1.0% for six items in the calibration sample and four items in the validation sample. One item had the greatest number of missing values in both data sets (5.6% for the calibration sample and 8.3% in the validation sample): *I like going to Australian Aboriginal cultural performances and exhibitions*. The slightly higher rate of missing values for this item is possibly because some respondents have never attended or had the opportunity to attend such cultural experiences and so considered the question not applicable to them.

The model-based, expectation-maximisation (EM) imputation method for missing values was used because it takes better advantage of the structure in the data and is based on the EM algorithm which is related to the maximum likelihood method which is the most widely used estimation algorithm in structural equation modelling (Kline, 2005). The EM imputation method was implemented in SPSS version 12.0 to create new data files for the construct measurement scales with no missing values for use in the factor analyses. Little's MCAR test was significant for both samples (calibration: $p = .001$; $\chi^2 = 5505.37$; $df=5190$; validation: $p = .009$; $\chi^2 = 5415.17$; $df=5170$), indicating that missing values were not missing completely at random, but this treatment of missing data was considered acceptable as the extent of missing values prior to EM imputation was not more than 8.3% as previously reported. Treatment of missing responses poses problems, particularly if the proportion of missing responses is more than 10% (Malhotra, Hall, Shaw, and Crisp, 1996).

The data was then assessed for sampling adequacy using the Kaiser-Meyer-Olkin (KMO) test. The results for the calibration (N=213) and validation (N=192) samples provided values of 0.87 and 0.84 respectively, and in interpreting these values, as values above 0.50 indicate appropriateness of applying factor analysis and values of 0.80 or above are regarded as 'meritorious' (Hair et al., 1995), these data sets were perceived as being adequate for analysis. Similarly, the total sample of international English-speaking tourists (N=405) when divided into three subsamples based on tourists' region or country-of-residence for invariance testing of the model derived from the confirmatory factor analysis, KMO test results indicated adequacy of these data samples for factorability. The KMO results for the North Americans (N=124) were

0.80; for the New Zealanders (N=140) were 0.86, and for the tourists from UK and Ireland (N=141) were 0.79.

With reference to minimum sample size, a minimum of five observations per variable is required for factor analysis (Hair et al., 1995). For the cultural experience attitude scale there are 29 variables and so at least 145 observations are required and this threshold was met for the calibration and validation samples. The sample sizes of the three country or region subsamples were also adequate for invariance testing of the model, providing the number of variables in the final model was reduced to 25 or less as expected.

Because the cultural experience attitude scale was expected to be multi-dimensional, statistical reliability for internal consistency of the whole scale is considered inappropriate and likely to be artificially and inappropriately inflated by including several redundant scale items (Malhotra et al., 1996). Accordingly the Cronbach alpha coefficients for the whole scale exceeded 0.9 for four of the data sets with a lowest value of 0.88 for the UK and Ireland sample. As a commonly used threshold value for acceptable reliability is 0.70 (Hair et al., 1995), these test results for the whole scale in these data sets are high and possibly inflated but the datasets appear to possess reliability. For each of the construct dimensions found in the EFA, internal consistency reliability will be computed using Cronbach alpha and reported within the EFA results.

Results and Discussion

Sample Characteristics

The sample of 405 individual tourists comprised similar percentage of females and males (51% cf 49%) and ages ranged from 18 years to more than 75 years with the most common groups being 55-64 years (28%) and 45-54 years (18%). Of the three population unit samples, approximately one-third were from UK and Ireland (34.8%), another third from NZ (34.6%) and the other third from North America (30.6%). Within each population unit sample, the gender balance was similar to that of the whole sample with either equal or similar percentage of females and males. For the UK sample of 141 individual tourists and the NZ sample of 140 individual tourists, there were slightly more females (52%) than males (48%). The North American sample of 124 individual tourists, had equal percentages of females and males (50% respectively). The ages ranged from 18 years to more than 75 years for all three population units with the most common group being 55-64 years for the samples from North America (29%) and the UK and Ireland (28%). This age group was the second most common one for the New Zealand sample (26%) where the most common age group was 45-54 years (29%). The second most common age group for the UK and Ireland sample was 65-74 years (18%), and for

the North American sample there were equal percentages for 65-74 years and 25-34 years (19% respectively).

Exploratory Factor Analysis

The EFA was conducted on the 29 items of the cultural experience attitude scale using the calibration sample (N=213) and undertaken in SPSS version 12.0 with the maximum likelihood extraction method and an oblique rotation method (OBLIMIN). Initially six factors were extracted for cultural experience attitudes based on eigenvalues greater than 1.0, but these were reduced to a final model of five factors with satisfactory factorial structure. Table 1 displays the pattern coefficients and the factor intercorrelations for the final solution based on 20 items. Nine items were removed to achieve a satisfactory factorial structure, and the EFA was rerun after the removal of each item because maximum likelihood extraction is based on shared variance. The first item to be eliminated was *I like going to markets*, based on its communality value of 0.17 being the lowest for the item set and below the 0.2 threshold indicating that the original variable shared a low amount of variance with all the other variables included in the analysis. Six further items were removed to improve discriminant validity of the factorial structure based on inspection of the pattern and structure matrices: The internal reliability of each dimension was calculated using Cronbach alpha coefficients and while the coefficients for all of the five factors were above the commonly used threshold value of .70 for acceptable reliability (Hair et al., 1995), two further items were eliminated so that all items retained within each dimensions had corrected item-to-total correlations greater than 0.5.

Inspection of the pattern coefficients and factor intercorrelations for the final solution displayed in Table 1, shows five interpretable cultural experience attitude factors that are consistent with some theoretical formulations. Four of the factors are based on 14 of the original 19 types of cultural experiences that were developed by expanding and adapting the arts enthusiast scale. The first factor comprises five items that concern a liking for cultural experiences involving Australian culture and history. The second factor comprises two items that are consistent with liking famous cultural experiences. The third factor comprises four items that are consistent with a liking for traditional performing arts. The fifth factor comprises three items that concern a liking for museums and cultural festivals. Finally, the fourth factor comprises six items consistent with social interaction and including six of the original eight items measuring respondent's liking for commonly sought motives and benefits from attending cultural experiences. Only two motive or benefit items were not associated with attending cultural experiences: doing so for escape, and to make others happy.

Table 1: Factor Pattern Coefficients for the Five Factors of Cultural Experience Attitudes
Derived from Oblique Rotation

Questionnaire Item I like going ...	Factors				
	I	II	III	IV	V
2.15 to cultural experiences involving Australian history	1.05	-.02	-.02	.00	-.15
2.12 to Australian aboriginal cultural performances and exhibitions	.66	-.06	.09	-.03	-.06
2.16 to see Australian art	.66	-.00	.10	-.01	.19
2.14 to cultural performances held in historical settings	.62	.15	-.03	-.05	.17
2.11 to historic buildings, sites and monuments	.38	.01	-.12	.23	.00
2.25 to see famous shows performed	-.06	.94	-.05	-.04	.03
2.24 to see famous performers/entertainers	.02	.80	.10	-.04	-.01
2.4 to the ballet	.05	.01	.83	.07	-.10
2.5 to dance performances	.05	.14	.67	.08	-.11
2.6 to the opera	-.04	-.02	.67	-.07	.20
2.2 to classical music performances	.11	-.06	.51	.00	.22
2.21 to cultural experiences because local people attend	-.05	-.16	.09	.90	-.07
2.20 to cultural experiences that my friends and family have done	-.00	.14	.03	.73	-.15
2.22 to cultural experiences that have been recommended by others	.11	.06	-.08	.62	.05
2.28 to cultural experiences for the chance to interact with others	.00	.02	.04	.54	.21
2.18 to cultural experiences to have fun	.19	.13	-.09	.42	.25
2.26 to cultural experiences to learn	.11	.13	.09	.42	.23
2.1 to art galleries	.04	-.03	.33	.05	.61
2.9 to museums	.18	.11	.04	.05	.59
2.10 to arts and cultural festivals	.11	.09	.15	.19	.55
Reliability Alpha	.86	.85	.80	.84	.81
Factor intercorrelations					
Factor I: Australian Culture and History					
Factor II: Famous Culture					
Factor III: Traditional Performing Arts					
Factor IV: Social Interaction					
Factor V: Museums and Cultural Festivals					
Percentage of explained variance	4.99	2.68	3.29	4.50	3.70
Eigenvalue	7.31	2.16	1.59	1.44	1.12

Note: Coefficients exceeding an arbitrary cut-off loading of .40 are shown in bold type. $N = 213$

The Cronbach alpha internal consistency reliabilities for these five factors were 0.8 or above which is above the commonly used threshold value of .70 for acceptable reliability (Hair et al., 1995). Because the factors are correlated, the sums of squared loadings cannot be added to obtain a total variance, but the five-factor solution accounted for 58 percent of the variance. Several of the factor intercorrelations were greater than 0.30, which justified using the maximum likelihood extraction method with an oblique rotation.

Confirmatory Factor Analysis

One-factor congeneric models using maximum likelihood CFAs were initially evaluated for the five hypothesised cultural experience attitude latent constructs of Australian culture and history, famous culture, traditional performing arts, social interaction, museums and cultural festivals. The one-factor model for the construct of liking Australian culture and history revealed excellent fit of the data to the model when the error terms were correlated for the items: *I like going to cultural performances held in historical settings* and *I like going to cultural experiences involving Australian history*. This correlation is theoretically sound due to the common historical elements and no existing literature to indicate which item should be eliminated at this stage. With these error items correlated, there was excellent fit of the data to the model both statistically, $\chi^2 (4, N= 192) = 6.71, p= .152$, and practically with RMSEA = .06 (.00; .14), TLI = .98, CFI = .99, GFI = .99, AGFI = .95 and SRMR = .02. Good fit of the data for the construct of liking social interaction was achieved after removing two items that were highly correlated with two other items indicating considerable overlap in measurement between the items. The resultant fit was good both statistically $\chi^2 (2, N= 192) = 4.78, p= .092$, and practically with RMSEA = .08 (.00; .19), TLI = .96, CFI = .99, GFI = .99, AGFI = .94 and SRMR = .02. As high intercorrelation was found when the other three latent constructs were evaluated as one-factor congeneric models with the liking Australian culture and history construct, they were evaluated as two-factor congeneric models with the liking for social interaction latent construct. Excellent fit of the data for two-factor model with the liking traditional performing arts construct was found following elimination of the opera item which was highly correlated with several of the other items. The resultant fit was excellent both statistically $\chi^2 (13, N= 192) = 18.27, p= .147$, and practically with RMSEA = .04 (.00; .09), TLI = .98, CFI = .99, GFI = .97, AGFI = .94 and SRMR = .05. Although the two-factor model for the liking museums and festivals construct was statistically significant, $\chi^2 (13, N= 192) = 31.7, p= .003$, the indices of practical fit indicated that the data was an acceptable fit to the model, TLI = .92, CFI = .95, GFI = .96, AGFI = .91, and SRMR = .05, except for a high RMSEA = .09 (.05; .13). Although the two items in the liking famous culture construct were highly correlated and the two-factor model was statistically significant, $\chi^2 (8, N= 192) = 22.16, p= .005$, this data was also an acceptable fit to the model, TLI = .92, CFI = .96, GFI = .97, AGFI = .91, and SRMR = .05, except for a high RMSEA = .10 (.05; .15). The scree plots for all five constructs demonstrated they were unidimensional.

A four-factor independent cluster measurement model comprising latent variables for liking Australian culture, liking famous culture, liking traditional performing arts, liking social interaction, and liking museums and festivals was specified so that items were loaded uniquely

on their respective latent constructs as hypothesized with the error terms correlated for the two history related Australian culture construct items. The liking famous culture construct was not included in the measurement model because it was comprised of only two items that were highly correlated. All the correlations between the four constructs in the full measurement model were freely estimated.

The initial data fit to the model was not acceptable as the model was statistically significant: χ^2 (84, $N = 192$) = 219.29, $p = .000$, and practically, the GFI = .87, AGFI = .82, TLI = .85, CFI = .88 were all less than the recommended .90 threshold measure, and the RMSEA = .09 (.08; .11), and the SRMR = .07 were higher than the recommended .05. The model was respecified with several items eliminated one at a time based on multiple criteria. For pairs of items with high correlations greater than 1.0 indicating some item redundancy or multicollinearity, and t -values greater than 2.0 in the standardised residuals covariance matrix indicating that the model was not explaining the association between these pairs of variables, the items with the lower model weight parameter loading were removed. Modification indices were also checked for values greater than 4.0 to identify parameters to be estimated in the revised model to significantly reduce the chi-square and improve model fit. The data fit to the final four-factor model was excellent statistically: χ^2 (21, $N = 192$) = 25.26, $p = .236$, and practically on all indices, GFI = .97, AGFI = .96, TLI = .98, CFI = .99, RMSEA = .03 (.00; .07), and the SRMR = .03. The model was also more parsimonious with a normed chi-square ratio of 1.2.

Table 2 Factor Pattern and Structure Coefficients for the Four Factors of Cultural Experience Attitudes

Questionnaire Items		Factors							
		Australian Culture		Traditional Performing Arts		Social Interaction		Museums and Festivals	
		P	S	P	S	P	S	P	S
2.12	I like going to Australian Aboriginal cultural performances and exhibitions	.69	.69	0 ^a	.45	0 ^a	.53	0 ^a	.53
2.15	I like going to cultural experiences involving Australian history	.72	.72	0 ^a	.46	0 ^a	.55	0 ^a	.60
2.16	I like going to see Australian art	.72	.72	0 ^a	.47	0 ^a	.55	0 ^a	.60
2.2	I like going to classical music performances	0 ^a	.41	.64	.64	0 ^a	.30	0 ^a	.38
2.5	I like going to dance performances	0 ^a	.37	.57	.57	0 ^a	.27	0 ^a	.34
2.28	I like going to cultural experiences for the chance to interact with others	0 ^a	.55	0 ^a	.33	.71	.71	0 ^a	.37
2.18	I like going to cultural experiences to have fun	0 ^a	.56	0 ^a	.34	.73	.73	0 ^a	.38
2.9	I like going to museums	0 ^a	.52	0 ^a	.37	0 ^a	.32	.62	.62
2.10	I like going to arts and cultural festivals	0 ^a	.60	0 ^a	.43	0 ^a	.37	.72	.72

Note: P = pattern coefficient; S = structure coefficient; $N = 192$. Factor correlations were free to be estimated. All pattern coefficients are statistically different from zero.

a. Parameters fixed at reported levels to identify the model

The factor patterns and structure coefficients for the estimated parameters are presented in Table 2. All factor pattern coefficients on the respective four factors were statistically significant and

ranged from a low .57 to a high of .73. Inspection of the structure coefficients showed discriminant validity with a clear distinction between the items comprising the four cultural experience attitude factors of liking Australian culture, liking social interaction, liking museums and festivals, and liking traditional performing arts. Intercorrelations between the latent variables were positive and significant (see Figure 1). The factor, liking Australian culture, had correlation of .84, .77 and .65 respectively with the factors, liking museums and festivals, social interaction and traditional performing arts. The liking social interaction factor had correlation of .52 and .46 respectively with the factors, liking museums and festivals, and traditional performing arts. The correlation between these latter two factors was .60. The reliability for each construct exceeded the recommended level of .70 for liking Australian culture (.75), and was close to the recommended level for liking social interaction (.68). The reliability for the liking museums and festivals construct (.61), and liking traditional performing arts construct (.54) were below the commonly used threshold, but values below .70 have been deemed acceptable if the research is exploratory in nature (Hair et al., 1995). The liking traditional performing arts construct was not included in the subsequent invariance testing of the full model for cultural difference because as well as the low Cronbach alpha coefficient, the two items within the construct had corrected item-to-total correlations less than 0.5 and so these attributes were not sufficient in their representation of the construct.

Invariance Testing of the Model for Cultural Differences

An examination of 'measurement invariance' enables to determine whether the items and the underlying constructs mean the same thing to members of different groups (Cheung and Rensvold, 2002). The central concern is whether or not components of the measurement model are invariant (i.e., equivalent) across particular groups (Byrne, 2001). The general process of determining non-equivalence of measurement parameters across groups by conducting a series of increasingly restrictive tests (Byrne, 2001) was applied to the three international English-speaking tourist groups of New Zealanders, North Americans, and tourists from the UK and Ireland using AMOS version 5.0. The χ^2 difference test ($\Delta\chi^2$) was used as the index of difference in fit between the baseline model and successively constrained models as recommended by Anderson and Gerbing (1988). A nonsignificant value of χ^2 indicates failure to reject the null hypothesis that the hypothesized covariance matrix is identical to the observed covariance matrix, which is usually accepted as evidence of adequate fit (Cheung and Rensvold, 2002). In particular, factorial invariance for the three groups of international tourists was tested at the construct level for metric invariance of factor loadings (i.e., that all factor loading parameters are equal across all groups). The latter indicates whether the strengths of the relations between specific scale items and the underlying constructs are invariant or differ

(Cheung and Rensvold, 2002) and are considered an important prerequisite for meaningful cross-group comparison (Bollen, 1989).

Two separate groups of analyses were conducted. Firstly, the final cultural experience attitude measurement model was tested for each sample separately to establish structural similarity and to create a baseline model where the parameter matrices of the models for the three groups were not constrained to be equal to each other except for the referent associated with each construct, which was set equal to unity across groups to identify the model. This test is for configural invariance and assesses whether the simple structure of factor loadings is obtained for each of the three groups (Steenkamp and Baumgartner, 1998). Given that the χ^2 and its degrees of freedom are additive, the sum of the χ^2 values derived from the model-fitting process for each group separately, reflects the extent to which the underlying structure fits the data across groups when no cross-group constraints are imposed (Byrne, 2001). The χ^2 and its associated degrees of freedom for the baseline model should be very close to the sum of the individual models as found in this analysis of the cultural experience attitudes for the three groups of English-speaking international tourists. The fit of the unconstrained baseline model with no restrictions on model parameters was then compared with a constrained model in which all factor loadings were constrained to be equal across groups.

Table 3 Model Fit for Multi-Group Model of Cultural Experience Attitudes for Three International Tourist Groups

Model	χ^2	df	p-value	GFI	AGFI	TLI	CFI	RMSEA	90% confidence interval of RMSEA	SRMR
New Zealand	15.43	11	.164	.97	.91	.97	.98	.04	[.02, .06]	.03
North America	20.82	11	.035	.96	.89	.94	.97	.09	[.02, .14]	.04
UK and Ireland	4.61	11	.949	.99	.98	1.07	1.00	.00	[.00, .01]	.02
Baseline	40.86	33	.163	.97	.93	.98	.99	.02	[.00, .05]	.02
Metric invariance: equal factor loadings	54.49	41	.077	.96	.92	.98	.99	.03	[.00, .05]	.03

Note: New Zealanders ($N = 140$); North Americans ($N = 124$); tourists from UK and Ireland ($N = 141$)

Results of the three-factor measurement model for cultural experience attitudes, assessed separately for each group of English-speaking international tourists, established structural similarity and an acceptable fit of the data to the model for each group (see lines 1 to 3, Table 3).

For the multi-group baseline model, the key indexes are the χ^2 statistic, and the CFI and RMSEA values (Byrne, 2001). As seen in Table 3 (line 3), the χ^2 value of 40.86, with 33 degrees of freedom, provides the baseline value against which all subsequent tests for invariance are compared. The CFI and RMSEA values of .97 and .02 respectively, indicate that the

hypothesised measurement model of cultural experience attitudes has excellent fit for the New Zealanders and the North Americans, but only acceptable fit for tourists from the UK and Ireland.

Having established excellent fit of the baseline model (Table 3, Line 4), testing for invariance of factorial metric measurement and structure across the three groups was undertaken on the constrained model. Chi-square difference tests were used to establish the difference in fit between the baseline model and the constrained model. As seen in Table 3, comparison of the χ^2 difference between these two models and their associated degrees of freedom yields a χ^2 difference value of 13.63 with 8 degrees of freedom, which is not statistically significant at the .05 probability level. This indicated that the equality constraints held across the three groups for factor loadings and no further tests of factor loadings were needed to pinpoint the location of any noninvariance. In other words, the parameter loadings were equivalent (invariant) across the three groups.

Conclusion

The primary research question was to develop a model for the underlying structure and dimensionality of tourists' attitudes towards attending cultural experiences using a two-stage statistical analysis process of EFA and then CFA on a sample of international English-speaking tourists with a cross-validation procedure of randomly dividing the participants into two subsamples. This provided a calibration sample for estimating and fine-tuning the factor model in the EFA and a validation sample for testing the stability of the final model in the CFA.

The instrument used in this study contained a comprehensive list of 29 cultural experience attitude items obtained from various sources but largely based upon a considerably expanded arts enthusiast scale (Wells and Tigert, 1971) as well as items measuring attitudes towards commonly found motives and benefits (sought and gained) applicable to tourists attending cultural experiences. Five dimensions were derived from the EFA (i.e., liking Australian Culture and History; Famous Culture; Traditional Performing Arts; Social Interaction; and Museums and Cultural Festivals). Results of the CFA validated a similar structure with stability for four of these five dimensions. Based on the internal consistency reliability for each of the dimensions, the final model was reduced to three dimensions (i.e., liking Australian Culture; Social Interaction; and Museums and Cultural Festivals). These dimensions are consistent with some theoretical formulations as two dimensions are based on liking for different types of cultural experiences and the other dimension indicates that social interaction is the most liked

socio-psychological attitude towards commonly found motives and benefits (sought and gained) from attending cultural experiences.

Invariance testing of the full measurement model for cultural experience attitudes was undertaken to determine the related research question of whether there was a significant difference in the model factorial structure and metric factor loadings for the three different cultural groups of international English-speaking tourists. Results of the model assessed separately for the three groups established structural similarity and an excellent fit of the data to the model for the New Zealanders and the North Americans, but only an acceptable fit of the model for tourists from the UK and Ireland. To test the metric invariance of factor loadings, the difference in fit between a constrained model and a multi-group baseline model was not statistically significant at the .05 probability level indicating that the model factor loadings are relatively invariant for the three groups of international English-speaking tourists.

The underlying dimensionality of cultural experience attitudes found in this study is reported with more confidence having developed the model for cultural experience attitudes using a two-stage process of EFA and CFA with a cross-validation procedure. Future research will test the cultural experience attitudes model with data for dimensionality and cultural differences with other groups of English-speaking tourists to Melbourne, Australia, namely, domestic tourists from the three neighbouring states of NSW, Queensland and SA; as well as with Japanese- and Chinese-speaking tourists from Asia.

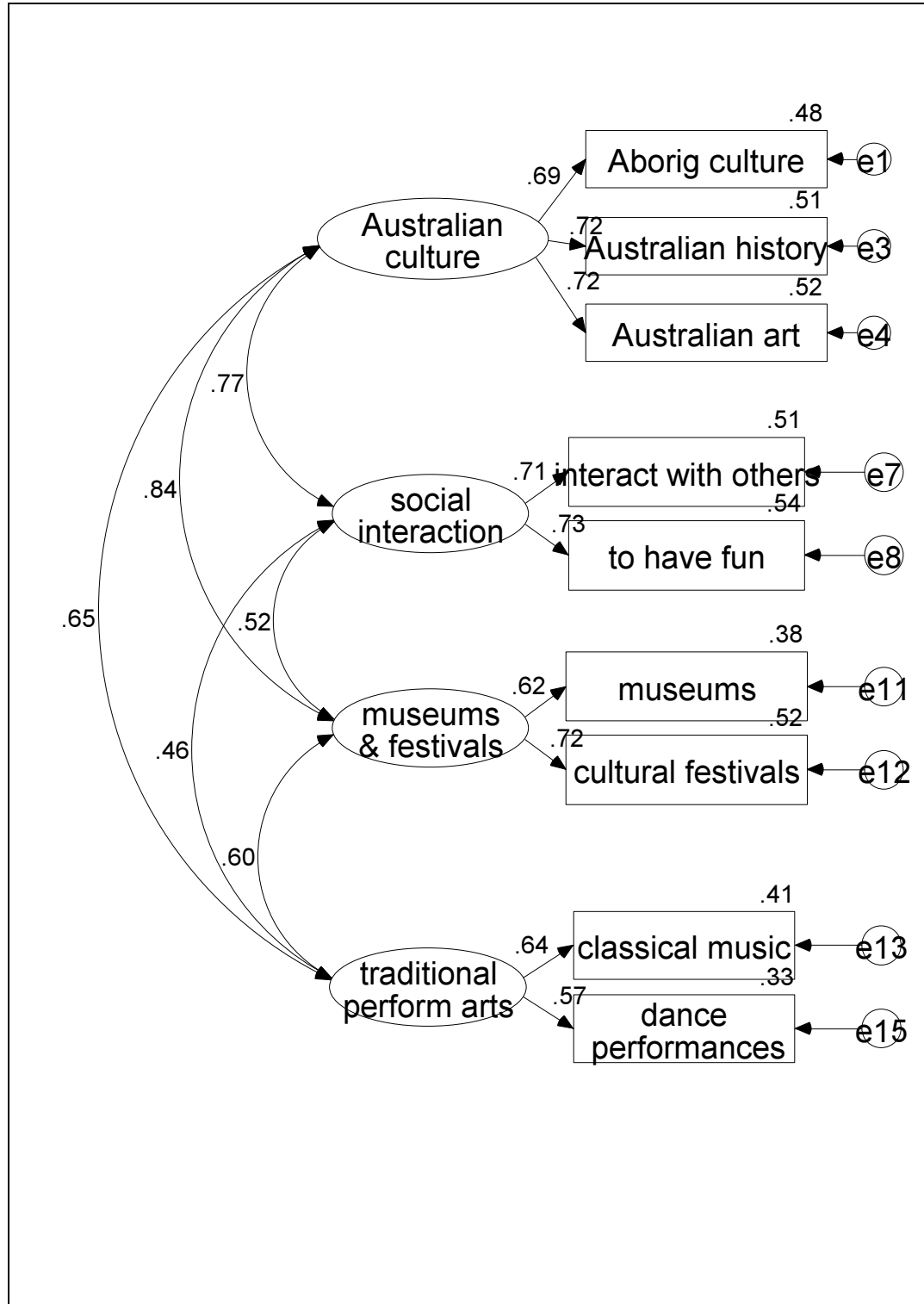


Figure 1 Hypothesised model for cultural experience attitudes

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