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### Leisure Constraints in Six Chinese Cities

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# Leisure Constraints in Six Chinese Cities

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*The purpose of this study is to describe leisure constraints as perceived by residents of the Chinese cities Beijing, Shanghai, Hangzhou, Qingdao, Chengdu, and Shenzhen. Rather than relying on lists of leisure constraints developed in other contexts, we used the common ethnographic technique of free listing, which allows informants to indicate what they perceive as constraints on their leisure. A second sample of informants rated the importance of 37 constraints determined through the free listing procedure. Constraints in these cities can be categorized, based on their perceived importance, into eight distinct types. These relate to several demographic and sociographic variables.*

**Keywords** China, ethnography, leisure constraints

## Introduction

The study of leisure constraints, their nature, and how individuals deal with them has developed into an important subfield in leisure studies over the past two-plus decades. However, most research that addresses multiple leisure constraints relies on lists developed in, and borrowed from, earlier studies rather than being developed in the context in which they are then used. Moreover, the samples from which these lists are derived have consisted largely of people from what Henrich, Heine, and Norenzayan (2010) have called “Western, Educated, Industrialized, Rich, and Democratic” societies to which they assigned the acronym “WEIRD” (p. 61). Henrich et al. claim that, rather than being representative of humans, WEIRD research subjects are often “particularly unusual compared with the rest of the species—frequent outliers” and that “members of WEIRD societies, including young children, are among the least representative populations one could find for generalizing about humans” (p. 61). Therefore, because so many lists were derived outside of the cultural contexts in which they were then used, as well as Henrich et al.’s

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concern over sampling, we suggest that leisure constraints research requires considerably more cross-cultural, descriptive, and comparative research before truly valid generalization can begin.

Many research methods textbook authors (e.g., Bailey, 2007) and common sense indicate that any phenomenon under study should be described as clearly, accurately, and as completely as possible prior to efforts at explanation and prediction. As Weller and Romney (1988, p. 9) point out:

... the first step in any study is to obtain a clear understanding of the definition and boundaries of what is being studied. ... there is an implicit assumption that the researcher is interested in what the respondents think about “something.” For convenience we call the “something” a semantic or cultural domain. The semantic or cultural domain is simply the subject matter of interest, a set of related items. Examples of domains that have been studied include color terms, kinship terms, diseases, plant terms, animal terms, airplane piloting errors, kinds of pain, and characteristics of infant feeding methods. The concept of a domain is a very general one and may include almost any coherently defined subject matter.

Our primary intent here is to describe because we believe that improved description is crucial for the advancement of theory. We posit that “leisure constraints” constitute a semantic or cultural domain, that is, a set of related items or ideas that is understood by and of consequence to members of particular social groups. However, should it be expected that the same constraints, although perhaps differing in intensity, are characteristic of everyone, everywhere? We are concerned that too little descriptive, ethnographic research has been conducted on leisure constraints, especially in non-Western settings, to properly support some of the more elaborate hypothesis testing done in recent years (see, e.g., Li, 2010; Ricci Uvinha, 2010; Roberts, 2010; Samdahl, 2010; Sivan, 2010). Moreover, while time and money, for example, are surely important considerations in many leisure decisions, does it make sense to ask informants to rate their valence without regard to context? As Godbey, Crawford, and Shen (2010) note, “it would be naïve ... to expect that all individuals—in all social, cultural, and historical contexts—would experience the same set of constraints and perceive each of them to have the same importance or strength” (p. 119). It may even be possible that constraints can occur in some social and cultural settings that are irrelevant or even inconceivable in others. Along with Godbey et al., we suggest that the one-size-fits-all approach common in leisure constraints research can be refined.

In their recent review of constraints theory and research, Godbey et al. (2010) state that “measurement development will be a critically important area for future research (e.g., developing a constraint item pool and investigating the second order structure of leisure constraints)” (p. 127). While we strongly concur with the need for improved measurement, we are less confident regarding the development and use of a standardized pool of constraints at this time because we fear that the ethnographic development of current constraint lists is inadequate. Therefore, we question the validity of constraints lists derived from studies in WEIRD societies when applied in other cultural contexts and advocate the development and use of lists of constraints derived from informant-provided data.

For this study, we developed a pool of leisure constraints in five large Chinese cities using free listing, a technique commonly used by cognitively oriented anthropologists, linguists, and psychologists that permits informants to define the content of cultural or cognitive domains (e.g., Quinlan, 2005; Weller & Romney, 1988). Because informants themselves provide the items that compose the domain in question, it is less likely that some may be irrelevant and/or meaningless to them.

First, we are interested in what constraints our informants indicate to be important in their lives. Second, we examine how differences in these constraints relate to other variables, including city of residence and demographics, such as gender, age, income, education, and marital status.

### **Previous Research on Leisure Constraints**

Jackson (1988) defined leisure constraints as factors “that inhibit people’s ability to participate in leisure activities, to spend more time doing so, to take advantage of leisure services or to achieve a desired level of satisfaction” (p. 203). Godbey et al. (2010) provide an excellent summary of research on leisure constraints over the past 25 years or so, and we will not repeat what they covered. However, we will review the manner in which lists of leisure constraints have been developed in the past studies as ours differs. We reviewed 73 publications<sup>1</sup> that develop and/or use lists of leisure constraints. These do not nearly exhaust the number of such studies in the literature as we examined only nine dealing with travel constraints and only 18 published in languages other than English. Nevertheless, we feel that they represent the corpus of papers on leisure constraints published since 1980.

#### *Studies Using Lists of Leisure Constraints*

The systematic study of constraints, barriers, and other concepts used to describe obstacles to leisure date largely to the last quarter of the 20th century. Early studies (e.g., Romsa & Hoffman, 1980; Francken & van Raaij, 1981; Jackson, 1983; Searle & Jackson, 1985) commonly used the term “barriers” when referring to factors that result in nonparticipation in recreational activities. More recent research has largely replaced barriers with “constraints,” regarded by many as a more inclusive term (Crawford & Godbey, 1987; Jackson, 1991). At the same time, “recreation” has generally been replaced by “leisure,” again regarded as a more inclusive term (Jackson, 1991). For brevity and simplicity we will refer to both early recreation barriers studies as well as later work as research on leisure constraints.

Of the 73 publications we examined, 59 used lists of constraints in surveys where respondents were asked to indicate, most often on 5-point Likert-type scales, the degree to which they agreed that the items are constraints or the items’ level of intensity as constraints. In these studies, the number of items on lists ranged from as few as four (Romsa & Hoffman, 1980) to as many as 32 (Henderson, Stalnaker, & Taylor, 1988; Raymore, Godbey, Crawford, & Von Eye, 1993; Jackson & Rucks, 1995). Of the 59, 33 used items taken from previous studies. One (Hultsman, 1993b) used items from earlier studies in addition to items from previous research by the author. Five publications (McGuire, 1984; Searle & Jackson, 1985; Kay & Jackson, 1991; Stodolska, 1998; Liechty, Freeman, & Zabriskie, 2006) used items from previous studies plus one or more from informant interview data. Three publications (Romsa & Hoffman; Francken & van Raaij, 1981; Hung & Petrick, 2010) used items developed on the basis of theory, three (Walker, Jackson, & Deng, 2007, 2008; Son & Yarnal, 2011) used a combination of theory and previous studies for item development, two (Boothby, Tungatt, & Townsend, 1981; Li & Chick, 2006) used informant-supplied data only and one was based on participant-observation (Roberts & Chick, 1984). When using lists of items from previous studies, researchers sometimes modified them to fit the context of their project. Alternatively, researchers occasionally retained borrowed items in

<sup>1</sup>A complete list of these references is available from the first author.

their original form and added context-specific items. In neither of these cases, however, did researchers solicit constraint items directly from informants.

The authors of 10 studies provided no information on how they determined the lists of constraints they used, although Hultsman (1993a) used the items derived from her own earlier study (Hultsman, 1992). Similarly, Raymore, Godbey, and Crawford (1994) used data from Raymore et al. (1993). Petrick, Backman, Bixler, and Norman (2001) did not indicate how they selected their 10 items other than to say they were specific to golf.

Ten of the 73 studies<sup>2</sup> involved interviews and/or focus groups. In these, all constraints reported were derived from informant-supplied information with one exception. In that case (Jun & Kyle, 2011), items from previous research were added to those supplied by informants. Finally, in the four studies conducted in non-WEIRD contexts, constraint items were developed from previous studies in one (Arab-Moghaddam, Henderson, & Sheikholeslami, 2007), from previous studies plus interviews with informants in another (Crawford & Stodolska, 2008) and from interviews only in the other two (Henderson & Ainsworth, 2003; Livengood & Stodolska, 2004). In the interview/focus group based studies, the number of constraints reported ranged from 2 to 12.

Time and money were ubiquitous in the lists, regardless of how they were developed. Obligations to others, especially children and other family members, were more common in interview studies, but that may be because many of these obligations were directed at women. Nevertheless, we cannot claim that different formats yielded systematic differences in constraint lists. We believe that a careful comparison of item development methods would be fruitful, especially if more studies involving non-WEIRD societies as well as studies of subcultural groups in North America were available.

### *Leisure Constraints Research in China*

In their 2006 article *Review of Leisure Constraints Study*, Chinese tourism researchers Wang and Huang (2006) reviewed constraints research in China and North America. Although they stated that leisure constraints research began in China in the early 1990s, there are few publications on the topic. Leisure constraints are generally referred to as “restrictive factors” in Chinese research (e.g., Huang, 2009; Liu & Chai, 2001; Wu & Dang, 2004). For example, Sun (2008) examined daily leisure sport participation of Uygur, Kyrgyz, and Tajik women in China’s western Xinjiang Uyghur Autonomous Region, including constraints to participation. In one deviation from the generally atheoretical character of these studies, Qiu (2007) claimed that cultural factors, including knowledge, religion, and custom, provide the background for intrapersonal, interpersonal, and structural constraints and, therefore, must be considered prior to them.

In 2009, the book *Constraints to Leisure*, edited by Jackson and originally published in the United States in 2005, was translated into Chinese and published by the Zhejiang University Press. This provided new theory and methods for Chinese researchers to study constraints. Shi and Li (2010), for example, conducted a study of leisure constraints among older people in three locations in Beijing. While the authors claimed that their study was exploratory and that more research is needed, papers such as these provide important foundational work for the study of leisure constraints in China.

Studies by Walker et al. (2007, 2008) represent the most sophisticated theoretical and methodological work on leisure constraints in China published to date in English. However, their samples from China and Canada were composed entirely of university students. While they found differences in leisure constraints between these two groups,

<sup>2</sup>A list of these 10 references is available from the first author.

generalizations based on college students should be viewed with extreme caution (Henrich et al., 2010).

In sum, research on leisure constraints in China is in its infancy. We believe that more descriptive research, as in several of the papers cited above, is sorely needed before launching into extensive hypothesis testing.

### ***Purposes of the Research***

The primary purpose of this paper is to provide a description of the leisure constraints that individuals in six large cities in China recognize and perceive to be important in their lives. We are also interested in how informants categorize these constraints and how demographic variables, including city of residence, gender, age, marital status, income, and level of education relate to constraint categories.

### **Methods**

Data for this study come from two phases: the free listing procedure mentioned above and a general survey based on the results of the free listing. The initial phase of data collection took place in five large cities in China. These included Beijing, Chengdu Hangzhou, Qingdao, and Shanghai. Shenzhen was included in the second round of the study in order to provide a data collection site in southern China. Locations and 2010 population estimates for these cities are given in Table 1.

#### ***Free Listing Data Collection***

Free listing is usually regarded as a first step in defining a cultural domain and as the most useful general method to ensure that the concepts in domains are culturally relevant (Weller & Romney, 1988). Free listing is similar to open-ended questions which can also be used to identify cultural domains and gather data quickly. In free listing, researchers typically ask informants to list all of the items that they can think of that are members of a particular domain. For example, informants might be asked to list all of the kinds of birds they can think of, all of the kinds of fruits they can think of, or all of the kinds of activities they can think of that people do during their free time. Free listing results can be then used in other research methods such as surveys.

In this study, we used free listing to collect data on leisure activities and leisure constraints in five Chinese cities. Because the Chinese term 休闲 (*Xiu Xian*) is often translated as equivalent to the English word "leisure," we used it when we asked our

**TABLE 1** Locations and Populations\* of Cities Surveyed

City	Location	2010 Population (millions)
Shanghai	Eastern coast on estuary of Yangtze River	15.79
Beijing	Northeastern China	11.11
Shenzhen	South China, north of Hong Kong	8.11
Chengdu	West central China	4.27
Hangzhou	Eastern China on Hangzhou Bay, an inlet of the Yellow Sea	3.27
Qingdao	Eastern Coast on the Yellow Sea	2.98

\*Source: Nations Online (2011), data from the United Nations Urban Agglomeration.

participants about leisure. In Chinese, 休 (*Xiu*) means physical relaxation and 闲 (*Xian*) refers to a physical opening or space, or an interlude in time (Liu, Yeh, Chick, & Zinn, 2008). We then used these data in the construction of a survey for the second round of data collection to be conducted in the original five cities plus Shenzhen. Researchers from the Asia Pacific Center for the Study of Leisure (APCL) in Hangzhou, China, conducted face-to-face free listing tasks in each of the five cities. Informants were not randomly selected but were intercepted at locations including college campuses, residential areas, parks, bus stops, train stops, and shopping areas. Bus and train stops, in particular, are excellent sites for intercept data collection because they are ubiquitous in Chinese cities, unlike most Western cities. Intercept samples are a viable alternative to the traditional mail-in surveys (Miller, Wilder, Stillman, & Becker, 1997).

Interviewers from the APCL attempted to gather free listing data from approximately 30 individuals, about half male and half female, all 18 years of age and older, from each site. First, to familiarize informants with the free listing procedure, they were asked to list all of the kinds of animals, such as cats, dogs, horses, pigs, and so on, that they could in a short period of time. Next, they were asked to list activities in which they participate during their leisure or free time. This would include things such as reading, watching TV, or going to a park. Finally, they were asked to list anything that constrains their leisure participation. Lists were collected, in Mandarin, from 41 (20 male, 21 female) individuals in Beijing, 23 (11 male, 12 female) in Hangzhou, 41 (20 male, 21 female) in Chengdu, 26 (11 male, 15 female) in Shanghai, and 45 (13 male, 32 female) in Qingdao. The 176 informants provided initial totals of 95 leisure activities and 55 leisure constraints.

### **Survey Data Collection**

We used the information from the free listing phase of the study in order to develop a survey to be distributed to larger samples in each of the six cities. In it, we asked informants to indicate whether or not they participated in leisure activities on the list (measured as Yes or No), the frequency of their participation (measured as “occasionally” or “frequently”), and how important each of the leisure activities and leisure constraints was to them (both measured on 1–5 Likert-type scales, ranging from extremely unimportant to extremely important). For example, for the activity “watching TV,” informants were asked to check whether or not they participated in it. If they participated, they were asked whether they participated occasionally or frequently and the importance of the activity to them. For the constraint “lack of time,” informants were asked to rate its importance, from 1 (extremely unimportant) to 5 (extremely important), to them. Finally, informants were asked to report socio-demographic information including their occupation, gender, level of school completed, income, age, and marital status. The city in which the survey was distributed was noted, as well. In this paper, we will focus on the reported importance of leisure constraints and demographic information across the six cities.

A total of 772 informants completed surveys in Beijing, Shanghai, Chengdu, Hangzhou, Qingdao, and Shenzhen. APCL researchers again gathered data from individuals intercepted at public locations. Approximately 120 surveys were collected in each city with nearly equal numbers of males and females. Approximately half of the informants were between the ages of 18 and 30 years and half over the age of 30. Informant socio-demographic information from each of the cities is shown in Table 2.

With the exception of education level, these figures are similar to those reported for the cities (*China Statistic Yearbook, 2005; Bulletin of Beijing 2005 Census, 2006; Bulletin of Shanghai 2005 Census, 2006; Bulletin of Hangzhou 2005 Census, 2006; Bulletin of*

**TABLE 2** Frequencies of Socio-demographic Characteristics of the Survey Sample<sup>1</sup>

	Hangzhou	Chengdu	Beijing	Shanghai	Qingdao	Shenzhen	Total	%
<b>Gender</b>								
Male	58	62	58	64	57	70	369	49.6
Female	61	51	68	72	61	58	371	50.4
<b>Age</b>								
20–25	26	39	24	22	48	34	193	25.1
26–30	42	34	52	37	34	28	212	27.6
31–35	23	20	29	22	20	31	145	18.9
>35	29	37	21	54	40	38	219	28.4
<b>Income<sup>2</sup></b>								
<1000	2	29	4	7	23	5	70	9.2
1000–3000	45	44	37	39	54	22	241	31.6
3001–5000	40	26	28	31	27	35	187	24.5
5001–7000	22	18	25	17	15	20	117	15.4
7001–13,000	8	9	28	20	5	23	93	12.2
>13,000	3	2	4	17	2	26	55	7.1
<b>Education</b>								
High School or Less	17	24	16	46	54	19	176	23.1
College Degree	86	75	91	75	64	96	487	63.8
Graduate Degree	15	30	18	15	6	16	100	13.1
<b>Marital Status<sup>3</sup></b>								
Single	59	64	65	44	60	60	351	45.7
Married	61	65	61	91	66	66	417	54.3

<sup>1</sup>Row and column totals do not equal 772 due to missing data.

<sup>2</sup>Income is in yuan, the base unit of Renminbi, the official currency of the People's Republic of China. One yuan was worth approximately .125 U.S. dollar at the time the data were collected.

<sup>3</sup>Small numbers of divorced and widowed individuals responded to the survey. They were typically older informants, as might be anticipated. We did not include them in the analyses below.

*Chengdu 2005 Census, 2006; Bulletin of Qingdao 2005 Census, 2006; Bulletin of Shenzhen 2005 Census 2006*). However, our informants had far more education than is the norm for urban Chinese and for China as a whole. We have no information on the survey response rate so it is possible that bias may have been introduced due to both of these factors.

### Data Analyses

*Free listing data.* Prior to use in survey development, we cleaned the free listing data because informants sometimes used different words or short phrases to describe the same activities or constraints. For example, we grouped items such as “lack of partners” and “no partners” as one rather than two constraints. However, we were not able to clearly pinpoint the meaning of some leisure activities or leisure constraints listed. For example, Chinese commonly use “*Da qiu*” (in Mandarin) to describe “playing ball,” one of the most common activities listed. But this could refer to basketball or soccer or any other game using a ball.

So, ambiguous items such as this were eliminated. After the data cleaning, we retained 89 leisure activities and 37 leisure constraints.

*Survey data.* In order to reduce the number of constraints and, second, create variables for further analyses based on the reduced number of constraints, we factor analyzed the importance ratings of the 37 constraint items. We ran six analyses using PASW Statistics 18, two each using maximum likelihood factor analysis, principal axis factor analysis, and principal components analysis. For each of the three extraction methods, we used varimax (orthogonal) and direct oblimin (oblique) rotations and compared the results in terms of interpretability. All of the analyses produced essentially identical results. Therefore, we report here the results of the principal axis extraction with direct oblimin rotation.

We then calculated factor scores for each of the factors retained from the factor analysis. Informants received a score on each of the eight factors that we then used in analyses involving their scores on other variables. In keeping with our interest in data description, we first present summaries of demographic differences among informants. Second, we determine if city of residence, income, age, level of education, gender, and marital status level are related to the values of the factors as well as the strength of that relationship. To do so, we use one-way and two-way analyses of variance, t-tests, and measures of effect size.

## Results

### *Free Listing Results*

As indicated above, 176 informants in five cities free listed leisure activities and leisure constraints. With respect to constraints, lack of time was listed 91 times and lack of money 83 times but after those the frequency with which items were mentioned declined dramatically. Only 23 of the 37 constraints were listed by two or more informants (see Table 3 for the final list of constraints used).

### *Survey Results of the Demographic Data*

Seven hundred seventy-two informants completed surveys in six large cities in China. Because of missing data, each of our analyses is based on slightly different numbers of individuals. However, given the relatively large sample size and the lack of any evidence that missing data are systematically patterned, any effects from the different sample sizes are unlikely to be consequential.

First, we conducted a series of cross-tabulations in order to better understand relationships among the demographic variables shown in Table 2. More females than males were in the 20–25 age range, while more males than females were older than 26, but the overall relationship is between gender and age is weak (Cramér's  $V = .14$ , Somers'  $d = .11$ ,  $n = 737$ ). While more females than males had college degrees, more males than females reported having graduate degrees. Regardless, the relationship between gender and education is weak (Cramér's  $V = .18$ , Somers'  $d = .13$  with education dependent,  $n = 731$ ). Males had somewhat higher incomes than females (Cramér's  $V = .18$ , Somers'  $d = .12$ , with income dependent,  $n = 730$ ) but this relationship is also very weak. Gender and marital status were unrelated (Cramér's  $V = .003$ ,  $n = 706$ ).

There was a weak negative relationship between age and education level (Somers'  $d = -.06$ ,  $\gamma = -.10$ ,  $n = 760$ ) but older informants had higher incomes than younger ones (Somers'  $d = .30$  with income dependent,  $\gamma = .37$ ,  $n = 759$ ), as might be expected. Older individuals were much more likely to be married than younger ones (Somers'  $d = .652$ ,  $\gamma = .93$ ,  $n = 733$ ). Education level and income were modestly, and positively, related (Somers'  $d = .20$  with income dependent,  $\gamma = .25$ ). Education level and marital

**TABLE 3** Free Listing Frequencies for Leisure Constraints in Six Chinese Cities

Constraints	Hangzhou	Chengdu	Beijing	Shanghai	Qingdao	Totals
Lack of time	15	21	22	7	26	91
Lack of money	10	11	17	16	29	83
Busy with work	6	11	6	4	3	30
Lack of facilities or space	5	3	5	2	11	26
No partners	3	2	6		10	21
Lack of family support	1	5	5	1	2	14
Fees too high		2	4		2	8
Busy with child care	2	1	1	3		7
Busy with housework		1		4	2	7
Lack of transportation	3	3		1		7
Lack of skill	1	2			3	6
Income too low	4		1			5
Crowding issues			3			3
Economic pressures			2		1	3
Lack of energy for leisure		3				3
No vehicle			3			3
Poor service quality	1	2				3
Traffic conditions			2		1	3
Busy caring for elders				2		2
Lack of leisure consciousness	2					2
Restricted by family		1		1		2
Social/cultural environment		1	1			2
Too busy studying			1		1	2
Lack of driving experience					1	1
Lack of group activities					1	1
Lack of initiative					1	1
Lack of interest		1				1
Lack of leisure information			1			1
Life pressures		1				1
Lifestyle issues	1					1
No steady job			1			1
No vacation			1			1
Not in the mood				1		1
Personal stress	1					1
Bureaucracy/corruption		1				1
Safety issues			1			1
Self-factors*					1	1

\*"Self-factors" is a direct translation from Chinese to English. In Chinese, self-factors are psychologically important issues that are related to things such as lack of interest and lack of initiative but are broader in scope.

status were weakly related (Somers'd =  $-.07$ , gamma =  $-.14$ ,  $n = 727$ ), with those married having slightly less education than those who were single.

Next, we were interested in whether there was a relationship between the demographics and the city in which the data were collected. A cross-tabulation of gender by city indicated

no relationship (Cramér's  $V = .070$ ,  $p = .598$ ). The relationship between marital status and city of residence was weak (Cramér's  $V = .121$ ,  $p = .058$ ).

Income and city of residence (Cramér's  $V = .206$ ,  $p = .000$ ,  $\eta^2 = .361$  with income dependent) were related. Another way of examining the data is to use a Kruskal-Wallis Test, a nonparametric analog of independent group analysis of variance that tests the equality of population medians. With income level as the outcome variable and city of residence as the group variable, chi-square = 89.95 (5) and  $p = .000$ . Shenzhen had the highest median income and Chengdu the lowest.

The sample from Shanghai was skewed toward the older end while age distributed fairly equally across the six income categories in the other cities. A Kruskal-Wallis test with age as the outcome variable is only barely significant (chi square of 11.67 (5),  $p = .04$ ). Educational attainment was unevenly distributed among the cities (Cramér's  $V = .184$ ,  $p = .000$ , Kruskal-Wallis chi-square = 40.87 (5),  $p = .000$ ) with the sample from Chengdu having nearly twice as many individuals with some graduate school compared with the other cities while the sample from Qingdao had nearly twice as many individuals in the lowest educational category compared with the other cities.

### ***Factor Analyses of the Leisure Constraints Data***

We conducted exploratory factor analyses on informant ratings of 37 leisure constraints in terms of their perceived importance. Listwise deletion of missing cases resulted in analyses based on 589 cases.

We eliminated six items, including "too busy studying," "no steady job," "lack of energy for leisure," "lack of leisure information," "bureaucracy/corruption," and "traffic conditions," from further analyses as they had factor loadings of less than .4. Factor analysis of the remaining 31 items resulted in eight factors. We retained items with factor loadings above .5 that had no substantial (.3 or greater) cross loadings. The KMO Measure of Sampling Adequacy equaled .907 and Bartlett's Test of Sphericity (approximate chi-square = 9536.74,  $df = 496$ ,  $p = .000$ ) was significant. These results indicate that factor analysis is appropriate with these data (Tabachnick & Fidell, 2007). The factor pattern matrix and Cronbach's alphas for each factor is shown in Table 4.

Rather than present tables of factor scores, which are standardized and therefore not interpretable in the original units of measurement, we computed sums across the variables in each factor and divided by the number of items in each. These are shown in Table 5 along with summary statistics for the eight factors.

We were interested in determining whether there were differences among the eight factors with respect to the six cities. To this end, we conducted one-way analyses of variance with the six cities as independent variables and each of the eight factor scores as an outcome variable. Again, our primary interest is not in the statistical significance of possible differences, which are inferential with respect to population parameters, but rather with the effect size of the independent variables. We report eta squared ( $\eta^2$ ), a measure of the variance accounted for by the main effects, interactions, and error in each analysis of variance (Tabachnick & Fidell, 2007). It is equal to the sum of squares of the effect ( $SS_{\text{effect}}$ ) divided by the total sum of squares ( $SS_{\text{total}}$ ) and can be thought of as the correlation between the effect and the dependent variable. We were also interested in the effects of age, income, and education on the eight factors and conducted one-way analyses of variance using each of these as grouping variables. Finally, we examined the effects of gender and marital status on the eight factors using t-tests for independent samples (with unequal variances). We used Cohen's  $d$  (Cohen, 1988) to measure effect size for the t-tests. Cohen's  $d$  is calculated by dividing the difference between the two sample means by the

**TABLE 4** Factor Pattern Matrix for Leisure Constraints in Six Chinese Cities

Constraints	Factors						
	Personal Issues	Lack of Money	Family Issues	Service Quality	Lack of Time	Transportation	Stress Lifestyle
Lack of interest	.82						
Lack of initiative	.77						
Not in the mood	.65						
No leisure concept	.63						
No family support	.49						
Self-factors	.48						
Lack of money		.88					
Income too low		.84					
Fees too high		.83					
Busy with child care		.90					
Busy with housework			.74				
Busy caring for elders			.67				
Restricted by family			.59				
Poor service quality				.89			
Lack of facilities or space				.82			
Crowding issues				.73			
Safety issues at leisure sites				.53			
Lack of time					.73		
Busy with job					.71		
No vacation					.48		
No vehicle						.69	

(Continued to next page)

**TABLE 4** Factor Pattern Matrix for Leisure Constraints in Six Chinese Cities (*Continue*)

Constraints	Factors						
	Personal Issues	Lack of Money	Family Issues	Service Quality	Lack of Time	Transportation	Stress Lifestyle
Lack of driving experience						.67	
Lack of transportation						.66	
Personal stress							-.65
Life pressure							-.61
Economic pressures							-.47
Lifestyle issues							.73
Lack of group activities							.72
Social/cultural environment							.66
No partners							.55
Lack of skill							.47
Eigenvalue	9.04	3.22	2.33	1.88	1.53	1.23	1.11
Percent of variance	29.14	10.40	7.53	6.07	4.92	3.96	3.59
Cumulative variance	29.14	39.54	47.07	53.14	58.06	62.02	65.61
Cronbach's alpha	.85	.88	.82	.87	.70	.77	.74

**TABLE 5** Summary Statistics for Eight Leisure Constraint Factors

Factor	Number of Cases	Mean	Standard Deviation
Lack of time	698	3.51	1.10
Lack of money	689	3.27	1.27
Too much stress	682	2.85	1.12
Poor service quality	683	2.65	1.15
Lack of transportation	688	2.50	1.19
Lifestyle issues	676	2.45	0.96
Personal issues	661	2.30	0.99
Family issues	673	2.26	1.09

standard deviation. Cohen originally assumed that the standard deviations for independent samples would be equal so either could be used. Using the pooled standard deviation is most common with two independent samples. Unlike  $h^2$ , Cohen's  $d$  ranges from zero to infinity<sup>3</sup> with values between 0 and .2 indicating a small effect, those of .5 a moderate effect, and those of .8 and above, a large effect (Cohen, 1988).

One-way analyses of variance indicated that city of residence had significant but weak main effects on the Personal Constraints (Factor 1;  $F(5, 587) = 3.533, p = .004, h^2 = .029$ ), the Time Constraints (Factor 5;  $F(5, 587) = 2.641, p = .023, h^2 = .022$ ), the Transportation Constraints (Factor 6;  $F(5, 587) = 3.286, p = .006, h^2 = .027$ ), and the Lifestyle Constraints (Factor 8;  $F(5, 587) = 2.671, p = .021, h^2 = .022$ ). Eta-squared can be thought of as an analog to  $r^2$  so, at best, city accounts for only 2.9% of the variance in Personal Constraints, for example. With a Bonferroni correction (where  $p$  must be equal to or less than .006), only Personal Constraints and Transportation Constraints are significant. We conclude that city of residence has little effect on the perceived importance of leisure constraints by informants.

We conducted one-way analyses of variance with age as the group variable and each of the eight constraints factors as outcome variables. In this case, Lack of Money (Factor 2;  $F(3, 587) = 12.62, p = .000, h^2 = .061$ ), Family Issues (Factor 3;  $F(3, 587) = 15.05, p = .000, h^2 = .071$ ), Poor Service Quality (Factor 4;  $F(3, 587) = 3.17, p = .014, h^2 = .018$ ) Lack of Time (Factor 5;  $F(3, 587) = 7.32, p = .000, h^2 = .036$ ), and Lack of Transportation (Factor 6;  $F(3, 587) = 19.81, p = .000, h^2 = .092$ ) were significant. A Bonferroni correction eliminated Poor Service Quality. Age accounts for about 6% of the variance in Lack of Money, 7% in Family Issues, 3.6% in Lack of Time, and 9.2% in Lack of Transportation.

With income as the group variable, Lack of Money (Factor 2;  $F(5, 582) = 12.64, p = .000, h^2 = .121$ ), and Lack of Transportation (Factor 6;  $F(5, 582) = 9.00, p = .000, h^2 = .096$ ) were significant. Income accounts for about 12% of the variance in the Lack of Money factor and about 9.6% of the variance in the Lack of Transportation factor.

We conducted a one-way analysis of variance with education level as the grouping variable. There were no significant differences in any of the eight constraint factors based on level of education.

Next, we examined possible differences in the eight constraints factors depending on gender and marital status using  $t$ -tests. With gender as the group variable, Family Issues

<sup>3</sup>Technically, it ranges from negative infinity through zero to infinity. However, negative values of  $d$  occur when the value of  $t$  is negative and this depends only on the direction of the difference between the means of the two samples.

(Factor 3) differed ( $t(551) = 4.15, p = .000$ ) with females. Cohen's  $d$  equals .36, a weak to moderate effect size. Using a Bonferroni correction, no other factors were significantly different based on gender (Transportation Issues came closest). Using marital status as the grouping variable, we found significant differences between married and single individuals in terms of Lack of Money (Factor 2) where  $t(569) = 5.54, p = .000$ , Cohen's  $d = .46$ , Family Issues (Factor 3) where  $t(572) = 7.54, p = .000$ , Cohen's  $d = .63$ , and Transportation Issues where  $t(562) = 5.68, p = .000$ , Cohen's  $d = .48$ .

## Discussion

The primary purpose of this study was to describe the domain of leisure constraints as perceived by a sample of residents of six large cities in China. Informants provided 37 leisure constraints via free listing. Of these, only the first six (Lack of Time, Lack of Money, Busy with Work, Lack of Facilities or Space, No Partners, and Lack of Family Support) were mentioned at least 10 times across the five cities. Only time and money were mentioned by more than 50% of respondents while about a third mentioned work.

With respect to sample demographics, our analyses suggest that the informants from the six cities were largely homogenous although income and educational attainment differed somewhat by city of residence. Exploratory factor analysis of the survey constraints data resulted in eight relatively distinct and conceptually clear constraint types. The first of these, which we have termed "personal," accounts for the largest percentage of the variance and closely resembles what Crawford and Godbey (1987) called "intrapersonal" constraints. Another (Factor 7), which we have termed "stress," could also be construed as intrapersonal. The second (Money), fourth (Service Quality), fifth (Time), and sixth (Transportation) each appear to be the sorts of constraints that Crawford and Godbey (1987) characterized as "structural." Finally, Factors 3 (Family Issues) and 8 (Lifestyle) could be subsumed under Crawford and Godbey's "interpersonal constraints" category. However, none of the factor analyses techniques we tried returned a three-factor solution composed of what were clearly structural, intrapersonal, and interpersonal constraints.

In common with most other constraints research, lack of time and lack of money emerged as the most critical constraints on leisure in both the free listing and the item rating data. Being busy with work, lack of partners, and family responsibilities were also important, as has been the case in numerous other studies (e.g., Kay & Jackson, 1991; Lee & Zhang, 2010; Mowen, Payne, & Scott, 2005; Nyaupane & Andereck, 2008). However, our informants were residents of major cities in China and substantially exceeded typical Chinese in terms of educational attainment. Because of these factors, sample members may resemble those in WEIRD samples (Henrich et al., 2010) more than would most other Chinese. It is possible that constraints faced by members of small town and rural communities in China would differ substantially from those listed and described as important by our informants, but this can only be confirmed or refuted by empirical research.

Members of self-sustaining food collecting and simple horticultural societies where money is less important, or even nonexistent, and free time more abundant than in large urban areas may exhibit even more varied hierarchies of leisure constraints. Johnson (1978), for example, compared time allocation between the Machiguenga, a small-scale hunting, food collecting, and horticultural society of the upper Amazon Basin of southeastern Peru, and the French. Machiguenga males had approximately 5.4 hours and Machiguenga females had approximately 5.1 hours more free time per day than their French counterparts. In a more recent study, Gurven and Kaplan (2006), again using a time allocation methodology, found that adult married male Machiguenga and Piro (also of the upper Amazon Basin) spent more time per day in leisure, which included idleness, socializing, playing games, and other

presumably nonproductive activities (388.8 and 408.6 minutes per day, respectively), than in work (203.5 and 347.9 minutes per day, respectively). Adult married female Machiguenga spent more time at leisure (347.4 minutes per day) than at work (244.8 minutes per day) while Piro women spent more time in work (442.9 minutes per day) than leisure (386.0 minutes per day). Chick and Shen (2011), using spot observation time allocation data from 12 small-scale communities, found that between the hours of 7 am and 6 pm adult males spent an average of 141.0 minutes in leisure (defined as idleness and recreation) and 325.5 minutes of work (defined as economically productive work plus household work) while women spent 133.6 minutes in leisure and 330.3 at work. The discrepancies in these figures appear to be the result of differences in groups' subsistence ecologies as well as differences in the ways in which researchers defined behavior categories. These studies hint that lack of time may be a less important leisure constraint in some societies.

Godbey et al. (2010) point out the problems of relating constraints to characteristics of the study population, the stage of participation in a leisure activity, and the fact that different constraints apply to different leisure activities. While the free listing we used in developing the list of constraints presented to informants in the six cities in China helps in terms of relating constraints to the study population, it does not address Godbey et al.'s (2010) second and third concerns. Jackson (1993), who looked at activity-specific constraints, recognized the last of these three concerns early on. Kay and Jackson (1991) saw the need to incorporate "... additional detail in the analysis of relationships between leisure participation and leisure constraints. For example, activities in which it is expensive to participate are more susceptible to financial constraints than those in which little or no direct cost is involved" (pp. 302–303). While Kay and Jackson found that lack of time is more important than lack of money to participating in sports, all sports are not created equal. The equipment for golf is usually more expensive than for tennis, for example. Moreover, public tennis courts are generally free to use while that cannot be said for golf courses. Golf usually involves more investment in terms of time as well. Indeed, most of the studies reviewed above are context-free and address leisure only at the conceptual level. A few deal with activity categories, such as outdoor recreation (e.g., Romsa & Hoffman, 1980; Johnson, Bowker, & Cordell, 2001), sport (e.g., Boothby et al., 1981; Alexandris & Carroll, 1999), or physically active recreation (e.g., Shaw, Bonen, & McCabe, 1991; Brown, Brown, Miller, & Hansen, 2001). Fewer still deal with specific activities, such as pool (Roberts & Chick, 1984), golf (Backman, 1991), whitewater rafting, canoeing, overnight horseback riding (Nyaupane, Morais, & Graefe, 2003), or cruising (Hung & Petrick, 2010). Finally, others address leisure constraints among specific groups of individuals, including those differentiated by class (e.g., Francken & van Raaij, 1981), women (e.g., Henderson et al., 1988; Jackson & Henderson, 1995; Shaw, 1994), adolescents (e.g., Hultsman, 1992, 1993a, 1993b), mentally challenged adults (Hawkins, Peng, Hsieh, & Eklund, 1999), and infrequent visitors to public parks in Northeast Ohio (Scott & Mowen, 2010). We feel that assessing population- and activity-specific constraints will spur major advances in leisure constraints theory.

Godbey et al. (2010) "acknowledge the merit of a localized approach in helping such research remain sensitive to the perceptions and experiences of research subjects and stay grounded to the phenomenon under investigation" (p. 115). Again, we agree. That is, there is a need for research on leisure constraints that includes people from disparate locations and cultures and who differ in terms of a variety of demographic characteristics, including gender, race, ethnicity, age, health status, marital status, residence (i.e., urban-rural), and socioeconomic status. Unfortunately, the use of participant-observation and other intensive ethnographic methods that would permit gathering in-depth data from a wide range of people who live in a wide range of settings is itself constrained by time and cost. However,

techniques, such as free listing or sentence-completion like that used by Boothby et al. (1981), directed at the constraints experienced in particular activities by particular groups of individuals, can be accomplished relatively quickly and at relatively low cost. The use of theory in constraint item development (e.g., Walker et al., 2007) is also important. Constraints derived using ethnographic methods and based in theory can then augment standardized constraint items. We believe that the result would be improved understanding of leisure constraints as they apply to people everywhere.

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