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Lynn Anderson
SUNY Cortland

Dale Anderson
SUNY Cortland

Anderson Young
SUNY Cortland

TESTING THE ADVENTURE RECREATION MODEL: A REPLICATION WITH SUBJECTS INVOLVED IN A REQUIRED OUTDOOR EXPERIENCE

Lynn Anderson, Ph.D. SUNY – Cortland

Dale Anderson, M.S. SUNY – Cortland

Anderson Young, Ph.D. SUNY – Cortland

The Adventure Recreation Model, first proposed and tested by Ewert and Hollenhorst (1989), attempts to describe participant characteristics and patterns of use in adventure recreation activities. The model was originally tested with students at Ohio State University who were involved in an outdoor pursuits program consisting of a wide variety of outdoor adventure activities. This study replicated and extended this research by using subjects who participated in a required outdoor course with an outdoor adventure component. The purpose of the study was to test the fit of the adventure model with subjects who were expected to be more diverse in their motivations for participation, and to compare the results to those of Ewert and Hollenhorst (1989). Like the original "theory testing" (p. 129) study, it was hoped that this replication would help broaden the application of the validity of the Adventure Recreation Model for explaining adventure recreation behavior.

BACKGROUND AND NEED FOR THE STUDY

Attempts to more fully understand adventure recreation behavior and motivations have been a consistent theme in the research literature in the recreation field (Priest, 1992). Although Ewert and Hollenhorst first published the Adventure Recreation Model in 1989, earlier research had led to its development. In an earlier study, Ewert (1985) examined the relationship between participant motivations for mountaineering and their level of experience. He found that type of motivation (intrinsic or extrinsic) differed for participants, depending on their self-reported level of experience in the activity. More experienced participants tended to have more intrinsic motivations and inexperienced participants more extrinsic motivations for mountaineering. The results of this study led to the development of a more complex model, in which type of motivation was one variable among several others associated with adventure recreation. This model, the Adventure Recreation Model, was presented by Ewert (1989), and tested by Ewert and Hollenhorst (1989). According to Ewert (1989), the adventure model was based on the notion that the "seeking of risk and uncertainty of outcome" (p.8) differentiates adventure recreation pursuits (e.g., rock climbing and backpacking) from other forms of outdoor recreation (e.g., hunting and fishing). Further, Ewert and Hollenhorst (1989) contended that models addressing recreation or outdoor recreation participation inadequately explained or even addressed the *risk-seeking* dimensions adventure experience and adventure activities (p. 127). Their 1989 study found support for the proposed adventure recreation model. The model was effective in identifying components of the outdoor adventure experience that were correlated to level of engagement in the adventure activity (described in more detail below). Level of engagement is a reflection of one's continued and immediate involvement in adventure recreation, and ranges from introductory, to development, to commitment. It is operationalized as a self-report assessment on the part of the participant (Ewert & Hollenhorst, 1989).

Though strong initial support for the model was found, continued testing of its validity was limited. Schuett (1992) tested a revised adventure model, using slightly different variables, and reported support for that model. Priest (1992) proposed and tested an alternative model, "The Adventure Experience Paradigm," (p. 128), based on the concepts of risk and competence. His findings also provided support for the concepts in Ewert and Hollenhorst's (1989) original model. Thus, though there is some limited research, there continues to be a need to

further test the adventure recreation model. Because no replication study of the original model could be found in the literature, it was deemed useful to test it again. Through replication efforts, the building of a viable adventure model is possible.

There are several benefits of having a viable adventure model. First, it would provide a clarified conceptual understanding of adventure recreation. Second, the model could help resource managers to understand and justify the need to provide a diversity of recreation and adventure recreation opportunity settings. Third, a sound adventure model could guide adventure programmers in tailoring their programs' settings, social contexts, and risk levels to participants' level of engagement in the activities. According to Priest (1992), resource managers and other outdoor recreation service providers could provide a spectrum of recreation opportunities, which would accommodate varying levels of skill and ability. Being able to match users to the settings and programs that best meet their needs would assist managers in providing higher quality experiences and environments.

OVERVIEW OF THE ADVENTURE RECREATION MODEL

According to Ewert and Hollenhorst (1989), the Adventure Recreation Model is based on the personal attributes of the participant, such as frequency of participation, skill/experience level, decision-making locus of control, and motivation factors, and on the activity/setting attributes, such as level of risk, social orientation, and environmental orientation. The model is reconstructed in Figure 1 to show how the participant and activity/setting attributes are related. As can be seen in the model, participants are divided into categories of Introduction, Development, or Commitment based on their level of engagement in outdoor adventure. The Adventure Model suggests that as engagement level increases:

- skill level increases
- frequency of participation increases
- locus of control becomes more individualized
- preferred risk level increases
- preferences for natural conditions increase
- social context moves to solitary or expert-only groupings
- motivations of challenge, achievement, and risk taking increase or prevail, as reflected by the shift from extrinsic to intrinsic motivation.

The model allows for classification of participants based on their experience level. This classification, in turn, is related to the level that users experience, perceive, or desire in other elements of the outdoor adventure experience. The model, in theory, could help managers more closely target and/or manage programs and resources that are suitable for the participant. On a more theoretical level, the model could help researchers understand adventure recreation behavior.

This study extended the testing of the model by Ewert and Hollenhorst (1989) by using outdoor adventure participants who were taking part in a required outdoor adventure program. Past experience with the program by the authors suggested that this sample would be likely to include some who would choose not to do adventure activities and it would include some planning their careers in that field. Believing that the sample would include participants who had a wide variety of motivations for participating in the adventure experience, the researchers hypothesized that the motivation aspect of the adventure model, in particular, would be more clearly tested than with Ewert & Hollenhorst's sample of subjects who voluntarily sought out the adventure experience. If the model is accurate, one would predict that those participants who did not voluntarily choose to be a part of the outdoor adventure experience would tend to be more extrinsically motivated, and more at the introduction level of engagement. Those participants who were highly engaged, such as choosing careers in outdoor recreation, would show more intrinsic motivations to participate. Thus, the purpose of this study was to test the accuracy of the Adventure Recreation Model in describing the personal and activity/setting attributes of adventure recreationists, and to compare it to results obtained by Ewert and Hollenhorst.

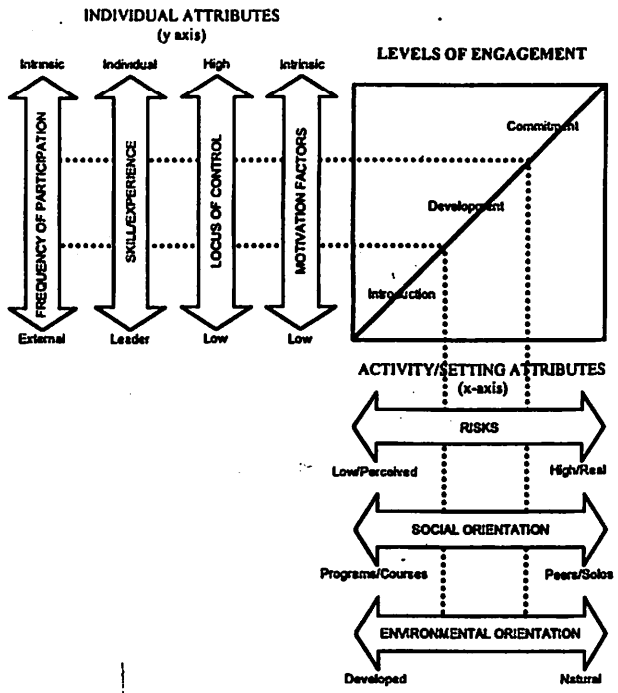

Figure 1. The Adventure Recreation Model by Ewert & Hollenhorst (1989).

METHODS

Because results will be compared to the 1989 study, it is appropriate to present the methods comparatively as well. Both studies used nonprobability samples. Although precluding generalizability to a population, such samples are acceptable in theory testing studies such as these. Further, to the extent that generalizability, like theoretical validation, can be achieved through multiple replications with different subjects, settings, and temporal contexts, this study is a small step toward a more generalizable view of the adventure model (Borg & Gall, 1989).

This study surveyed 60 undergraduate recreation majors taking a required outdoor course; the 1989 study included 115 undergraduate and graduate students in various majors taking elective courses. Although smaller and more homogeneous with respect to academic major, the 1999 subjects were expected to present more varied attitudes and motivations toward adventure. For example, this sample included persons who would prefer to avoid outdoor pursuits and persons who chose the recreation major as an expression of their interest in adventure recreation.

In both studies, subjects completed the instrument a day after the conclusion of their courses. Because the course context may affect responses, those contexts merit brief comparative description. The subjects of this study completed a thirteen-day program that included seven days in a camp-like resident outdoor education setting and a six-day wilderness canoe trip in New York State's Adirondack Park. These context factors differed from the 1989 study in which subjects were students in short (i.e., weekend) courses in various adventure activities (e.g., backpacking, climbing, caving, etc.) Most of those courses took place in semi-primitive areas of Ohio, Northern Kentucky, and West Virginia.

Following their courses, subjects completed Ewert and Hollenhorst's (1989) Outdoor Adventure Survey. The instrument includes items to measure, via self-report, the variables of level of engagement, user attributes (skill level, locus of decision-making), setting attributes (type of environment, preferred level of risk, social orientation), and 18 motivations for participation (e.g., develop skills, make friends, for the challenge, etc.). In both studies, the questionnaire used a nine point Likert scale, to which subjects responded for each item on the questionnaire. The data were analyzed with SPSS 9.0, using Pearson correlation and stepwise multiple regression at the .05 level of significance.

RESULTS

The response rate on the questionnaires was 100%. Of these, 62% were female and 38% were male. Ewert and Hollenhorst's sample was 31% female and 69% male. The mean age of this sample was 23 years, as compared to 20 years in Ewert and Hollenhorst's study.

Following the procedures of the 1989 study, subjects' self-reported levels of engagement in outdoor adventure were used to group them into three categories. Responses of 1 to 3 on the nine point Likert scale were deemed "Introductory," 4 to 6, "Development," and 7 to 9, "Commit-

TABLE 1
Pearson Correlation Tests of Significance Between Level of Engagement and Other Variables and Comparison to Ewert and Hollenhorst's 1989 Findings.

Variable	Model Prediction*	1999 r	1999 p	1999 Supports model?	1989 r	1989 p	1989 Supports model?
User Attributes:							
frequency of participation	positive	.37	.00	yes	.45	.00	yes
skill	positive	.93	.00	yes	.79	.00	yes
locus of decision-making	positive	.38	.00	yes	.38	.00	yes
Setting Attributes:							
type of environment	positive	.39	.00	yes	.36	.00	yes
preferred level of risk	positive	.40	.00	yes	.27	.00	yes
social orientation:							
friends	positive	-.06	.63	no	-.09	.19	no
classes	negative	-.01	.92	no	-.13	.10	no
self	positive	.06	.65	no	.27	.00	yes
teachers	negative	.15	.245	no	-.05	.32	no
peers	positive	.34	.01	yes	.20	.02	yes
Motivation for Participation:							
To develop skills	positive	.45	.00	yes	.19	.02	yes
To make friends	negative	.01	.93	no	.13	.09	no
For the image	negative	.22	.09	no	.02	.40	no
For novelty	negative	.36	.01	no	.00	.5	no
For physical fitness	negative	.22	.10	no	.03	.38	no
For the challenge	positive	.31	.02	yes	-.03	.38	no
For the competition	positive	.25	.05	yes	.19	.03	yes
To experience nature	positive	.42	.00	yes	-.03	.40	no
For fun and enjoyment	positive	.38	.00	yes	-.02	.43	no
Feelings of self-esteem	positive	.11	.40	no	-.03	.38	no
Requested of others	negative	.01	.95	no	.06	.26	no
To socialize	negative	-.01	.50	no	.08	.2	no
To take risks	positive	.50	.00	yes	.13	.09	no
For the excitement	positive	.39	.00	yes	.01	.46	no
To experience control	positive	.20	.12	no	.14	.08	no
For a sense of achievement	positive	.22	.09	no	.01	.44	no
For status	positive	.12	.37	no	.16	.06	no
To express creativity	positive	.39	.00	yes	.11	.12	no

*Direction of the relationship with level of engagement, as predicted by the Outdoor Adventure Model.
Shading indicates discrepancy between the findings of this study and the 1989 study.

ment." In this study, 17% were introductory, 47% were development, and 37% committed. Ewert and Hollenhorst's sample was 22%, 59% and 19% respectively.

Table 1 presents the results of the Pearson correlations, as well as a comparison to the results of Ewert and Hollenhorst's study. Level of engagement was correlated with each of the other measured variables. As can be seen in the table, there was much agreement between the findings in the two studies. This study, like the original, found relationships between level of engagement and skill, locus of decision-making, environmental preferences, preferred risk level, and willingness to participate with peers. Unlike the original study, no relationship was found between level of engagement and "participation by oneself." More noteworthy differences in the findings of the two studies came in the area of motivations for participation. In 1989, only two motivational areas, skill development and competition, showed significant relationships with level of engagement, and they were so weak (r=.19 for both) that motivation was dropped in Ewert and Hollenhorst's (1989) revised adventure model. In contrast, this study found stronger relationships in those areas (r=. 45 and .25 respectively) and as well as moderately strong relationships for the motivations of challenge (r=.31), experiencing nature (r=.42), fun and enjoyment (r=.38), risk taking (r=.50), excitement (r=.39), and expressing creativity (r=.39).

Stepwise multiple regression was used to see if there were any specific variables in the adventure recreation model that were more likely to be related to, or the strongest predictors of, level of engagement. Because of the small sample size (n=60) in relation to the number of variables measured (23 variables total), the multiple regression analysis was limited to those variables that had the most theoretical relevance, as well as showed high correlation to level of engagement in the Pearson correlation (Borg and Gall, 1989). Therefore, in the regression analysis, level of engagement was correlated with skill level, locus of decision-making, type of environment, and preferred level of risk in a stepwise manner.

Table 2 shows the results of the multiple regression, the purpose of which was to determine which of the influence or predictor variables could be combined to form the best prediction of the dependent or criterion variable. As can be seen in Table 2, the most powerful predictor of level of engagement was skill level (R=.93). This meant that 86% of the variance in engagement level could be predicted by skill level (R^2=.86). Due to this very high multiple correlation coefficient, no other variable could be added to the regression model to improve upon the prediction of variance in level of engagement. Another multiple regression was run with all the variables in the model, with the same results – skill level was the most powerful predictor of level of engagement, and could not be improved upon with the addition of any other variables.

DISCUSSION

The findings of this study reinforce those of the first study that supported the Adventure Model. Although not confirming the entire model, the findings also suggest caution in revising the model. Motivational factors, which were eliminated from the model after the first study, should, according to these findings, remain in the model. The evidence to support "social orientation" in the model was modest in the original study and more so in this. These differences may be due to known differences in the subjects of two studies. This sample had a more varied distribution of the defining variable (level of engagement) and almost reversed percentages of women and men. Also, the 1989 subjects were queried following participation in one of a number of different short activity courses. The 1999 subjects completed the instrument following the completion of a longer program that included only canoe tripping as the just completed context for adventure. Finally, at least for motivational factors, the use of recreation majors for this study may have made a difference. These students would have been exposed to theories of leisure, recreation, and adventure. Hence, items on the instrument that reflected those theories may have resonated with these subjects. The degree to which any of these factors actually apply cannot be determined from the data.

TABLE 2

Results of the Step-wise Multiple Regression of Influence or Predictor Variables on Level of Engagement.

INFLUENCE OR PREDICTOR VARIABLES	Beta	Correlation coefficient (r)	Multiple corr. coefficient (R)	R^2
Level of Engagement to:				
Skill Level	1.04	.93*	.93*	.86

*significant at the .00 level

Those variables that have shown no relationship in either study may need to be eliminated from the instrument and model. However, because of the high correlation, or collinearity, of the variables in the model, the stepwise multiple regression was not helpful in identifying which variables could be most easily eliminated. Based on the simple correlations, both Ewert and Hollenhorst (1989) and this study found little to no support for the "social orientation" variable, and it may be a logical factor to eliminate from the adventure recreation model.

Although more respondents in this study were at the self-reported "commitment" level, they probably fell far short of actually matching the profile theoretically envisioned by Ewert and Hollenhorst (1989) for persons at this level (e.g., Himalayan mountaineering). Hence, we would reiterate the need for a more behaviorally anchored scale for determining "level of engagement." Were such a measure to be devised, future researchers might need to make special efforts to include "commitment" level subjects in their studies.

Although the correlations shown in both studies support many of the associations postulated by the model, larger questions remain. They stem from the model's assertion that the seeking of adventure and risk is at the heart of participation in "adventure" activities. The unanswered question is whether the notion of adventure is the defining element of participation in these outdoor adventure pursuits or simply an element of the experience, which may or may not be salient? It is easy to imagine two groups following essentially identical canoe trip itineraries. The more experienced group, neither perceives nor seeks great challenge or risk, but instead is happily occupied by wildlife observations, social interaction, and the opportunity to contemplate their place in the universe. The other group, perhaps less experienced, is on the adventure of a lifetime and riveted to the challenges of route finding, paddling into the wind, and portaging. We know not whether the second group sought risk, but they are experiencing risk and adventure. We do know that the more experienced group did not seek and is not experiencing risk, yet they are participating in an activity that Ewert and Hollenhorst would label "adventure recreation," and would distinguish from other forms of outdoor recreation based on the inherent degree of real or perceived danger. Ironically, the theory excludes an activity such as hunting, which has a highly uncertain outcome and which offers objective dangers of exposure to the elements and to other hunters' errant shots.

The adventure label might be more soundly applied to a group of "higher risk" nature-based non-motorized activities such as hang gliding, whitewater boating, rock climbing, surfing and to other activities such as auto racing, skydiving, and motocross. Perhaps better would be to refer to the element of adventure as an aspect of most or all (higher and lower risk) outdoor pursuits. An adventure model would describe not *all* who participate in those activities, but a subgroup of participants for whom the preference for and perception of risk is central to the quality of their experience. Additionally, this subgroup of participants may be purposefully or inadvertently created, or "engineered," by the leaders or the other group members as perceptions of risk are reduced or enhanced. Holyfield (1999), in an

ethnographic study of the "manufactured adventure" in commercial whitewater rafting, found that leaders, the other group members, or the social context in its entirety, can frame an activity as "adventurous" or not, particularly for novice or introductory participants.

To consider this question empirically, the instrument item on "level of preferred risk" not "level of engagement" may be a more meaningful variable to drive the taxonomy and description of adventure recreationists. Further, one could examine groups of homogeneous engagement/participation levels and see whether subgroupings by preferred risk can be formed. Theoretically then, even though a homogeneous (i.e., all highly involved) group of participants may be rock climbing together, only some of the group members may be involved in an "adventure activity," based on their level of preferred risk.

In sum, this study added further to the potential validity of the adventure recreation model (Ewert & Hollenhorst, 1989) in explaining outdoor adventure behavior as a complex set of variables related to one another. However, the study also raises fundamental questions about the model, and suggests further testing. It is recommended that preferred level of risk on the part of the participant be investigated as a more valid dependent variable than level of engagement in explaining adventure recreation behavior.

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Lynn Anderson is an associate professor and chair in the Recreation and Leisure Studies Department at SUNY Cortland; **Dale Anderson** is a Visiting Assistant Professor, and **Anderson Young** is a Professor in the same department. The authors can be reached at PO Box 2000, Cortland, NY 13045; (607) 753-4941; E-mail: andersonl@cortland.edu, danderson@cortland.edu, and younga@cortland.edu.