Testing Alternative Leisure Constraint Negotiation Models: An Extension of Hubbard and Mannell’s Study

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The purpose of this study was to test a model of the leisure constraint negotiation process proposed by Hubbard and Mannell. A multidimensional measure of physically active leisure was used to extend their findings to a sample of middle-aged and older adults in a metropolitan park setting. Volunteers and visitors (aged 50–87 years) of a Midwestern metropolitan park agency completed a self-administered questionnaire. Results of a two-step structural equation modeling procedure suggested a constraint-negotiation dual channel model. In this model, the negative influence of constraints on participation was almost entirely offset by the positive effect of negotiation strategies. The effect of motivation on participation was fully mediated by negotiation. The implications of these findings for studying constraint negotiation and active leisure in mid- to late-life are discussed.

Keywords constraints, negotiation, motivation, middle-aged and older adults, physically active leisure

Leisure researchers have used various constraints models to guide the study of physically active leisure participation and nonparticipation (e.g., Alexandris, Barkoukis, Tsochartzoudis, & Groulos, 2003; Hubbard & Mannell, 2001). Leisure motivation and constraint negotiation have been offered as explanations regarding why constraints do not necessarily reduce or preclude leisure participation (Hubbard & Mannell; Jackson, Crawford, & Godbey, 1993). However, few investigators have empirically tested the relationships between negotiation, motivation, constraints, and leisure participation. One exception is Hubbard and Mannell’s examination of four competing process models of constraint negotiation, which explored employees’ frequency of participation in employer-provided indoor fitness center activities. Hubbard and Mannell emphasized the importance of examining these models across other populations and activities. Thus, the aim of this study was to test Hubbard and Mannell’s
four models as well as a model based on Jackson et al.’s balance proposition to extend the research on negotiation, motivation, constraints, and leisure participation to a different age sample in a different recreation setting. We also employed a multidimensional measurement of physically active leisure including frequency, duration, and intensity information.

Leisure Constraint Negotiation

Leisure constraints limit participation in desired leisure activities (Crawford & Godbey, 1987; Crawford, Jackson, & Godbey, 1991). Crawford et al. developed a hierarchical model of intrapersonal, interpersonal, and structural constraints. Intrapersonal constraints are within the individual such as shyness, poor health, and lack of skill. Interpersonal constraints pertain to social interactions such as the conflicting schedules or family obligations of potential activity partners. Structural constraints are features of the external environment such as inconvenient facilities, time limitations, and lack of low-cost options. Jackson et al. (1993) elaborated on this hierarchical model emphasizing level of participation rather than participation versus nonparticipation. Jackson et al. also proposed possible relationships among constraints, negotiation, and motivation, which have informed ongoing research efforts on leisure participation and negotiation strategies (Frederick & Shaw, 1995; Henderson et al., 1995; Hubbard & Mannell, 2001; Jackson & Rucks, 1995). Understanding whether or not negotiation strategies help people overcome constraints to participation has practical implications for the provision of leisure-based health promotion programs.

Leisure Constraint Negotiation Models

Hubbard and Mannell (2001) expanded Raymore, Godbey, Crawford, and von Eye’s (1993) hierarchical constraints scale, which operationalized intrapersonal, interpersonal, and structural constraints based on Crawford et al.‘s (1991) conceptual model. Hubbard and Mannell added items that pertained to workplace structural constraints such as having different work schedules from others and being too busy with physical activities outside of work. They also included some new intrapersonal, interpersonal, and structural constraint items. Additional intrapersonal constraint items included not being in good enough shape, not having the energy to participate, and lack of comfort participating with people who are older or younger. An additional interpersonal constraint item was having friends or acquaintances with whom to participate. Additional structural constraint items were not having the right clothes or equipment and having a disability that precluded participation.

Hubbard and Mannell (2001) operationalized four primary types of negotiation: time management, skill acquisition, financial strategies, and interpersonal coordination. A time management strategy might entail substituting a desired activity with a more convenient activity, whereas a skill acquisition strategy might be taking lessons. A financial strategy could involve saving money to do desired activities, whereas an interpersonal strategy might be meeting people with similar leisure interests.

Hubbard and Mannell (2001) tested four alternative models of the relationships of constraints, negotiation, and motivation on physically active leisure: the independence model, the negotiation-buffer model, the constraint-effects-mitigation model, and the perceived-constraint-reduction model (Figure 1). Hubbard and Mannell’s independence model suggested that constraints, negotiation, and motivation have independent effects on participation with no proposed relationships between these three factors. Their negotiation-buffer model suggested that negotiation would positively moderate the negative effect of constraints on participation, and motivation would have a positive effect on both negotiation and participation. Their constraint-effects-mitigation model proposed that the more constraints people have, the more they use negotiation strategies, which in turn positively influences participation levels. However, they proposed that negotiation only partially mediates the constraint-participation relationship; constraint still has a negative effect on participation.
Negotiation was also hypothesized to partially mediate the relationship between motivation and participation. Their final model, the perceived-constraint-reduction model, hypothesized the same relationships for motivation as in the constraint-effects-mitigation model. However, in contrast to the constraint-effects-mitigation model, they proposed that negotiation decreases constraint levels, thereby assuaging some of the negative influence of constraint on participation.

Using structural equation modeling, Hubbard and Mannell (2001) found support for the constraint-effects-mitigation model, which suggests that negotiation strategies mitigate the negative effects of constraints on participation. Hubbard and Mannell’s results support
the notion that people with more perceived constraints may still participate and may actually participate more than people with fewer constraints (Kay & Jackson, 1991; Shaw, Bonen, & McCabe, 1991). Their results also supported an indirect effect of motivation on participation through negotiation strategies. These results suggest that negotiation strategies and motivation are crucial elements in shaping leisure participation.

Samdahl and colleagues (Samdahl, 2005; Samdahl & Jekubovich, 1997) argued that if all modifications in leisure are explained in terms of the negotiation of constraints, negotiation may not be a useful construct and may even obscure an understanding of leisure choices. Building off this perspective, Hubbard and Mannell (2001) argued that because constraints triggered strategies, but strategies also independently influenced participation, negotiation strategies may be both facilitators and negotiators of participation.

**Balance Proposition and Alternative Model Extension**

With the exception of Hubbard and Mannell’s (2001) findings, there is a dearth of research on the role of motivation in the constraint negotiation process. Although motivation has been negatively associated with perceived constraints (Carroll & Alexandris, 1997) and has been identified by researchers as important to the negotiation of leisure constraints (Jackson et al., 1993; Mannell & Loucks-Atkinson, 2005), an empirical test of Jackson et al.’s balance proposition has not been done. Therefore, this study incorporates the motivation-balance model (Figure 2).

The motivation-balance model hypothesizes that motivation influences all of the other model factors. In this model, motivation moderates the relationship between constraints and participation. Higher motivation levels are expected to reduce the negative impact of constraints on participation. Similar to the constraint-effects-mitigation and perceived-constraint-reduction models, the motivation-balance model proposes that negotiation mediates the relationship between motivation and participation. According to the proposed model, motivation directly increases participation and higher motivation levels increase the use of negotiation strategies to produce a positive impact on participation.

**Constraint Negotiation Process and Age**

Researchers (e.g., Jackson, 2000; Mannell & Kleiber, 1997) suggested that leisure constraints research should examine sociodemographic factors such as age. Some constraints research has been done with older adult samples. Alexandris et al. (2003) found that constraints predicted a significant proportion of the variance (40%) in older Greek adults’ intentions to participate in a community-based physically active leisure program. Intraper-sonal constraints (e.g., lack of confidence, fear of getting hurt) and structural constraints (e.g., access, finances) were the strongest predictors. Stanley and Freysinger (1995) found that age was related to declines in sports participation, and Shaw et al. (1991) showed that age accounted for 8% of the variance in physically active leisure. In addition, Wilcox

![FIGURE 2](image.png)
and colleagues (Wilcox et al., 2003, 2000) determined that increased age was negatively associated with participation in physically active leisure for older women. Health problems may be a particularly salient constraint to leisure activity participation among adults aged 50 and older (see McGuire & Norman, 2005, for a review). For example, health and functional ability are related to ceasing leisure activities in later life (Strain et al., 2002). Researchers found that health problems limit trail use (Bialeschki & Henderson, 1988) and travel (Blazey, 1992). Also, Murphy, Williams, and Thomas (2002) and O’Brien Cousins (2000) documented that fear of falling, fear of injury, and fear of health problems may constrain physically active leisure among older adults. However, McGuire, Dottavio, and O’Leary (1986) found that fewer middle-aged and older adults experienced constraints than younger adults. They suggested that the older age demographic may reduce participation rates or develop coping skills to deal with constraints on participation. In the latter case, evidence that middle-aged and older adults use life management strategies to adapt to age-related functional limitations and health problems (Freund & Baltes, 2002) suggested that negotiation is relevant in mid- to late-life. However, researchers have not examined the relationships among constraints, negotiation, motivation, and participation among middle-aged and older adults.

**Study Purpose, Research Objectives, Research Questions, and Hypotheses**

Our purpose was to extend Hubbard and Mannell’s (2001) modeling of the constraint negotiation process using a multidimensional measure of physically active leisure with middle-aged and older adults in a metropolitan park setting. People aged 50 and older have lower rates of leisure-time physical activity in the United States compared to younger age groups (Centers for Disease Control and Prevention, 2005), and constraint negotiation processes may be different for them. We wanted to determine whether or not Hubbard and Mannell’s models applied to middle-aged and older adults. We thought testing these empirical models was relevant beyond participants of corporate employee indoor fitness centers, which likely represent a small proportion of the overall physically active leisure in which people 50 and older engage. To obtain a broader range of both indoor and outdoor leisure activities, we conducted this study with park visitors and volunteers of a Midwestern metropolitan park agency.

Our study employed a measure designed to tap the multiple dimensions of physically active leisure (e.g., frequency, duration, and intensity). Most studies on constraints to physically active leisure have used unidimensional measures of active leisure such as the frequency of participation in the past year, month, or week (Alexandris & Carroll, 1997; Alexandris et al., 2003; Hubbard & Mannell, 2001) or the duration of participation (Mannell & Zuzanek, 1991) (see Shaw et al., 1991, as an exception). Multidimensional measures of physically active leisure may provide a more valid representation of participation than unidimensional measures (Courneya & McAuley, 1994; Skelton & Beyer, 2003).

**Research Questions and Hypotheses**

We tested three research questions:

1. Is motivation to participate in physically active leisure positively related to a multidimensional measure of such participation?
2. Is there an interaction between negotiation and leisure constraints on physically active leisure (i.e., the buffer proposition)?
3. Is there an interaction between motivation and leisure constraints on physically active leisure (i.e., the balance proposition)?
We tested four hypotheses based on Hubbard and Mannell’s (2001) findings:

1. Middle aged and older adults with higher levels of leisure constraint will have lower levels of physically active leisure.
2. Middle aged and older adults with higher levels of negotiation will have higher levels of physically active leisure.
3. Middle aged and older adults with higher levels of leisure constraint will have greater use of negotiation strategies.
4. Middle aged and older adults’ motivation will have an indirect, positive relationship with physically active leisure through negotiation strategies.

Methods

Respondents and Procedure

A convenience sample of 271 volunteers and visitors to a Midwest metropolitan park agency aged 50 years and older comprised the study sample. To recruit park volunteers for the study, we contacted approximately 500 older park volunteers using mail, and where possible, e-mail (Dillman, 1999). We recruited park visitors through banners posted at special events and park offices, which advertised a study of people aged 50 and older and the chance to win raffle prizes. Some park visitors were recruited for the study through word of mouth at the special events or through spouses who were park volunteers.

We distributed questionnaires at the following locations: a) three park visitor centers, b) the agency’s September zoo volunteer meeting, and c) two special events for the general public. We asked individuals to complete on-site self-administered questionnaires during two community-wide free special events held by the agency as well as during group-administered survey sessions at four park offices/centers. The special events targeted park visitors and the park offices targeted park volunteers. We chose the special event study sites because they were well-attended by adults aged 50 years and older in previous years. We held the volunteer sessions at the park offices, which were convenient for the park volunteers. We offered the respondents incentives to participate such as complimentary refreshments, door prizes (e.g., food baskets), and raffle prizes (e.g., restaurant, book store, and movie gift certificates). Respondents had the option of completing the questionnaire on-site or taking it home and returning it via a preaddressed postage-paid envelope. We also left questionnaires at the park agency offices for potential respondents to complete and return via mail. Of the 339 questionnaires that were distributed, 298 questionnaires were returned for a response rate of 88%. We received 242 surveys from on-site data collection and 56 surveys from mail returns. For on-site returns, we received 141 surveys from the two special events and 101 surveys from the park sessions. Twenty-three of the surveys were not included in the present analyses because they had nonrandom missing data (Schafer & Graham, 2002) mostly from the special events \( n = 20 \). Of the remaining 275 surveys, 4 were omitted because of outlier data (i.e., an unusually large number of hours of physical activity such as 30-plus hours or no distinction between light, moderate, or strenuous was made) resulting in a total sample of 271 respondents.

Measures

We measured constraints using a modified version of the Hubbard and Mannell (2001) leisure constraint scale. We omitted items referencing workplace exercise programs and added items on fear of getting hurt (Alexandris et al., 2003) and poor health (Shaw et al., 1991). The constraints subdomains are intrapersonal, interpersonal, and structural constraints. Some examples of items were, “I don’t have the energy to participate”
“The people I know usually don’t have time to start an activity with me” (interpersonal constraint), and “I would do an activity if the facilities I need are not crowded” (structural constraint). Response options ranged from strongly disagree (1) to strongly agree (5).

Negotiation strategies were measured using the Hubbard and Mannell (2001) negotiation strategies scale, which was modified for consistency with the physical activity terminology used in the physical activity scale for the elderly (PASE), and with three workplace items omitted. The negotiation strategy subdomains are time management, financial management, skill acquisition, and interpersonal coordination. Some examples of item statements were, “I try to be organized” (time management), “I try to budget my money” (financial management), “I try to improve my skills” (skill acquisition), and “I arrange rides with friends” (interpersonal coordination). The response options were modified for consistency with the physical activity response options and included: never (1), seldom (2), sometimes (3), often (4), and very often (5).

The two general motivation items from Hubbard and Mannell (2001) were slightly modified for language consistency with the PASE questions used in this study (in italics): “I participate or would like to participate in a recreation, sport or fitness activity for my own immediate enjoyment or pleasure,” and, “I participate or would like to participate in a recreation, sport or fitness activity because it is good for my health.” The response options ranged from “not at all” (1) to “very much” (5). We used Hubbard and Mannell’s two motivation items to facilitate study comparisons. In addition, enjoyment and health motives for exercise are reliable and valid for older adults (Resnick, 2005).

A paragraph on free time recreation, sport and fitness activities and a modified list of physical activities from the historical leisure activity questionnaire (Kriska et al., 1990) were provided to introduce respondents to a modified version of the leisure time activity subscale of the PASE (New England Research Institutes, Inc., 1991). The scale assessed physically active leisure over the past seven days. The list of physical activities included both indoor and outdoor physical activities. We also provided an “other” option so respondents did not feel compelled to list only the activities referenced.

Respondents completed a series of questions from the leisure time activity subscale pertaining to four intensity levels: light, moderate, strenuous, and muscle strength. The wording was modified to: “Over the past seven days, how often did you participate in [intensity level] recreation, sport or fitness activities?” Each of these questions was followed by examples of activities that might be considered within the given intensity level. The word “might” was used purposefully so that respondents would be encouraged to indicate activities under the categories as they saw fit, rather than according to a priori researcher criteria. Frequency response options were: (0) never, (1) seldom (1–2 days), sometimes (3–4 days), and often (5–7 days). Duration response options were less than one hour (1), 1 but less than 2 hours (2), 2–4 hours (3), and more than 4 hours (4). Similarly, the open-ended activities question in the series was modified to: “What were these [intensity level] recreation, sport or fitness activities?” Examples of activities might be walking, golfing, swimming, and weight lifting. Based on the Centers for Disease Control and Prevention (1997) definition of physical activity, respondents were allowed to indicate walking, gardening, and yard work within the intensity-based question series on physically active leisure. This differed from the original PASE, which separates walking from the intensity-based question series and lists gardening and yard work in a separate section under household activities.

Following the PASE scoring protocol (New England Research Institutes, 1991), frequency (days) and duration (hours) were converted into an hours per day score and then weighted by intensity level (i.e., light = 21, moderate and strenuous = 23, muscle = 30). The resulting value reflected a weighted sum score for physically active leisure across
frequency, duration and intensity. The PASE has been shown to have acceptable test-retest reliability \( r = .75 \) (Washburn et al., 1993) and validity (Martin et al., 1999; Washburn & Ficker, 1999; Washburn et al., 1999).

**Data Analysis**

We normalized the multidimensional measure of physically active leisure using a square root transformation. Resultant multiple regression model diagnostics (i.e., histogram, normal probability plot, and scatterplot) indicated that the standardized residuals conformed to ordinary least squares assumptions of linearity, normality and heteroscedascity. We used Amos 5.0 for SPSS 13.0 to examine the bivariate relationships and to test the interactive effects and the structural equation models, using full information maximum likelihood (FIML) estimation. This method of handling missing data creates accurate parameter estimates and standard errors (Graham, Cumsille, & Elek-Fisk, 2003).

To test the possible moderating influence of negotiation and motivation on the constraint-participation relationships, we used Barron and Kenny’s (1986) protocol for testing interaction effects. We calculated interaction terms for negotiation and constraint (negotiation \( \times \) constraint) and motivation and constraint (motivation \( \times \) constraint) and included them with their respective components in multiple regression equations with participation as the dependent variable (Graham et al., 2003).

We used structural equation modeling (SEM) to test the alternative models of the constraint negotiation process. SEM analysis combines a confirmatory factor analytic model (CFA; also called a measurement model) with a regression model (also called a structural model) to determine the goodness of fit between the hypothesized model and the sample data (Byrne, 2001). The goodness of fit reflects the degree to which the covariances implied by the hypothesized model fit the actual sample covariances. The closer the fit, the better the proposed model accounts for the variance in the data.

Following Kline’s (2005) recommendation, we tested and respecified the measurement model to obtain an acceptable measurement model prior to testing the alternative structural models. The measurement model consisted of four latent variables: constraints, negotiation, motivation, and physical activity participation. Physically active leisure participation was a single-indicator variable while constraints, negotiation, and motivation were multiple-indicator variables. The three indicators for constraints and the four indicators for negotiation were the subdomain mean scores using standardized items to control for unequal variances across items. The indicators for motivation were the scores for the enjoyment motive and health motive items. In sum, there were ten indicator variables. To determine whether respecification of the model was needed to increase the variance accounted for in the model, we examined the correlation residuals, which are the differences between the sample correlations and the predicted model correlations (Bollen, 1989). These residuals should be near zero for close-fitting models. Therefore, we allowed the error terms associated with correlation residuals larger than .15 to covary to improve the measurement model prior to testing the full structural equation models. In full SEM (consisting of both CFA and regression analysis), the standardized parameter estimates \( (\beta)$s) for the indicators provide the factor loadings on the latent variable (CFA) whereas the standardized parameter estimates for the latent factors (regression model) provide information on the importance of the hypothesized relationships (Byrne, 2001).

The chi-square statistic provides one measure of goodness of fit; the higher the probability, the closer the fit (Bollen, 1989). However, achieving a nonsignificant chi-square statistic is difficult because of its sensitivity to sample size and the assumption of perfect fit as opposed to close fit (Byrne, 2001). Therefore, a ratio of chi-square to degrees of freedom has been suggested with ratios of three or less recommended (Carmines & McIver, 1981).
addition, several fit indices have been proposed to address model fit. Root mean square error
of approximation (RMSEA) is an absolute fit index used to determine how well the model
fits the population covariance matrix. Values less than .05 suggest a good fit, and values as
high as .08 indicate an acceptable fit of the data (Browne & Cudeck, 1993). Incremental
fit indices including the comparative fit index (CFI), incremental fit index (IFI), normed fit
index (NFI), and Tucker-Lewis index (TLI; also called the non-normed fit index) compare
the hypothesized model to the baseline or null model (Byrne, 2001). Values greater than .95
indicate a close fit (Hu & Bentler, 1999), with values as low as .90 suggesting an acceptable
fit (Marsh, Hau, & Wen, 2004). The TLI considers the complexity of the hypothesized
model and is one of the most effective parsimony-adjusted fit indices (Williams & Holahan,
1994).

Results
We compared the characteristics of the two sub-samples of park volunteers \( (n = 150) \) and
park visitors \( (n = 121) \) to determine whether or not analyzing them as a single group was
appropriate. The only statistically significant difference between the two samples was age.
On average, park volunteers were approximately three years older than park visitors. The
two samples were similar in terms of levels of constraint, negotiation, motivation, physical
activity, and gender so the analyses were conducted using the full sample.

Respondent Characteristics
Of the 271 respondents, 60% were female and 40% were male. Respondents ranged in
age from 50 to 87 years old with a mean of 63.4 years \( (SD = 8.9) \). The majority of the
respondents were white (96%) and married (64%). Fifty-five percent of the respondents
were retired, 31% worked full-time, and 11% worked part-time. Nearly one quarter (24%)
of the sample had completed a four-year college or university education and 27% had
completed graduate-level or professional degrees. For respondents who provided income
information \( (n = 237) \), nearly half (45%) had a household income of $50,000 or more.
Seventeen percent of the respondents earned $25,000 or less, 38% earned $25,000–49,999,
23% earned $50,000–74,999, 10% earned $75,000–99,999, and 12% earned $100,000 or
more.

Item Consistency and Descriptive Information
Table 1 provides means and standard deviations for each of the variables used in the model
testing and the alpha and correlation coefficients from this study and Hubbard and Mannell’s
(2001) study for comparison purposes. Most of the coefficient alphas yielded acceptable
values with the exception of financial negotiation \( (\alpha = .57) \), which was retained to replicate
prior constraint negotiation research.

Of the 259 respondents who provided complete frequency information across intensity
levels, 25 had not participated in any free time physical activities in the past week. Of
the 234 active respondents, 94% had participated in at least one light physical activity,
52% had participated in at least one moderate activity, 21% had participated in at least
one strenuous activity, and 37% had engaged in at least one muscle strengthening activity.
Respondents participated in light to strenuous physical activity in locations such as the home,
the neighborhood, the metropolitan park system, other parks, and the gym. Respondents
usually participated in muscle strengthening at home or the gym.

Respondents were moderately constrained \( (M = 2.66) \), with the constraint subdomain
mean scores all falling near the scalar midpoint of 3. Structural constraints were rated
the highest followed by interpersonal constraints and intrapersonal constraints (Table 1).
Respondents used moderate levels of negotiation strategies \( (M = 2.89) \), with all negotiation
subdomain mean scores near the midpoint. Respondents used skill acquisition strategies
TABLE 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Present study</th>
<th>Hubbard and Mannell (2001)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Participation</td>
<td>4.71</td>
<td>2.79</td>
</tr>
<tr>
<td>Constraint (Total Scale)</td>
<td>2.66</td>
<td>0.46</td>
</tr>
<tr>
<td>Intrapersonal</td>
<td>4.67</td>
<td>0.57</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>2.71</td>
<td>0.66</td>
</tr>
<tr>
<td>Structural</td>
<td>2.92</td>
<td>0.68</td>
</tr>
<tr>
<td>Negotiation (Total Scale)</td>
<td>2.89</td>
<td>0.49</td>
</tr>
<tr>
<td>Time management</td>
<td>2.72</td>
<td>0.51</td>
</tr>
<tr>
<td>Skill acquisition</td>
<td>3.08</td>
<td>0.68</td>
</tr>
<tr>
<td>Interpersonal coordination</td>
<td>2.97</td>
<td>0.79</td>
</tr>
<tr>
<td>Financial</td>
<td>2.95</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoyment motive</td>
<td>4.08</td>
<td>1.12</td>
</tr>
<tr>
<td>Health motive</td>
<td>4.17</td>
<td>1.00</td>
</tr>
</tbody>
</table>


The most and time management strategies the least (Table 1). Further, respondents were highly motivated to participate in physically active leisure for enjoyment (M = 4.08) and for health benefits (4.17). The correlation coefficient for the enjoyment and health motives was \( r = .66 \) (\( p < .01 \)).

**Evaluating the Leisure Constraint Negotiation Models**

*Testing the moderating effects of motivation and negotiation on constraint.* The motivation-constraint and the negotiation-constraint interaction terms were not statistically significant for physically active leisure participation. Therefore, the negotiation-buffer model and the motivation-balance model were not supported in this study.

*Testing the independence and mediation models of constraint negotiation.* We tested and compared the fit of the independence, constraint-effects-mitigation, and perceived-constraint-reduction models. The measurement model was first tested as the baseline model. The measurement model provided a minimally adequate fit of the data \( \chi^2 / df = 2.54, p < .001, CFI = .93, TLI = .87, RMSEA = .08 \). Based on an assessment of the residual correlations, we specified correlated error terms for (a) interpersonal constraint and interpersonal negotiation and (b) structural constraint and financial negotiation. The creation of this respecified model fits with the theoretical expectations that interpersonal negotiation strategies relate to interpersonal constraints, and that financial negotiation strategies relate to finance-based structural constraints. For example, a person might perceive fewer interpersonal leisure constraints because they access high levels of interpersonal negotiation resources such as people with whom to participate or family support. Financial negotiation
strategies such as improvising equipment and/or clothes might occur in response to the finance-based structural constraint of lack of money for clothes and equipment. Specification of correlated error terms for these indicators implies that a source of variability between them is not accounted for by the underlying factors in the model (Kline, 2005).

The model fit statistics for the respecified measurement (CFA) model were improved substantially ($\chi^2/df = 1.51$, CFI = .98, TLI = .96, RMSEA = .04). The factor loadings associated with the indicators of the latent variables were moderate to high. Intrapersonal constraint had the highest factor loading on constraint ($\beta = .71$), followed by interpersonal constraint ($\beta = .57$) and structural constraint ($\beta = .55$). Time strategies ($\beta = .79$) had the highest factor loading on negotiation, followed by skill acquisition ($\beta = .68$), financial strategies ($\beta = .66$), and interpersonal coordination ($\beta = .62$). The enjoyment motive ($\beta = .78$) and health motive ($\beta = .85$) had high factor loadings on motivation.

We tested the alternative structural models using the respecified measurement model. We examined the fit indices used by Hubbard and Mannell (2001) to aid comparisons of fit patterns (Table 2). Results indicated that the independence and constraint-effects-mitigation models provided the same degree of fit with fit indices suggesting a good fit of these two models to our data. The perceived-constraint-reduction model did not fit our data well. Although the bivariate correlation coefficient between motivation and participation was statistically significant ($r = .26$, $p < .001$), this relationship was not significant in the mitigation model nor the reduction model. The $\beta$s were also nonsignificant for the path

<p>| TABLE 2 Comparative Summary of Fit Indices for the Independence, Constraint-Effects-Mitigation, Perceived-Constraint-Reduction, Reduced Independence, and Constraint-Negotiation Dual Channel Models |</p>
<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2/df$</th>
<th>IFI</th>
<th>CFI</th>
<th>RMSEA</th>
<th>NFI</th>
<th>TLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hubbard &amp; Mannell’s (2001) Independence model</td>
<td>2.34</td>
<td>0.90</td>
<td>0.90</td>
<td>0.09</td>
<td>0.84</td>
<td>0.86</td>
</tr>
<tr>
<td>Replication</td>
<td>1.52</td>
<td>0.98</td>
<td>0.98</td>
<td>0.04</td>
<td>0.94</td>
<td>0.96</td>
</tr>
<tr>
<td>Hubbard &amp; Mannell’s (2001) Constraint-effect-mitigation model</td>
<td>1.62</td>
<td>0.96</td>
<td>0.95</td>
<td>0.06</td>
<td>0.89</td>
<td>0.94</td>
</tr>
<tr>
<td>Replication</td>
<td>1.52</td>
<td>0.98</td>
<td>0.98</td>
<td>0.04</td>
<td>0.94</td>
<td>0.96</td>
</tr>
<tr>
<td>Hubbard &amp; Mannell’s (2001) Perceived-constraint-reduction model</td>
<td>1.80</td>
<td>0.94</td>
<td>0.94</td>
<td>0.07</td>
<td>0.88</td>
<td>0.92</td>
</tr>
<tr>
<td>Replication</td>
<td>4.40</td>
<td>0.84</td>
<td>0.84</td>
<td>0.11</td>
<td>0.81</td>
<td>0.71</td>
</tr>
<tr>
<td>Hubbard &amp; Mannell’s (2001) Independence model (reduced)</td>
<td>1.54</td>
<td>0.98</td>
<td>0.98</td>
<td>0.05</td>
<td>0.93</td>
<td>0.95</td>
</tr>
<tr>
<td>Replication</td>
<td>1.52</td>
<td>0.98</td>
<td>0.98</td>
<td>0.04</td>
<td>0.93</td>
<td>0.96</td>
</tr>
</tbody>
</table>

Note. Because the models in Hubbard and Mannell (2001) and this study were specified differently, it is the overall pattern of fit between the alternative models of each study that is of interest rather than the differences between individual fit indices. Reproduced statistics from “Testing competing models of the leisure constraint and negotiation process in a corporate employee recreation setting,” by J. Hubbard and R. Mannell, 2001, *Leisure Sciences, 23*, p. 157. ©2001 by Leisure Sciences. Reprinted with permission of the authors.
linking constraint to negotiation (.07) in the mitigation model and the path linking negotiation to constraint (.12) in the reduction model. Following backward stepwise regression procedures, we omitted nonsignificant paths \((p > .05)\) from the models and retested them.

The constraint-effects-mitigation and the perceived-constraint-reduction models reduced to yield the same model. In this reduced model, the path between constraint and participation was negative \((\beta = -.34, p < .001)\) and the path between negotiation and participation \((\beta = .33, p < .001)\) and motivation and negotiation \((\beta = .37, p < .001)\) were positive. Because no significant path existed between constraint and negotiation in this reduced model, it was renamed the constraint-negotiation dual channel model to distinguish it from the other models.

Both the reduced independence model and the dual channel model provided a good fit of the data (Table 2). The primary difference between the reduced independence model and the dual channel model is that the dual channel model includes the effect of motivation. The parsimony-adjusted TLI and the RMSEA of the dual channel model suggest that this model provided a slightly better fit of the data. The dual channel model, with factor loadings and regression paths, is depicted in Figure 3.

**Discussion**

***Balance and Buffer Hypotheses***

Jackson et al.’s (1993) balance proposition suggested that level of leisure participation may result from an interaction between motivations and constraints. However, in this study, motivation did not moderate the relationships between constraints and leisure participation. In other words, the relationships between constraints and the physical activity outcomes did not significantly differ between middle-aged and older adults with low levels of motivation and those with high levels of motivation. This finding may reflect that most of the respondents were already active or placed positive value on physical activity.

Hubbard and Mannell (2001) suggested that negotiation may “buffer” or moderate the effects of constraints on participation, but they did not find support for this proposition. Consistent with their results, the findings of this study failed to support the buffer hypothesis. Levels of negotiation did not moderate the negative influence of constraints on physically active leisure. Hubbard and Mannell suggested that the buffer effect may not be as robust as is often presumed. This failure of negotiation to reduce the effects of constraints may result from negotiation strategies that do not match the constraints encountered. For example, negotiation strategies related to time, finances, and interpersonal coordination (leading to high levels of negotiation overall) would not alleviate intrapersonal constraints. Future research might look at the relationships between specific negotiation strategies and specific constraints to participation rather than looking at overall levels of negotiation and constraint.

***The Role of Motivation in Constraint Negotiation***

These findings support previous research on the importance of motivation in the constraint negotiation process (Alexandris, Tsorbatzoudis, & Grouios, 2002; Carroll & Alexandris, 1997; Hubbard & Mannell, 2001; Jackson et al., 1993; Mannell & Loucks-Atkinson, 2005). The constraint-negotiation dual channel model, which indicated the independent and opposing effects of constraints and negotiation and the indirect effect of motivation on participation, provided a better fit to the data than did the reduced independence model, which omitted the independent effect of motivation on participation. Adding motivation increased rather than decreased the fit of the dual channel model. Because the perceived-constraint-reduction and the constraint-effects-mitigation models reduced to its equivalence, further validation of the application of the dual channel model in this sample was provided.
The constraint-negotiation dual channel model for physically active leisure in mid to late life: Final latent variable model.

**Note:** Following conventional structural equation modeling notation, ellipses refer to the latent variables, rectangles refer to the observed variables and circles indicate error variances. All path values are standardized parameter estimates ($\beta$s). Path values between the observed variables and their respective latent variables indicate factor loadings (CFA). Path values associated with arrows between latent variables indicate the degree and direction of the relationship (regression model). All paths in this final reduced model are significant. Due to space considerations, covariances between constraint-motivation, social-interpersonal, and finances-structural variables are not shown.

In both this study and Hubbard and Mannell’s (2001) study, the relationship between motivation and participation was fully mediated by negotiation strategies. Motivation positively influenced negotiation strategies which, in turn, positively influenced participation. This relationship was maintained with our older park-based sample when accounting for a wider range of activities and a multidimensional measure of physically active leisure. Motivation appears to play a vital role in the development and use of strategies to overcome constraints to participation. Therefore, assessing participants’ motivation levels—in addition to participation levels—before, during, and after a given program might be worthwhile. Likewise, identifying whether negotiation strategies increase as motivation increases over the course of a program might be helpful. Further, researchers should use motivation items that are reflective of the type of participation (e.g., passive forms of leisure).
Negotiation Strategies and Resources—Are They Just Facilitators?

The results did not support Hubbard and Mannell’s (2001) finding that negotiation partially mediated the relationship between constraint and participation. Instead, our findings indicated that constraint and negotiation work independently and with similar, but opposite, influences on participation. Negotiation positively influenced participation whereas constraint negatively influenced participation. Thus, what about the debate raised by Hubbard and Mannell regarding whether or not these strategies and resources should be considered negotiators or just facilitators? It may appear the strategies and resources used by the respondents were facilitators rather than negotiators because the effects of negotiation were independent of participation. However, considering this question in light of the older respondents who participated in this study may be helpful. Adults 50 years and older have experienced years of competing demands and desires. As a result, they may have already developed strategies and identified resources to negotiate some constraints to leisure participation. However, some leisure constraints may persist and new ones (e.g., age related physical limitations) may emerge. Possibly some of the strategies and resources these adults use to facilitate participation occur irrespective of constraints (Hubbard & Mannell, 2001).

Unfortunately, because of the cross-sectional design of this study we cannot examine the relationships between lifelong leisure constraints, negotiation, and participation nor the possible ebb and flow of these relationships over time. More research is needed to adequately address this theoretical debate. Therefore, some words of caution are warranted. We do not wish to argue the universality of constraint negotiation (for a more thorough discussion on this pitfall, see Samdahl, 2005). Perhaps “negotiation strategies” were only facilitators of physically active leisure for this sample of middle-aged and older adults.

Study Limitations

One of the limitations of using a convenience sample is that the results cannot be generalized. We cannot say whether we would find similar results with a probability sample of adults aged 50 years and older in this metropolitan park system, a probability sample of this age group using park systems in different geographic locations, or a general population sample of people 50 years and older. For instance, our sample was not representative of the general population of middle-aged and older adults in terms of socioeconomic status and race/ethnicity. The majority of our sample was also physically active, which we would not expect in a general population sample of this age demographic. We would expect that the levels of constraints, negotiation, motivation, and participation would differ based on these sample characteristics. Further research on constraint negotiation of physically active leisure needs to be conducted with representative samples from the general population to examine the generalizability of the results from this study and other studies using limited samples.

We studied the constraint negotiation process with a wide range of ages (i.e., 50–87 years), which may encompass distinct cohorts that have different constraints, negotiation, motivation, and leisure participation. Perhaps the constraint negotiation process differs for people 50 to 64, 65 to 74, and 75 years and older. For instance, do middle-aged adults use more negotiation strategies to overcome constraints to physically active leisure participation than do older adults? Examining the possible differences in the constraint negotiation process by age cohort seems worthwhile.

Although we used Hubbard and Mannell’s (2001) two motivation items to simplify comparisons between our results and theirs, motivations beyond health and enjoyment influence physically active leisure participation in mid- to late-life. These motivations include expectations that participation will improve mood, endurance, alertness, and energy, and
provide a sense of personal accomplishment (Resnick, 2005). In addition, Driver and colleagues developed a typology of recreation experience preferences (cited in Manning, 1999) that may be salient motivations for adults aged 50 years and older. Motivations for physically active leisure in mid- to late-life may relate to social recognition, autonomy, social opportunities, learning, excitement, introspection, and nostalgia, among others. Perhaps we would have come to different conclusions about the relationships among the study variables had we used a broader array of motivations for physically active leisure.

We examined leisure constraint negotiation at one point in time. To examine whether the leisure constraint negotiation is a process—and, if so, in what cases it appears relevant—it needs to be studied over time, in interpersonal relationships, and in the socialization of specific leisure behaviors. For example, Mannell and Loucks-Atkinson (2005) recommended that researchers examine constraint negotiation as an ongoing process that may operate differently at different stages of participation (i.e., from the adoption to the maintenance stages). Hubbard and Mannell (2001) indicated that such longitudinal research has been lacking, which still appears to hold true. Relatively little research exists on leisure constraint negotiation during life transitions (Jackson, 2005). For instance, do life transitions such as mid- to late-life career shifts or work retirement lead to different constraints and resources? Do negotiation strategies change during life transitions? These and other questions about the role of the constraint negotiation process in life transitions remain largely unanswered. Further, although there has been a substantial body of research on the role of leisure as a buffer to negative life events (see Hutchinson & Kleiber, 2005, for a review), little research has been undertaken on the constraint negotiation process in the aftermath of negative life events such as after the loss of a loved one or the onset of a chronic illness or injury. What would constraint negotiation of physically active leisure look like during these life transitions?

**Future Research: Understanding Constraint Negotiation in Context**

*The context of gender and age.* Future research needs to explore other factors known to influence physically active leisure such as age and gender. Stanley and Freysinger (1995) found that men participated in sports more frequently than did women and Shaw et al. (1991) found that men engaged in physical activity more hours per week than did women. In addition, Altergott and McCreedy (1993) and Jackson and Henderson (1995) found that men had lower leisure constraint levels than women irrespective of age. However, Alexandris et al. (2003) did not find evidence of gender differences in the constraints of older Greek participants in a physical activity program.

Researchers could include age and gender as independent variables in models to see how they influence the constraint negotiation process. According to the gendered life course perspective (Moen, 2001), women and men have different biographical paths and pacing, relational careers, turning points, and issues of enduring inequality, historical convergence, and structural lag, all of which contribute to different health outcomes. Examining whether the relationships between motivation, negotiation, constraints, and physically active leisure participation differ for men and women aged 50 and older across important life transitions such as retirement, caregiving, widowhood, and the onset of chronic health conditions would be worthwhile. For example, do constraints differ by gender for middle-aged and older adults? Are there differences between men and women in motivation levels or the utilization of negotiation strategies across the life course? If the answers to these questions yield differences by gender, these differences may reveal implications for the development and implementation of leisure-based physical activity programs.

*Other contexts.* Another way to contextualize the constraint negotiation process would be to assess it for different dimensions of physically active leisure. Testing a model of
constraint negotiation in terms of intensity and duration of participation in addition to the typical frequency outcome would be interesting. Contextualizing leisure constraint negotiation would also be enhanced by examining constraint, negotiation, and motivation in relation to other criterion variables. In particular, social cognitive factors such as social support, self-efficacy, and self-identity may be helpful in understanding constraints and the utilization of negotiation strategies and resources. Hubbard and Mannell (2001) suggested that researchers attend to self-efficacy as a motivator as well as an indicator of negotiation success, and Mannell and Loucks-Atkinson (2005) provided a model of constraint negotiation that incorporates negotiation self-efficacy. Perhaps negotiation self-efficacy would help explain the independent effects of constraint and negotiation. Maybe confidence in one’s ability to procure resources and to initiate strategies influences behaviors that facilitate participation in physically active leisure, regardless of whether constraints are encountered.

Situational contexts may be particularly meaningful for middle-aged and older adults. More people are retiring before age 65 years than ever before (Gendell, 1998). Middle-aged and older adults are often caregivers for a family member (National Alliance of Caregiving & American Association for Retired People, 2004). Older adults are also most likely to have health problems that limit leisure activities (Strain et al., 2002). The constraint negotiation of physically active leisure for retirees, caregivers, and people with chronic health conditions may be different than for other populations. Thus, exploring these differences and their implications could be worthwhile.

Specific types of constraints and negotiation strategies appeared to measure something in common. This finding supports the importance of attending to additional variables in the study of the constraint negotiation process. Perhaps perceived interpersonal constraints and interpersonal negotiation strategies reflect an interpersonal leisure repertoire or an interpersonal leisure awareness. Hubbard and Mannell (2001) suggested examining a person’s repertoire of resources in the constraint negotiation process may be useful. Future research on the constraint negotiation of physically active leisure would be enhanced by attending to the role of such factors as race/ethnicity, socioeconomic status, and residential status in empirical models of the relationships between the constraint and negotiation sub-domains, in contrast to the general models of constraint and negotiation tested by Hubbard and Mannell (2001) and in our study. In their model of leisure constraint negotiation, Walker and Virden (2005) pointed to other understudied micro- and macro-level factors (e.g., personality traits, cultural/national forces) that would contribute to the contextualization of leisure constraint negotiation of physical activity.

Conclusion

The current study partially replicated and extended the analyses of Hubbard and Mannell (2001) with visitors and volunteers aged 50 years and older at a metropolitan park, finding evidence for a motivation-negotiation process. Results suggested that negotiation fully mediated the relationship between motivation and participation in physically active leisure. However, no evidence was found in this study for a constraint-negotiation process. Constraint and negotiation were unrelated with both having independent and opposite effects on participation. Based on these findings, we proposed an alternative model for physically active leisure in mid- to late-life—the constraint-negotiation dual channel model. Further research is needed to continue to test this model and its practical implications as well as alternative models of the leisure constraint negotiation process with different populations, with additional factors, and across different leisure contexts to understand its role in physically active leisure behavior.
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