Structural Validity of Leisure Satisfaction Scale for Hong Kong Adults
休閒滿意量表在應用於香港成年人的結構之可靠性

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Abstract

The purpose of this study was to assess the structural validity of the Leisure Satisfaction Scale proposed by Beard and Ragheb (1980) as applied to Chinese adults. A Chinese version of the Leisure Satisfaction scale (short form) was used to measure the levels of leisure satisfaction of 455 Chinese adults in Hong Kong. Confirmatory factor analysis was conducted using structural equation modeling (LISREL 8.7) to test the six-factor model structure. The six dimensions of leisure satisfaction were Psychological, Educational, Social, Relaxational, Physiological, and Environmental Satisfaction factors. The findings of the study suggested that the six-factor structure proposed by Beard and Ragheb fit the data of the Hong Kong adults. However, one item "I engage in leisure activities because I like doing them" has a very weak factor loading on the Relaxation factor and did not seem to effectively represent relaxation satisfaction.

摘 要

本研究之目的是評估由 Beard and Ragheb (1980) 設想及制定的休閒滿意量表在結構上之可靠性。 是次研究以休閒滿意量表 (中文版) 來量度四百五十五名香港成年人對休閒的滿意程度，並以結構方程式 (LISREL 8.7) 驗證六個休閒滿意因素的結構模式。 此六個休閒滿意因素分別為: 與心理相關的滿意因素、教育相關的滿意因素、社會相關的滿意因素、 鬆弛相關的滿意因素、生理相關的滿意因素及環境相關的滿意因素。 是次研究發現，Beard and Ragheb 所提出的六個休閒滿意因素的結構與香港成年人的數據吻合。 然而，「我參與休閒活動是因為我喜歡投入那些活動」這一項在與鬆弛相關的因素中之因素負載量極低。 因此，這項目似乎未能有效地反映與鬆弛相關的滿足感。

Key Words: Leisure Satisfaction Scale, Chinese, Confirmatory Factor Analysis, Hong Kong

Introduction

In the field of leisure studies, interest in understanding leisure satisfaction has increased over the past decade. Leisure satisfaction, which reflects the overall gratification individuals derive from participating in leisure activities (Beard & Ragheb, 1980), attracted the attention of both practitioners and researchers because of its association with various positive effects such as physical, mental and social wellness (Ragheb, 1993), life satisfaction (Edginton, Jordan, DeGraf, & Edginton, 2002), and quality of life (Llyod & Auld, 2002).

Leisure Satisfaction Scale

The short version of the Leisure Satisfaction Scale (LSS) developed by Beard and Ragheb in 1980 has been used widely for measuring leisure satisfaction. The Scale contains 24 items conceptualized as comprising six dimensions of leisure satisfaction. These dimensions were Psychological Satisfaction, Educational Satisfaction, Social Satisfaction, Relaxational Satisfaction, Physiological Satisfaction, and Environmental Satisfaction (Beard & Ragheb).

Although the heightened research interest in leisure satisfaction emanated from the US, the need to understand these personal assessments of leisure in a global context also has increased. This created the demand for valid and reliable measurement scales that could be used on different population groups. It is likely that people of different cultural backgrounds will experience leisure differently and derive satisfaction from differing components of leisure. The dimensions of satisfaction that apply in western societies may not be coherent in other divergent cultures.

The LSS has been used in examining leisure satisfaction of people from different nations, including France, Korea, and Hong Kong (e.g., Lysyk, Brown, Rodrigues, McNally, & Loo, 2002; Sivan, Fung, Fung, & Ruskin, 2002; Won, 2000). For example, Won tested the factor structure of LSS on a sample of Koreans and found crossed loading of six items in the Educational and Psychological dimensions. Won subsequently re-specified the model by deleting the cross-loaded items and achieved model fit for a five-factor model. Similarly, Lysyk et al's French study obtained a five-factor model with the Educational and Psychological subscales clustering on a single dimension. These studies suggest that slight variations in the conceptual dimensions of leisure satisfaction exist among different cultural groups. However, more confirmatory factor analyses are needed to test the factor structures of leisure satisfaction in countries other than US and Canada including countries with Chinese cultures.

The purpose of this study was to test the factor structure of leisure satisfaction proposed by Beard and Ragheb in a Chinese context. The Chinese version of the LSS developed by Sivan and Fung (1998) was used to gauge leisure satisfaction of Chinese adults in Hong Kong.

Method

Participants

Data for this paper came from a larger study that examined the relationship between leisure satisfaction and sport participation in Hong Kong. Participants of the study was comprised of mature and older Chinese adults in Hong Kong aged between 40 and 88 years (M = 59.92, SD = 12.32). A total of 455 people completed the survey questionnaires. Of the participants, 54.6% were male and 45.4% were female. Systematic convenience sampling methods were used to recruit study participants. About 80% (364 participants) of the study participants were recruited from 30 city parks and public places in Hong Kong, which covered the 18 districts in Hong Kong. The other 20% were either lawn bowl or gateball players who were participating in their sports events.

Instrument

The translated short version of LSS (Beard & Ragheb, 1980) was used as to measure leisure satisfaction. The scale contains 24 items reflecting several types of leisure satisfaction. Each dimension of LSS contained 4 items (see Figure 1). A 5-point scale with a score of 1 represented "almost never true" and a score of 5 represented "almost always true", was used to obtain the responses. The reliability coefficient for the total scale in Beard and Ragheb's (1980) study was . 96. The subscale reliabilities were: Psychological = .86, Educational = .90, Social = .88, Relaxation = .85, Physiological = .86, and Environmental = .86.

Data Screening and Analysis

Preliminary data screening and descriptive statistics analysis were performed using SPSS (Version 13.0). Inspection of the data showed that several missing responses could be regarded as missing at random (Little & Rubin, 1987; Little & Schenker, 1995). SPSS missing value analysis with regression estimation was conducted to estimate and replace the missing values. In the multivariate outliers analysis, the examination of the Mahalanobis distances identified seven multivariate outliers (SD > 3.0). These cases were deleted from the data set. Subsequently, a total of 448 cases were used for model testing.

Although much research has shown that maximum likelihood (ML) estimation methods are robust to moderate violation of the normality assumption and performs well over a range of sample sizes (Anderson & Gerbing, 1988; Hoyle,

1995; Hu, Bentler, & Kano, 1992), it was important to ensure that the distribution of the data did not violate the normality assumption. Examination of the skewness and kurtosis of the distributions of the current data indicated that the frequency distributions did not deviate widely from normal (see Table 1). Muthen and Kaplan (1985) have suggested that univariate skewness and kurtosis in the range of -1.0 to +1.0 would not be expected to cause much distortion. Moreover, Monte Carlo simulations have suggested distributions can be classified as 'normal' when skewness is smaller than 2 and kurtosis smaller than 7 (Byrne, 1998).

Following data screening, the factor structure of leisure satisfaction was examined using confirmatory factor analysis (LISREL 8.7). A six-factor leisure satisfaction model proposed by Beard and Ragheb (1980) was specified (Figure 1). The estimates of the parameters were derived from the observed data using ML, which is the predominant estimation method in structural equation modeling. As the basic task of model testing using structural equation modeling is to compare the structure of observed data to a priori model, the following fit indices were adopted for determining the goodness-of-fit of the model: x^2/df, the root mean square error of approximation (RMSEA), standardized root means square residual (SRMR), Goodness-of-Fit index (GFI), comparative fit index (CFI), and the Non-normed fit index (NNFI). Among the indices selected, the chi-square statistics is useful for making decisions about the better model when comparisons between re-specified and initial model has to be made (Kline, 1998). However, it has also been used an indicator of goodness-of-fit when its value is divided by its associated degree of freedom. A ratio of 3 has been suggested to be a value for minimal acceptance (Kline, 1998). RMSEA values below .01, which are exceptionally rare, represent an outstanding fit (Sugawara & MacCullum, 1993), a value of .05 would indicate a very good fit (Steiger, 1990), and a value of .08 would indicate sizable errors of approximation in the population (Bryne, 1998). The SRMR represents the average value across all standardized residuals and it ranges from 0 to 1. The SRMR should be equal or less than .05 in a well-fitting model (Bryne, 1998). The GFI, CFI and the NNFI are indices of relative fit and it has been suggested that values of these indices need to be above .90 to be consider satisfactory (Bentler & Bonnet, 1980; Hu & Bentler, 1999).

Results

The goodness-of-fit statistics indicated that the hypothesized six-factor model fit the sample data satisfactorily (RMSEA = .02, SRMR = .05, GFI = .95, CFI = .98, NNFI = .98). The calculated x^2/df was1.23 (x^2 = 303.8, df = 246), which further supported that the hypothesized model was tenable. The factor loadings of the indicators are presented in Figure 1.

The first order factor loadings ranged between .21 and .64. The weakest loading occurred between item 16 "I learn things in my leisure activities simply because I like learning them" and its corresponding factor "Relaxation". With a factor loading of .21, the item can be regarded as a very weak indicator of the factor (Comrey & Lee, 1992). The factor loadings of the other 23 items achieved a factor loading of .44 or above, which could be considered to be at least fair indicators (Comrey & Lee, 1992). When the weak item (item 16) was removed in a re-specified model, the model fit was not significantly better than the initial model (x^2/df = 1.28, RMSEA = .02, SRMR = .05, GFI = .95, CFI = .98, NNFI = .97). However, the weak factor loading of the item suggested that the item did not align well with the other three indicators that measured the relaxation outcomes. As well, the substantive meaning of "I learn things in my leisure activities simply because I like learning them" does not seem to effectively reflect gratification derived from relaxation.

Table 1. Descriptive Statistics of LSS Items

No.	Item	Mean	SD	Skewness (SE)	Kurtosis (SE)
I1	My leisure activities are interesting to me	3.76	.72	-.68(.11)	.80(.23)
I2	My leisure activities give me self-confidence	3.53	.79	-.41(.11)	-.07(.23)
I3	My leisure activities give me a sense of accomplishment	3.38	.87	-.04(.11)	-.54(.23)
I4	I use many different skills and abilities in my leisure activities	3.37	.84	-.27(.11)	-.37(.23)
I5	My leisure activities increase my knowledge about things around me	3.76	.73	-.70(.11)	.73(.23)
I6	My leisure activities provide opportunities to try new things	3.65	.78	-.56(.11)	.09(.23)
I7	My leisure activities help me to learn about myself	3.51	.77	-.32(.11)	-.21(.23)
I8	My leisure activities helps me to learn about other people	3.70	.77	-.67(.11)	.19(.23)
I9	I have social interactions with others through leisure activities	3.78	.80	-.84(.11)	.72(.23)
I10	My leisure activities have helped me to develop close relationships with others	3.52	.88	-.47(.11)	-.40(.23)
I11	The people I meet in my leisure activities are friendly	3.58	.77	-.47(.11)	-.01(.23)
I12	I associate with people in my free time who enjoy doing leisure activities a great deal	3.51	.87	-.52(.11)	-.08(.23)
I13	My leisure activities help me to relax	4.07	.62	-.83(.11)	2.47(.23)
I14	My leisure activities help relieve stress	4.02	.66	-.67(.11)	1.39(.23)
I15	My leisure activities contribute to my emotional well being	3.97	.65	-.75(.11)	1.65(.23)
I16	I engage in leisure activities simply because I like doing them	3.79	.75	-.80(.11)	.83(.23)
I17	My leisure activities are physically challenging	3.21	.98	-.25(.11)	-.78(.23)
I18	I do leisure activities which develop my physical fitness	3.56	.97	-.68(.11)	-.13 (.23)
I19	I do leisure activities which restore me physically	3.48	.96	-.69(.11)	-.25(.23)
I20	My leisure activities help me to stay healthy	3.83	.83	1.13(.11)	1.59(.23)
I21	The areas or places where I engage in my leisure activities are fresh and clean	3.83	.67	-.69(.11)	1.58 (.23)
I22	The areas or places where I engage in my leisure activities are interesting	3.54	.75	-.51(.11)	.29(.23)
I23	The areas or places where I engage in my leisure activities are beautiful	3.66	.72	-.85(.11)	1.23(.23)
I24	The areas or places where I engage in leisure activities are well designed	3.62	.73	-.75(.11)	.94(.23)

The factor loadings between the satisfaction domains and the higher order construct of Leisure Satisfaction (LS) ranged from .38 to .96. The lowest coefficient (.38) occurred between the Environment domain and LS. The highest coefficients were the Educational domain (.96) and the Social domain (.84) on LS. All associated t-values of the coefficients were significant at the .05 level. The R^2 values associated with each domain were: Psychological R^2 = .62, Education R^2 = .91, Social R^2 = .70, Relaxation R^2 = .23, Physiological R^2 = .23, and Environmental R^2 = .14

Having established the structural validity of the LSS, the Cronbach's alpha reliability coefficients of the sub-scales and the total scale were also calculated. The coefficients for the six domains were: Psychological = .86, Educational = .82, Social = .80, Relaxation = .76, Physiological = .89, Environmental = .88 and for the full scale, the coefficient was .91. These coefficients provided further support for the quality of the LSS.

Conclusion

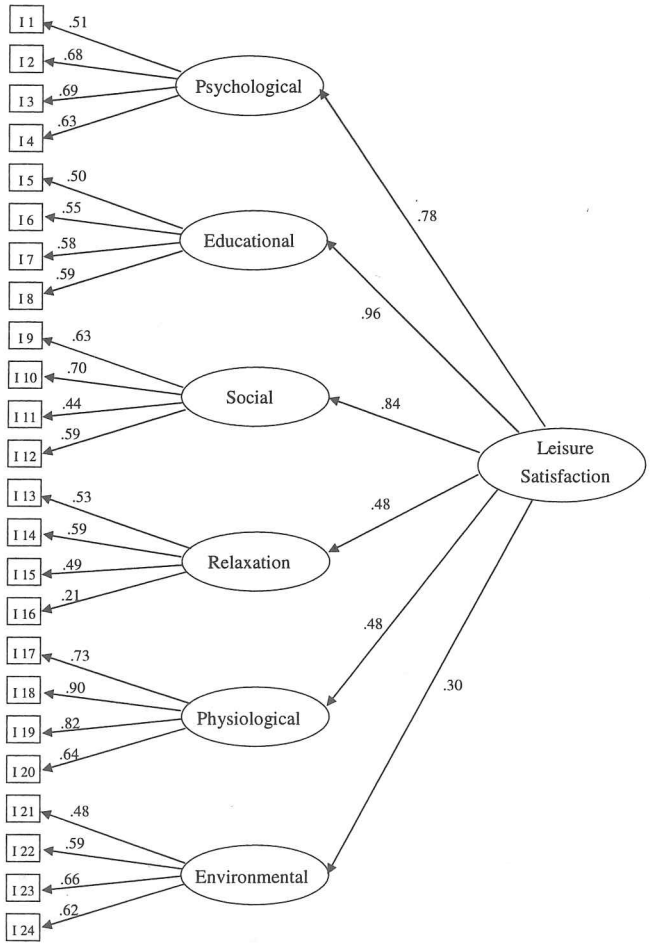
The findings of the present study indicated that the six-factor structure of leisure satisfaction proposed by Beard and Ragheb (1980) was a reasonable representation of the cognitive profiles associated with leisure satisfaction of matured and older Chinese in Hong Kong. However, the item "I learn things in my leisure activities simply because I like learning them" has a very weak factor loading on the Relaxational Satisfaction factor and it does not seem to be an effective measure of individuals' satisfaction of relaxation derived from leisure engagement.

Amongst the six dimensions of leisure satisfaction, Environmental Satisfaction has the smallest contribution in explaining leisure satisfaction of matured and older Chinese adults. The strongest components that reflect leisure satisfaction of this population group were Educational and Social Satisfaction.

One limitation of the present study is the generalizability of the findings as convenience sampling was used to recruit participants and the sample was limited to matured adults. More research into the leisure satisfaction of other population groups will expand our understanding of individuals' cognitive profiles associated with leisure satisfaction.

In comparison with previous findings regarding the application of LSS in other cultures, such as that of Korean and French (e.g., Lysyk et al. 2002; Won, 2000), the scale and the proposed leisure satisfaction dimensions seem to be more relevant when applied to matured Chinese in Hong Kong. The scale is therefore suitable for use in examining the nature and influence of leisure satisfaction of Hong Kong adults, and possibly adults in other Chinese societies as well.

Figure 1. Six-Factor Model of Leisure Satisfaction.



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