

A Motivational Model of Leisure Participation in the Elderly

GAËTAN F. LOSIER

*Laboratoire de Recherche sur le Comportement Social
Université du Québec à Montréal*

PAUL E. BOURQUE

*Département de Psychologie
Université de Moncton*

ROBERT J. VALLERAND

*Laboratoire de Recherche sur le Comportement Social
Université du Québec à Montréal*

ABSTRACT. We developed a motivational model of leisure participation to examine the factors that may encourage involvement by the elderly in leisure activities. The model posits that opportunities and constraints determine motivation to participate, which in turn predicts satisfaction. Satisfaction is expected to lead to participation. In a study testing the proposed model, 102 elderly Canadians answered a questionnaire assessing the variables in the model. As predicted, results of a path analysis supported the proposed motivational model and accounted for 32% of the variance in the elderly's leisure participation. These results are discussed in the light of self-determination theory (Deci & Ryan, 1985).

ELDERLY PEOPLE have recently taken a greater interest in being more active and living more fully. In Canada, for instance, the proportion of people over 65 enjoying physical activity regularly (at least once a month) rose from 50% to 63% between 1976 and 1981 (Statistics Canada, 1986). Because leisure activities often include social interactions (Crandall, 1979; Kelly, Steinkamp, & Kelly, 1986), leisure participation may be particularly beneficial to the elderly, because social involvement is considered a key factor to successful aging (Atchley, 1976). Regular leisure participation has been shown to lead to psychological benefits among the elderly (Iso-Ahola, 1980; Tinsley, Colbs, Teaff, & Kaufman, 1987).

We examined the factors that may influence leisure participation by developing and testing a motivational model positing that contextual factors

may affect motivation, which in turn will determine leisure satisfaction. The model also presumes that leisure satisfaction will influence participation. In this study, we have considered four dimensions: determinants of motivation (contextual factors), leisure motivation, leisure satisfaction, and leisure participation.

Among the numerous factors that may affect leisure experiences, motivation may be most important. Motivation is considered an integral part of the leisure experience (Iso-Ahola, 1979; Neulinger, 1974) and is defined as the force that initiates, directs, and sustains behavior (Petri, 1981). In this context, leisure motivation can be referred to as the energy that initiates, directs, and sustains leisure involvement. The research literature on motivation traditionally considers different types of motivation, which are posited to lead to particular outcomes.

Self-determination theory (Deci, 1980; Deci & Ryan, 1985, 1987, 1991) can help assess respective consequences of different types of motivation. This theory maintains that there are three broad types of motivation: intrinsic, extrinsic, and amotivation, representing varying degrees of self-determination, in which intrinsic motivation is the most self-determined type and amotivation the least self-determined. An individual is said to have intrinsic motivation when he or she engages in an activity for the fun or pleasure experienced while doing the activity (Deci & Ryan, 1985), for example, "playing cards because it is fun." The activity is seen as an end in itself as opposed to a means to some ends, in which latter case the activity is said to be extrinsically motivated (Deci & Ryan, 1985).

Extrinsic motivation can be further divided into two subtypes: self-determined extrinsic motivation and non-self-determined extrinsic motivation (Deci & Ryan, 1985). In both cases, a person engages in an activity for reasons other than the activity itself. However, if the reason for engaging in the activity is freely chosen, for example, "playing cards because one feels it helps to keep his or her mind alert," then it represents self-determined extrinsic motivation. But if the reason is not freely chosen by oneself, for example, "playing cards because one is afraid to be rejected by others if he or she refuses to play," then it represents non-self-determined extrinsic motivation.

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Address correspondence to Robert J. Vallerand, Laboratoire de Recherche sur le Comportement Social, Département de Psychologie, Université du Québec à Montréal, P.O. Box 8888, Station A, Montréal, Québec, Canada H3C 3P8.

Finally, amotivation refers to behaviors that are nonmotivated. Individuals who are amotivated perceive a lack of contingency between their behavior and outcomes, in which case they experience incompetence and lack of control (Deci & Ryan, 1985), for example, "not knowing why one is playing cards."

These four types of motivation can be represented along a continuum of self-determination, from most to least self-determined: intrinsic motivation, self-determined extrinsic motivation, non-self-determined extrinsic motivation, and amotivation (Deci & Ryan, 1985). Several studies using self-determination theory have supported the heuristic value of this approach (see Deci & Ryan, 1985, 1991, for reviews). Indeed, this theory has been a useful research framework in various life domains, such as interpersonal relations, education, work, sport, and leisure (see Vallerand, in press, for a review). Research using this theoretical framework has also been carried out with different North American populations, including youth (Ryan & Connell, 1989), adults (Blais, Sabourin, Boucher, & Vallerand, 1990), and the elderly (O'Connor & Vallerand, 1990; Vallerand & O'Connor, 1989, 1991).

Our proposed motivational model of leisure participation in the elderly is presented in Figure 1 and can be summarized in three basic propositions. The first states that perceptions of leisure opportunities and perceptions of leisure constraints will both predict leisure motivation. Leisure opportunities are defined as perceptions concerning the choices of leisure activities available in one's area. Leisure constraints represent perceptions that there are factors limiting one's ability to choose among the leisure activities available in one's region. In line with self-determination theory's (Deci & Ryan, 1985) postulate that self-determination is a key determinant of motivation, we predicted that both perceptions of leisure opportunities and perceptions of leisure constraints act as determinants of leisure motivation.

The self-determination theory proposes that perceptions of self-determination enhance intrinsic motivation and self-determined extrinsic motivation, whereas constraints (or lack of perceived self-determination) undermine these self-determined types of motivation and facilitate non-self-determined forms of motivation (Deci & Ryan, 1985). If an individual perceives that an activity provides many opportunities and no constraints in his or her choices, then this person's self-determined motivation toward the activity is expected to be maintained or even enhanced. If one does not foresee an activity as providing many options or feels constrained in his or her choices, then this individual's self-determined motivation is expected to be undermined. It follows that perceptions of leisure opportunities and perceptions of leisure constraints may act as determinants of leisure motivation and, respectively, enhance or undermine self-determined motivation toward leisure.

The notion that perceptions of self-determination enhance intrinsic motivation and self-determined extrinsic motivation has been supported in a hos-

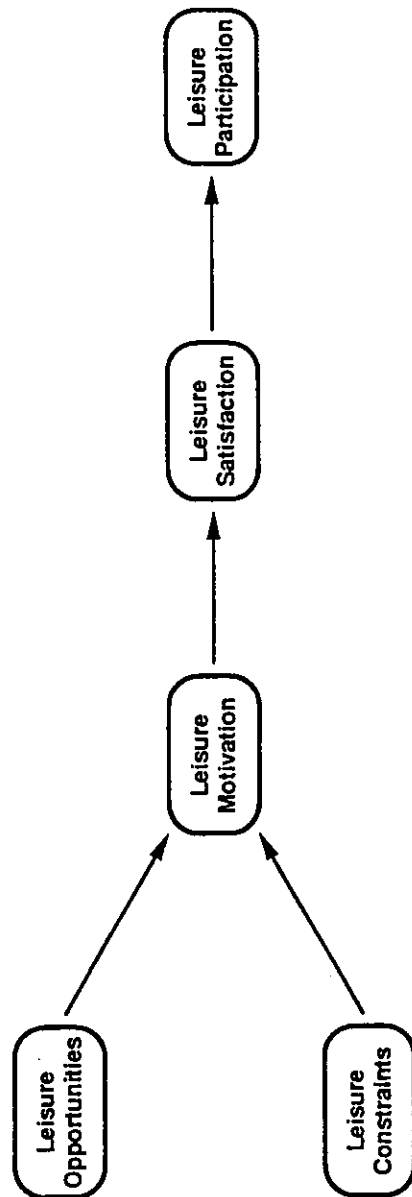


FIGURE 1. Proposed motivational model of leisure participation in the elderly.

of studies with younger populations (see Deci & Ryan, 1985, 1991, for reviews), and more recently with the elderly. Vallerand and O'Connor (1991) found that elderly individuals living in nursing homes that provided high levels of self-determination reported more intrinsic motivation and self-determined extrinsic motivation and less non-self-determined extrinsic motivation and amotivation than those living in nursing homes where the milieu was more constraining. In addition, elderly individuals living in nursing homes that provided high levels of residential constraints displayed less intrinsic motivation and self-determined extrinsic motivation and more non-self-determined extrinsic motivation and amotivation than those living in nursing homes where the milieu was more supportive of self-determination (Vallerand & O'Connor, 1991).

Vallerand and O'Connor's (1991) study with the elderly showed that perceptions of self-determination can lead to higher levels of self-determined motivations (intrinsic motivation and self-determined extrinsic motivation) whereas perceptions of constraints can undermine self-determined motivation and promote non-self-determined motivations (non-self-determined extrinsic motivation and amotivation). We predicted that perceptions of leisure opportunities would lead to more self-determined motivation toward leisure whereas perceptions of leisure constraints would undermine self-determined motivation and promote non-self-determined motivation in leisure.

The second proposition of our model states that leisure motivation will affect leisure satisfaction. Leisure satisfaction is defined as a positive sensation experienced during or following a leisure activity and is considered an indication of the degree of contentment an individual experiences toward the activity (Beard & Ragheb, 1980). Self-determined types of motivation, as opposed to non-self-determined types of motivation, lead to numerous positive outcomes, including better mental health, higher self-esteem, and more satisfaction toward the activity and life in general (see Deci, 1980; Deci & Ryan, 1985, 1991; Vallerand, in press). We predicted that self-determined motivation toward leisure, as opposed to non-self-determined leisure motivation, would lead to greater leisure satisfaction.

Recent studies on leisure or aging that use the self-determination framework have yielded noteworthy initial results. For example, results of a study of Canadian college students by Pelletier, Vallerand, Blais, and Brière (1990) showed that self-determined motivation, as opposed to non-self-determined motivation, was related to better mental health, including satisfaction with life. Results of two studies with the elderly (O'Connor, Vallerand, & Hamel, 1992; Vallerand & O'Connor, 1989) showed that the four types of motivation described above were related, as predicted, to various measures of physical and mental well-being, including life satisfaction. Self-determined types of motivation (intrinsic motivation and self-determined extrinsic motivation) were positively related to dimensions of well-being and life satisfaction,

whereas non-self-determined forms of motivation (non-self-determined extrinsic motivation and amotivation) correlated negatively with these same dimensions (O'Connor et al., 1992; Vallerand & O'Connor, 1989). These results suggest that leisure motivation could predict leisure satisfaction, because the latter is a component of the broader concept of life satisfaction (Ragheb & Griffith, 1982).

The third proposition of our model states that leisure satisfaction is a predictor of leisure participation. Leisure participation is the frequency of engagement in a nonwork related activity that an individual does of his or her own free will (Beard & Ragheb, 1980). We predicted that greater leisure satisfaction would lead to greater leisure participation. Leisure experience, and probably leisure satisfaction, is said to result from the gratification of psychological needs (Tinsley & Tinsley, 1986), but the intrinsic value of an activity or the potential for satisfaction of psychological needs (such as self-determination and competence) motivates individuals to seek and conquer optimally challenging activities (Deci & Ryan, 1985) and to enjoy and reengage in the activity. In fact, numerous empirical findings (see Deci & Ryan, 1985, 1991, for reviews) have indicated that interest in and enjoyment of an activity lead to subsequent behavioral involvement in the activity. We predicted that leisure satisfaction would lead to leisure participation.

We proposed a motivational model of leisure participation in the elderly (Figure 1). We expected that perceptions of leisure opportunities and perceptions of leisure constraints would affect leisure motivation, which in turn would determine leisure satisfaction. We also expected leisure satisfaction to predict leisure participation. In addition to the three stated propositions, some general factors may affect leisure satisfaction and participation, such as perceived health and various sociodemographic variables (see Markides & Martin, 1979; McGuire, 1984; Ouellette, 1986; Ragheb, 1980). Although we considered some of these general factors in the present study, we believe their effects on leisure participation would be mediated mainly by the factors considered in the model.

Method

Subjects and Procedure

Questionnaires in French were sent to 304 French-speaking elderly Canadians in the Moncton area of New Brunswick who were selected through the proportional stratified sampling method; 157 were returned (51.7%), and 102 were sufficiently complete to be analyzed. The final sample reflects, in most aspects, the demographic distribution of the elderly population of the province as established by the Department of Health and Community Services (Strategic Planning Branch, 1987). The respondents ranged in age from 65 to

93 years, with a mean of 73.8 years, and included 66 women and 36 men. Almost 70% of the participants were married; just over 30% were either widowed, single, or divorced. Finally, roughly half lived in an urban setting, and half in a rural community.

The questionnaire, mailed to 304 elderly individuals, invited candidates to participate in a study concerning their attitudes toward leisure. Participants were assured that the information given would remain confidential. They were asked to return the completed questionnaire promptly, using the pre-addressed, stamped envelope. The questionnaires were mailed during the first week of May, and a letter 2 weeks later reminded those who wished to take part in the study to send in the questionnaire if they had not already done so. The final data set consisted of sufficiently completed questionnaires from 102 participants.

Measures

The questionnaire contained four sections designed to measure leisure motivation, satisfaction, participation, opportunities, and constraints. We also collected health and demographic information.

The Motivation in the Elderly Scale (MES) developed by Vallerand and O'Connor (1991), used to measure the four types of motivation, is based on self-determination theory (Deci & Ryan, 1985) and has been found reliable and valid in six important life domains for the elderly (Vallerand & O'Connor 1991). In the present study, we used only the MES's Leisure subscale, which contained four questions:

1. In general, why do you engage in leisure activities?
2. Why do you engage in group leisure activities (with one or more persons)?
3. Why do you engage in personal leisure activities (alone)?
4. Why do you engage in sports or physical activities?

Four responses to each question were designed to measure the four types of motivation. For intrinsic motivation, the response was "for the pleasure of doing it"; the response "I choose to do it for my own good" indicated self-determined extrinsic motivation. Non-self-determined extrinsic motivation was measured with the response "because I am supposed to do it," and amotivation was indicated by using the item "I don't know; I don't see what's in it for me." Participants answered on a 7-point Likert scale, ranging from *not at all* (1) to *exactly* (7), indicating to what extent each response corresponded to their reasons for engaging in leisure activities. The Cronbach alphas in the present study were .85 (intrinsic motivation), .79 (self-determined extrinsic motivation), .83 (non-self-determined extrinsic motivation), and .75 (amotivation).

The Satisfaction in Leisure Scale (SLS) is an adaptation of the Satisfaction With Life Scale (Diener, Emmons, Larson, & Griffin, 1985) and was developed by Pelletier, Vallerand, Blais, and Brière (1989). It consists of five items (e.g., "In general, my leisure activities closely represent my ideal") answered on a 7-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (7). This scale has been found reliable and valid in the measurement of leisure satisfaction (Pelletier et al., 1989). The SLS also proved reliable among our elderly participants ($\alpha = .87$).

Because we were unable to find a relatively concise French measure of leisure involvement, we developed the Leisure Participation Scale (LPS) based on two other leisure participation inventories (Ouellette, Nowlan, & Ulmer, 1987; Sherman, 1974). We selected items common to both instruments that referred to leisure activities in a general sense. Because of the advanced age of our participants, we wanted to keep the questionnaire brief. The LPS thus consists of five items broadly describing various leisure activities, such as "engaging in physical or sports activities." For each of the five items, participants rated how often they were engaging in the given activities on a 5-point Likert scale ranging from *never* (1) to *frequently, once a week or more* (5). This scale had a fair internal consistency level ($\alpha = .64$).

The final section of the questionnaire included three items to be answered on a 7-point Likert scale dealing with perceptions of leisure opportunities and ranging from *not at all* (1) to *a whole lot* (7), perceptions of leisure constraints ranging from *not at all* (1) to *a whole lot* (7), and perceived health ranging from *poor* (1) to *excellent* (7). Leisure opportunities and leisure constraints were measured, respectively, with the items "How informed do you feel you are concerning leisure activities offered in the region?" and "Are there obstacles (e.g., lack of transportation, money, partners) that stop you from engaging in leisure activities as often as you would like?" Perceived health was measured with the item "How do you rate your level of health?" Also included were sociodemographic variables such as education, which was determined by the number of years of schooling, and age, which was calculated from the birthdate. Other sociodemographic factors included gender, area of residence (urban or rural), and marital status (married or not).

Results

There was only one marginal gender difference for leisure participation ($t = 1.7, p < .09$), suggesting that women tended to be more involved in leisure than men. Consequently, the data were analyzed across gender except for the path analyses, wherein gender was retained as a possible significant predictor variable. The means and standard deviations for the various variables show that the participants felt more self-determined and intrinsically motivated toward leisure, as opposed to non-self-determined or amotivated. The means

of the intrinsic motivation and self-determined extrinsic motivation subscales were much higher than the means of the non-self-determined extrinsic motivation and amotivation subscales (Table 1). Similar results have been noted elsewhere with the elderly (Vallerand & O'Connor, 1989, 1991). The participants also seemed mostly satisfied (leisure satisfaction means = 5.5 on a point scale) and fairly active (leisure participation mean = 3.8 on a 5-point scale) with respect to their leisure activities (Table 1).

Pearson Correlation Analysis

The results from a Pearson correlation analysis support the three propositions of the motivational model of leisure participation (Table 2). Analysis of the first proposition, that perceptions of leisure opportunities and perceptions of leisure constraints should be related to leisure motivation, showed that perceptions of leisure opportunities positively correlated with intrinsic motivation ($r = .37, p < .001$) and self-determined extrinsic motivation ($r = .22, p < .05$), whereas perceptions of leisure constraints were inversely related to self-determined extrinsic motivation ($r = -.24, p < .05$). These findings suggest that the more choices one feels to have with respect to leisure activities, the more self-determined is his or her leisure motivation. Conversely, the more leisure constraints one experiences, the less self-determined motivation one feels toward leisure activities.

TABLE 1
Means and Standard Deviations of the Measured Variables

Variables	<i>M</i>	<i>SD</i>
Leisure opportunities and constraints and general factors		
Perceptions of leisure opportunities ^a	4.7	1.1
Perceptions of leisure constraints ^a	2.9	2.1
Perceived health ^a	5.1	1.1
Education	8.4	3.1
Age	73.8	6.1
Leisure motivation		
Intrinsic motivation ^a	6.0	1.1
Self-determined extrinsic motivation ^a	5.7	1.1
Nonself-determined extrinsic motivation ^a	2.1	1.1
Amotivation ^a	1.9	1.1
Leisure satisfaction ^a	5.5	1.1
Leisure participation ^b	3.8	0.8

Note. ^aScores are on a 7-point Likert scale. ^bScores are on a 5-point Likert scale.

TABLE 2
Pearson Correlation Coefficients Between the Measured Variables

Variable	Gender	Home	M.Status	Age	Educ.	Health	PLC	PLO	AM	NSDEM	SDEM	IM	LS	LP
LP	.22*	.05	.10	-.05	-.05	.26*	-.24*	.24*	-.13	-.18	.55***	.45***	.50***	1
LS	.03	-.02	.23*	-.00	.01	.20	-.27*	.26*	-.27*	-.23*	.52***	.54***		
IM	.03	-.03	.08	-.03	.12	.20	-.14	.37***	-.26*	-.08	.76***			
SDEM	.10	-.03	.08	-.04	.11	.17	-.24*	.22*	-.16	-.01				
NSDEM	.01	.01	-.00	.14	-.00	-.10	-.01	-.13	.31**					
AM	.15	-.06	-.05	.02	-.07	.02	.11	-.14						
PLO	.01	.14	-.16	-.21*	-.01	.32**	.13							
PLC	-.09	.07	-.03	-.01	-.03	-.10								
Health	.13	.09	.03	.02	.13									
Educ.	-.06	-.25*	.08	-.18										
Age	.12	.09	.31**											
M.Status	.41***	-.02												
Home	-.00													
Gender														

Note: Gender: male = 1; female = 2. Home: urban = 1; rural = 2. M.status: married = 1; not married = 2. Educ. = education. PLC = perceptions of leisure constraints. PLO = Perceptions of leisure opportunities. AM = Amotivation. NSDEM = Nonself-determined extrinsic motivation. SDEM = Self-determined extrinsic motivation. IM = Intrinsic motivation. LS = Leisure satisfaction. LP = Leisure participation.
* $p < .05$. ** $p < .01$. *** $p < .001$.

For the second proposition, that self-determined motivation and non-self-determined motivation would correlate, respectively, positively and negatively with leisure satisfaction, analysis showed that leisure satisfaction was positively related to the two forms of self-determined motivation, respectively, intrinsic motivation ($r = .54, p < .001$) and self-determined extrinsic motivation ($r = .52, p < .001$), and inversely correlated with the non-self-determined forms of motivation, that is non-self-determined extrinsic motivation ($r = -.23, p < .05$) and amotivation ($r = -.27, p < .05$). Thus, self-determined leisure participants appeared to experience more leisure satisfaction, whereas non-self-determined leisure participants seemed to experience less leisure satisfaction. For the third and last proposition, that leisure satisfaction would predict leisure participation, leisure satisfaction correlated positively with leisure participation ($r = .50, p < .001$).

Path Analysis

Overall, these correlations are congruent with the three stated propositions of the motivational model of leisure participation. However, a path analysis using multiple regression analyses was conducted to further test the model. It included leisure opportunities, constraints, motivation, satisfaction, and participation, as well as perceived health and sociodemographic variables. In the name of parsimony, a leisure motivation index composed of the four types of motivation was used. Indeed, the Motivation in the Elderly Scale (MEES; Vallerand & O'Connor, 1991) allows one to consider these four types of motivation either separately or globally within a motivation index.

In line with other research (Grolnick & Ryan, 1987; Ryan & Connell, 1989; Vallerand & O'Connor, 1989), we devised a leisure motivation index by weighting each of the four types of motivation on the self-determination continuum, from intrinsic motivation to amotivation, and then summing the products. Intrinsic motivation, the highest self-determined form of motivation, was given the highest positive weight (+2). Self-determined extrinsic motivation (+1) is lower on the continuum of self-determination than intrinsic motivation (Deci & Ryan, 1985) and received a lower positive weight (+1). Amotivation represents the absence of self-determination and was weighted negatively (-2). Non-self-determined extrinsic motivation (-1) represents a lower form of extrinsic motivation and was also negatively weighted (-1) (see Grolnick & Ryan, 1987; Ryan & Connell, 1989; Vallerand & O'Connor, 1989, for more information on these scoring procedures). The results of the four multiplications were summed to provide a leisure motivation index. High positive scores on this index reflected a high level of self-determined motivation toward leisure; high negative scores represented a high level of non-self-determined motivation in leisure.

The proposed motivational model of leisure participation in the elderly (Figure 1) suggests that leisure opportunities and constraints affect leisure motivation, which in turn determines leisure satisfaction, and that leisure satisfaction leads to leisure participation. This model as well as alternate models were submitted to path analyses, using (at first) all of the variables considered. Nonsignificant predictors were later removed and various models were again tested using the remaining predictors. The best fit model that was obtained from the final path analysis is shown in Figure 2; it generally supports the proposed motivational model of leisure participation. As anticipated, leisure opportunities enhanced leisure motivation ($\beta = .36, p < .001$), whereas leisure constraints undermined leisure motivation ($\beta = -.26, p < .01$). In turn, leisure motivation was a strong predictor of leisure satisfaction ($\beta = .44, p < .0001$). The more self-determined the leisure motivation, the more positive the leisure satisfaction. Finally, higher levels of leisure satisfaction led to greater levels of leisure participation ($\beta = .32, p < .01$).

Although the motivational model of leisure participation was generally supported, the results from the path analysis (Figure 2) also yielded relations not predicted by the proposed motivational model (Figure 1). First, leisure motivation also influenced leisure participation ($\beta = .30, p < .02$). Second, two sociodemographic variables were related to leisure satisfaction or leisure participation: marital status predicted leisure satisfaction ($\beta = .21, p < .03$), and gender contributed significantly to explaining leisure participation ($\beta = .24, p < .03$): Elderly individuals who were not married, as opposed to those that were married, experienced greater leisure satisfaction, and women tended to be more involved than men in leisure activities.

Our motivational model explains a significant amount of variance of leisure participation in the elderly. Together, the factors in the model explained 16% of the variance in leisure motivation ($R^2 = .16$) and 35% of the variance in leisure satisfaction ($R^2 = .35$). Our model also accounted for 32% of the variance in leisure participation ($R^2 = .32$).

Discussion

Our purpose was to propose and test a motivational model of leisure participation in the elderly. As anticipated, the conceptual validity of the proposed model was empirically supported; the findings support the three propositions stated in the motivational model. Perceptions of leisure opportunities and perceptions of leisure constraints were significant determinants of leisure motivation. Perceptions of leisure opportunities enhanced self-determined leisure motivation, whereas perceptions of leisure constraints undermined self-determined leisure motivation. These relations are in line with self-

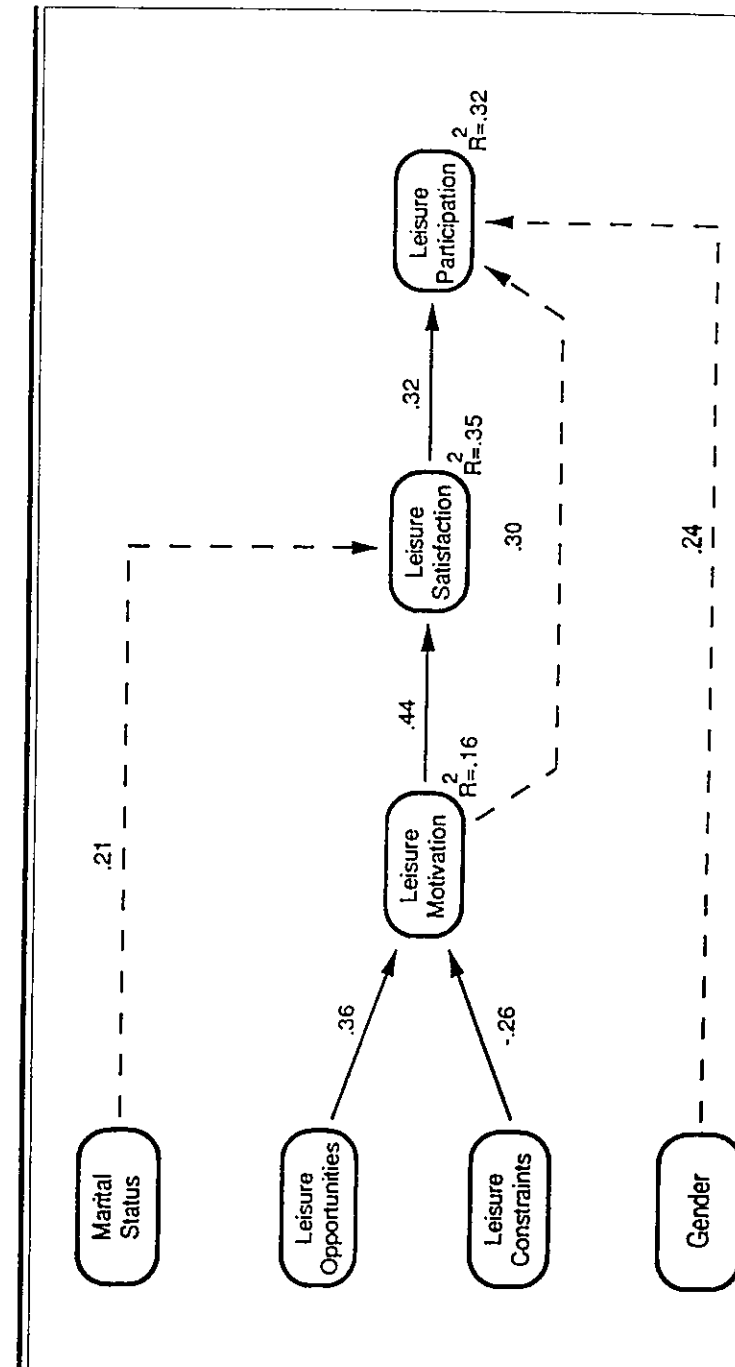


FIGURE 2. Results of a path analysis on the motivational model of leisure participation in the elderly. Solid lines represent predicted relations, and dashed lines represent unpredicted relations; coefficients on the arrows are significant standardized beta (β) values ($p < .05$).

determination theory (Deci & Ryan, 1985), which suggests that the perception that one has choices and freedom to choose should have positive effects on one's self-determined motivation.

Also, as expected by the model and again in agreement with self-determination theory (Deci & Ryan, 1985), self-determined types of motivation were shown to be the main determinants of positive leisure satisfaction. Finally, leisure satisfaction was positively associated with and predicted a significant portion of variance in leisure participation. This finding is in line with much empirical work on intrinsic motivation, which suggests that satisfaction from involvement in an activity can lead to greater behavioral involvement in the activity (see Deci & Ryan, 1985, 1991, for reviews).

The present results agree with much of the literature on leisure and motivation in the elderly. In this respect, five points should be emphasized. First, motivation is considered an integral part of leisure experiences (Iso-Ahola, 1979; Neulinger, 1974) and a central element in the study of leisure (Iso-Ahola, 1980). In line with several other studies (e.g., Graef, Czikszenmihaly, & McManama, 1983; Mannell & Bradley, 1986; Tinsley & Tinsley, 1986), our results show that motivation is an important determinant of the quality of the leisure experience. In addition, leisure motivation was a better predictor of leisure satisfaction than of leisure participation, which is also in agreement with the literature (see Deci & Ryan, 1985). And although not postulated by the proposed motivational model, the link between motivation and participation has been reported before in different life domains (Deci & Ryan, 1985, 1991; Vallerand, *in press*).

Second, it has been suggested that motivation is an important factor to consider in research dealing with the elderly (Howe, 1987; O'Connor & Vallerand, 1990; O'Connor et al., 1992; Vallerand & O'Connor, 1989, 1991). This was evident in the present study, for leisure motivation was a determinant of both leisure satisfaction and leisure participation in elderly individuals.

Third, our findings support Deci and Ryan's (1985) postulate of a self-determination continuum, on which the different types of motivation reflect varying degrees of self-determination. Consequently, a simplex pattern of relations emerged among the four types of motivation. Intercorrelations between adjacent scales on the self-determination continuum showed stronger positive association, whereas scales farther apart showed stronger negative intercorrelations. For example, intrinsic motivation correlated most positively with self-determined extrinsic motivation and most negatively with amotivation (Table 2). Thus, these results support the simplex structure proposed by Deci and Ryan (1985). A similar pattern of intercorrelations was noted in other studies with the elderly (O'Connor et al., 1992; Vallerand & O'Connor, 1989, 1991).

Fourth, our findings suggest that self-determination theory (Deci & Ryan, 1985) may serve as a common framework for leisure motivation stud-

ies. Crandall's (1980) study highlights the need for more integration in the area of leisure motivation. He identified as many as seventeen different types of motivation relevant to the study of leisure. Obviously, it would be more constructive to consider a unifying theoretical framework to allow for comparison between research results. However, such a perspective may be broad in scope to accommodate the diverse inquiries into leisure motivation.

Among the various organismic approaches to the study of motivation, self-determination theory (Deci, 1980; Deci & Ryan, 1985, 1987, 1991) may be broad enough in scope and applicability to accommodate numerous research interests in leisure motivation. This theory has created much research interest in important life domains, such as interpersonal relations, educational work, sport, and leisure (see Vallerand, *in press*), as well as with different populations, including youth (Ryan & Connell, 1989), adults (Blais et al., 1990), and the elderly (O'Connor & Vallerand, 1990; O'Connor et al., 1990; Vallerand & O'Connor, 1989, 1991).

Fifth and last, these findings support the proposition that leisure satisfaction can predict leisure participation, but this does not mean that leisure participation cannot influence leisure satisfaction. Kelly and Ross (1989) indicated that the relation between leisure satisfaction and leisure participation may be reciprocal in nature. Consequently, leisure satisfaction could be considered either a determinant or a consequence of leisure participation. In the present model, leisure satisfaction is considered a determinant of leisure participation, because the former is more closely related to leisure motivation than the latter. However, over time, leisure satisfaction and leisure participation may have a reciprocal relation.

Although the proposed motivational model of leisure participation in the elderly is based on sound theoretical assumptions and was empirically supported, the present results should be interpreted in light of the methodological limitations of the study. We used a correlational design, which does not establish causal proof of the observed relations. The data were taken at a single moment in time; consequently, one cannot predict what could happen over time with respect to the observed relations. Our leisure participation scale was a self-report measure. A more precise and perhaps elaborate measure might have yielded different results. Finally, we assessed perceptions of leisure opportunities and perceptions of leisure constraints with single item measures. More elaborate measures are desirable.

Future research on successful aging may do well to consider leisure motivation, as it is a key element of a network related to participation in leisure activities, which often involve social interactions (Crandall, 1979; Kelly, Steinkamp, & Kelly, 1986). Because aging often involves a reduction in social activities as a result of retirement or other events, increased leisure participation may act as a buffer and help maintain social involvement (Atchley

1976), a possibility that could be important in light of increases in the elderly population and the much needed concern for improving the quality of their lives.

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