

Measurement Properties and Cross-Cultural Equivalence of Negotiation with Outdoor Recreation Constraints

An Exploratory Study

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Abstract

This study examined the measurement properties and cross-cultural equivalence of a constraints negotiation model in the context of outdoor recreation. A convenience sample of 263 U.S. and 537 Chinese university students provided data by completing questionnaires in English and Chinese, respectively. Multiple models were fitted using confirmatory factor analysis. A hypothesized six-factor first-order model did not fit the U.S. data, but a modified four-factor model achieved acceptable fit. A second-order negotiation measurement model fit the U.S. data, but failed the nested χ^2 tests. Results did not support conceptual invariance between the English and Chinese version of the scale, suggesting further inquiry is important before moving forward with its use cross-culturally. Findings and implications are discussed with future studies suggested.

Keywords: *Chinese; measurement invariance; second order model; tau-equivalence*

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Introduction

Constraints are a major focus of theoretical and empirical leisure study, evolving since the 1980s (Jackson, 2005; Godbey, Crawford, & Shen, 2010). The breadth of constraint research considers not only constraints, “factors assumed by researchers and/or perceived or experienced by individuals to limit the formation of leisure preferences and/or to inhibit or prohibit participation and enjoyment in leisure” (Jackson, 2000, p. 62), but also people’s effort to negotiate them. Following several qualitative studies that supported the idea of constraint negotiation (Henderson & Bialeschki, 1993; Henderson, Bedini, Hecht, & Schuler, 1995; Jackson & Rucks, 1995), Hubbard and Mannell (2001) proposed and tested relationships among constraint, negotiation, motivation, and participation and found negotiation and constraint influenced people’s participation independently and constraint increased negotiation. Since 2001, several studies have replicated the negotiation models with various activities, including those in outdoor recreation (White, 2008), physical activity (Loucks-Atkinson & Mannell, 2007; Son, Mowen, & Kersteter, 2008; Wilhelm Stanis, Schneider, Chavez, & Shinew, 2009a; Wilhelm Stanis, Schneider, & Russell, 2009b; Wilhelm Stanis, Schneider, Shinew, Chavez, & Vogel, 2009c; Ma, Tan, & Ma, 2012), cruising travel (Huang & Petrick, 2012), recreational golf (Jun & Kyler, 2011), celebrity fanning (Lee & Scott, 2009), as well as general leisure activities (Lyu, Oh, & Lee, 2013).

Although these model-based studies marked the development in understanding how negotiation associated with other constructs, there are at least two questions about the psychometric properties of negotiation measurement that remain unanswered. The first question is whether the measurement of negotiation follows a second-order model (Jackson, 2005). In a second-order model, dimensions of negotiation serve as first-order factors such as time management, which in turn serve as indicators of the single second-order factor negotiation. Testing a second-order negotiation model not only relates to the hierarchical structure of negotiation, but also pertains to a fundamental conceptual question. If negotiation exists as a cohesive latent construct, the second-order model of negotiation should be supported. However, few studies directly test this second-order model (White, 2008; Huang & Petrick, 2012; Ma et al., 2012). Rather, the majority of studies use aggregated subscale scores as indicators of negotiation (e.g., Hubbard & Mannell, 2001; Son et al., 2008). This use of subscale scores leads to a second question as to whether negotiation items equally load on the factor. If they load unequally on factors and subsequently are not tau-equivalent, using the mean-scale score could change the manifestation of the latent variable and lead to an invalid measurement of negotiation. Thus, a psychometric investigation into these two measurement questions will inform negotiation researchers’ measurement decisions.

Another question within negotiation research is how it applies across cultural groups. A few studies assessed constraints with different cultural groups such as Korean (Lyu et al., 2013), Japanese (Lee & Scott, 2009), and Taiwanese/Chinese (Walker, Jackson, & Deng, 2007; Ma et al., 2012). These projects used English-translated questionnaires and found similarities and differences between various culture groups. These non-U.S./Canada studies reflect a growing interest in both leisure constraint negotiation across cultural groups as well as an expanded understanding of negotiation. Despite the growing representation of diverse populations in leisure and leisure constraint negotiation research, comprehensive cross-cultural comparison studies are uncommon. The three aforementioned studies move leisure research forward but are limited in that they used a simple translated instrument. Comprehensive cross-cultural studies require established cross-cultural equivalence of the construct, which would ensure that any scale score differences are functions of the construct rather than systematic measurement bias due to trans-

lation (Budruk, 2010). Multigroup confirmatory factor analysis (CFA) is a well-developed method to test conceptual and metric equivalence (Shaffer & Riordan, 2003; Budruk, 2010; Casper, Bocarro, Kanters, & Floyd, 2011). To perform multigroup CFA, the same instrument in English and the translated language collects data from multiple groups and the data is simultaneously analyzed against the proposed measurement models. This process is also referred to as a measurement invariance test, which focuses on scale generality (Casper et al., 2011). Thus, testing a negotiation scale simultaneously in an English-spoken cultural group and a non-English cultural group using multigroup CFA furthers the cross-cultural study of leisure constraint negotiation.

Outdoor recreation was chosen as the study context for following reasons. First, outdoor recreation can benefit participants in various ways, including connections with nature, involvement in physical activities, and escape from daily stress (Driver, Brown, & Peterson, 1991). However, there have been concerns regarding the decline of young people's participation in outdoor recreation, especially nature-based recreation (Louv, 2005). Examining why people, especially younger people, do not participate or stop participating in certain outdoor recreation activities, and how they deal with constraints in outdoor recreation helps public and private recreation providers to understand current and potential customers' leisure choices, identify neglected services or facilities, design targeted marketing materials, and involve more and diverse people in their programs.

In sum, given the gap in negotiation measurement and cross-cultural negotiation research, this study explored the measurement properties and cross-cultural language equivalence of a negotiation scale in the context of the outdoor recreation setting using an instrument administered in two languages, English and Mandarin Chinese. Specifically, this study first built a baseline measurement negotiation model based on previous research using a convenience sample of U.S. college students. Two measurement properties of negotiation measurement were tested, second-order model and tau-equivalence. Then, the baseline model was simultaneously tested with a U.S. sample and a comparative Chinese college student sample using multigroup CFA.

Literature Review

Leisure Constraint Negotiation Theory and Models

The majority of leisure constraints research approaches individuals' leisure choices and behavior as negative factors that limit or prohibit leisure participation and affect leisure preference (Jackson, 2005). Empirical studies reveal that constraints influence leisure preference, participation, and experience (Alexandris, Grouios, Tsorbatzoudis, & Bliatsou, 2001; Hubbard & Mannell, 2001; Tsai & Coleman, 2009; Godbey et al., 2010). Leisure constraint studies recognize that constraints do not prevent leisure participation but may inhibit or alter leisure preference and participation as people can negotiate constraints. The term negotiation describes the "effort of individuals to use behavioral or cognitive strategies to facilitate leisure participation despite constraints" (Jackson, Crawford, & Godbey, 1993, p. 4) and the process, resources, and strategies used to "navigate, react, respond" to leisure constraints, and to "create, fulfill, challenge, reframe, or revise" their leisure involvement (Little, 2007, p. 406).

Jackson et al. (1993) formalized and extended ideas of negotiation implicit in earlier studies. Specifically, their propositions hypothesized how motivation and self-efficacy could influence negotiation and how negotiation related to constraints and participation. Building on these propositions Hubbard and Mannell (2001) tested several leisure constraints and negotiation models and found the best was where constraints decreased participation but also influenced

greater use of negotiation, thus counteracting the negative effects of constraints. This model is named the constraint-effect-mitigation model. Subsequent research continues to explore the relationships among these constructs using similar but not the same negotiation measures (Loucks-Atkinson & Mannell, 2007; Son et al., 2008; White, 2008; Wilhelm Stanis et al., 2009b; Lee & Scott, 2009; Jun & Kyle, 2011; Hung & Petrick, 2012; Lyu et al., 2013). Given that the measurement of negotiation in these studies differs in the number and the hierarchy of negotiation factors, conclusive evidence about the relationships among motivation, constraints, and negotiation remains absent.

Schneider and Wilhelm Stanis (2007) advanced the negotiation idea by introducing a coping and stress theory to the constraints literature. Coping, originally studied with stress in psychology, is defined as “constantly changing cognitive and behavioral efforts to manage a troubled person-environment relationship” (Lazarus & Folkman, 1984, p. 141). As proposed by Schneider and Wilhelm Stanis (2007), the negotiation of leisure constraints shares similarities with coping with stress. In this sense, coping with outdoor recreation constraints can be defined as people constantly changing cognitive and behavioral efforts to manage a troubled recreation-environment relationship (Schneider & Wilhelm Stanis, 2007). Early on in constraints research, Jackson and Rucks (1995) distinguished behavioral and cognitive negotiation strategies, similar to coping categorizations. Negotiation studies emphasize behavioral strategies, with little attention to cognitive strategies (Wilhelm Stanis, 2008; Wilhelm Stanis, et al., 2009b; Lee & Scott, 2009). Wilhelm Stanis et al. (2009b) applied the coping framework to negotiation and continued to develop a comprehensive negotiation measurement with satisfactory measurement validity and reliability. Their model testing supported Hubbard and Mannell’s (2001) constraint-effect-mitigation model in general.

Negotiation Measurements

Although negotiation measurement varies in terms of the strategies measured and their categorization, almost all studies to date conceptualized negotiation as a multidimensional scale. Across studies, several common negotiation dimensions emerged. Two of the most frequently measured negotiation dimensions are financial resources and interpersonal coordination, followed by time management and skill acquisition. While some studies were consistent in how they named negotiation dimensions (Loucks-Atkinson & Mannell, 2007; Son et al., 2008; Wilhelm Stanis et al., 2009b), the items used to measure dimensions named the same were not always consistent. For example, Loucks-Atkinson and Mannell (2007) measured the dimension of “changing leisure aspirations” with five items including “I sometimes substitute another more convenient activity for a preferred one,” “I change the location of where I participate,” “I participate at times when facilities aren’t overcrowded,” “I reduce the difficulty of activity,” and “I change the type of physically active leisure activities that I participate in”; while White (2008) measured “changing leisure aspiration” using two items, including “go to areas that are less crowded” and “go to areas where I feel comfortable.” Wilhelm Stanis et al. (2009b) also measured the first three items in Loucks-Atkinson and Mannell’s changing leisure aspiration dimension, but incorporated items from coping scales and identified this expanded negotiation dimension as “issue management.”

The association between negotiation dimensions and negotiation could be conceptualized as a second-order factor model (i.e., dimensions as first-order factors such as time management serve as the indicator of the single second-order factor, negotiation). Brown (2006) suggested a second-order model should be tested separately by comparing it with the first-order model using a nested χ^2 test, in addition to the overall model fit test. Three of ten leisure negotiation studies

reviewed directly tested the second-order measurement model (White, 2008; Hung & Petrick, 2012; Ma et al., 2012), but none conducted the nested χ^2 test. Rather than a second-order model, the seven other studies used sums or averages of a subset of items as negotiation, which generated a quasi-first-order measurement model. This practice reduced the number of parameters estimated to improve model parsimony; however, this data aggregation also raises questions about measurement model quality.

One primary concern of using aggregate data is that the measurement model might not sufficiently examine scale reliability and validity. Existing practice involves examining the dimension scales' coefficient alpha as a reliability check and further testing the model with other constructs in CFA to verify the validity (Hubbard & Mannell, 2001; Son et al., 2008; Lee & Scott, 2009; Jun & Kyle, 2011). A potential problem with this procedure is that the Cronbach's coefficient alpha cannot detect certain measurement problems, such as correlated measurement errors or misspecified factor correlations. Subsequently with the coefficient alpha, the good fit that quasi-first-order negotiation models report might be inflated by using means as indicators. Thus, a CFA of a negotiation measurement model prior to replacing a vector of items with a mean score is necessary. A second concern with using mean scores is that it averages the influence of various strategies on the construct of negotiation, while strategies might load differently. For example, some strategies might be more closely associated with negotiation and have higher factor loadings. CFA has a separate procedure named tau-equivalence test to address this issue (Brown, 2006), and a factor that fails the tau-equivalence test indicates that some indicators carry more characteristics of the latent construct than others. Given the lack of testing in negotiation research, the measurement properties remain unclear as does its application across cultures.

Cross-Cultural Leisure Research and Methodology

Chick (2000) describes cross-cultural comparative research as research that "deals with two or more societies that possess relatively distinct cultures (though they may share many cultural traits, such as each having patrilineal descent and each have some form of wrestling)" (p. 3). The interest in cross-cultural studies is driven, in part, by the increasing demographic diversity within a country and the cross-cultural communications among countries, such as international tourism (Budruk, 2010). Interest in cross-cultural research also comes from cross-cultural studies in other social science and humanity areas that have supported leisure studies theoretically or methodologically, such as anthropology (Chick, 2000) and social psychology (Walker & Wang, 2008a). In addition, non-Western cultures have been traditionally invisible in leisure studies (Iwasaki, Nishino, Onda, & Bowling, 2007). Thus, cross-cultural studies could add potentially different voices and work to overcome the leisure field's disciplinary ethnocentrism (Chick & Dong, 2005; Walker & Wang, 2008b). As Henderson (1998) suggested, "regardless of any of the potential problems... researchers in the field of leisure studies cannot abdicate their responsibility to make sure our research is inclusive ..." (p.169).

Despite the importance of cross-cultural leisure research, leisure research has been criticized as being inward looking and lacking cross-cultural studies (Valentine, Allison, & Schneider, 1999; Shaw, 2000). Mannell (2005) asked "whether or not the phenomenon of leisure as conceptualized in western leisure studies is a culturally universal psychological state?" (p. 101). Since then, several leisure constructs have been examined cross-culturally, including the meaning of leisure (Liu, Yeh, Chick, & Zinn, 2008; Walker & Wang, 2008a), leisure preferences (Jian, Sandnes, Huang, Huang, & Hagen, 2010), leisure motivation (Walker & Wang, 2008b), leisure constraints (Walker et al., 2007), leisure behaviors (Tsai, 2005; Xu, Morgan, & Song, 2009), and place attachment (Budruk, 2010).

Of particular interest to this study, Walker and colleagues found that Chinese and Canadian university students are “similar and different” in their leisure activities and experiences (Walker & Wang, 2008b), leisure motivation (Walker & Wang, 2008a), self-consciousness (Wang & Walker, 2011), and leisure constraints (Walker et al., 2007). For example, Walker and Wang (2008b) found that Chinese who reside in Canada reported more passive leisure activities than Canadians. These Chinese participants did not differentiate leisure from work by perceived freedom, and they appraised cooking and socializing as leisure while Canadians did not. Walker and Wang (2008a) found that both Canadian and Mainland Chinese university students were intrinsically and extrinsically motivated to do what they did in their spare time, but they differ in their ratings of types of motivation. Mainland Chinese students were less motivated by identified motivations (e.g., “I do what I do in my spare time, because as an individual, the activities I do are important to me”) and introjected rewards (e.g., “I do what I do in my spare time, because it makes me think more positively about myself”) and introjected punishments (e.g., “I do what I do in my spare time, because if I don’t do it, I feel guilty”) than Canadian students. Wang and Walker (2011) further discussed an indigenous Chinese concept of face concern, which relates to intrinsic moral standards and reputation earned from society and specific social situations in which a person is interacting. This concept potentially explains the motivational difference between Chinese and Canadians.

In terms of leisure constraints, Walker et al. (2007) quantitatively compared a convenience sample of Chinese university students with Canadian university students and found Chinese students were more intra- and interpersonally constrained while Canadian students were more structurally constrained. Qualitative research in 2010 (Hudson, Hinch, Walker, & Simpson, 2010) supported these findings. In terms of methods, Walker et al. tested the measurement model of constraint separately by sample using CFA prior to model comparison. The hypothesized constraint model was generally acceptable with the Canadian sample but marginally acceptable with the Chinese sample. As such, Walker et al. modified both constraint models by adding two error correlations and achieved a model with the same structures across both groups. Although this testing was an important step toward assessing model equivalence across groups, a multigroup CFA with the constraint model was not conducted and thus the equivalence not fully established. Walker’s collection of studies suggest Chinese and Canadians share similar leisure motivations, but their perception of leisure and leisure constraints might differ. Thus, it is reasonable to hypothesize that Chinese and North Americans differ in leisure constraint negotiation, as negotiation is closely associated with leisure participation and leisure constraints.

Despite the advancement in cross-cultural leisure research, it is constrained both conceptually and methodologically. First, cross-cultural leisure research is conceptually constrained because of the ambiguity when defining culture (Chick, 2001). Chick (2000) summarized that many culture definitions refer to it as knowledge, beliefs, attitudes, and values. Culture is widely discussed but difficult to define with the difficulty resulting in and emanating from determining if and how a culture is distinct from other cultures. Intuitively, it is easy to make the assumption that one culture is different from another (e.g., Chinese culture is different from U.S. culture) but objective systematic culture comparisons exist, with perhaps best known is Hofstede’s work. Most recently, Hofstede (2010) reported findings comparing nations in five cultural dimensions and reported that the United States and China differ mainly in power distance, individualism, and long-term orientation. However, Hofstede’s (2010) finding raised a question about geographic scope in culture studies: do political boundaries (nations) also present cultural boundaries?

Chick (2000) suggested large countries such as the United States and China may contain

numerous cultural entities. Therefore, it is reasonable to ask whether to use nation as the unit for culture. Valentine et al. (1999) distinguished between cross-national study and cross-cultural study. Cross-national research focuses predominantly on cross-societal patterns with specific territorial borders, while cross-cultural research can include subcultures within a particular society. Minkov and Hofstede (2012) argued that nation is a good unit to study cultures as they found more culture homogeneity than heterogeneity in countries. Additionally, most aforementioned cross-cultural studies used nation as an approximate unit for culture and did not report issues in doing so. As such, using nations as a unit of culture seems both realistic and valid.

Cross-cultural leisure research is methodologically constrained as culturally sensitive and inclusive approaches are lacking (Floyd, 1998; Chick & Dong, 2005) and calls to examine the universality of constraints exist (Crawford & Jackson, 2005). Budruk (2010) suggested offering translated versions of English-language questionnaires as one path toward the development of culturally sensitive and inclusive approaches. Beyond that, however, Budruk suggests “empirically establishing cross-cultural equivalence is a step toward developing theoretically and methodologically sound frameworks that are relevant across all groups” (p. 38). Budruk indicated that well-tested and administrated surveys using translated English-language questionnaires could serve as a gateway to introduce a Western-based construct into a non-Western background and stimulate in-depth qualitative research. To date, just a few negotiation studies have used translated questionnaires (Walker et al., 2007; Lee & Scott, 2009; Ma et al., 2012; Lyu et al., 2013). However, while Budruk strongly suggested the cross-culture validity of a questionnaire be tested before any comparisons made, few studies have attempted it (e.g., Walker et al., 2007).

Budruk (2010) succinctly summarized four components of cross-cultural validity equivalence: functional, normative, semantic, and conceptual. Functional equivalence is an initial and necessary condition of cross-cultural research where the construct under investigation has the same function in cultures. Normative equivalence refers to the social norm that could influence people’s responses in the data collection process, which would thus determine proper methodology. Semantic equivalence refers to words and phrases in one language having matching meaning in another, so the meanings in one language are preserved in the translation process. Conceptual equivalence means the concept operationalized in one culture and developed in one language exists in the same form in another culture. Methodologically, the functional and normative equivalence could be checked and established in the research design, methodology selection, and research instrument development stages. The semantic equivalence could be established in the stage of the translation of instrument from one language to another one. The conceptual equivalence could be tested using stepwise multigroup CFA. Specifically, a measurement with the same form means that the factorial structure of the construct, the relationship between items and factors are the same cross languages. In practice, the conceptual equivalence is often of most interest.

To test the conceptual equivalence, a stepwise multigroup CFA includes a sequence of progressively stricter statistical tests that build on each other (Brown, 2006; Budruk, 2010). As such, when one form of equivalence, or measurement invariance, is satisfied, then analysis proceeds to test the next form. Brown suggested typifying equivalence (invariance) using three sequentially constrained analyses: 1) equal form, 2) equal factor loading, and 3) equal intercept. Equal form is the loosest invariance, only requiring the same dimensions or factorial structures. Equal factor loading requires variables to load on factors in the same way across groups while equal intercept considers indicators as predicted by latent factors. Thus, a construct with equal intercept occurs when the effect of dependent variable equals zero, the remaining effect of all indicators are the

same across groups. Clearly, equal intercept is the strictest form of construct equivalence. In this project, all three were of interest.

Negotiation across Cultures

Beyond understanding the general nature of negotiation, understanding if and how negotiation scales perform in different cultures is of interest. Negotiation has been studied with different cultural groups qualitatively and quantitatively. Among others, Stodolska (1998), Livengood and Stodolska (2004), and Koca, Henderson, Asci, and Bulgu (2009) qualitatively examined negotiation with immigrants and found participants could identify various negotiation strategies which supports the proposition that negotiation exists across cultures. Although the construct of negotiation may exist across cultures, its form may differ. For example, Koca et al. found that when low-income Turkish women faced the constraints of family obligation, they did not mention any negotiation strategies related to changing the division of labor in the family, because their traditional cultures expect woman to take all family obligations.

Just three other studies to date investigated negotiation quantitatively in a non-Western cultural context (Lee & Scott, 2009; Ma et al., 2012; Lyu et al., 2013). Although these studies did not directly compare their studied populations with European/North American populations, their results support the different forms negotiation can take across culture. For example, Ma et al. (2012) found their negotiation measurement model did not fit Taiwanese/Chinese data. Subsequently, they dropped items and identified correlated measurement errors to improve the model quality. Although the model modifications may be due to data issues, it is also reasonable to consider the latent structure of negotiation differs in various cultural environments, which would call for its further examination.

Rationale and Purpose

Given the opportunities to advance negotiation measurement and fill the gap in cross-cultural leisure constraint negotiation studies, this study explored the cross-cultural equivalence of negotiation within a convenience sample of U.S. and Chinese university students. To do this, the following procedures were followed and are further explained in the methods section: 1) build a baseline negotiation measurement model, by testing and respecifying as appropriate a second-order multiple factors model based on a well-developed negotiation scale using the U.S. data; 2) test the tau-equivalence within each subfactor to decide if data reduction is appropriate; and 3) as appropriate, test the cross-culture conceptual equivalence with the established second-order model or the simplified model.

Methods

Survey Sample and Data Collection

Data were obtained from two convenience samples of university students in the United States and China through two waves of data collection. In the first data collection wave, 14 faculty members from five universities in the United States and one university in China were contacted because of their connections with the authors. Eight contacts from four universities in the United States and one university in China agreed to assist with data collection by distributing questionnaires in spring 2012 in classes that related to parks, recreation, and tourism. Participating U.S. universities were selected to represent most regions in the country, while only Sichuan University participated in China. Sichuan University is one of largest, comprehensive universities in China and has diverse students from various regions, which may help to limit the bias of including only one Chinese university.

As a class was the sampling unit, all students who attended the specific class when the faculty members distributed the questionnaire were invited to complete the questionnaire during class. Students in the U.S. universities completed the English questionnaire and students in the Chinese universities completed the Chinese questionnaire. The U.S. sample did not include international students from China. Among U.S. participating professors, three were from the same university. They were informed that there were other faculty members in the department also distributing questionnaires as a way to check and control the potential issue of students overlapping across classes. For the Chinese sample, the two classes where participating instructors distributed the questionnaire were for students of different years in the College of History, Culture, and Tourism Management and the College of Public Health Administration. Thus, overall, the possibility of the same students participating multiple times was low. The response rates were not available, but a check with the participating faculty members found that most students attending the class finished the questionnaire. Additionally, as this study did not employ probability-based sampling due to practical limits, the response rate may not be as critical as that for studies with random designs. One hundred fifty-seven (157) U.S. cases and 537 Chinese cases were collected in the first wave of data collection. A second wave of data collection spring 2013 at an additional U.S. university to enlarge the English data set. The same survey protocols were followed, with two instructors distributing the questionnaire in two classes for students of different years. A total of 106 questionnaires were collected in this fifth U.S. university.

In terms of the respondent sociodemographic characteristics and academic status, the respondents in the two waves of the U.S. sample were similar. The U.S. respondents were, on average, aged 23 years old (first wave=23 years old, second wave=23 years old) and largely white (first wave=95.9%, second wave=83.2%). The majority were male (first wave=53.2%, second wave=54.4%), and of urban backgrounds (small city, first wave=30.1%, second wave=26.7%; medium city, first wave=29.5%, second wave=20.8%; metropolitan, first wave=16.4%, second wave=12.9%). Sampled students spread across four academic years (first wave: freshman=6.5%, sophomore=30.5%, junior=16.9%, senior=46.1%; second wave: freshman=25.5%, sophomore=34.3%, junior=27.5%, senior=11.8%). These two waves of data were put together as the U.S. data. The Chinese respondents ($n=534$) were slightly younger with an average age of 21 and largely Han (87.8%). The majority were female (65.8%), and of mixed geographical background (agricultural farm or ranch, 21.2%; small city, 20.0%). Students spread across three academic years (freshman, 43.8%; sophomore, 22.5%, and junior 31.3%).

Due to funding constraints, convenience sampling was used. Nonprobability student samples, though commonly used, do constrain the generality and representativeness of the results of this study. However, Visser, Krosnick, and Lavrakas (2000) suggested nonprobability studies have their values in testing “whether a particular process occurs at all, to explore its mechanisms, and to identify its moderators” and “after an initial demonstration of an effect or process or tendency, subsequent research can assess its generality (p. 237).” Examples of leisure constraint and negotiation studies using university students as samples exist (Walker et al., 2007; Walker & Wang, 2008a; Ma et al., 2012). Given this study aimed to test the cross-cultural validity of negotiation and was exploratory, the samples of U.S. and Chinese university students were considered realistic and sufficient for research purposes. However, generalization is improbable.

Measures

This study adopted a questionnaire developed by Wilhelm Stanis (2008), Wilhelm Stanis et al. (2009b), integrating Folkman and Lazarus's (1988) measurement of coping strategies, but tailored for outdoor recreation, like Schneider and Hammitt (1995). The questionnaire included

several sections, including constraints to outdoor recreation participation and negotiation of these constraints, which this paper focuses on.

Negotiation was measured with 24 items that presumably loaded on six factors: financial management, cognitive strategies, time management, interpersonal coordination, issue management, and skill acquisition (items in Table 1 and Table 2). Most items were replicated from Wilhelm Stanis et al.'s (2009b) negotiation measurement, with necessary modifications tailored to the outdoor recreation context. The first modification was word changes. For example, a statement, "I think about how important physical activity is" was adjusted to "I think about how important this outdoor recreation activity is." Second, four items under the factor of issue management were dropped after a conceptual check by the Chinese and U.S. authors, including "I try to ignore others bothering me," "I make light of conflict situation," "I talk to park personnel," and "I express anger to the person who caused a conflict situation." The rationale is that these items were specifically about on-site conflict, while the rest of the items focused on negotiation strategies to general outdoor recreation constraints. As such, it was assumed that the difference in specificity might cause respondent confusion. Third, two cognitive items from Folkman and Lazarus (1988) were added: "I feel there will be other opportunities in the future" and "I persuade myself it's OK that I cannot participate," as what Wilhelm Stanis et al. (2009b) suggested to explore other cognitive strategies. Items were then ordered in the same way as Wilhelm Stanis et al. (2009b), and the two new items put at the end of the questionnaire. The measurement was then pilot tested with 18 selected U.S. university students and 25 Chinese university students in China. Only minor changes in grammar were applied.

Wilhelm Stanis et al.'s (2009b) negotiation model was selected as the basic model for four reasons. First, the quality of this comprehensive measurement was established through CFA and coefficient alpha tests, and good-of-fit indices and coefficients reported in detail, compared to other studies that did not fully report their measurement test results. Although Wilhelm Stanis et al. (2009b) did not test the second-order model of negotiation or the tau-equivalence within subfactors, their negotiation subfactors model was expected to serve as a basic model for an advanced CFA. Second, Wilhelm Stanis et al.'s (2009b) negotiation model shared the origins in Hubbard and Mannell's (2001) study with two other negotiation studies (Loucks-Atkinson & Mannell, 2007; Son et al., 2008), manifested by the same factor structure, except the added factor of issue management, and similar wording. Considering the rare replication of studies in leisure and recreation negotiation research, using Wilhelm Stanis et al.'s (2009b) measurement could continue a line of studies related to negotiation measurement conducted by different researchers, seeking the common core Jackson (2005) refers to. Third, using the same instrument enables cross-activity comparison in the future, given the availability of data. Finally, Wilhelm Stanis et al.'s (2009b) negotiation measurement was compared with other measurements and found it had sufficient coverage of negotiation strategies and factors compared to other measurements. For example, the three subscales of White's (2008) negotiation measurement in the outdoor recreation context, including "changing interpersonal relations," "changing leisure aspiration," and "improve finances" were all conceptually measured by Wilhelm Stanis et al. (2009b) as "interpersonal coordination," "issue measurement," and "financial management." Wilhelm and Stanis et al.'s (2009b) measurement was also similar to Ma et al.'s (2012) measurement, which examined negotiation with a university student sample from Taiwan. Ma et al. measured six subfactors of negotiation, including "time management," "interpersonal coordination," "improve finances," "physical fitness," "acquisition of skill," and "change leisure aspirations (this subfactor was removed later in the modified model)." All these negotiation subfactors were conceptually captured in Wilhelm Stanis et al.'s (2009b) measurement.

Questionnaire Translation and Pre-Test

The survey was conducted in the United States and China. As such, an English questionnaire was translated into Chinese using back-translation. Specifically, the questionnaire was translated from English into simplified Chinese by one researcher who has Chinese as a native language and then a team of Chinese-fluent individuals—who had not seen the original English-language questionnaire—translated it back to English. The original English questionnaire and the back-translated English questionnaire were compared. The negotiation section did not have much difference between the back-translated version and the original English version. Revisions were made in other sections to ensure the translation was accurate and there was language equivalence.

Besides using the back-translation technique, van de Vijver, and Leung (1997), Shaffer and Riordan (2003), and Budruk (2010) suggested several best practices to enhance the normative and semantic equivalence of the cross-cultural instruments. For example, Budruk suggested “employing field researchers who are familiar with the language/culture in which the study is being conducted” (p. 27). One of the authors is Chinese and is sensitive to Chinese culture and the difference to the U.S. culture. Before translation, the Chinese researcher checked whether the behaviors measured in the instrument were common in China and found good commonality. For example, the Chinese researcher verified planning ahead, saving money, and prioritizing activities as common behaviors in China. Then, items were translated into simplified Chinese. During the translation process, the cultural differences between the United States and China were considered. For example, the literal translation of park in Chinese, *Gong Yuan* (公园), has a narrower designation than the designation in English. Thus, rather than translating into *Gong Yuan*, park was translated as *Hu Wai Xiu Xian Chang Suo* (户外休闲场所), which means places for people to do outdoor recreation. Also following Budruk (2010), techniques such as bilinguals’ discussion and pre-testing among smaller samples to improve semantic equivalence occurred. After the back-translation, the Chinese instrument was discussed and verified among a group of Chinese graduate students in China, who were familiar with outdoor recreation theories and sufficient in English. It was, then, pre-tested with another 25 Chinese graduate students in China, who were not included in the final sample. Finally, a Chinese graduate student with a degree in English and experienced in translation was consulted about the questionnaire. Several edits of terminology and sentence structure were made on the Chinese questionnaire to make it more readable to Chinese respondents.

Data Analysis

Data were entered, cleaned, and analyzed using SPSS 19 and Amos 20.0. Descriptive analysis was first conducted separately within the U.S. sample and the Chinese sample, providing means and standard deviations to describe the samples and variables of interest. Initially, normality of each negotiation item was assessed, confirming their skewness and kurtosis were acceptable (Tabachnick & Fidell, 2001). Missing data were scarce and excluded from analysis list wise when identified. Reliability analysis on the six negotiation factors ensued and then CFA conducted to answer the three research questions.

Step 1: Building a second-order multiple-factor baseline negotiation measurement model using the U.S. data. The hypothesized second-order baseline negotiation model was characterized by six first-order factors: financial management, cognitive strategies, interpersonal coordination, skill acquisition, time management, and issue management, and one higher-order factor, negotiation, which accounted for the correlations among the six first-order factors. The conceptual base for the second-order model was that the six categories of strategies were dimensions of negotiation.

Brown (2006) suggested a three-step general sequence of higher-order factor CFA: 1) develop a well-behaved first-order CFA solution, 2) examine the magnitude and pattern of correlations among factors in the first-order solution, and 3) fit the second-order model and statistically test it with a nested χ^2 test. Thus, to build a second-order measurement model of negotiation as proposed, the first step was to fit a six-factor CFA model, allowing the correlations among the factors to be freely estimated. Specifically, items within each factor with the largest variance were chosen as the marker indicator to define the variance of latent variables. Raw data were directly utilized in the analysis rather than the covariance matrix. All measurement error was presumed uncorrelated and all factors were freely correlated to each other. Second, the correlations among factors were examined.

Third, if the six-factor model had a good fit and the correlations supported a higher-order model, the second-order factor of negotiation would be added. If the six-factor model did not have a good fit, model modifications would be conducted, and the modified model would serve as the base for the second-order model. The overall goodness-of-fit of the second-order model was examined. The size of the higher-order factor loadings was also evaluated to determine the acceptability of the second-order model. The nested χ^2 test determined whether adding a second-order factor produced a significant degradation in fit relative to the first-order solution. The nested χ^2 test involved two important concepts: 1) parent model, the model with fewer constraints; and 2) nested model, the model with more constraints. In this study, the six-factor first-order model was the parent model and the second-order model was the nested model. The nested χ^2 test examined the χ^2 difference from χ^2 of the nested model minus χ^2 of the parent model. The χ^2 difference indicated whether adding constraints to the model would increase the discrepancy between the proposed model and the data. Thus, according to negotiation theory, which holds that strategies people use to deal with constraints are influenced by a broader dimension of negotiation, the difference in χ^2 was expected to be close to zero and nonsignificant, which would indicate the nested model (second-order model) did not degrade from the parent model (first-order model) significantly.

Step 2: Test the tau-equivalence on baseline model with U.S. data within each subfactor to decide if data reduction is appropriate. Tau-equivalence tests ensued to check whether indicators equally loaded on the corresponding factor. Factor loadings under the same factor were constrained to be equal based on the baseline model fitted in research question one. The tau-equivalent model was compared to the model fitted in the previous step with no cross-loading items and correlated measurement errors. Another nested χ^2 test was conducted. If the χ^2 did not significantly increase, the tau-equivalence would be accepted and thus the mean scores of first-order factors would be used as the negotiation indicators and the quasi-first-order measurement model of negotiation would be applied in further analysis. However, if the χ^2 significantly increased, the full baseline model built in research question one would be applied in further analysis.

Step 3: As appropriate, test the cross-culture conceptual equivalence using U.S. and Chinese data. The final step assessed cross-cultural equivalence with equal form, equal-factor loading, and equal-indicator intercepts in a stepwise minor. Similar to the test of the second-order model, a sequence of CFA-based multigroup factor analysis was suggested by Brown (2006).

First, the baseline model was fitted separately with two groups. Since the model was fitted with the U.S. data in previous analysis, the negotiation model built through research questions one and two was only fitted with the Chinese data. To move to the next stage of comparison, all overall goodness-fit statistics must be acceptable and all freely estimated factor loadings statis-

tically significantly. If this step was quantified, it would evolve to the next step; otherwise the analysis stops here.

Second, the baseline model would be fitted simultaneously with two groups, if appropriate. The simultaneous fitting reflected in AMOS was to “stack” a CFA analysis with one group on top of the other. The model goodness-of-fit indices of was thus for the multigroup CFA. This step determined whether the number of factors, pattern of indicators and factor loadings were identical in different groups. Nested χ^2 also determined whether the added specification would significantly degrade the model. If this step found acceptable fits, analysis would evolve to the next step; otherwise the analysis stops here, indicating the model do not have the basic type of conceptual equivalence, the equal form.

Third, the “stacked” CFA would be conducted again, if appropriate, but with factor loadings restrained as equal across the two samples. If this step found acceptable fit, analysis would evolve to the next step; otherwise the analysis stops here, indicating the model has equal form across groups, but not have equal loadings.

Finally, whether the intercepts of indicators were equal across groups would be tested, if appropriate, by adding the means of indicators and a restrained intercept to be equal. This is the final step of multigroup CFA. If this step found acceptable fits, the studied construct has the highest level of equivalence, equal intercept. The effect of latent variable on indicators would be the same across groups.

Multigroup CFA is also sensitive to unequal sample size. Thus, unequal sample size was addressed by an extra step of randomly selecting an equal size sample of the Chinese student sample to repeat the multigroup CFA and comparing the results against the results from multigroup CFA with the full sample.

Goodness-of-fit indices. Several model goodness-of-fit indices were selected to evaluate the models, including χ^2 , $\chi^2/\text{degrees of freedom (df)}$, the root mean square error of approximation (RMSEA), comparative fit index (CFI), and the Tucker-Lewis index (TLI). Ideally, χ^2 should be nonsignificant to show that the model fits the sample matrix perfectly. However, χ^2 is often affected by sample size and therefore the adjusted χ^2/df was provided. A χ^2/df less than 3 is recommended (Carmines & McIver, 1981). Despite the ratio’s popularity, the use of it is “strongly discouraged” (Brown, 2006, p.89). We thus suggest this index as secondary. Using χ^2 is also limited by its hypothesis that the estimated matrix strictly equals the sample matrix, and indices with parsimony correction and comparative fit indices are thus used. Browne and Cudeck (1993) proposed, as a rule of thumb, that RMSEA values less than .08 suggest adequate model fit. CFI and TLI values in the range of .90 to .95 may be indicative of acceptable model fit (Bentler, 1990). However, indices will be considered with caution given that issues surrounding goodness-of-fit indices are still debated and these indices are differentially affected by sample size, model complexity, and estimated method (Brown, 2006). For example, TLI and RESEA tend to falsely reject models when sample size is small (Hu & Bentler, 1999). In addition, a difference of χ^2 between first-order model and second-order model tested the performance of the second-order model, and the difference in TLI used in the multigroup CFA test. To fully accept a second-order model, the difference of χ^2 should not be significant. To accept the equivalence across two groups, difference in TLI needs to be less than .01 (Casper et al., 2011).

Results

Descriptive and Normality Check

In total, 800 questionnaires were obtained: 263 from the U.S. universities and 537 from the Chinese university. Five English questionnaires and three Chinese questionnaires were unusable

due to more than 40% missing data in the negotiation section or obvious mindless responses, such as the same answers for all questions with careless handwriting. In addition, about 17% of the U.S. data and less than 12% of Chinese data had missing values and listwise deletion was employed. Therefore, 213 U.S. cases and 534 Chinese cases were entered into the CFA.

Generally, respondents used the measured negotiation strategies from “rarely” to “sometimes” to start, continue or increase their outdoor recreation participation (Tables 1 and Table 2). All items had skewness and kurtosis values within 1.0, which was less than the 3.0 cutoff absolute values suggested by Kline (2005), except the item “I use protective devices (e.g., pepper spray)” with a skewness value of 2.24 and kurtosis value of 4.43 within the Chinese sample, and a skewness value of 1.23 within the U.S. sample. This item was dropped from further analysis. Data were therefore treated as normal and a maximum likelihood estimator was used to estimate the model.

Two negotiation factors had acceptable Cronbach's coefficient alpha (α) within the U.S. sample: 1) interpersonal coordination with the highest value ($\alpha=.76$), and 2) financial management ($\alpha=.61$; Table 1). Skill acquisition, cognitive strategies, time management, and issue management had alpha less than .6, indicating a lack of internal consistency for these factors. The similar issue of low alpha values was observed for three factors within the Chinese sample (Table 2). However, alpha can either underestimate or overestimate scale reliability, if the measure contains correlated measurement errors (Brown, 2006). A further CFA analysis investigated relations among measures. Additionally, an initial estimation of AVE within the U.S. sample found low values of all factors which flagged bad model fit and suggested the proposed latent variables did not sufficiently explain the item variances (Table 1).

Step 1: Build a Second-Order Multiple-Factors Baseline Negotiation Measurement Model Using the U.S. Data

Six-factor first-order model. Different than expected, the six-factor first-order negotiation model did not fit the U.S. data ($\chi^2=624.52$, $\chi^2/df=2.91$, CFI=.69, TLI=.63, RMSEA=.10; Table 3). Poor model fits are often caused by misspecifications of the hypothesized model, such as nonpositive definite matrices, improper number of factors, or correlated unique errors of indicators (Brown, 2006). Stepwise model modifications detected and addressed these potential misspecifications.

First, the covariance matrix of factors reported by AMOS was not positive definite and some factors were highly correlated, indicating misspecification in factor structure. Brown (2006) suggested the positive definite input variance-covariance and model-implied variance-covariance matrix is a necessary condition to obtain a valid CFA. After assessing thirteen correlations among six factors, issue management was identified as highly correlated with the other factors, including two correlation coefficients problematically exceeding one: 1) the correlations between issue management and cognitive strategies, and 2) between time and issue management. The second issue with the factor relationship was that time and financial management were highly correlated ($r=.88$). Two modifications were thus proposed 1) to drop the factor of issue management from the model, and 2) to merge time and financial management together as one factor, time-financial. After several attempts of different combinations of these two modifications, only when these two modifications were made together was the factor correlation matrix positive.

Table 1*Descriptions and Reliability of Negotiation Strategies Items within the U. S. Sample*

Coping strategies categories and items	<i>M</i>	<i>SD</i>	<i>Skew</i>	<i>Kurtosis</i>
<i>Financial Management ($\alpha=.61$, $AVE=0.36$)</i>				
F ₁ I try to live within my means	3.56	0.92	-0.61	0.45
F ₂ I save money	3.49	1.01	-0.44	-0.33
F ₃ I try to budget my money	3.27	1.02	-0.30	-0.27
F ₄ I improvise with the equipment I have	3.07	1.01	-0.36	-0.31
<i>Cognitive strategies($\alpha=.54$, $AVE=0.21$)</i>				
C ₁ I think about how important outdoor recreation is	3.38	1.09	-0.34	-0.56
C ₂ I ignore what people think of me	3.54	1.00	-0.43	0.09
C ₃ I avoid allowing things to get to me	3.45	0.91	-0.41	0.32
C ₄ I feel there will be other opportunities in the future	3.52	0.89	-0.47	0.59
C ₅ I persuade myself it's OK that I cannot participate	2.50	0.97	0.26	-0.18
<i>Time Management ($\alpha=.46$, $AVE=0.18$)</i>				
T ₁ I try to plan ahead	3.77	0.97	-0.60	0.09
T ₂ I try to prioritize my outdoor recreation activities	3.21	1.00	-0.31	-0.20
T ₃ I get up earlier or stay up later to have more time	3.43	1.04	-0.35	-0.30
T ₄ I cut short my activity sessions	2.61	0.82	0.04	0.24
<i>Interpersonal Coordination($\alpha=.76$, $AVE=0.45$)</i>				
I ₁ I recreate with people like myself	3.57	0.91	-0.26	-0.19
I ₂ I try to find people with similar interests	3.62	0.87	-0.48	0.17
I ₃ I try to find people to recreate with	3.25	0.91	-0.26	-0.08
I ₄ I arrange rides with friends	3.16	1.03	-0.22	-0.36
<i>Issue Management($\alpha=.32$, $AVE=0.15$)</i>				
IM ₁ I change the location of where I recreate	3.04	0.90	-0.11	-0.02
IM ₂ I recreate at times when outdoor recreation sites are less busy	3.29	0.99	-0.11	-0.28
IM ₃ I substitute a more convenient activity for a preferred one	3.06	0.94	-0.25	0.31
<i>Skill Acquisition($\alpha=.59$, $AVE=0.33$)</i>				
S ₁ I try to improve my skills	3.57	0.90	-0.30	0.21
S ₂ I learn new activities	3.24	0.85	-0.25	0.13
S ₃ I ask for help with required skills	2.50	0.93	0.01	-0.51
<i>Other</i>				
P I use protective devices (e.g. pepper spray)	1.80	1.07	1.23	0.75

Note. Negotiation strategies measured on a scale of 1=Never, 2=Rarely, 3=Sometimes, 4=Regularly, 5=Very Often. P was dropped in the analysis due to the low quality of normality.

Table 2*Descriptions and Reliability of Negotiation Strategies Items within the Chinese Sample*

Coping strategies categories and items	<i>M</i>	<i>SD</i>	<i>Skew</i>	<i>Kurtosis</i>
<i>Financial Management</i> ($\alpha=.66$)				
F ₁ I try to live within my means	2.98	0.97	-0.17	-0.55
F ₂ I save money	3.10	1.04	-0.09	-0.57
F ₃ I try to budget my money	2.74	0.98	-0.04	-0.58
F ₄ I improvise with the equipment I have	2.63	1.13	0.12	-0.97
<i>Cognitive</i> ($\alpha=.56$)				
C ₁ I think about how important outdoor recreation is	2.79	1.02	-0.10	-0.64
C ₂ I ignore what people think of me	2.67	1.16	0.22	-0.87
C ₃ I avoid allowing things to get to me	3.15	0.96	-0.06	-0.35
C ₄ I feel there will be other opportunities in the future	3.20	1.03	-0.32	-0.52
C ₅ I persuade myself it's OK that I cannot participate	2.79	1.06	0.07	-0.66
<i>Time Management</i> ($\alpha=.44$)				
T ₁ I try to plan ahead	3.01	1.08	-0.01	-0.75
T ₂ I try to prioritize my outdoor recreation activities	2.53	1.02	0.18	-0.65
T ₃ I get up earlier or stay up later to have more time	2.41	1.12	0.38	-0.73
T ₄ I cut short my activity sessions	2.60	0.90	0.21	-0.22
<i>Interpersonal Coordination</i> ($\alpha=.66$)				
I ₁ I recreate with people like myself	2.71	1.00	0.18	-0.48
I ₂ I try to find people with similar interests	3.27	0.98	-0.11	-0.59
I ₃ I try to find people to recreate with	3.00	0.91	-0.11	-0.15
I ₄ I arrange rides with friends	1.86	1.06	0.97	-0.12
<i>Issue Management</i> ($\alpha=.51$)				
IM ₁ I change the location of where I recreate	2.68	0.90	0.34	-0.04
IM ₂ I recreate at times when outdoor recreation sites are less busy	3.13	1.02	-0.19	-0.44
IM ₃ I substitute a more convenient activity for a preferred one	2.96	1.00	-0.04	-0.57
<i>Skill Acquisition</i> ($\alpha=.71$)				
S ₁ I try to improve my skills	2.91	0.95	-0.18	-0.46
S ₂ I learn new activities	2.77	0.83	0.03	-0.13
S ₃ I ask for help with required skills	2.35	0.88	0.36	-0.10
<i>Other</i>				
P I use protective devices (e.g. pepper spray)	1.39	0.83	2.24	4.43

Note. Negotiation strategies will be measured on a scale of 1=Never, 2=Rarely, 3=Sometimes, 4=Regularly, 5=Very Often. P was dropped in the analysis due to the low quality of normality

Second, two diagnostic indices were evaluated to identify problematic indicators and correlated indicator unique errors: parameter significance and modification index (MacCallum, 1986; Brown, 2006). Parameter significance detects whether some indicators were misspecified, such as the indicator was specified to load on a factor but actually has no salient relationship to any factor. Results revealed all indicators were significantly loaded on corresponding factors and all factors were significantly correlated. Thus, significance of parameters did not detect any misspecification. The second diagnostic index, modification index (MI), revealed how much χ^2 would decrease if the unique errors of indicators were respecified as correlated (Joreskog & Sorbom, 1984) because in AMOS unique errors are set as not correlated by default. Brown (2006) suggested modifications based on MI need to be theoretically or methodologically meaningful. Thus, this study first identified the pairs of indicators with the largest MI, and then checked whether it was meaningful. If it could be explained theoretically or methodologically, the measurement errors of those two indicators were specified as correlated. Then, the goodness-of-fit indices were checked. If the model fit was still unacceptable, the process aforementioned was repeated again. The processes were repeated until an acceptably fit measurement model was achieved ($CFA > .9$, $TLI > .9$, $NFI > .9$, $RMSEA < .06$). After repeating this modification process nine times, the modified negotiation measurement model was close to an acceptable fit. However, the indicator, "I persuade myself it's OK that I cannot participate" no longer significantly loaded on the cognitive factor. Considering it was a new item and its nonsignificant correlation with factor, the indicator was dropped from the model. The final model fit was: $\chi^2=218.30$, $\chi^2/df=1.58$, $CFI=.93$, $TLI=.91$, $RMSEA=.05$ (Table 3; Figure 1). All factor loadings and correlations among factors were statistically significant at the specified .05 level.

In sum, the modified negotiation measurement model was characterized by four factors: 1) structural constraint negotiation, 2) interpersonal coordination, 3) skill acquisition, and 4) cognitive strategies. Compared to the hypothesized model, the modified model had two fewer factors and allowed eight pairs of unique errors of indicators to correlate. Of these eight indicator pairs, five were considered theoretically meaningful, including 1) "I save money" and "I try to budget my money", 2) "I think about how important outdoor recreation is" and "I try to prioritize my outdoor recreation opportunities", 3) "I save money" and "I try to plan ahead", 4) "I ignore what people think of me" and "I avoid allowing things to get to me", and 5) "I try to budget my money" and "I try to plan ahead." The remaining three pairs were not theoretically meaningful, but were close to each other on the questionnaire and indicated correlated unique errors may be due to methodological issues: 1) "I improvise with the equipment I have" and "I arrange rides with friends", 2) "I try to find people to recreate with" and "I learn new activities", and 3) "I get up earlier or stay up later to have more time."

Model modification is not an uncommon practice in social science or in leisure constraint negotiation studies. For example, Son et al. (2008) added correlation between indicator measurement errors and Ma et al. (2012) dropped a factor and nine items from their negotiation measurement model. A rationale supporting the addition of correlations between unique errors rather than deleting indicators is that it is preferable to make modifications involving the addition of new parameters prior to deleting parameters (MacCallum, 1986). However, it is worth noting that model modification is data-driven in its nature and thus might yield a model overfits the data but does not resemble the true model that produced the data (MacCallum, 1986). As such, factor analysis with modification is no longer confirmatory but data-driven and, must be evaluated with caution.

Table 3
Negotiation Models Fit Indices: Presumed Six-factor First-order Model, Modified Four-factors First-order Model, Four-factor Second-order Model, Four-factor Second-order Model with Tau-equivalence, and Simplified Four-factor Second-order Model with U.S. and Chinese Data

Models	χ^2	df	χ^2/df	χ^2_{diff}	Δdf	CFI	TLI	RMSEA
<i>U.S. data</i>								
Proposed six-factor first-order model ^a	624.52	215	2.91	-	-	.69	.63	.10
Modified four-factor first-order model	218.30	138	1.58	-		.93	.91	.05
Four-factor second-order model	224.46	140	1.60	6.17*	2	.92	.90	.05
Four-factor second-order model with tau-equivalence	252.80	149	1.70	28.34***	9	.90	.90	.06
Quasi-first-order factor model with data aggregation	8.17	2	4.08	-	-	.97	.92	.12
<i>Full Chinese data</i>								
Four-factor first-order model	479.93	138	3.48	-	-	.86	.83	.07
Four-factor second-order model	496.45	140	3.55	-	-	.86	.83	.07
<i>Random selected Chinese data</i>								
Four-factor first-order model	261.62	138	1.90	-	-	.86	.83	.07
Four-factor second-order model	267.07	140	1.91	-	-	.86	.83	.07

Note. a. Compared to Wilhelm Stanis et al.'s (2009b) goodness-of-fit of the six factor first-order model: $\chi^2=560.81$, $\chi^2/df=2.16$, CFI=.97, TLI=.97, RMSEA=.06.
* $p<.05$; ** $p<.01$, *** $p<.005$

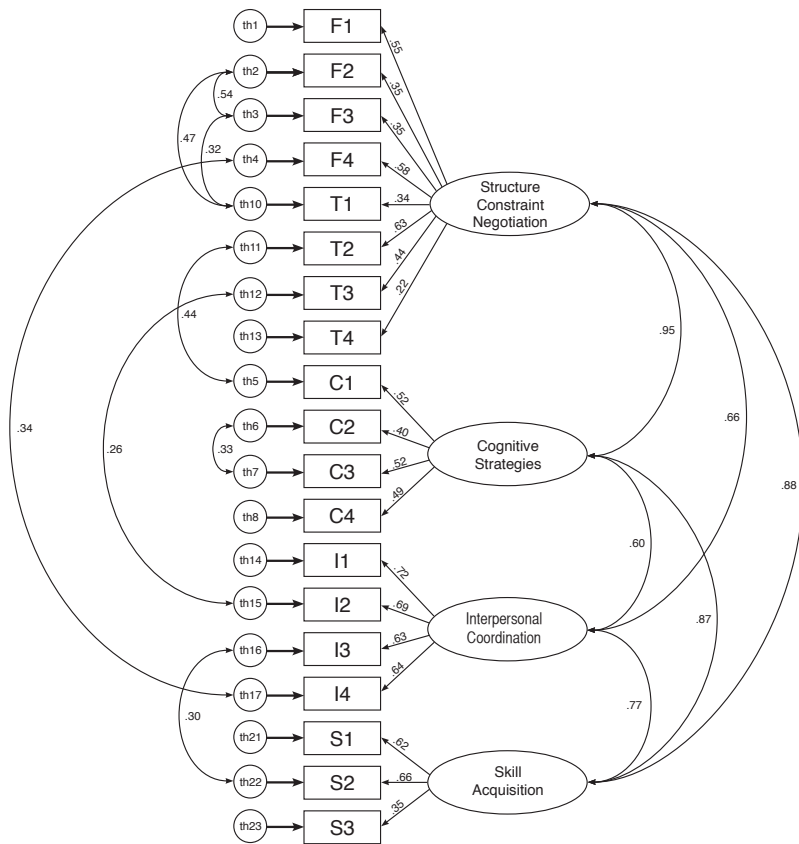


Figure 1. Modified four-factor first-order negotiation model with standardized estimates with the U.S. data. F1: I try to live within my means. F2: I save money. F3: I try to budget my money. F4: I improvise with the equipment I have. T1: I try to plan ahead. T2: I try to try to prioritize my outdoor recreation activities. T3: I get up earlier or stay up later to have more time. T4: I cut short my activity sessions. C1: I think about how important outdoor recreation is. C2: I ignore what people think of me. C3: I avoid allowing things to get to me. C4: I feel there will be other opportunities in the future. I1: I recreate with people like myself. I2: I try to find people with similar interests. I3: I try to find people to recreate with. I4: I arrange rides with. S1: I try to improve my skills. S2: I learn new activities. S3: I ask for help with required skills. $\chi^2=218.30$, $CFI=.93$, $TLI=.91$, $RMSEA=.05$.

Four-factor second-order model. The second-order model was then fitted by adding negotiation as a second-order factor to the four-factor model established in step 1. The second-order model had an acceptable model fit ($\chi^2=224.46$, $\chi^2/df=1.60$, $CFI=.92$, $TLI=.90$, $RMSEA=.05$; Table 3; Figure 2), with χ^2 increased by 6.17 and a df reduced by 2, compared to the four-factor first-order model. All factor loadings and correlations were statistically significant at the specified .05 level. The model degradation by fitting a second-order model was statistically significant at the specified .05 level ($p=.45$). However, the second-order model had a similar level of acceptable fit as the first-order model, and all first-order factors significantly loaded on negotiation. Most importantly, the second-order model was supported by negotiation theory and empirical studies, which either directly verified the second-order negotiation model (White, 2008; Huang

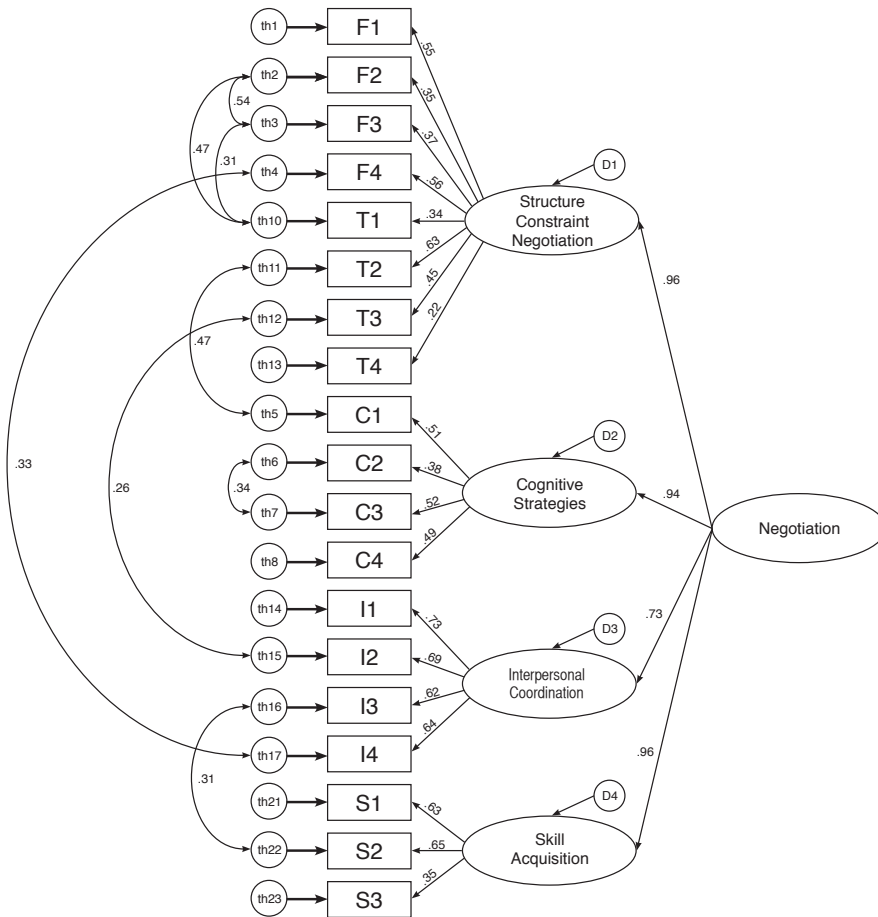


Figure 2. Four-factor second-order negotiation model with standardized estimates with the U.S. data. F1: I try to live within my means. F2: I save money. F3: I try to budget my money. F4: I improvise with the equipment I have. T1: I try to plan ahead. T2: I try to try to prioritize my outdoor recreation activities. T3: I get up earlier or stay up later to have more time. T4: I cut short my activity sessions. C1: I think about how important outdoor recreation is. C2: I ignore what people think of me. C3: I avoid allowing things to get to me. C4: I feel there will be other opportunities in the future. I1: I recreate with people like myself. I2: I try to find people with similar interests. I3: I try to find people to recreate with. I4: I arrange rides with. S1: I try to improve my skills. S2: I learn new activities. S3: I ask for help with required skills. $\chi^2=224.46$, $CFI=.92$, $TLI=.90$, $RMSEA=.05$.

& Petrick, 2012; Ma et al., 2012) or conceptually followed a second-order model (Hubbard & Mannell, 2001; Loucks-Atkinson & Mannell, 2007; Son et al, 2008; Wilhelm et al., 2009b; Lee & Scott, 2009; Jun & Kyle, 2011; Lyu et al., 2013). As such, the second-order model was retained for further analysis.

Step 2: Test Tau-Equivalence within Each First-order Factor of Baseline Model with U.S. Data to Decide if Data Reduction is Appropriate

The tau-equivalence was tested to verify the data reduction. The results suggested the four-factor second-order model with tau-equivalence marginally fit the data ($\chi^2=252.80$, $\chi^2/df=1.70$, CFI=.90, TLI=.90, RMSEA=.06; Table 3). All factor loadings and factor correlations were statistically significant at the specified .05 level. However, the model with tau-equivalence significantly degraded from the model without tau-equivalence ($\chi^2_{diff}=28.34$, $\Delta df=9$, $p < .001$). A quasi-first-order factor model was fitted to further check the validity of the tau-equivalent negotiation measurement model, which used the mean score of four first-order factors as negotiation indicators. Results suggested contradicting goodness-of-fit, including acceptable CFI and TLI (CFI=.97, TLI=.92; Table 3), but unacceptable RMSEA and χ^2 and df ratio (RMSEA=.12, $\chi^2/df=4.08$; Table 3). Thus, these results suggest aggregating data to replace indicators should be used with caution.

Step 3: Test the Cross-Culture Conceptual Equivalence with the Established Second-Order Model or the Simplified Model with U.S. and Chinese Data

Lastly, multigroup CFA was performed to test the conceptual equivalence of negotiation. Two models fitted from previous steps were utilized: a four-factor first-order model and a four-factor second-order model. These two models were fitted acceptably with the U.S. data in the previous steps, so the model was further fitted with Chinese data separately as the basic step of multigroup CFA. Results suggested insufficient fit for both models with Chinese data (four-factor first-order model: $\chi^2=479.93$, $\chi^2/df=3.48$, CFI=.86, TLI=.83, RMSEA=.07; four-factor second-order model: $\chi^2=496.45$, $\chi^2/df=3.55$, CFI=.86, TLI=.83, RMSEA=.07; Table 3; Figure 3). Because the two models did not fit the Chinese data, there was no justification to pursue other steps of the multigroup CFA test. The results did not support conceptual invariance between English and Chinese version of the negotiation scale.

As the unequal sample sizes may affect the multiple group comparison, 213 cases were randomly selected from the Chinese sample and the multigroup CFA was performed again. Still, both models insufficiently fit the Chinese data (four-factor first-order model: $\chi^2=261.62$, $\chi^2/df=1.90$, CFI=.86, TLI=.83, RMSEA=.07; four-factor second-order model: $\chi^2=267.07$, $\chi^2/df=1.91$, CFI=.86, TLI=.83, RMSEA=.07, Table 3).

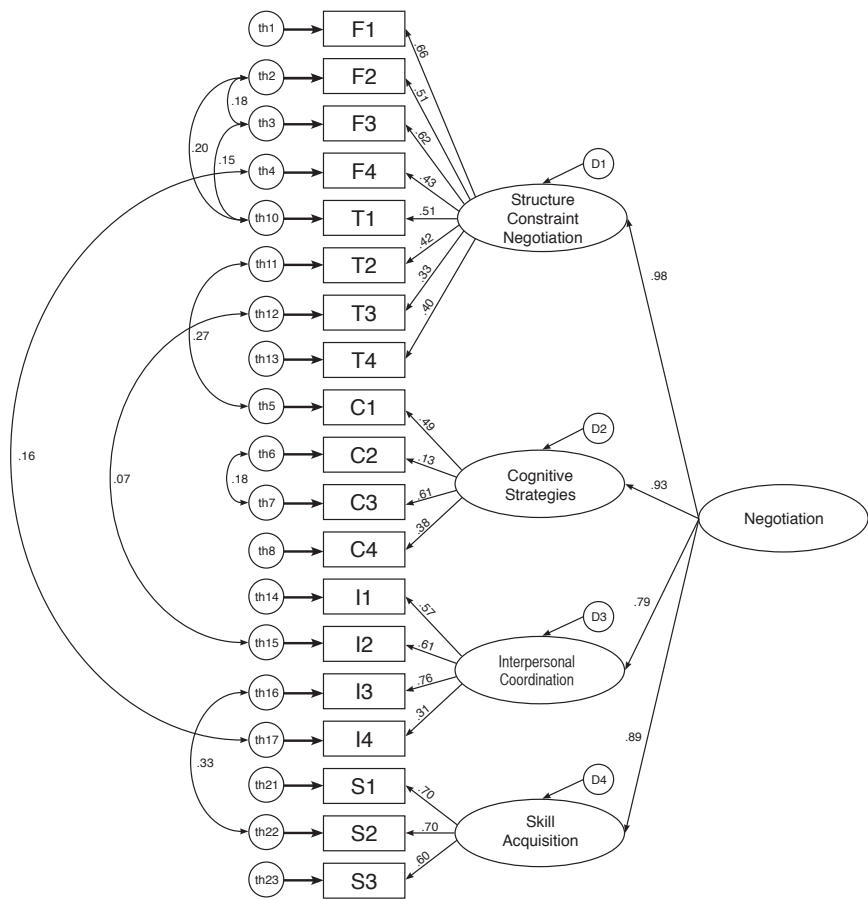


Figure 3. Four-factor second-order negotiation model with standardized estimates with the Chinese data. F1: I try to live within my means. F2: I save money. F3: I try to budget my money. F4: I improvise with the equipment I have. T1: I try to plan ahead. T2: I try to try to prioritize my outdoor recreation activities. T3: I get up earlier or stay up later to have more time. T4: I cut short my activity sessions. C1: I think about how important outdoor recreation is. C2: I ignore what people think of me. C3: I avoid allowing things to get to me. C4: I feel there will be other opportunities in the future. I1: I recreate with people like myself. I2: I try to find people with similar interests. I3: I try to find people to recreate with. I4: I arrange rides with. S1: I try to improve my skills. S2: I learn new activities. S3: I ask for help with required skills. $\chi^2=496.45$, $CFI=.86$, $TLI=.83$, $RMSEA=.07$.

Discussion and Future Research

This research investigated the measurement properties and cross-cultural equivalence of negotiation with a convenience sample of U.S. and Chinese university students, using a modified negotiation scale shared by Wilhelm Stanis (2008) and Wilhelm Stanis et al. (2009b). The hypothesized six-factor first-order negotiation model did not fit the U.S. data but rather, a modified

four-factor first-order negotiation measurement model with eight pairs of correlated indicator unique errors did. A second-order model acceptably fit the U.S. data, but it significantly degraded the negotiation model, based on the results of the nested χ^2 tested, which leaves further questions on the relationships among dimensions of negotiation. Tau-equivalence among indicators was not fully supported indicating aggregated data should be used with caution. Results from the multigroup CFA did not support conceptual invariance between the English and Chinese version of the negotiation scale, indicating negotiation is understood differently in the United States and China. Subsequently, cross-cultural equivalence of this negotiation scale is not apparent with these samples.

The study was hypothesis driven and was designed as confirmative by using a valid and reliable measurement and performing CFA. However, the original model was not supported by university student data. Several explanations are possible. The lack of support could indicate a basic difference between negotiations in the context of physical activity as opposed to the context of only outdoor recreation. Wilhelm Stanis et al. (2009b) studies physical activity in an outdoor setting whereas this study focused broadly on outdoor recreation. Another possible explanation may be the age difference between studied populations. The sample in Wilhelm Stanis et al.'s (2009b) study had an average age of 40.1, compared to an average age of 22.1 in this study. The poor model fit with the younger sample might suggest age differences in negotiating with leisure constraints. For example, the Selection-Optimization-Compensation Theory suggested that younger adults attempt to accumulate resources (increasing gain) and older adults focus on minimizing losses (avoid loss) (Day & Unsworth, 2013). Since the focus differs, younger and older adults' commitment to outdoor recreation may differ, and they might deal with constraints differently. An in-depth discussion of age difference in leisure negotiation was out of scope of this study, but our findings suggest further investigations on this issue. Given the tenuous support for the various negotiation strategies and structures, it points to the necessity for continued work in negotiation structure research and inability to accept the existing scales as consistently structurally sound.

Like other negotiation studies, this project modified their hypothesized model to improve fit, indicating a model of leisure constraint negotiation remains elusive. For example, Hung and Petrick (2012) merged time management and improving financial factors together given their strong correlation ($r=0.91$) as did Lee and Scott (2009) who measured time and financial management as one factor, naming it "structural constraint negotiation." This modification might indicate that time management and financial management strategies are used by people in the same manner, compared to the use of other strategies, and thus should be grouped as one negotiation dimension. In terms of respecifying indicator unique errors as correlated, both Son et al. (2008) and Ma et al. (2012) also performed the same modifications to improve model fit. However, their indicators or factors were different from those in this study. For example, Son et al. (2008) added the correlated unique error between interpersonal constraint and interpersonal negotiation, as well as between structural constraint and financial negotiation. Ma et al. (2012) did not report what indicators they specified with correlated unique errors. This study found eight pairs of indicators with correlated unique errors. Some of these indicators may indicate an item order issue in the survey as discussed by Dillman, Smyth, and Christian (2007). Most other indicators indicate that negotiation strategies might not only be used to deal with constraints, but also fit into a broader picture of people's life and thus negotiation strategies were correlated for other causes. For example, people who budget their money might also tend to plan ahead. The relationship among negotiation strategies demands additional research.

This study found that outdoor recreation constraint negotiation differed at the conceptual level across U.S. and Chinese university students. The lack of cross-cultural equivalence of translated negotiation scale indicates applying the same measurement of negotiation to compare U.S. and Chinese student negotiation by mean score is inappropriate and highlights the need for additional equivalence testing in leisure research (Kyle, Bricker, Graefe, & Wickham, 2004). Similarly, Walker and colleagues (2007, 2008a, 2008b, 2011) found leisure motivations were similar, but leisure meanings and leisure constraints differed between Canadian and Chinese university students. One explanation for the differences found in this study may be due to different outdoor recreation participation patterns. In other sections of the questionnaire, Chinese respondents reported significantly less frequent participation in the listed outdoor recreation activities (t -statistic = -20.63). As such, the more frequent participation in the U.S. sample may suggest U.S. students have already successfully negotiated constraints, and more experience in negotiation will affect negotiation. On a related note, a different meaning of leisure might be another reason. Walker and Wang (2008a) found their Chinese sample perceived leisure as with less effort, which was consistent with Liu et al.'s (2008) description of leisure in Chinese, which has a connotation of rest from work. As such, Chinese responses to leisure constraints might be more passive compared to Canadians and those in the United States. The third possible reason for differences in leisure constraint negotiation might lie in the different experiences of leisure constraints of Chinese. Walker and Wang (2008b) found Chinese are more intra- and interpersonally constrained than Canadians. Dong and Chick (2012) found Chinese are more constrained with personal issues, such as lack of interest, lack of initiative, not in the mood, no leisure concept, and no family support issues, compared to structural constraints. If a person is more constrained as lacking of interest, then they might not want to negotiate with constraint at all (Shogan, 2002; Kleiber, Wade, & Loucks-Atkinson, 2005).

Limitation of This Study

Although this study found interesting results about negotiation across cultural groups, study limitations exist. First, the study applied a quantitative approach to a cross-cultural study as Budruk (2010) suggested. Further qualitative approaches such as in-depth interviews and focus groups can explore the questions raised about the various negotiation strategies and their foundations. Second, the present study is limited by the size of the U.S. sample ($n=213$), though the Chinese sample size is ample ($n=534$). Although Soper (2012) suggested a sample size of 200 as acceptable and some negotiation studies using CFA report a sample size less than 200 (Hubbard & Mannell, 2001), a sample size of 300 is preferable. Third, the convenience sample of university students also limited the representation and generality of this study. However, as Walker et al. (2007) argued, "because most Chinese universities are owned by government, and therefore its beliefs are reflected in these institutions' teachings, students may be more likely to reflect Chinese culture than less so" (p. 586). Fourth, although model modifications were presented, the results should be viewed with great caution as it may yield inflated measures of fit (MacCallum, 1986). Future studies testing the modified model are welcomed.

Future Studies

This research found several issues with current negotiation scales and cross-cultural variance of leisure. First, as tau-equivalence was not found, negotiation measurement needs additional research. Although leisure constraint negotiation studies have evolved to examining the relationship among negotiation and other constructs, additional work to focus on the nature and manifestation of negotiation is still necessary, especially about how negotiation strategies work

together and how negotiation fits into the larger personal life and relates to other factors, such as control (Schneider & Wilhelm Stanis, 2007; Walker, 2007).

Regarding Wilhelm Stanis et al.'s (2009b) negotiation measurement, a replication with a larger random sample of Chinese or other cultural groups would quantitatively inform some of questions about negotiation measurement, such as whether the difference between the model fit was caused by data or reflected real differences. Further, examining how the same group of people deals with constraints to different leisure experiences would be beneficial to understand the universality of constraints.

Last but not least, whether negotiation differs across cultures needs further evidence from qualitative and quantitative research. This study found a difference and suggested future investigations on why negotiation may differ across cultures. More qualitative studies on how non-Western groups deal with leisure constraints could help to answer this question to advance leisure constraint negotiation understanding. For example, an ethnology study could consider leisure constraint and negotiation in the context of leisure meanings and activity patterns and in a broader background of culture, akin to Crawford and Stodolska (2008).

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